



ForeFlight Mobile

Pilot's Guide



ForeFlight
A Boeing Company

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DEFINITIONS

Abbreviation	Definition
AC	Advisory Circular
ACARS	Aircraft Communications Addressing and Reporting System
ADIZ	Air Defense Identification Zone
ADS-B	Automatic Dependent Surveillance - Broadcast
ADS-C	Automatic Dependent Surveillance - Contract
AFM	Aircraft Flight Manual
AFTN	Aeronautical Fixed Telecommunication Network
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information Regulation and Control
ALT	Altitude
ALTRV	Altitude Reservation
APV	Approach with Vertical Guidance
AR	Authorization Required
ATC	Air Traffic Control
ATFM	Air Traffic Flow Management
ATFMX	Air Traffic Flow Management Exempt
ATIS	Automatic Terminal Information Service
ATN	Aeronautical Telecommunications Network
BRNAV	Basic Area Navigation
CASA	Civil Aviation Safety Authority (Australia)
CFR	Code of Federal Regulations
COM	Communication
CPDLC	Controller Pilot Data Link Communication
CTOT	Calculated Takeoff Times
D-FIS	Data Link Flight Information Service
DA	Decision Altitude

DEFINITIONS

Abbreviation	Definition
DAT	Data
DC	District of Columbia
DEST	Destination
DLE	Delay
DME	Distance Measuring Equipment
DOF	Date of Flight
DVFR	Defense Visual Flight Rules
EET	Estimated Elapsed Time
EFC	Expect Further Clearance
ELT	Emergency Locator Transmitter
EOBT	Estimated Off-Block Time
ES	Extended Squitter
ETD	Estimated Time of Departure
ETP	Equal Time Point
FAA	Federal Aviation Administration
FANS	Future Air Navigation Systems
FFR	FireFighting
FIC	Flight Information Centre (Canada)
FIR	Flight Information Region
FL	Flight Level
FLTCK	Flight Check
FMC	Flight Management Computer
FMS	Flight Management System
FS	Flight Suspension
GBAS	Ground Based Augmentation System
GLONASS	Global Navigation Satellite System
GLS	Glide Slope

DEFINITIONS

Abbreviation	Definition
GNSS	Global Navigation Satellite System
GPH	Gallons Per Hour
GPS	Global Positioning System
GPU	Ground Power Unit
GSL	Geometric altitude relative to Sea Level
HAZMAT	Hazardous Material
HEAD	Head of State
HLA	High Level Airspace
HFDL	High Frequency Data Link
HOSP	Hospital
HSI	Horizontal Situation Indicator
HUM	Humanitarian
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
ILS	Instrument Landing System
INMARSAT	International Marine/Maritime Satellite
INS	Inertial Navigation System
IRU	Inertial Reference Unit
KHZ	Kilohertz
KM	Kilometers
LNAV	Lateral Navigation
LORAN	Long-Range Aid to Navigation
LPH	Liters Per Hour
LPV	Localizer Precision with Vertical Guidance
MARSA	Military Separation
MEA	Minimum Enroute Altitude
MEDEVAC	Medical Evacuation

DEFINITIONS

Abbreviation	Definition
MFB	Military Flight Bag
MHz	Megahertz
MLS	Microwave Landing System
MNPS	Minimum Navigation Performance Specifications
MTSAT	Multi-functional Satellite Augmentation System
NAV	Navigation
NM	Nautical Miles
NOTAM	Notice to Air Missions
OEI	One Engine Inoperative
OPR	Operator
ORGN	Originator
PBN	Performance Based Navigation
PDC	Pre-Departure Clearance
PDF	Portable Document Format
PER	Performance Category
PPH	Pounds Per Hour
RALT	Enroute Alternate Aerodrome
RCP	Required Communication Performance
REG	Registration
RF	Radius to Fix
RIF	Route to Revised Destination
RMK	Remarks
RNAV	Area Navigation
RNP	Required Navigation Performance
RPT	Regular Public Transport
RTF	Radiotelephone
RVR	Runway Visual Range

DEFINITIONS

Abbreviation	Definition
RVSM	Reduced Vertical Separation Minimum
SAR	Search and Rescue
SATCOM	Satellite Communication
SBAS	Satellite-Based Augmentation System
SEL	Selective Calling (SELCAL)
SELCAL	Selective Calling
SFRA	Special Flight Rules Area
SID	Standard Instrument Departure
STAR	Standard Terminal Arrival
STAYINF	Stay Information
STS	Special Handling Reason
SUR	Surveillance
TACAN	Tactical Air Navigation
TALT	Take-off Alternate
TEC	Terminal Enroute Control
TSO	Technical Standard Orders
TYP	Type
UAT	Universal Access Transceiver
UHF	Ultra High Frequency
VDL	Very-High Datalink Frequency
VHF	Very-High Frequency
VNAV	Vertical Navigation
VOR	Very High Frequency Omnidirectional Radio Range
WAAS	Wide Area Augmentation System
WPR	Waypoint Position Reporting
YFR	Initially an IFR flight that changes to use other flight rules
ZFR	Initially a VFR flight that changes to use other flight rules



GETTING STARTED

ForeFlight Mobile is the essential aviation mobile application that combines preflight, in-flight, and post-flight tools into a single, intuitive mobile application. This guide will help you learn about and take advantage of all the capabilities available in ForeFlight Mobile.

ForeFlight should be installed on a device with the latest iPad or iOS operating system. For assistance with choosing an iPad, visit www.foreflight.com/support/buying-guide.

To get started, download ForeFlight Mobile from the Apple App Store. For more information, visit www.foreflight.com/support/getting-started.

About this Guide

This guide provides a detailed overview of ForeFlight Mobile. The first portion of the guide is divided into sections based on when you're likely use a feature (e.g., Getting Started and Preflight). The remaining portions of the guide provide feature descriptions and is organized according to how the views appear in the toolbar (e.g., Airports, Maps, and Plates).

Additional guides for Filing Flight Plans, using Logbook, Checklist, Weight & Balance, and Search & Rescue are available in the ForeFlight Mobile **Documents > ForeFlight** drive.

NOTE: This guide presumes a basic level of iPad/iPhone proficiency. If you are new to iOS devices, we recommend visiting Apple iPad Support as well as the iPad User Guide at support.apple.com/manuals/.

PLAN COMPARISON

ForeFlight offers three plans for individual pilots and two plans for businesses. Each plan includes charts for one region with additional regions available for purchase. Runway Analysis is available as per tail (business) and per type (individual) add-on license. Visit www.foreflight.com/buy to purchase a license. Refer to the table below to determine if a feature is included with your plan.

Features	Individual			Business	
	Basic Plus	Pro Plus	Performance Plus	Pro	Performance
Aeronautical Map	✓	✓	✓	✓	✓
High-Resolution Base Map	✓	✓	✓	✓	✓
Flight Planning	✓	✓	✓	✓	✓
Flight Plan Filing	✓	✓	✓	✓	✓
Weather	✓	✓	✓	✓	✓
En Route Charts	✓	✓	✓	✓	✓
Airport Data	✓	✓	✓	✓	✓
FBO Information	✓	✓	✓	✓	✓
Global Navigation Data	✓	✓	✓	✓	✓
ForeFlight Airport Diagrams	✓	✓	✓	✓	✓
Jeppesen VFR Procedures	✓	✓	✓	✓	✓
Optional Data Packages	✓	✓	✓	✓	✓
Weight & Balance	✓	✓	✓	✓	✓
Logbook	✓	✓	✓	✓	✓
Checklist	✓	✓	✓	✓	✓
Avionics Connectivity	✓	✓	✓	✓	✓
Printable NavLog	✓	✓	✓	✓	✓
Documents Catalog	✓	✓	✓	✓	✓
Flight Notifications	✓	✓	✓	✓	✓
Content Packs	✓	✓	✓		✓
Track Logs	✓	✓	✓	✓	✓
Breadcrumbs	✓	✓	✓	✓	✓



PLAN COMPARISON

Features	Individual			Business	
	Basic Plus	Pro Plus	Performance Plus	Pro	Performance
Passenger App Mode	✓	✓	✓	✓	✓
Internet Traffic	✓	✓	✓	✓	✓
Plates on Maps		✓	✓	✓	✓
Synthetic Vision		✓	✓	✓	✓
Hazard Advisor		✓	✓	✓	✓
Hazard Alerts		✓	✓	✓	✓
Profile View		✓	✓	✓	✓
Cloud Documents		✓	✓	✓	✓
Icing, Turbulence Map Layers		✓	✓	✓	✓
Surface Analysis Map Layer		✓	✓	✓	✓
Performance Profiles			✓		✓
3D View			✓		✓
Optimized Routing			✓		✓
Takeoff & Landing Performance			✓		✓
Runway Analysis (Add-on license required)			✓		✓
Pre-Departure Clearance (PDC)			✓		✓
Digital ATIS (D-ATIS)			✓		✓
Fuel Load Planner			✓		✓
Limit Checks			✓		✓
Integrated JetFuel X Prices			✓		✓
FBO Fuel Orders			✓		✓
Trip Assistant			✓		✓
Files in Flights			✓		✓
Marked Positions			✓		✓
ForeFlight on the Web	✓	✓	✓	✓	✓

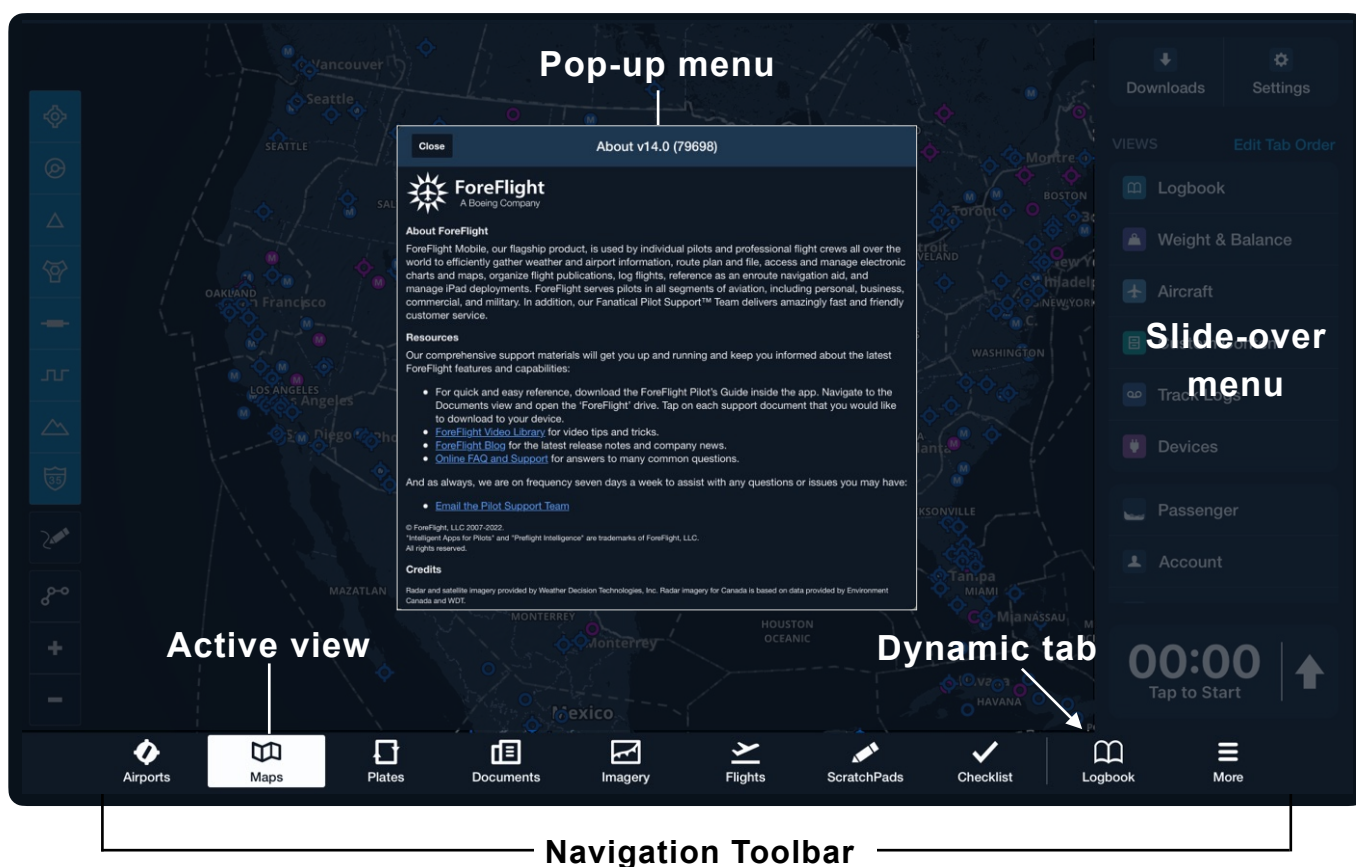
DESIGN

The Design chapter discusses how ForeFlight Mobile is organized and how to navigate the various views. The chapter also discusses how to customize the appearance of ForeFlight with the App Theme setting.

1.1 Navigation

ForeFlight Mobile is comprised of various views (also commonly referred to as pages). Each view represents a distinct aspect of ForeFlight functionality such as Airports, Maps, and Plates. Views either display full-screen or in a pop-up modal over the active view.

You can access a view by tapping its tab in the navigation toolbar or the slide-over menu (via the More tab).



1. DESIGN

1.1.1 Navigation Toolbar

The navigation toolbar is always depicted at the bottom of the screen. The order of tabs in the navigation toolbar can be customized. Toolbar order does *not* synchronize between devices.

1.1.2 More Menu and Navigation Toolbar

The number of tabs in the navigation toolbar dynamically adjusts between five to ten tabs based on available screen size and device orientation. The order of the More menu determines which tabs are included in the toolbar and how they are ordered.

For example, if a device displays six tabs in portrait mode, the top six items in the More menu are displayed in the navigation toolbar. The view at the top of the More menu is displayed on the left side of the navigation toolbar. Tabs are sorted from left to right according to how they appear in the More menu.

If a tab is not visible in the navigation toolbar, it is available in the **More** slide-over menu.

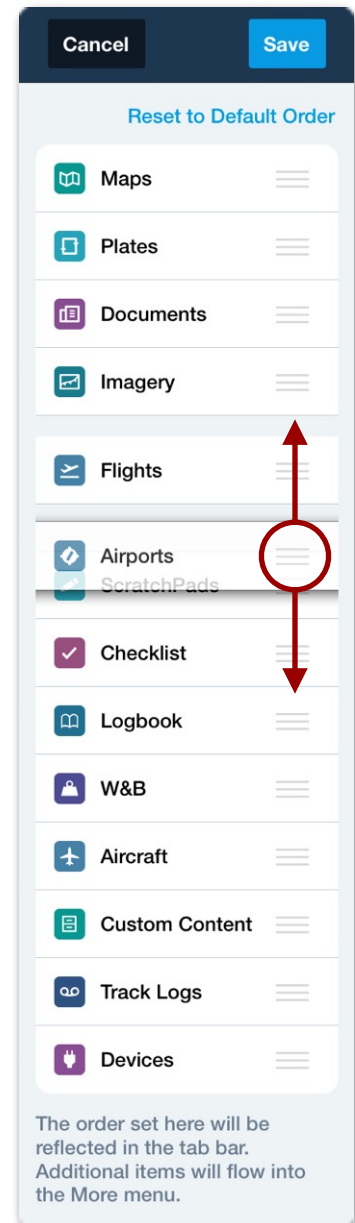
1.1.3 Customizing Tab Order

To edit tab order:

1. Tap **More**.
2. Tap **Edit Tab Order**.
3. Touch-hold the 3-stacked-line icon next to the tab you wish to move.
4. Slide the tab up or down to the desired position.
5. Tap **Save**.

To restore the original default tab order:

1. Tap **More**.
2. Tap **Edit Tab Order**.
3. Tap **Restore to Default Order**.
4. Tap **Save**.



Editing Tab Order

1. DESIGN

1.1.4 Dynamic Tab

The tab to the left of the More is dynamic and will change as you select different items from the More menu. The dynamic tab allows the last selected item, not otherwise displayed in the navigation toolbar, to be displayed for quick access.

1.2 Timer/Stopwatch

The bottom of the More menu includes a count down timer and a count up stopwatch. Tap the arrow to change between count up or count down mode. Only one timer can run at a time. If the timer or stopwatch is active, tapping the arrow will stop the timer and change to the other style.

1.2.1 Stopwatch (Count Up Mode)

Tap the stopwatch to begin counting up from zero. Tap it again to stop the count. Tap it once more to reset the count to zero.



Stopwatch

1.2.2 Timer (Count Down Mode)

Tap the timer to set a duration in hours, minutes, and seconds. Select whether the timer will repeat and set the number of repetitions after the initial countdown. Tap the timer to start the countdown, and tap it again to stop and clear the count.

ForeFlight provides in-app audio and visual alerts when the timer counts down to zero. If ForeFlight is in the background or closed when the timer expires, your device will display an iOS notification with the same information. Enable ForeFlight iOS notifications in the iPad or iPhone **Settings** app > **Notifications**.

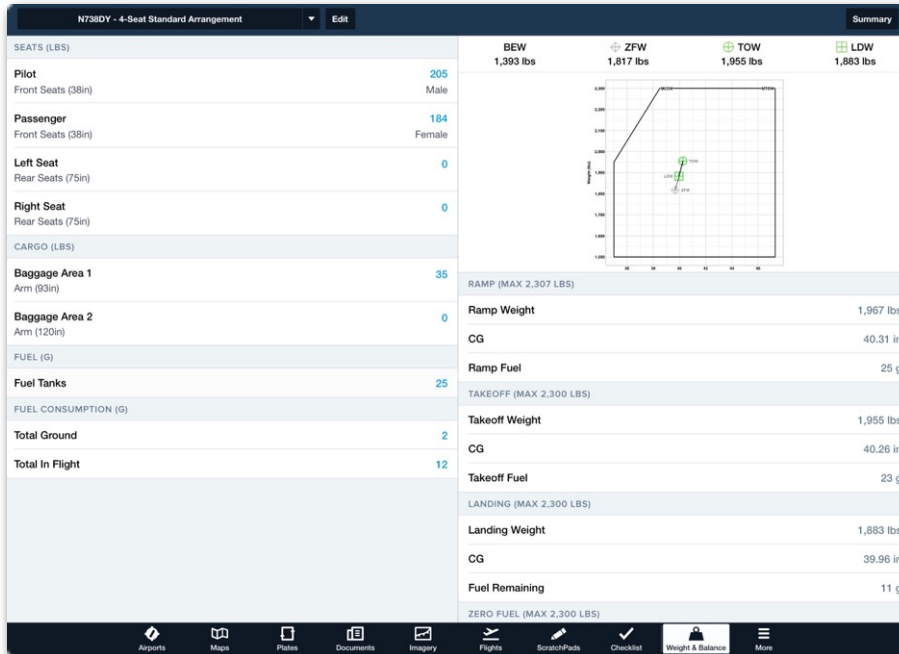


Timer

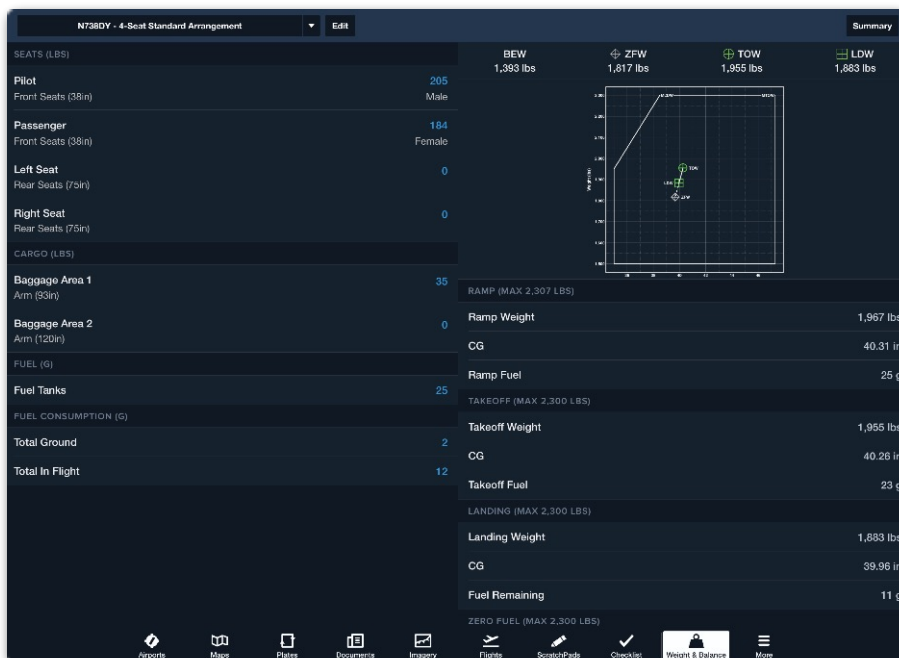
1. DESIGN

1.3 App Theme

ForeFlight Mobile can be displayed in a light or dark theme. The color theme is adjusted under **More > Settings > App Theme**. See Settings for additional information. See **Settings** for additional information.



Light Theme

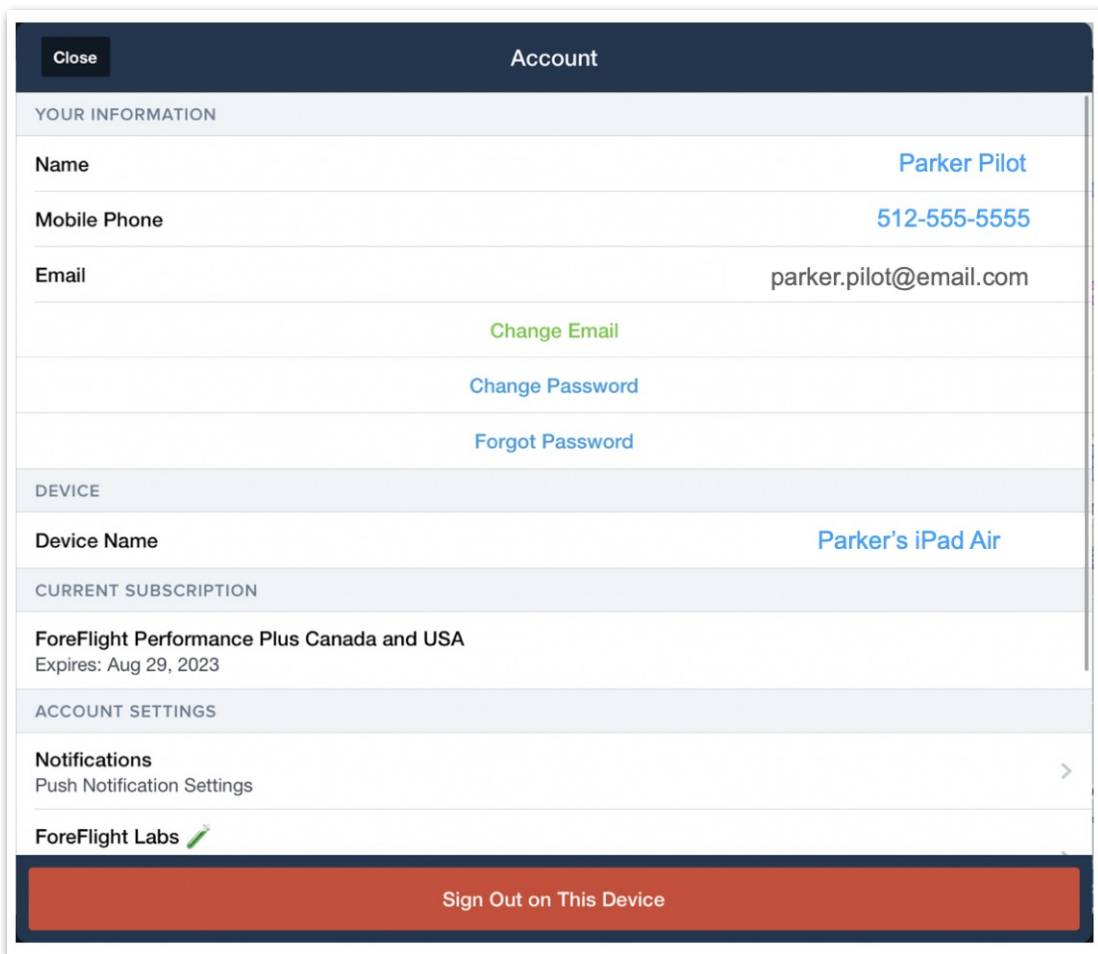


Dark Theme

ACCOUNTS

The Accounts view displays subscription details and contact information. Select **More > Account** to view or edit the following information.

- Account login
- Subscription
- Pilot name
- Phone number
- Email address
- Account Password
- Device Name
- Notifications
- ForeFlight Labs



ForeFlight Mobile Accounts Menu

2. ACCOUNTS

2.1 Subscriptions

When downloading ForeFlight Mobile for the first time, a 30-day free trial begins automatically. The free trial includes all Basic Plus features, excluding the items below.

Trial Account Excluded Features

- Data Syncing
- Flight Plan Filing
- Data Downloading
- Logbook
- Jeppesen Charts
- Weight & Balance
- Checklist
- Content Pack
- Internet Traffic

After the free trial, a paid subscription is required. You can purchase a subscription anytime and do not have to wait for the trial to expire. No credit for unused portions of a trial are issued.

ForeFlight subscriptions can be purchased at foreflight.com/buy (recommended) or in the app. To purchase additional items, such as Jeppesen charts, Dispatch, or Runway Analysis, you must use foreflight.com/buy.

2.2 Device Names

Device names are displayed on your other devices that are signed into ForeFlight Mobile and on the [ForeFlight Web Account](#) page. There are two methods for assigning a name to a device. The method depends on the device's current operating system.

Devices with iOS or iPadOS 16 and later can assign a name within the ForeFlight Mobile app under **More > Account > Device Name**. To specify the device name:

1. Open ForeFlight and tap **More > Account**.
2. Tap the **Device Name** field and enter the name you want to be associated with the device.
3. Select **Close** in the upper left corner of the Account view.

Devices that have not yet updated to iOS or iPadOS 16 can be named within the iPad or iPhone Settings app by selecting **General > About > Name**.

2. ACCOUNTS

2.3 Managing Devices

You must sign in to ForeFlight Mobile to manage devices (internet connection required).

To sign in to your account:

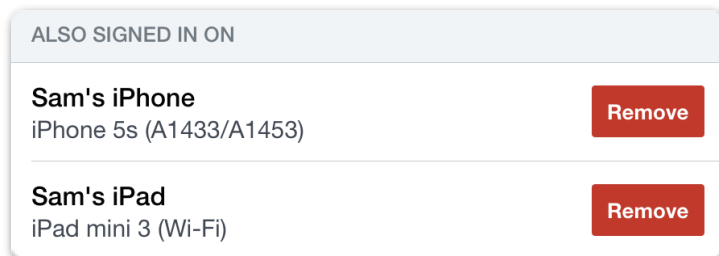
1. Tap **More** > **Account** > **Sign In**.
2. Enter your email address (username).
3. Tap **Next**.
4. Enter your password.
5. Tap **Sign In**.

If you forgot your password, enter the email address associated with your account and tap **Forgot Password**. A password reset email will be sent to the address entered.

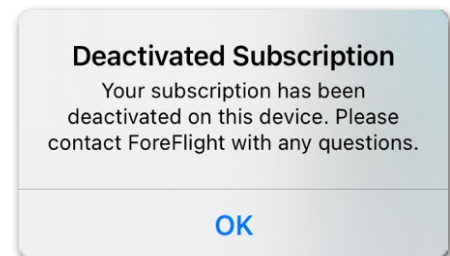
To sign out of an account, tap **More** > **Account** > **Sign Out on This Device** > **Sign Out**.

2.3.1 Removing Devices

Signed-in devices are depicted on the Accounts page. Remove a device from your account by tapping **More** > **Account** > **Remove** > **Remove Device** and entering your ForeFlight credentials. Devices removed from your account receive a Deactivated Subscription pop-up and are signed out of the account. Removed devices lose access to all synced data. Removing a device is recommended for lost or stolen devices.



Remove Device Button



Removed Device Message

You can also use www.foreflight.com/manage to change your email address, password and manage which devices are associated with your account.

2. ACCOUNTS

2.4 Notifications

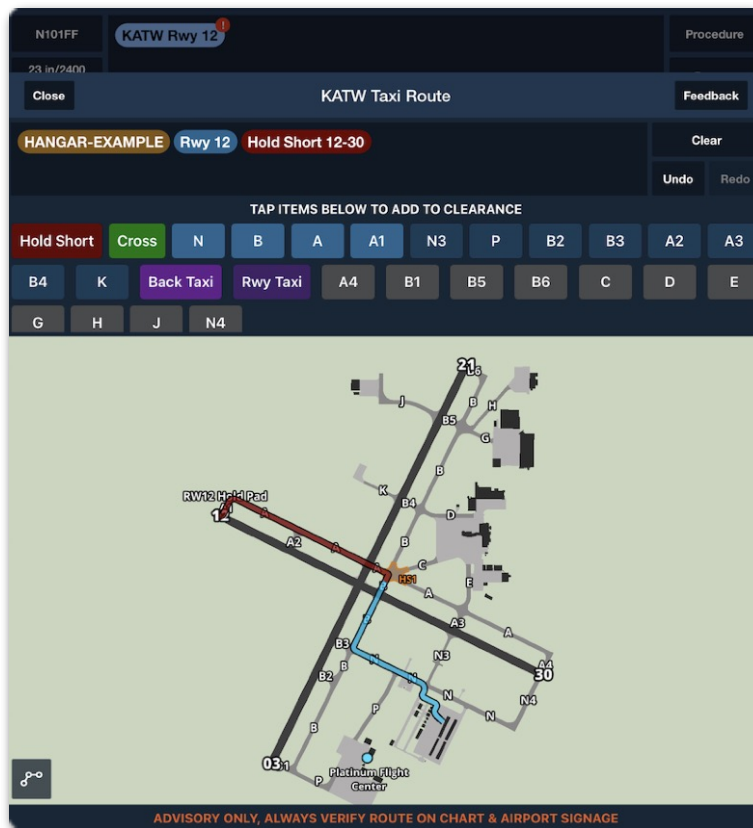
Receive new feature releases, special offers, and event push notifications by selecting **More > Account > Notifications** and turning on Marketing Push Notifications. This setting affects all devices signed in to your account. A change made on one device is reflected on all other devices.

2.5 ForeFlight Labs

ForeFlight Labs is a collection of beta features that need your feedback. Lab features are disabled by default. Enable features independently in **More > Account > ForeFlight Labs**. ForeFlight Labs features are limited by subscription plan. Only features available with your subscription are visible in ForeFlight Labs.

2.5.1 Taxi Routes

Taxi Routes is a Performance Plus, ForeFlight Labs feature that provides an interactive and contextually-aware taxi route editor.



Taxi Routes

2. ACCOUNTS

To access Taxi Routes, tap the Taxi Route button at the bottom of the Maps FPL window or at the top of the Plates view. Alternatively, tap the bubble for any airport in your route and tap **Edit Taxi Route** to open the Taxi Route Editor for that airport.

Your current position is the starting point when at an airport. If you create a User Waypoint at a location on the airport, the user waypoint will show as a location option in brown, such as “HANGAR-EXAMPLE.”

ForeFlight automatically creates a taxi route between the two specified points. Edit the route by tapping taxiway names, hold short and crossing locations, back taxi or runway taxi instructions, and other options.

Your taxi route is displayed on the moving map and airport diagram in Plates. Tap the route on the map to clear it or to make additional edits. To remove the Taxi Route, tap the route line and choose **Clear**.

Taxi Route is not supported at all airports. The Taxi Route map is not interactive and is for advisory purposes only.

2.5.2 Enhanced Weight & Balance

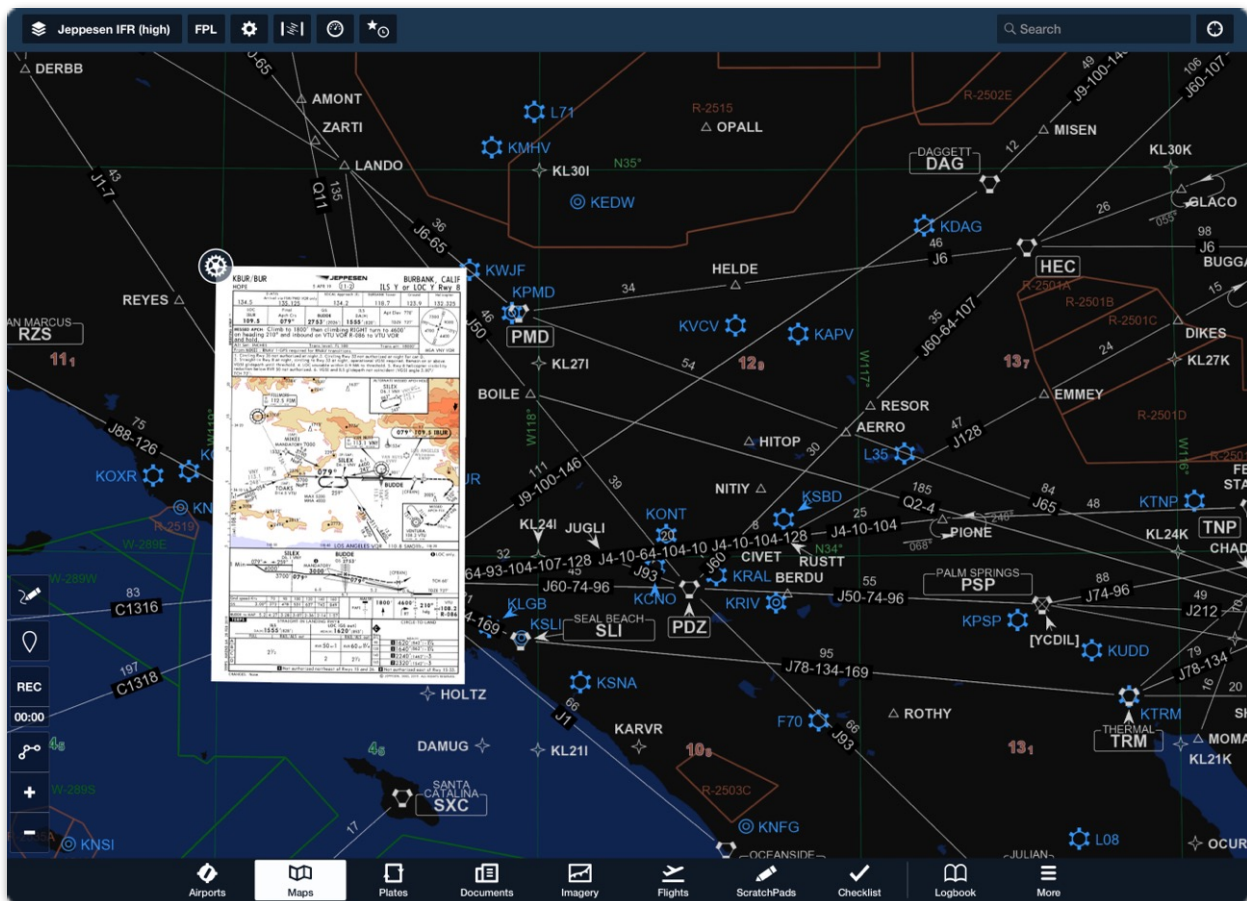
Enhanced Weight & Balance features are available for all accounts beginning with ForeFlight Mobile version 14.2. The improved features are enabled by selecting **More > Accounts > ForeFlight Labs**.

For full details, see the ForeFlight Weight & Balance Guide in **Documents > ForeFlight** or at www.foreflight.com/wb-guide.

JEPPESEN

Jeppesen terminal and en route charts can be viewed in ForeFlight Mobile by linking an existing electronic Jeppesen chart subscription or by purchasing Jeppesen charts alongside your ForeFlight subscription.

Jeppesen charts purchased through ForeFlight are automatically available for download on the mobile devices signed in to your account. Linked Jeppesen charts must be installed on your device from the **More > Jeppesen** view before they can be downloaded. Linked charts require an available seat for each device installing the charts. Up to six unique Jeppesen accounts can be linked to ForeFlight.



Jeppesen Charts in ForeFlight Mobile

NOTE: Jeppesen charts can only be viewed in ForeFlight Mobile. ForeFlight Web is used exclusively to establish an integration and to manage the devices that are using the Jeppesen charts.

3. JEPPESEN

3.1 Purchasing Jeppesen Coverage

ForeFlight offers ten Jeppesen regions for purchase. Customers with individual ForeFlight accounts can purchase coverage exclusively at www.foreflight.com/buy.

ForeFlight Business customers can add Jeppesen charts to their subscription by contacting sales@foreflight.com.

Jeppesen coverage purchased through ForeFlight includes terminal charts for the selected region and global en route charts. All terminal procedures for the selected region are included except for those that Jeppesen designates as part of a special chart coverage. Special chart coverage is generally reserved for military airfields. Contact team@foreflight.com to inquire about Jeppesen special chart coverage for the airports in your region.

When Jeppesen charts are purchased through ForeFlight, Jeppesen coverage is depicted in the **More > Jeppesen** view. Jeppesen charts are available for download in the **More > Downloads** view.

If purchasing additional Jeppesen coverage from ForeFlight, delete and reinstall the currently downloaded Jeppesen terminal procedures to view the new coverage. To delete Jeppesen terminal procedures, select **More > Downloads** and swipe from right to left on the Jeppesen Terminal Procedures download.



Jeppesen Regions

3. JEPPESEN


3.2 Linking Jeppesen Accounts

Link up to six Jeppesen accounts using ForeFlight Web or ForeFlight Mobile. Linked Jeppesen account *details* are visible on all devices and ForeFlight Web.

3.2.1 Linking Jeppesen with ForeFlight Mobile (Individual Accounts)

To link a Jeppesen account with ForeFlight Mobile, select **More > Jeppesen > Sign In** and enter your Jeppesen credentials.

The electronic coverage associated with your Jeppesen account is depicted after establishing the link. Jeppesen charts must be installed (and downloaded) on your device before you can view them. Linking a Jeppesen account with ForeFlight Mobile in-app is available exclusively for individual ForeFlight accounts.



Jeppesen Charts in ForeFlight Mobile

Jeppesen's global library of departure, arrival, and terminal procedures are now available to access in ForeFlight Mobile.

[LEARN MORE](#)

Already have a Jeppesen Subscription?

[SIGN IN](#)

Jeppesen Sign In Menu

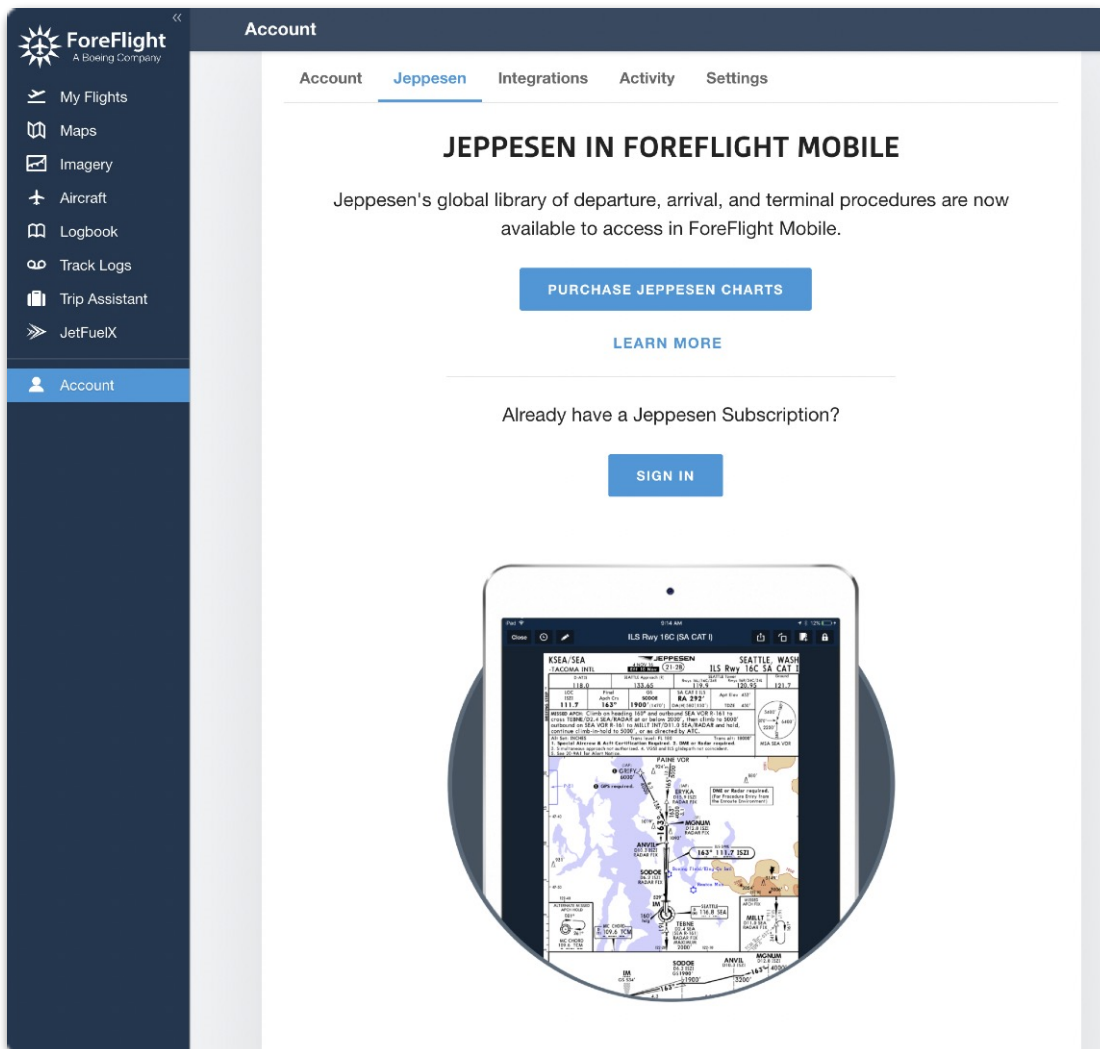
3. JEPPESEN

3.2.2 Linking Jeppesen with ForeFlight Web

To link a Jeppesen account with **ForeFlight Web**, select **Account > Jeppesen** and sign in with your Jeppesen credentials.

Jeppesen charts are only available on ForeFlight Mobile. ForeFlight Web is used exclusively to establish the integration and to manage the devices using the Jeppesen charts.

Business accounts linking Jeppesen must use an administrator account. Linked Jeppesen coverage is visible to all users on the ForeFlight account. ForeFlight administrators can remove Jeppesen coverage from any device on the account from the **Account > Jeppesen** view.



Jeppesen Integration Page - ForeFlight Web

3. JEPPESEN

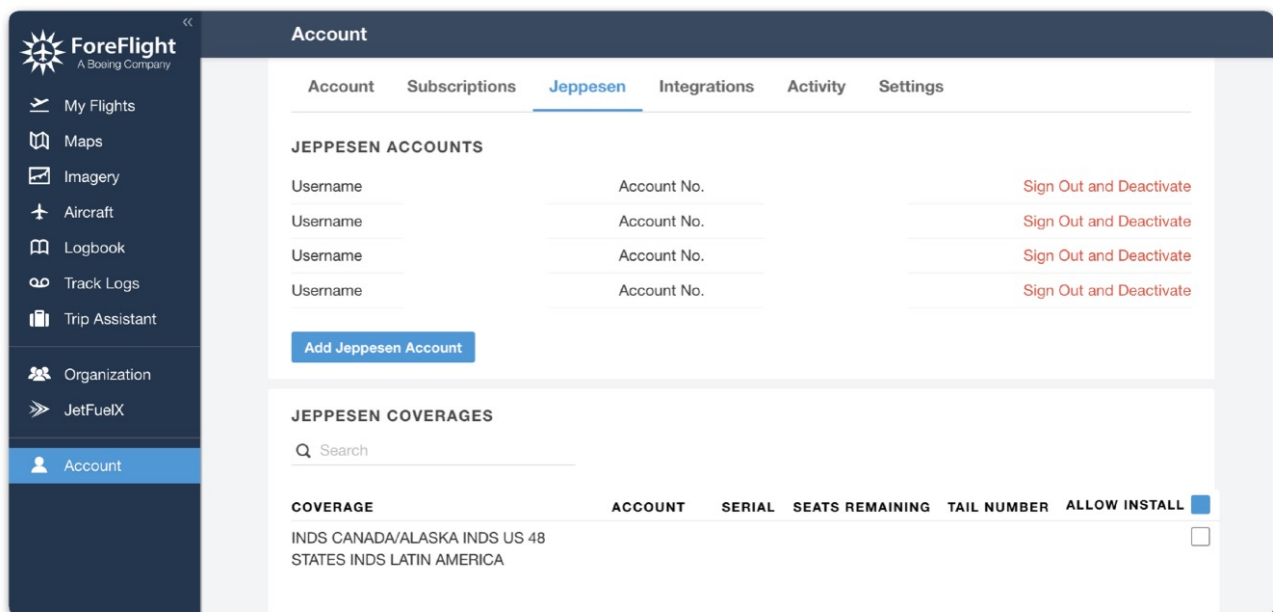
3.3 Multiple Jeppesen Accounts

Up to six Jeppesen accounts can be simultaneously linked to ForeFlight. However, only one Jeppesen-linked coverage can be installed on a device at a time. It's not possible to install multiple linked coverages.

The Jeppesen charts available for download combine purchased coverage and linked coverage. For example, if South America coverage is purchased through ForeFlight, and two linked Jeppesen coverages are established (Europe and Africa), the devices can download the purchased (South America) coverage and have the option to install either Europe or Africa, but not both.

Multi-pilot ForeFlight account managers can link Jeppesen accounts using ForeFlight's web application. All iOS devices on a multi-pilot account automatically sign in to Jeppesen when an administrator links the account. Pilots can install and download any coverage included in the linked Jeppesen account. Account managers can see which users have installed coverages under the *Installed* section of the Jeppesen tab on the web.

Pilots of a multi-pilot account cannot independently sign in to a Jeppesen account. Account administrators are the only accounts permitted to add or remove Jeppesen accounts. Individual pilots can install and uninstall Jeppesen coverage without administrator approval, provided seats are available.



Multiple Linked Jeppesen Accounts

3. JEPPESEN

3.3.1 Allowing Jeppesen Installs

ForeFlight multi-pilot accounts structured as an organization can enable the ability to install Jeppesen coverage on ForeFlight. Click **Allow Install** to permit users within the organization to install and download the selected coverage. If the coverage should not be installed on ForeFlight, deselect **Allow Install** and choose **Save Changes**.

JEPPESEN COVERAGES

Q Search

COVERAGE	ACCOUNT	SERIAL	SEATS REMAINING	TAIL NUMBER	ALLOW INSTALL
Electronic Chart Services JeppView Initial REV SVC - JEPPEVIEW WORLD WIDE Electronic Chart Services Worldwide JV IFR Military Supplement Coverage Electronic Chart Services Worldwide JV IFR Single Access Coverage Electronic Chart Services Worldwide Military Supplement JV IFR Single Access Coverage			0		<input checked="" type="checkbox"/>
JeppView for Rockwell Collins Fusion Worldwide IFR JeppView for Rockwell Collins Fusion Worldwide IFR Military Supplement			0		<input checked="" type="checkbox"/>

[Save Changes](#)

Jeppesen Allow Install

3.3.2 Removing Coverage

Remove coverage from a device by clicking **Deactivate** in the Jeppesen Installed section. This will uninstall the coverage and remove the downloaded charts from the user's device. The user will still be signed into the Jeppesen account. Deactivating Jeppesen coverage immediately frees up a seat for another pilot.

INSTALLED

Q Search

DEVICE NAME	PILOT NAME	COVERAGE	SERIAL
Pilot One iPad	pilot-one@company.com	INDS REVISION SERVICE WORLDWIDE INDS Charting Standard	Deactivate
Pilot Two iPad	pilot-two@company.com		Deactivate

Removing Coverage

CAUTION: Removing Jeppesen coverage from a multi-pilot ForeFlight account deletes all associated Jeppesen chart downloads from the pilot's device.

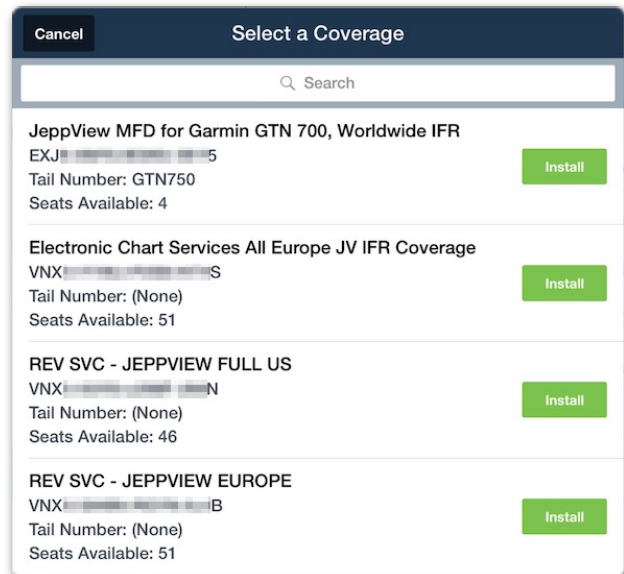
3. JEPPESEN

3.4 Installing Linked Charts

Install Jeppesen charts on an iPad or iPhone by tapping **More > Jeppesen > Install Coverage > Install**. Once coverage is installed on a device, it is immediately available for download.

Each time Jeppesen charts are installed on a device, the device uses one of the available Jeppesen seats. The number of seats available is displayed on the **More > Jeppesen** page.

If there are no available seats, the charts will not be available for installation. You'll need to purchase additional seats or remove the coverage from another device.



Jeppesen charts available to install

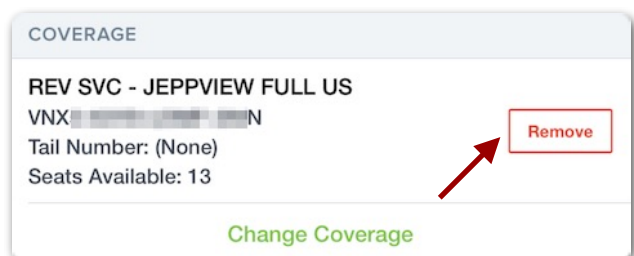
NOTE: Only one linked Jeppesen coverage can be installed at a time. It is not possible to *install* multiple linked coverages.

3.5 Changing Coverage

To uninstall the current coverage and install a different one, select **More > Jeppesen > Change Coverage**. Removing coverage from a device immediately removes the downloaded charts and documents for that coverage.

3.6 Removing Jeppesen Charts

Installed Jeppesen coverage is listed in the **Coverage** section. Tap **Remove** to uninstall the current coverage from your device. Removing coverage from a device immediately removes the downloaded charts and documents for that coverage and frees up the seat for someone else.

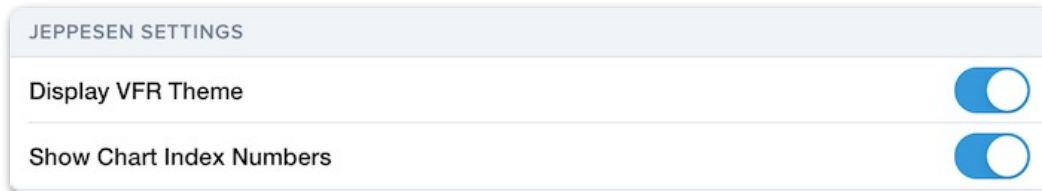


Jeppesen Coverage Remove button

3. JEPPESEN

3.7 Jeppesen Settings

Jeppesen settings are available in the Jeppesen view. Select **More > Jeppesen** to access the settings.



Jeppesen Settings

Display VFR Theme enables the Jeppesen (VFR) en route chart and VFR terminal procedures (Europe). This setting is disabled by default. When the Display VFR Theme setting is disabled, the Jeppesen (VFR) chart is removed from the Maps drop-down menu, and VFR terminal procedures are removed from the Procedures list.

Show Chart Index Numbers displays a procedure's index number below the procedure name in chart lists. Jeppesen index numbers (at the top of every terminal procedure) are usually three or four digit numbers enclosed in an oval. The index number helps to sort airports within a city and procedures within an airport.

3.8 Viewing Jeppesen Charts

Jeppesen charts and terminal procedures are available on the Maps, Airports, and Plates views. Display en route charts by selecting them from the map layer menu.

3.8.1 Terminal Procedures

Jeppesen terminal charts appear at the top of the procedures list. It is not possible to display FAA, NavCanada, or EuroControl charts above Jeppesen terminal charts. Jeppesen Terminal procedures are the default and will display automatically in the following scenarios.

- Tapping **Show Airport Diagram** in the FPL Route Editor.
- Adding an approach using Procedure Advisor.
- Displaying an airport's taxi diagram automatically upon landing.

NOTE: A Pro Plus or higher subscription is required to overlay plates on the Maps view. If you add Jeppesen terminal charts to a Basic Plus plan, they will only be viewable in the Plates and Airports views.

3. JEPPESEN

3.8.2 En route Charts

All Jeppesen accounts include *global* VFR and IFR en route charts, no matter what terminal procedure coverage you have. Jeppesen en route charts are dynamic and customizable. As you zoom in, additional chart details are displayed. Jeppesen en route charts support always-up labels. Jeppesen global en route charts are approximately 1GB in size.



Jeppesen En Route Charts

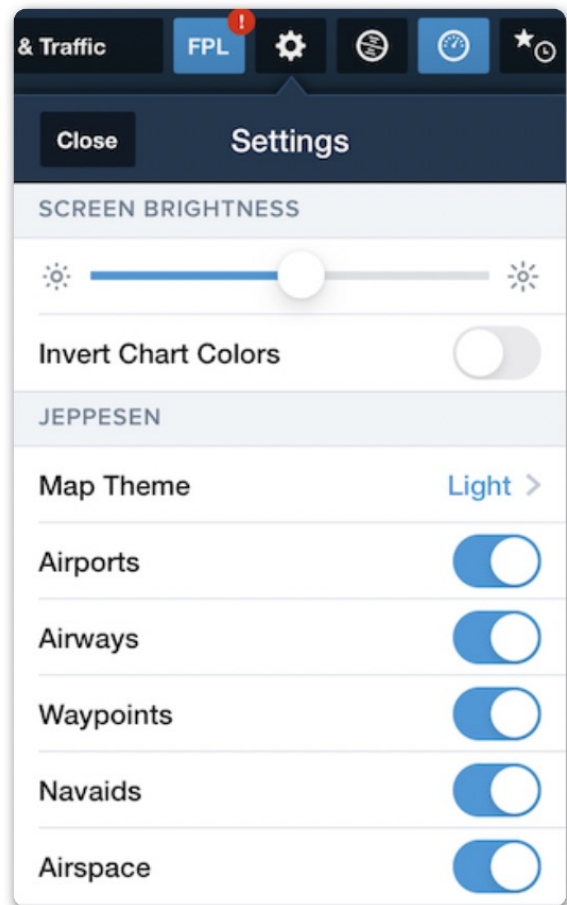
NOTE: Jeppesen en route charts are not available when using the following devices: iPad Mini 1, iPad 2, iPad 3, and iPhone 5 and earlier.

En route charts are available in the Maps view layer selector, at the top just under the Aeronautical layer.

3.9 Jeppesen Map Settings

Selecting any Jeppesen en route chart adds the Jeppesen-related settings to the Map Settings menu.

The selections only apply to the selected layer allowing you to mix and match map settings for each Jeppesen en route chart type. Refer to the following page for additional information.



Jeppesen Settings

3. JEPPESEN

The following table lists the map settings available with each Jeppesen en route chart type and what they do.

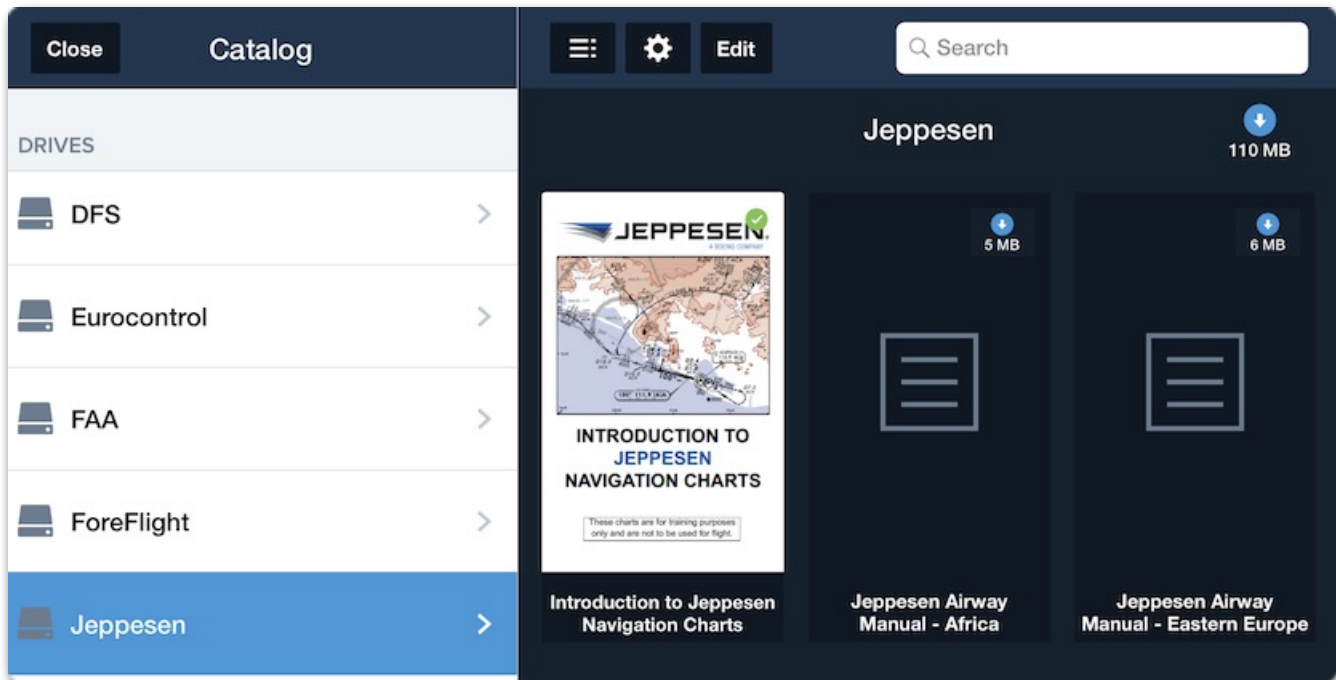
	Jeppesen VFR	Jeppesen IFR (low)	Jeppesen IFR (high)
Map Theme	Choose between a Light and Dark map theme. The Dark Theme inverts black and white while preserving other colors.		
Airports	Show or hide airport markers and labels, including private airports and helipads. Zooming into large airports will reveal their runway configuration.		
Airways	Show or hide VFR corridors and IFR low airways, including labels, MEAs, MOCAs, and radials from nav aids.	Show or hide IFR low airways, including labels, MEAs, MOCAs, and radials from nav aids.	Show or hide IFR high airways, including labels, altitudes and radials from nav aids.
Waypoints	Show or hide VFR waypoints and IFR low waypoints.	Show or hide IFR low waypoints.	Show or hide IFR high waypoints.
Nav aids	Show or hide navigation aids and labels, including NDBs, VOR-TACANs, and VOR-DMEs.		
Airspace	Show or hide airspace boundaries and labels, including controlled airspace, Mode C, MOAs, SUAs, ADIZ, FIRs, and ARTCC radio frequencies.		
Cultural	Show or hide cultural labels, including spot elevations, urban areas, railway lines, parachute jumping areas and magnetic longitude lines.	N/A	N/A
Roads	Show or hide major highways, roads, and streets.	N/A	N/A

3. JEPPESEN

3.10 Jeppesen Documents

Purchasing Jeppesen coverage or installing a linked Jeppesen account adds the Jeppesen document catalog to your device. The Jeppesen document catalogs adds Jeppesen Airway Manuals for the installed coverage.

Jeppesen documents will remain on the device for as long as the Jeppesen coverage is installed. Jeppesen Airway Manuals can be printed but cannot be shared via email.



Jeppesen Documents

DOWNLOADS

Charts and aeronautical data can be viewed online but must be downloaded for offline use. When using ForeFlight for the first time, required downloads are automatically installed. Required downloads include an airport and navigation database, business directory (FBO data), obstacle database, and terrain database.

Select **More > Downloads** to access the Downloads view. The Downloads view displays all installed data with a green checkmark. Tap **Data Settings** and **Region Settings** to make download selections.

Data Type Selections — Data Settings Region Settings — **Region Selections**

Required Downloads

- Airport and Nav Database (May 19, 2022 - Jun 16, 2022) ✓
- Airport and Nav Database (Jun 16, 2022 - Jul 14, 2022) ✓
- Business Directory (Updated Jun 2, 2022) ✓
- Worldwide Obstacles (May 19, 2022 - Jun 16, 2022) ✓
- Worldwide Obstacles (Jun 16, 2022 - Jul 14, 2022) ✓
- Worldwide Terrain (Terrain map cached for offline use) ✓

High-Resolution Terrain — United States: Contiguous (Updated May 30, 2017) ✓

High-Resolution Basemap — United States: Contiguous (Updated Feb 2, 2022) ✓

Taxi Diagrams — Texas (May 19, 2022 - Jun 16, 2022) ✓

Buttons: Close, Delete, Data Settings, Region Settings, Pause, Download

Downloads View

4. DOWNLOADS

4.1 Download Selections

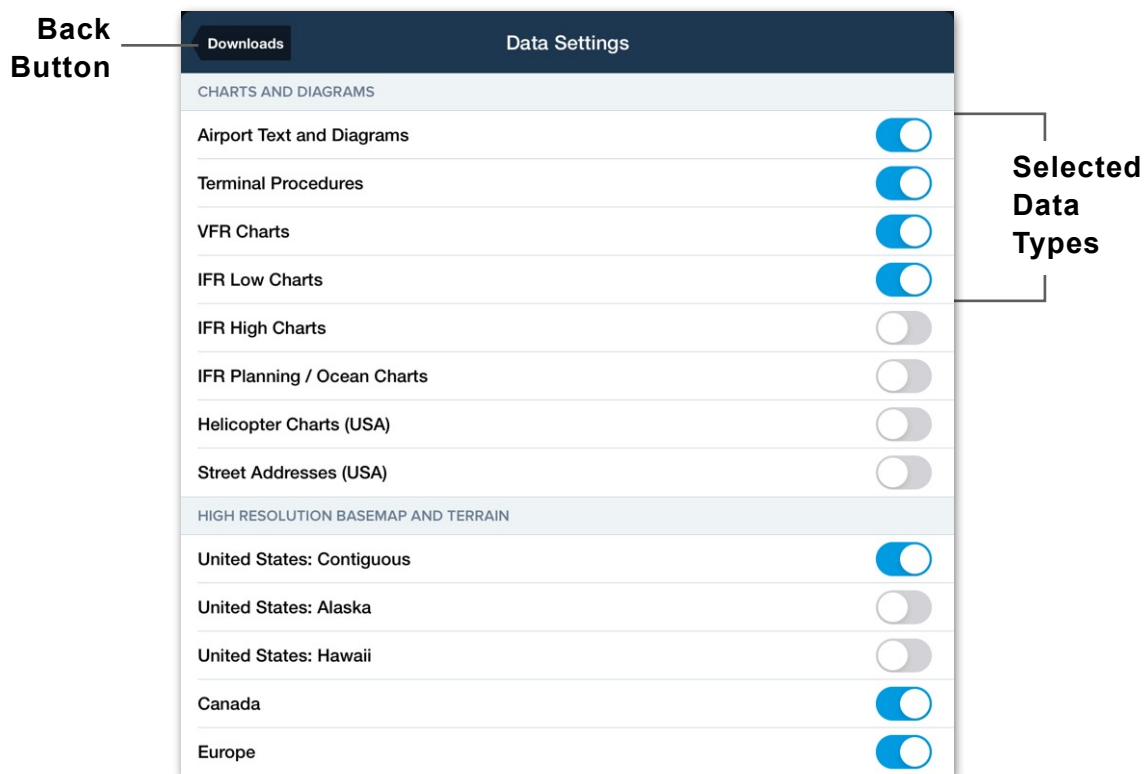
All charts, terminal procedures, and high-resolution download selections are optional. Download selections are not synced between devices and must be made on each device signed into your account. Download selections are divided into two sections, Data Settings, and Region Settings.

Choose the type of data you want to download for offline use in **Data Settings**. Select the states, provinces, and countries in **Region Settings**.

4.1.1 Data Settings

Data Settings consist of various types of data. Each selected data type will be downloaded for the chosen regions (if available). It is not possible to have different data settings for different regions.

High-resolution basemap and terrain downloads are not associated with region settings. Selecting a high-resolution basemap and terrain download installs the data regardless of subscription type and region settings. After making data setting selections, tap the **Downloads** back button to return to the Downloads view to make region selections or to begin downloading.



Data Settings

4. DOWNLOADS

Data Type Definitions

The following data types are available for download.

- **Airport and Nav Database** is an international aviation database with over 27,000 airports and NAVAIDS from 220 countries. This data is used in the Airports view (frequencies, runways, hours, FBOs, etc.) and the Maps view (locations, routes, NAVAIDS, airspaces) and includes data used in the Aeronautical data layer.
- **Business Directory** contains information about FBOs and services at airports.
- **Worldwide Obstacles** are provided by Jeppesen and include hazards such as towers and bridges. Obstacles are shown as markers on the map when the Obstacles or Hazard Advisor layers are enabled.
- **Worldwide Terrain** is low-resolution terrain data that adds terrain features to the base map. This map provides global coverage and is only available if downloaded.
- **High-Resolution Basemap and Terrain** add additional detail to the base map. High-resolution terrain is a required download for the use of Synthetic Vision.
- **Airport Text and Diagrams** provide taxi diagrams, aerodrome charts, and A/FD, CFS, and AIP.
- **Terminal Procedures** include FAA, Nav Canada, EuroControl, and Airservices arrival, departure, and approach plates for the selected regions.
- **VFR, IFR High, and IFR Low Charts** contain seamless en route charts for the United States, Canada, Australia, and Europe.
- **IFR Planning / Ocean Charts** contains IFR planning and ocean charts for the United States and Atlantic and Pacific oceans.
- **Helicopter Charts (USA)** include nine major metro areas and U.S. Gulf of Mexico VFR and IFR Helicopter charts (downloaded when the Gulf of Mexico is selected).

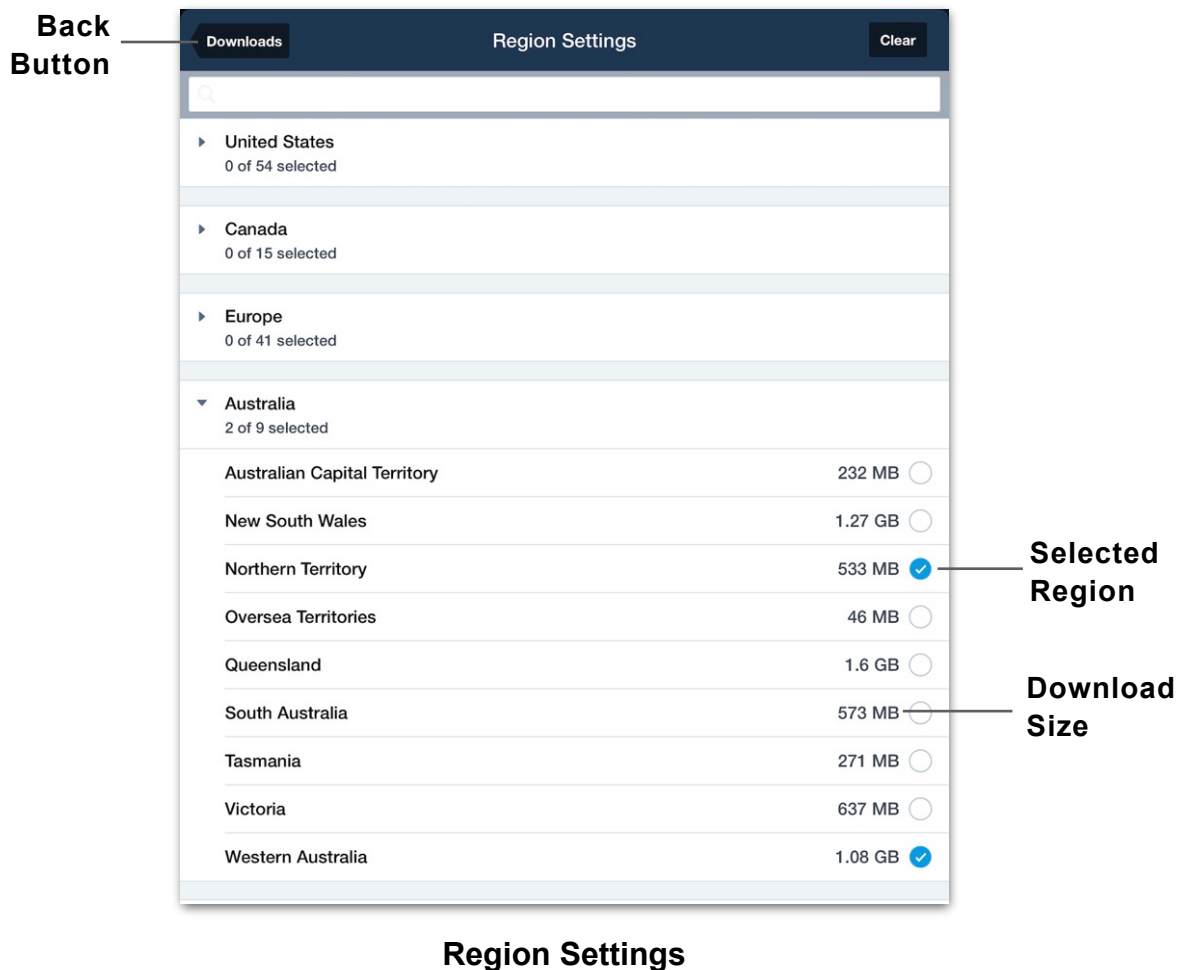
4. DOWNLOADS

4.1.2 Region Settings

Region settings are divided into five sections: United States, Canada, Europe, Australia, and Caribbean/Mexico/Central America. Regions can only be selected if they have been purchased. The Caribbean, Mexico, and Central American region is included with a United States subscription. To buy additional regions, visit www.foreflight.com/buy.

Tap a region to expand the menu. The download size (e.g., 573 MB) is listed to the right of the state, province, country, or region. Download size is dynamic and varies based on the selected data types (e.g., IFR Low Charts) and available data. A message is displayed after selecting the region if a data type is unavailable.

After region selections have been made, tap the **Downloads** back button to return to the Downloads view to make data setting selections or to begin downloading.



4. DOWNLOADS

4.2 Downloading Data

After selecting data types and regions, tap the **Downloads** back button in the upper toolbar. Downloads not already installed on your device become available for download immediately (internet connection required).

To install an individual download, tap the blue arrow. To download all pending downloads, tap **Download** at the bottom of the screen. The number of pending downloads and the size of pending downloads are displayed at the bottom of the Downloads view.



Pending Downloads

A progress bar is displayed at the bottom of the view when actively downloading data. The progress bar depicts the size of the active downloads.



Active Downloads

Stop all downloads anytime by tapping the **Pause** button at the bottom of the Downloads view. Stop individual downloads by tapping the pause button associated with the download. Downloads will continue where they left off when resumed.

Completed downloads display a green checkmark. When all pending downloads are complete, the **Download** button is disabled.

If data has not yet been downloaded to your device, ForeFlight will display the data over the air using your device's internet connection. Viewing data over the air should only be done on the ground. Cellular internet connections are often unreliable when you fly. As a result, if you attempt to view charts over the air as you're flying, they may be unavailable or appear blurry. Downloading any data you may need for flight prior to takeoff is the recommended practice.

NOTE: Blurry charts are an indication that your charts are not downloaded.

4. DOWNLOADS

4.2.1 Updating Downloads

Aeronautical data is updated every 28 days. En route charts are updated every 56 days. Updated aeronautical information becomes available for download approximately five days before the current data expires.

When updated data is available for download, a red badge with a number appears on the **More** button. The number on the badge corresponds to the number of downloads available for the next data cycle. Select **More > Downloads** and tap the **Download** button to download the future data cycle. ForeFlight will continue to display the current data until the expiration date, also known as the changeover date. ForeFlight automatically displays the new data at the changeover date and removes the expired data from your device. Changeover occurs at a specific time of day **based on the device's geographical location**.

The screenshot displays the 'Downloads' screen in the ForeFlight app. It features a list of download items with various status indicators:

- Downloaded Data:** Items with a green checkmark, such as 'Pacific Islands' (May 19, 2022 - Jun 16, 2022) and 'Pacific Islands' (Jun 16, 2022 - Jul 14, 2022).
- Active Download:** 'Austria (Eurocontrol)' is currently downloading, shown with a blue progress bar and a '344 MB' label.
- Pending Download:** Items with a blue plus icon, including 'Austria (Rogers)' (97 MB), 'Air Million Azores VFR' (3 MB), 'Air Million Azores Weekend VFR' (3 MB), 'Air Million Canary Islands VFR' (2 MB), and 'Air Million Canary Islands Weekend VFR' (2 MB).
- Active Download Progress:** A progress bar at the bottom shows 'Total' progress for the active download, with a 'Pause' button and a 'Download' button.
- Download All Pending Data:** A button at the bottom right to initiate downloading all pending items.

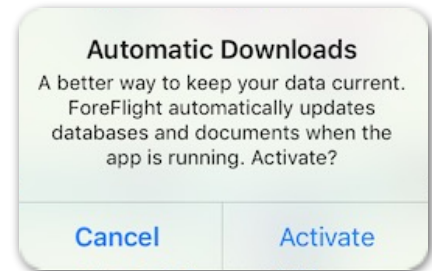
4. DOWNLOADS

4.2.2 Automatic Downloads

ForeFlight can automatically download new data when ForeFlight is open and connected to the internet. Automatic downloads do not occur when connected to Gogo or Satcom Direct in-flight internet. To automatically download data, the following criteria must be met:

- Automatic downloads enabled.
- Active internet connection (Wi-Fi or Cellular).
- One hour or more since manually downloading.
- The device has sufficient storage available.

When downloading data for the first time, a pop-up appears with an option to enable automatic downloads. Automatic downloads can also be enabled or disabled in **More > Settings > Automatic Downloads**.



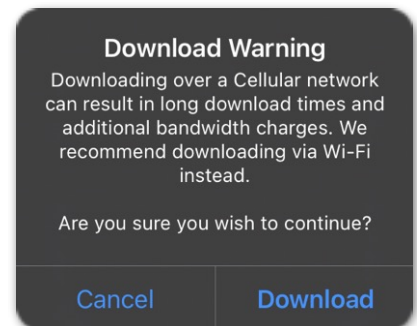
Automatic Download pop-up

Downloads over cellular

ForeFlight can download data using your device's cellular network. Select **More > Settings > Allow Downloads over Cellular** to enable or disable this feature.

If **Allow Downloads over Cellular** is disabled and an attempt to download data over cellular is made, a pop-up warning message is displayed.

If **Download** is selected in the pop-up message, the **Allow Downloads over Cellular** setting is automatically enabled, and future downloads over cellular will be possible.



Cellular Data Warning

4.2.3 Background Downloads

Background downloads allow you to download pending downloads while ForeFlight is closed, you're working in another app, or while the device is asleep. Background downloads are enabled in **More > Settings > Background Downloads**.

All pending downloads are downloaded in a single file when background downloads are enabled. Background downloads may take longer than those done in the foreground. Disabling background downloads is recommended if downloading over a slow internet connection or with a device with limited storage space.

4. DOWNLOADS

If downloading is started while the device is connected to Wi-Fi, it will automatically stop if it disconnects from Wi-Fi. Downloads that are started with cellular data will continue in the background. Background downloads may pause if the device is low on battery. Charging the device while downloading in the background is recommended.

Data downloaded in the background is installed the next time ForeFlight Mobile is opened.

4.2.4 Data Changeover Times

Aeronautical data becomes effective and is displayed at a specific time on the changeover date according to published regional standards.

For a given device, the changeover time is determined by the *device's current geographical location*, not the data itself. For example, European data becomes effective at 0901Z if the device is located in the United States.

Device Location	Changeover Time
Europe, South Africa, Brazil, and Taiwan	0000Z
Australia	1200Z the day before changeover date
New Zealand, South Korea	1600Z the day before changeover date
North American regions, regions not mentioned	0901Z

Data changeover times by region

NOTE: Change-over time for aeronautical data is determined by precise geo-location. If device geo-location cannot be determined, the device's iOS Region setting is used instead.

4. DOWNLOADS

4.3 Deleting Downloads

Expired data is deleted automatically, with some exceptions. If new data do not replace expired data, the expired data will remain on the device.



Delete All Downloads

Delete Expired

To delete an individual download (expired or active), swipe your finger from right to left across the entry. If the deleted data is selected in your download settings, you'll be prompted to download the data again.

Downloads can also be deleted by tapping **Delete** > **Delete All Downloads** or **Delete Expired** at the top of the Downloads view. Deleting all downloads removes all installed downloads from your device. Deleting expired downloads only removes data that has expired and is still on your device.

4.3.1 Packed and Unselected Downloads

Charts downloaded to your device that are not part of a selected region in region settings, such as charts downloaded with Pack, are stored in the *Packed and Unselected Regions*. Deleting these charts when they are no longer needed or device memory is limited is recommended.

4. DOWNLOADS

4.4 Preflight Download Check

Ensure data is downloaded before every flight. To preflight your data, follow these steps.

1. Disconnect your device from Wi-Fi (if applicable) and enable *Airplane Mode*. This will keep ForeFlight from retrieving data over the Internet, as would happen in flight.
2. Open ForeFlight Mobile, go to the **Airports** page, and view airports along your route. Verify airport procedures indicate they are **Saved** on the Airports or Maps views.
3. Open Maps and select any en route charts you may need in flight. Zoom in to the airports you will be flying to and ensure the charts are not blurry.

4.5 Troubleshooting Downloads

ForeFlight data is hosted on a network of servers around the world. When you start a download, the data comes from the server closest to you to provide fast and reliable downloads.

Download time can vary depending on the amount of data you are downloading. For example, if downloading all items for the United States, approximately 10GB of data is downloaded. Even on a fast Wi-Fi connection, this will take significant time.

ForeFlight *recommends* only downloading data for regions you will fly within or near. Doing so will save significant time and disk space. If a download fails, ForeFlight automatically reattempts the download. If you see a red error message on the download, the additional attempts were unsuccessful, and the download will need to be manually attempted.

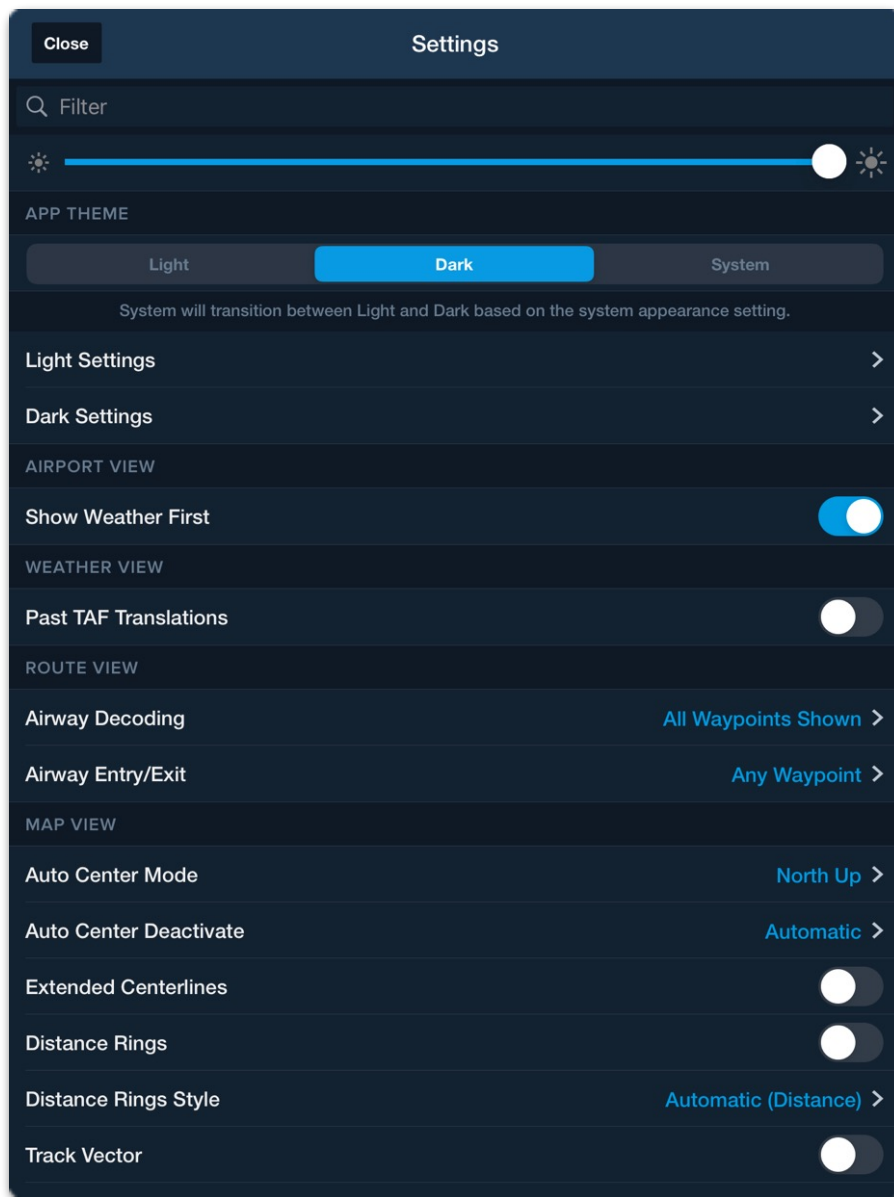
Troubleshooting tips:

- Reboot your iPad.
- Use another network or cellular data.
- Reboot your router.
- Temporarily disable or delete Virtual Private Networks (VPN).
- Temporarily disable or delete anti-virus applications.

SETTINGS

Settings customize your ForeFlight experience. Select **More > Settings** to access the main settings view. The main settings view contains the majority of settings available for ForeFlight Mobile. ForeFlight Mobile settings do not sync between devices.

Settings specific to a feature may also be found within that feature's view. For example, map-related settings can be found in the main settings menu and on the Maps view by tapping the **Map Settings** (gear) button. Conversely, Logbook settings are exclusively available in **More > Logbook > Settings**.

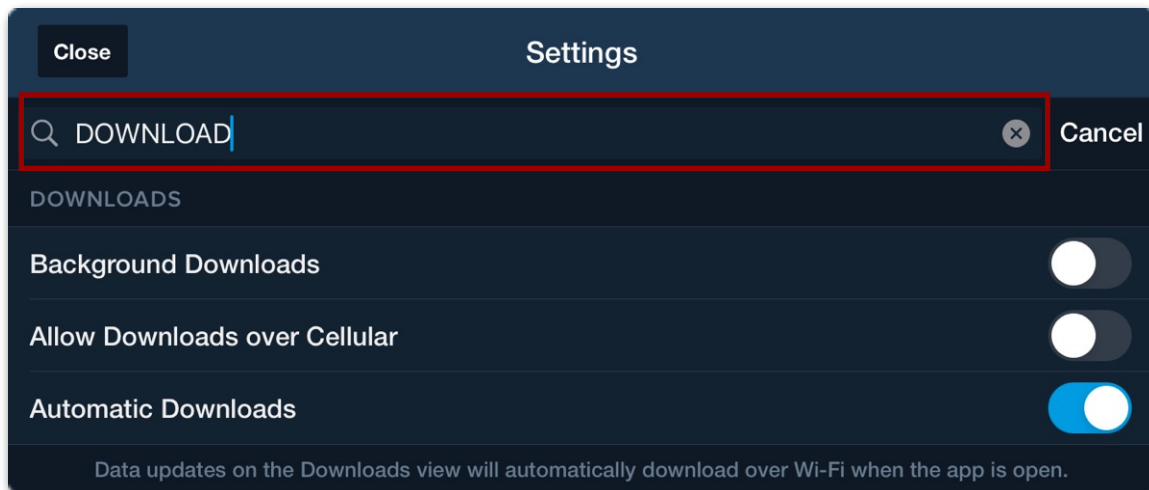


Main Settings Menu

5. SETTINGS

5.1 Search Bar

The search bar near the top of the Settings menu filters the settings shown. The search bar is dynamic. Search results are updated as you type. Due to the number of available settings, the use of the search bar is recommended.



Searching for Downloads with the Search Bar

5.2 Brightness Slider

The brightness slider matches the iOS device's brightness setting and can be used in lieu of the iOS device's brightness setting.



Brightness Slider

5.3 App Theme

App Theme allows pilots to choose between a **Light**, **Dark**, or **System** theme. When **System** theme is selected, ForeFlight automatically selects light or dark theme based on the iPad/iPhone iOS settings.

Light and dark themes provide additional settings for adjusting the individual elements within ForeFlight. For example, when dark theme is enabled, the color of plates can be inverted. The individual Light and Dark settings ultimately determine ForeFlight's appearance.

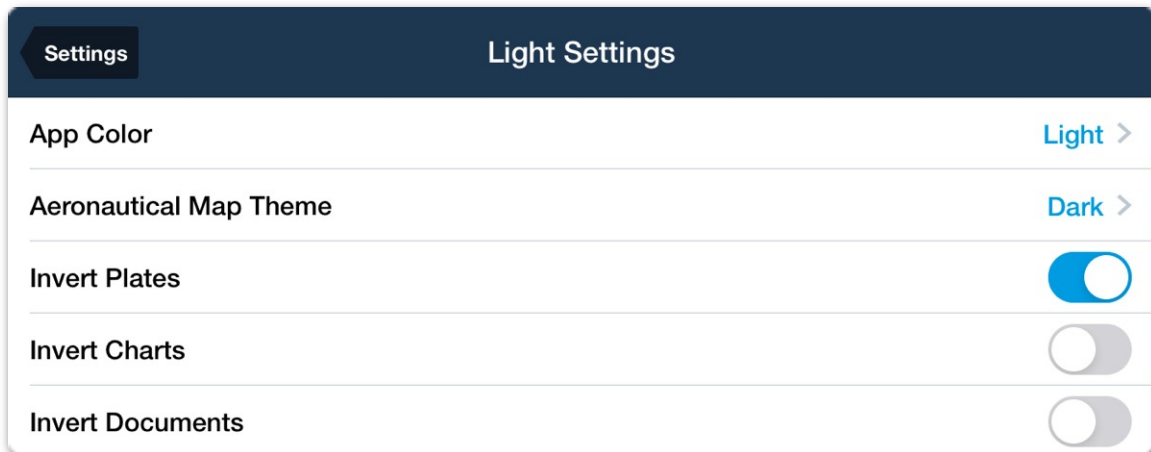
5. SETTINGS

5.3.1 Light and Dark Settings

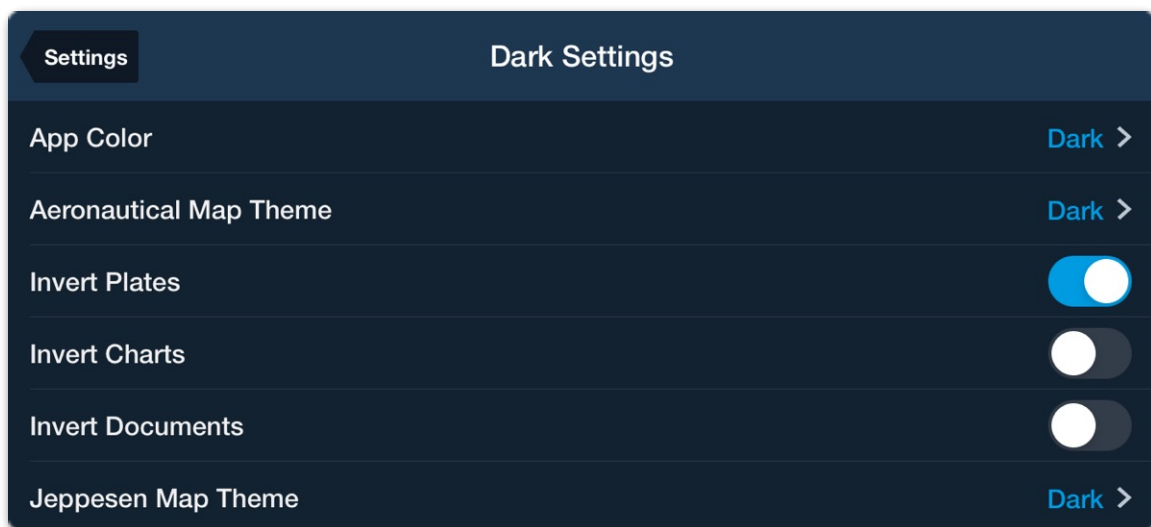
Light and dark settings specify the *App Color*, *Aeronautical Map Theme*, and whether to invert the color of Plates, Charts, and Documents.

The **Light** setting results in menus with white backgrounds. The **Dark** setting results in menus with a dark blue background. The **Aeronautical Map Theme** controls whether the ForeFlight base map should be **Light** (tan), **Dark** (dark blue), or **Classic** (light brown).

Inverted plates and documents use black backgrounds and white text. When inverted colors are enabled, the colors on plates, charts, and documents are also inverted. Plates, charts, and documents can be inverted with the light or dark theme.



Light Settings



Dark Settings

5. SETTINGS

5.4 Airport View Settings

The **Show Weather First** setting displays the airport's *METAR* when the Airports view is selected. This settings also displays the airport's METAR first in the **sidebar** when an Aeronautical map airport icon is tapped.

If this setting is disabled, the Airports view displays the last viewed tab and the Maps sidebar displays the airport info tab.

The screenshot shows the ForeFlight mobile app interface for the airport KAXH: Houston/Southwest. The 'Weather' tab is selected, and the 'Show Weather First' setting is enabled, displaying the METAR at the top of the weather section. The METAR is: **VFR, 330° at 11 - 17 kts, 10 sm, sky clear**. Below the METAR, various weather parameters are listed, including Time (11:55 AM CDT), Wind (330° at 11 - 17 kts), Visibility (10 sm), Clouds (Clear below 12,000'), Temperature (18°C (64°F)), Dewpoint (-1°C (30°F)), Altimeter (30.06 inHg), Humidity (28%), and Density Altitude (370'). A 'NEARBY WEATHER' section shows KSGR: Sugar Land Regional with its own weather details. The bottom navigation bar includes icons for Airports, Maps, Plates, Documents, Imagery, Weight & Balance, and More.

Info	Weather	Runway	Procedure	NOTAM
Latest Weather	VFR, 330° at 11 - 17 kts, 10 sm, sky clear ☀️	AWOS-3	123.625	
Elevation	69' MSL	Clearance	120.8	
Pattern altitude	1,069' MSL (est.) ➔	UNICOM	123.0	
Fuel	Jet A+, 100LL	CTAF/UNICOM	123.0	
Procedures	GPS, LOC, RNAV	Appr & Dep	123.8	

Airport View - Show Weather First Enabled

5. SETTINGS

5.5 Weather View Settings

Past TAF Translations displays expired TAF forecast periods in the various weather views when enabled. When disabled, expired TAF forecast periods are hidden from view.

5.6 Route View Settings

Airway Decoding allows pilots to choose between **All Waypoints Shown** and **Bends Only**. The **Bends Only** setting hides waypoints along an airway that do not cause a course change. VORs and NDBs will always be shown in an airway. When **Bends Only** is enabled, some smart airway labels are not displayed.

Airway Entry/Exit specifies if a route should start and end at any waypoint or at a navaid when using the Route Editor.

5.7 Map View

The following map-related settings are available in the Map View section of the main settings menu.

5.7.1 Auto Center

Auto Center Mode determines map orientation. The map can be orientated north up or track up. **Track Up** and **Track Up Forward** require the map to be centered on your location with detectable motion.

To center the map on your location, tap the auto-center (bullseye) button in the upper toolbar. When auto-center is enabled, the button is highlighted. If the map is not centered on your location, the map is orientated north up.

Auto Center Deactivate

Auto Center Deactivate controls if the map can be panned without first *manually* disabling auto center. The **Automatic** setting disables auto center when the map is panned. The **Manual** setting requires that you first tap the auto-center button on the map to deactivate it to be able to pan.

5. SETTINGS

5.7.2 Extended Centerlines

Extended Centerlines control if extended runway centerlines are displayed on the map. Extended centerlines are proportional to the runway length. For every 1000 feet of runway, ForeFlight shows a 1 nm extended centerline. For example, a 5000-foot runway displays a 5 nm extended centerline. Extended centerlines are only depicted for the runways at the airports in your route.

An extended centerline runway label can be tapped to display information about the runway, including winds, length, surface type, lighting, elevation, and associated procedures.

The screenshot displays the ForeFlight mobile app interface. On the left, a map shows the KASH airport area with extended runway centerlines for Runway 32. The centerlines are shown as purple lines extending from the runway. The information panel on the right provides the following details:

KASH Runway 32	
Select Runway 32 Straight In Rwy 32	
	Runway 32 6,000' x 100', 192' MSL Asphalt, excellent condition
WIND COMPONENTS	
Rwy 32	Winds variable
Wind: Variable at 4 kts (42m ago)	
GLIDESLOPE INDICATOR	
Rwy 32	4-light PAPI (on left)
SLOPE	
Rwy 32	0.13%
DISPLACED THRESHOLD	
Rwy 32	350'

Extended Centerlines

5. SETTINGS

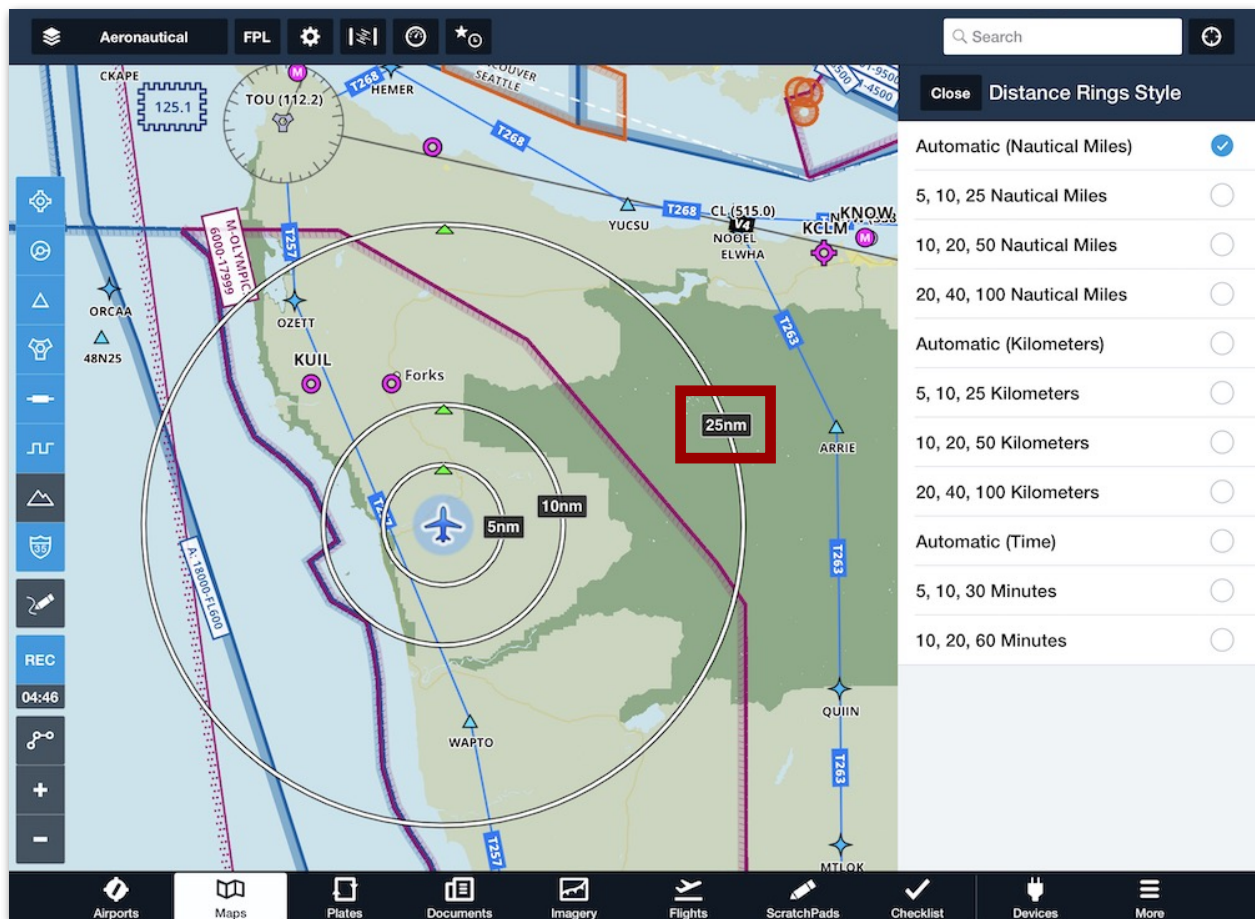
5.7.3 Distance Rings

Distance rings display concentric rings around your aircraft's position. No ring is displayed when zoomed out. As the map is zoomed in, rings will appear with up to three being shown.

When any automatic style is selected, ring scales adjust automatically when the map is zoomed in or out. Range rings will only show if a GPS position is received. If a time-based style has been selected, the rings are only displayed when you have a GPS fix *and* are moving at more than 10 knots.

Distance Ring Styles

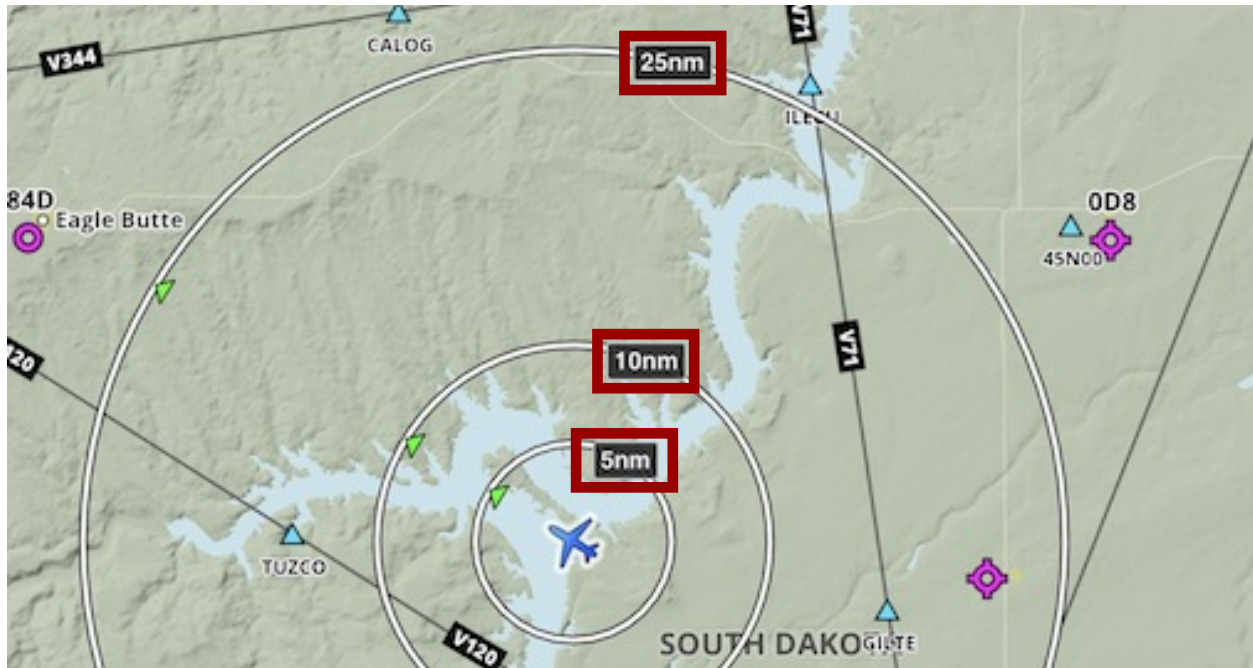
Distance Rings can display distance by time (minutes) or length (nm or km). To set the preferred style, with Distance Rings showing on the map, tap on a Distance Ring label to reveal a slide-over. Select the preferred type from the list. Alternatively, go to **More > Settings > Distance Rings Style**.



Tap a label on the Distance Rings to reveal the style slide over

5. SETTINGS

Green triangles on the rings align with the track direction and project where the current track will take the aircraft in relation to the Distance Ring. Ring time and distance labels are always displayed off the right-wing between the two and three o'clock positions, regardless of orientation.



Distance labels off of the right wing

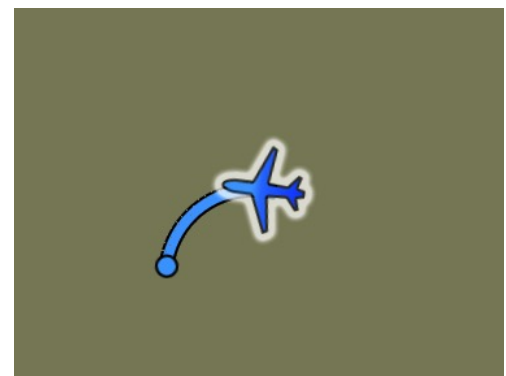
5.7.4 Track Vector

Track Vector displays a vector (line) in front of your aircraft's icon.

Track Vector Length

The Track Vector Length setting controls the length of the track vector based on a specified distance (in nautical miles) or the distance your aircraft will cover given the current speed and specified amount of time (in seconds or minutes).

While your track direction is changing at more than two degrees-per-second (i.e., the aircraft is turning), the track vector changes to a curve in the direction of your turn.



Track Vector in a turn

5. SETTINGS

5.7.5 Route Labels

Route Labels control if the waypoints in your route have labels on the Map. Labels are dynamic and will adjust to prevent overlapping. Route labels must be enabled to display approach procedure waypoints and minimum descent altitudes.

5.7.6 Ownship Marker

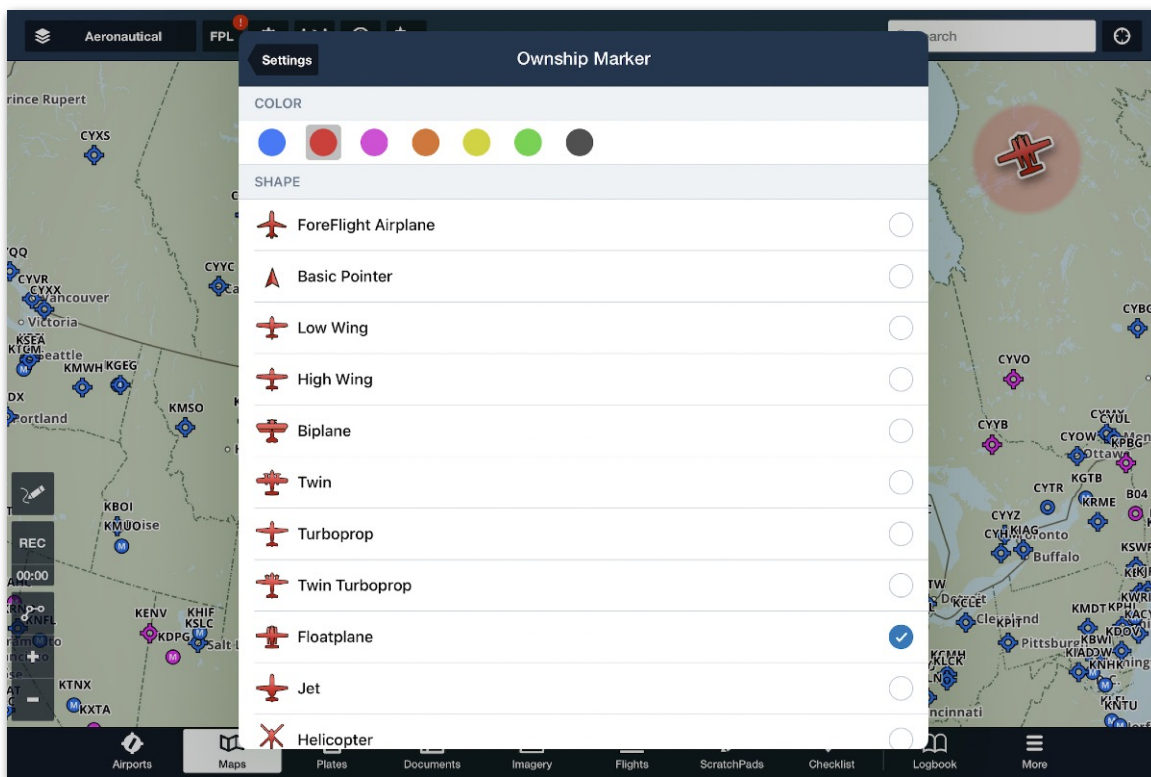
Ownship Marker determines the *color* and *shape* of the aircraft position icon displayed on the Maps, Track Logs, and Plates views. If the icon not is displayed, enable it as described in [Enable Ownship](#).

Color

The default aircraft icon color is **blue**. When a new color is selected, it applies both to the aircraft icon and its animated position pulse on the Maps and Plates views.

Shape

The default aircraft icon shape is the **ForeFlight Airplane**. Additional shapes include other fixed-wing and rotary-wing aircraft.



Aircraft Position Icon: Setting Color and Shape

5. SETTINGS

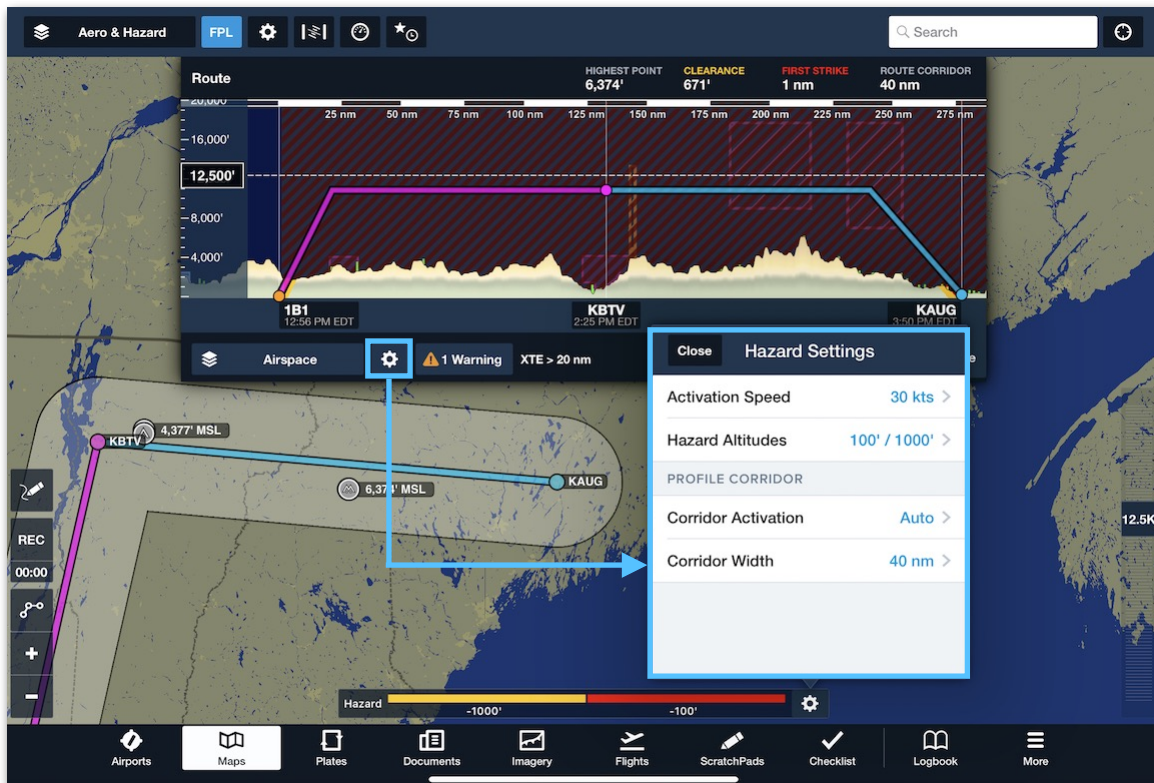
5.7.7 Hazard Settings

The Hazard Settings menu controls the behavior of the Hazard Advisor, Profile View, and Profile Corridor, all of which require a Pro Plus or higher subscription. There are four hazard-related settings described below: **Activation Speed**, **Hazard Altitudes**, **Corridor Activation**, and **Corridor Width**.

Displaying Hazard Settings

The Hazard Settings menu can be displayed in one of the following ways:

- In the Navigation Toolbar, tap **More > Settings** and then scroll down to the Map View list and tap **Hazards**.
- On the Maps view, tap the **Map Layer Selector**, turn on the **Hazard Advisor** layer, and tap the settings (gear) icon to the right of the **Map Legend** at the bottom of the screen.
- On the Maps view, tap **FPL** to open the Route Editor, tap **Profile** to open the Profile view, and tap the settings (gear) icon on the bottom edge of the Profile view drawer.



Hazard Settings - Maps View

5. SETTINGS

Activation Speed

This setting controls when the *selected* **Hazard Advisor** altitude automatically changes to the device's current GPS altitude.

Hazard Altitudes

This setting controls the red and yellow coloration given to hazardous terrain and obstacle on the **Hazard Advisor** map layer and **Profile View**. By default, the **Normal** configuration colors terrain and obstacles yellow if they are within 1,000 ft below the aircraft and red if they are within 100 ft below the aircraft. However, there are three additional configurations for different helicopter operations.

Corridor Activation

This setting controls when the **Profile Corridor** appears around the route line: **Show** (always), **Hide** (never), or **Automatic** (whenever the Profile View or Hazard View are displayed).

Corridor Width

This setting controls the area around your aircraft or the entire route inside which obstacles presenting a collision risk are displayed. Changing this setting has the following effects:

- The Profile Corridor, if enabled, expands or contracts around the route line according to the Corridor Width. This may change the **highest-point markers** displayed along each leg.
- On the Hazard Advisor map layer, when the Profile Corridor is active, Corridor Width determines how far from the route centerline hazardous obstacles are displayed on the map.
- On the Profile View, terrain and obstacles within half the distance of the selected Corridor Width are shown. For example, when the width is 8 nm, obstacles and terrain 4 nm on either side of the route centerline are depicted in the Profile View.
- On the Profile View, the current Corridor Width is displayed as the "Route Corridor" value in the top right corner.

5. SETTINGS

5.7.8 Map Touch Action

Map Touch Action controls the behavior of IFR and VFR charts. This setting is only available when an IFR or VFR en route chart is selected.

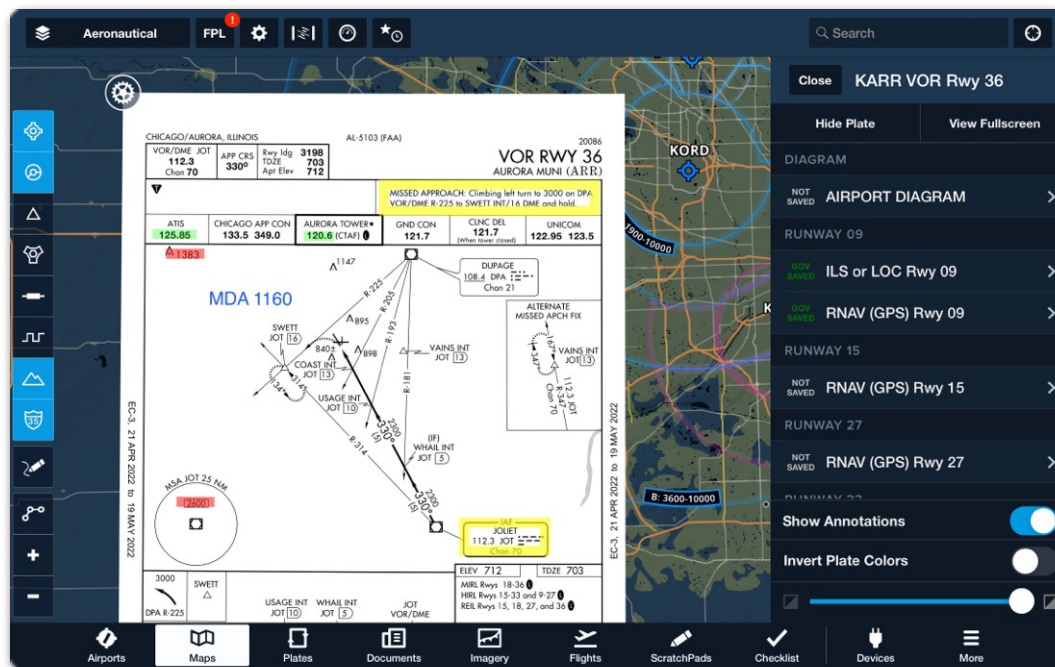
- **No Action** results in no map overlap changes when tapping on the map.
- **Bring chart to front** moves the chart to the top layer with a single tap. When a chart is on the top layer, it overlaps adjacent charts.
- **Bring chart to front with legends** moves the chart, chart legend, and chart border to the top layer with a single tap. When a chart is on the top layer, it overlaps adjacent charts.

5.7.9 Cockpit Sharing

Cockpit Sharing allows sharing routes between devices running ForeFlight Mobile when connected to the same Wi-Fi network.

5.7.10 Map Annotations

Show Annotations on Map determines if terminal procedure plate or airport diagram annotations are displayed on a plate when sent to Maps. This setting is also available on the Maps view. Tap the plate when depicted on the map to enable/disable **Show Annotations**.



Approach Plate with Annotations

5. SETTINGS

5.7.11 Auto-Receive Flight Plans

Auto-Receive Panel Flight Plans loads *new* routes from connected Garmin navigators without user input. When disabled, new routes generate a pop-up notification with an option to load into ForeFlight.

5.7.12 Four-color Radar

Four-color Radar enables radar in a low-resolution, four-color scheme that complies with dBZ-to-color mapping standards defined by the Radio Technical Commission for Aeronautics.

5.7.13 Internet Radar Coverage

Internet Radar Coverage displays the area of available radar coverage while connected to the Internet. Areas without coverage display a transparent mask with hash marks and “Radar not available” labels.

5.7.14 Breadcrumbs

Breadcrumbs are a thin green line indicating your aircraft’s path since takeoff.

Breadcrumbs Clear After

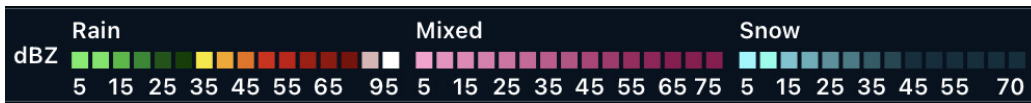
The Breadcrumbs Clear After setting controls the time that Breadcrumbs remain on the Map after landing. If a takeoff is not detected after the last landing within the selected time, Breadcrumbs are automatically cleared from the map.

5. SETTINGS

5.7.15 Show Map Legend

The **Show Map Legend** setting displays a legend at the bottom of the Maps view when any of the following layers are selected.

- Radar
- Enhanced Satellite
- Hazard Advisor
- Color IR Satellite
- Icing and Turbulence
- Clouds
- Winds (Temps/Speeds)



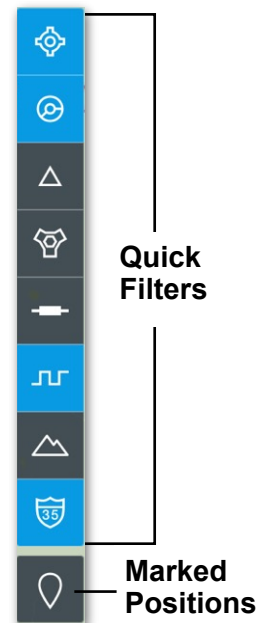
Map Legend (Radar)

5.7.16 Marked Positions

Marked Positions display a button on the left side of the Maps view. Tap the button to drop a green position marker at your current location. See [Marked Positions](#) for additional information.

5.7.17 Quick Filters

Quick Filters toggles the Aeronautical Map Layer quick filter buttons for Airports, Airspace, Waypoints, Nav aids, Airways, ARTCC/FIR, Terrain, and Roads.



5. SETTINGS

5.8 Layer Selector

- **Multiple Selections** allows the maps layer selector to remain open while selecting various map layers. Tap outside the layer selector to close it.
- **Auto Zoom to Custom Content** adjusts the maps zoom level and positioning to display the entire custom content map layer when selected.

5.9 Map Annotations

- **Show Control** displays the annotation button on the left side of the maps view.
- **Auto Apple Pencil Drawing** automatically activates map annotations when touching the map with an Apple Pencil.
- **Annotations Timeout** specifies the amount of time before annotation mode is automatically disabled. Screen touches with an Apple Pencil, stylus, or finger reset the annotation timeout countdown.

5.10 Checklist

- **Speak** reads the Challenge or Challenge & Response portion of a checklist aloud.

5.11 Plate and Document Views

- **Lock Disables Buttons** controls if the lock switch on the Plates and Documents views disables the buttons. The lock switch disables pan, zoom, and all button touches (including the navigation bar) when enabled. When disabled, the lock switch only locks the plate and document pan, zoom, and page changing.

5.12 Traffic

- **Hide Distant Traffic (ADSB)** hides traffic more than 15 nautical miles or 3,500' (above or below) your current GPS position. Only ADS-B traffic can be filtered with the Hide Distant Traffic setting.

5. SETTINGS

5.13 Search and Rescue

- **SAR Features** enable the SAR grid layers and SAR patterns. See the Search and Rescue Guide, available in Documents > ForeFlight, for additional information.
- **SAR Waypoints as Lat/Lon** displays SAR pattern waypoint labels as Latitude/Longitude instead of SAR-01, SAR-02.

5.14 Downloads

Download settings control how data is downloaded. For additional information, see the [Downloads](#) chapter.

- **Background Downloads** allow downloads to continue while ForeFlight is in the background. When enabled, all pending downloads are downloaded simultaneously. When disabled, ForeFlight must remain open during the download process and downloads are done four at a time.
- **Automatic Downloads over Cellular** allow downloads to complete using cellular data. Turning this on is only recommended for devices with unlimited data plans.
- **Automatic Downloads** allows ForeFlight to automatically download updates when they become available and when the device is connected to the internet.

5.15 Pack

- **Enable Auto-Check** automatically evaluates whether downloads are needed based on the planned route. When this setting is enabled, Pack displays a red exclamation badge when a new route is planned.

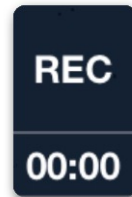
When disabled, Pack evaluates the route when the Pack suitcase button is tapped. It is not possible to automatically pack for flights. Auto-check only evaluates your route to see if new data can be downloaded.

5. SETTINGS

5.16 Track Log

Track Log settings control how recordings are started. For more information, see the [Track Logs](#) chapter.

- **Enable Start/Stop Control** displays the Track Log record [REC] button and the Track Log timer in the bottom-left of the Maps view. Tapping the **REC** button starts or stops a track log recording.
- **Enable Auto Start/Stop** automatically records Track Logs. Track Logs are started when ForeFlight is open and detects a takeoff (accelerating climb at a speed greater than 40 knots) and ends when ForeFlight detects a landing.



**Track Log
Record Button**

5.17 Flights

- **Briefing Format** specifies the type of briefing generated for your device, Graphical HTML (U.S. only) or Graphical PDF (International). Flights outside the United States default to the Graphical PDF briefing. Classic (Text) briefings are no longer supported and will be removed in a future update.
- **Enable Fuel Orders** exposes the Fuel Order field on the Flights view. The Fuel Order field is used to create and send fuel orders to your destination FBO before the flight (Performance tier accounts only).

5.18 Taxi Diagram

- **Auto Show Taxi** displays the landing airport's taxi diagram upon landing.
- **Show Taxi on Map** displays the landing airport's taxi diagram on the Maps view. When disabled, the taxi diagram is automatically displayed in the Plates view. (Pro Plus plan or higher required).

5. SETTINGS

5.19 Preferences

The Preferences section contains various settings.

5.19.1 Alerts

Alert settings control the behavior of in-app alerts. All alerts are displayed visually and can be announced audibly. See the [Alerts](#) chapter for more information.

- **Speak All Alerts** plays alerts audibly via your device's speaker or a connected headset. When toggled, a confirmation message is audibly played. Use the iPad/iPhone volume buttons to adjust the volume.

5.19.2 Units/Time

The Units/Time menu contains the following settings:

- **Times** determine the timezone format. Local Time uses the device's timezone. Station Time uses the timezone of the weather station/airport. Zulu Time displays time in UTC/GMT.
- **Wind Speed specifies** wind speed units (Knots, Miles per hour, Meters per second).
- **Pressure** specifies pressure units (Inches of mercury, hPa/millibars).
- **Temperature** specifies temperature units (Celsius, Fahrenheit, Automatic). When automatic is selected, weather sourced from official aviation sources (METARs, TAF) is displayed in Celsius. Non-aviation sources (daily forecasts) use the iOS device temperature format setting.
- **Visibility** specifies visibility format (Statute miles, Kilometers).
- **Coordinates** setting determines how coordinates are displayed in ForeFlight.
 - DD.dd° degrees and hundredths of degrees.
 - DD°MM.mm - degrees, minutes, and hundredths of minutes.
 - DD°MM'SS" - degrees, minutes, and seconds.
 - MGRS 6-/8-/10-digit - Military Grid Reference System with three precision levels (more digits equates to greater precision).
- **Aircraft Speed** specifies airspeed and groundspeed units (Knots, Miles per hour, Kilometers per hour).

5. SETTINGS

- **Distance** controls distance units (Nautical miles, Statue miles, Kilometers).
- **Altitude Instruments** specifies the altitude unit of altitude-related instruments (GPS altitude, climb gradient, etc.).
- **Bearing and Track Instruments** include Ruler, Synthetic Vision, and Map Instruments. This setting specifies if the instruments are relative to magnetic or true north.
- **Runway Length** displays runway length in feet or meters.
- **Precip Amount** specifies the unit of precipitation reports in daily weather. The automatic setting uses the device's iOS region setting.

5.19.3 Allow Device to Sleep

When the Allow Device to Sleep setting is enabled, the iPad/iPhone is allowed to sleep after a period of inactivity. The device's iOS auto-lock setting determines the inactivity period. Disable Allow Device to Sleep to ensure the iPad/iPhone will not enter sleep mode while ForeFlight Mobile is running in the foreground.

5.19.4 Automatic Clock Check

Automatic Clock Check verifies that the device's system time is set correctly. If it is found to be incorrect, you will get an alert. Proper system time is essential for many features in the app. Enabling this setting is recommended.

5. SETTINGS

5.19.5 Enable Ownship

Enable Ownship specifies when GPS location is displayed.

- **Always** displays your location on the map when GPS accuracy is 100 meters or better. The location marker is hidden if GPS accuracy is worse than 100 meters. ForeFlight displays a dot with a pulsing halo when no motion is detected. When motion is detected, ForeFlight displays the selected current location marker orientated in the direction of the ground track with the pulsing halo.

Aircraft position is also displayed on approach plates and airport diagrams with a Pro Plus or higher subscription.

When Always is selected, location is displayed on plates with a pulsing halo when GPS accuracy is 25 meters or better. If GPS accuracy exceeds 25 meters, the pulsing halo is hidden from plates. If GPS accuracy exceeds 100 meters, the location marker and pulsing halo are hidden.

The location marker is hidden if GPS data is not received for 20 seconds.

- **Never** hides the location marker on maps and plates at all times.
- **Limited** displays the location marker on airport diagrams when the speed is less than 80 knots. Above 80 knots, or when GPS location accuracy degrades below 25 meters, the location marker is hidden. In limited ownship mode, the location marker is hidden if GPS data is not received within the past 3 seconds.

The location marker is not displayed on the map in limited ownship mode.

5.19.6 Ownship Not For Navigation

When enabled, this setting adds an **Ownship not for navigation** label to the top right corner of the Maps view and top left corner of the Plates view.

5. SETTINGS

5.19.7 Show Heliports

The Show Heliports setting displays heliports on the map when the Aeronautical Map is selected, and the setting is enabled. The setting also determines if the nearby airports list includes heliports. This setting can also be adjusted on the Maps view. Tap the map settings (gear) button in the upper toolbar and select Airports when the Aeronautical map layer is selected.

5.19.8 Show Private Airports

The Show Private Airports setting displays private airports on the map when the Aeronautical Map is selected, and the setting is enabled. The setting also determines if the nearby airports list includes private airports. This setting can also be adjusted on the Maps view. Tap the map settings (gear) button in the upper toolbar and select Airports when the Aeronautical map layer is selected.

5.19.9 Start on Last Screen

The Start on Last Screen setting allows ForeFlight to open to the last view used when the app is closed. If this setting is disabled, ForeFlight opens to the Airports view.

5.19.10 Sync Data To/From Device

The **Sync Data To/From Device** setting is unique to each device. When this setting is enabled, the data types listed below are synced to the ForeFlight servers and available on each device signed into your account.

- Aircraft Profiles
- Favorite / Recent Routes
- Favorite Airports
- Documents (including Document Annotations)
- ScratchPads
- Briefings
- Navlogs
- Track Logs
- User Waypoints
- Logbook
- Weight & Balance
- Flights (including Messages and Files)
- Checklists

NOTE: Custom content (e.g., custom map layers and Content Packs) and plate annotations are not synced to your account.

5. SETTINGS

5.19.11 Enable Diagnostic Logs

The Enable Diagnostic Logs setting records diagnostic information for troubleshooting purposes. This setting is enabled by default and should remain enabled unless the ForeFlight Pilot Support Team instructs otherwise. Disabling diagnostic logging limits the Pilot Support team's troubleshooting abilities.

5.19.12 Performance Logging Level

The Performance Logging Level setting is used to diagnose issues with app performance. Do not set this to anything other than zero unless instructed by a ForeFlight support team member, as it may negatively impact healthy app performance.

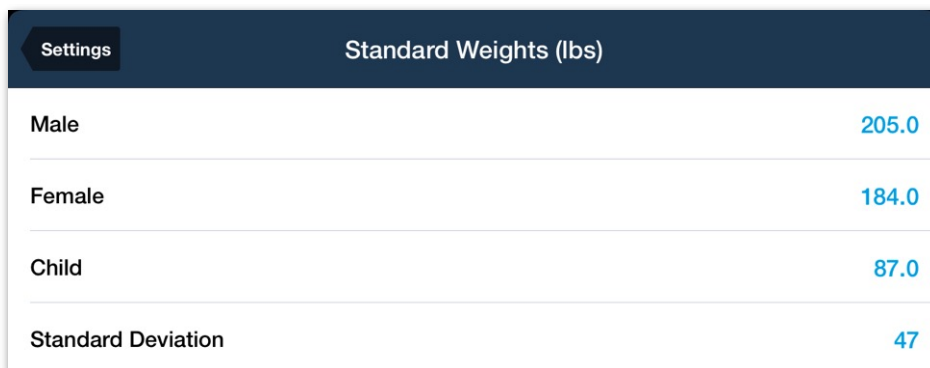
5.20 Weight and Balance

The Weight and Balance section has a single setting.

5.20.1 Standard Weights

The Standard Weights (lbs) setting specifies default weights for calculating weight and balance.

- **Male** defines the default weight for a male passenger or crew member.
- **Female** defines the default weight for a female passenger or crew member.
- **Child** defines the default weight for a child.
- **Standard Deviation** defines how much the standard weights are expected to deviate. This value is only applied when using the standard weights curtailment option (business or MFB subscription required).



Settings		Standard Weights (lbs)
Male		205.0
Female		184.0
Child		87.0
Standard Deviation		47

Standard Weight Settings

MAP SETTINGS

Settings that are unique to the Maps view are found in map settings. Access map settings by tapping the settings (gear) button in the upper toolbar. Settings adjusted on the map are automatically synced with the main settings view. Map settings do not sync between devices. The following settings are available from the Maps view.

6.1 Screen Brightness

The brightness slider allows for additional *dimming* beyond your device's lowest setting. At the highest setting, brightness matches the device setting.

6.1.1 Invert Chart Colors

The **Invert Chart Colors** inverts black and white colors on charts for improved low-light viewing (does not affect Street or Aerial maps). This setting does not affect the Aeronautical map and Jeppesen en route charts.

6.2 ForeFlight Map

The ForeFlight Map section controls elements related to the ForeFlight base map.

6.2.1 Map Theme

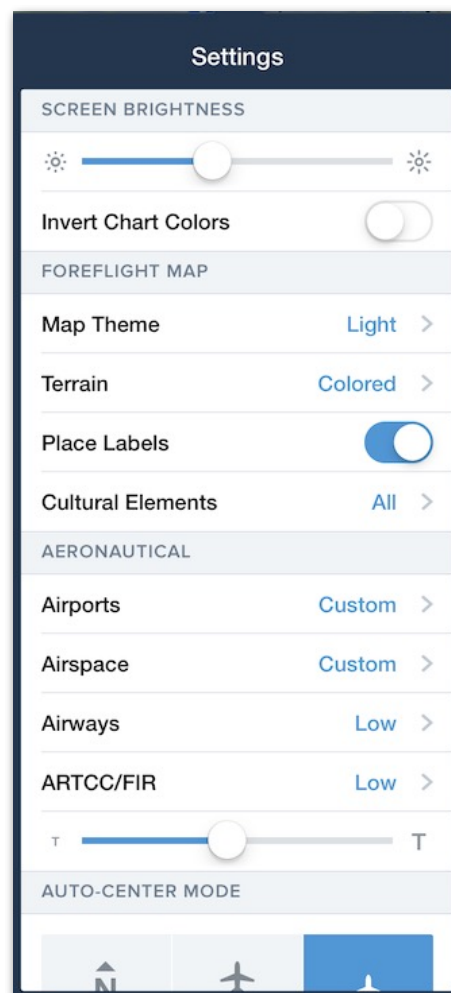
The Map Theme controls whether the ForeFlight base map is **Light** (tan), **Dark** (dark blue), or **Classic** (light brown).

6.2.2 Terrain

The Terrain setting offers three options:

- **Off** - Terrain is not depicted on the base map.
- **Shaded Terrain** - uses grayscale shading to depict terrain.
- **Colored Terrain** - uses coloring to depict terrain.

Peaks, Passes, and Cables display mountain peaks, passes, and cables on the map. This data is available with the high-resolution terrain download.



Map Settings

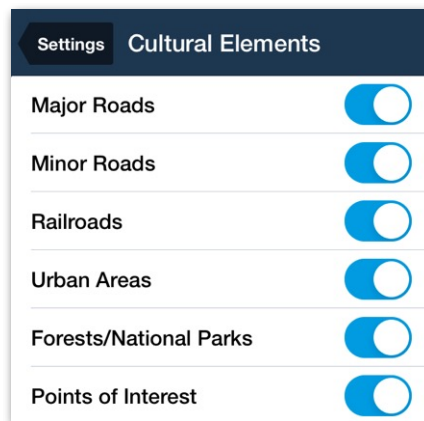
6. MAP SETTINGS

6.2.3 Place Labels

The Place Labels setting adds text labels to the map that identify political and geographic features. Place labels are responsive to dynamic text sizing.

6.2.4 Cultural Elements

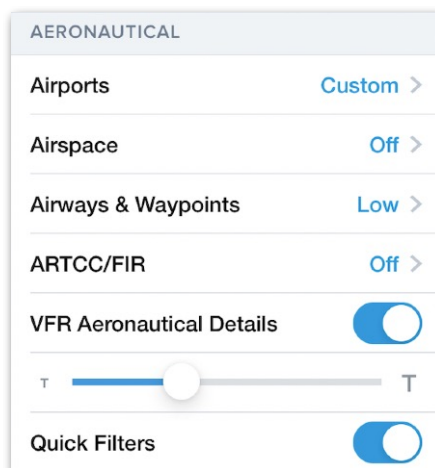
Cultural element settings allow the base map to be customized to show or hide elements such as roads, railroads, urban areas, forests/national parks, and points of interest.



Cultural Elements

6.3 Aeronautical

Settings to customize the Aeronautical map are available when the Aeronautical map layer is selected. When Aeronautical is not selected in the map layer menu, Aeronautical settings are hidden. The following settings are available in the Aeronautical section.



Aeronautical Settings

6. MAP SETTINGS

6.3.1 Airports

The Airports setting determines the types of airports displayed when the Aeronautical layer is selected.

- **Show Airports** displays all selected airport types when enabled. When disabled, all airport types are hidden from the map. This setting is also available at the top of the Aeronautical Map quick filter as a quick filter button.
- **Heliports** displays or hides heliports on the Aeronautical map. When enabled, heliports also appear in the nearby airport list.
- **Private Airports** displays or hides private airports on the Aeronautical map. When enabled, private airports also appear in the nearby airport list.
- **Seaplane Bases** displays or hides seaplane bases on the Aeronautical map. When enabled, seaplane bases also appear in the nearby airport list.
- **Other Fields** displays or hides any airport types not classified as an airport, heliport, private heliport, or seaplane base.
- **Min. Rwy Length** displays or hides airports based on the total length of their longest runway. By default, this field is set to **None**, and airports are displayed regardless of their runway length. When changed to a number between 3,000 ft (914 m) and 10,000 ft (3,047 m), airports that do not meet the minimum runway length are hidden from the map. Heliports are also filtered out when this setting is used.

Setting a minimum runway length also displays a blue quick access button on the lower right corner of the map that can be used to view and change this setting. The quick access button disappears when Min. Rwy Length is set back to **None**.

CAUTION: The Min. Rwy Length represents the total length of the runway *including* the displaced threshold. Review the relevant airport listings to determine the usable portion of each runway.

6. MAP SETTINGS

6.3.2 Airspace

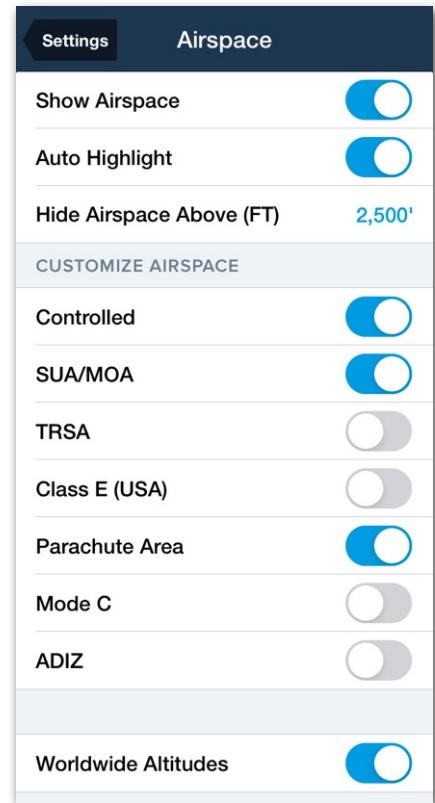
The airspace setting controls the display of aeronautical map airspace. The following airspace-related settings are available from the Map settings menu.

Show Airspace controls whether *all* selected airspace types are displayed when the Aeronautical map layer is selected. This setting is also available as a quick filter button.

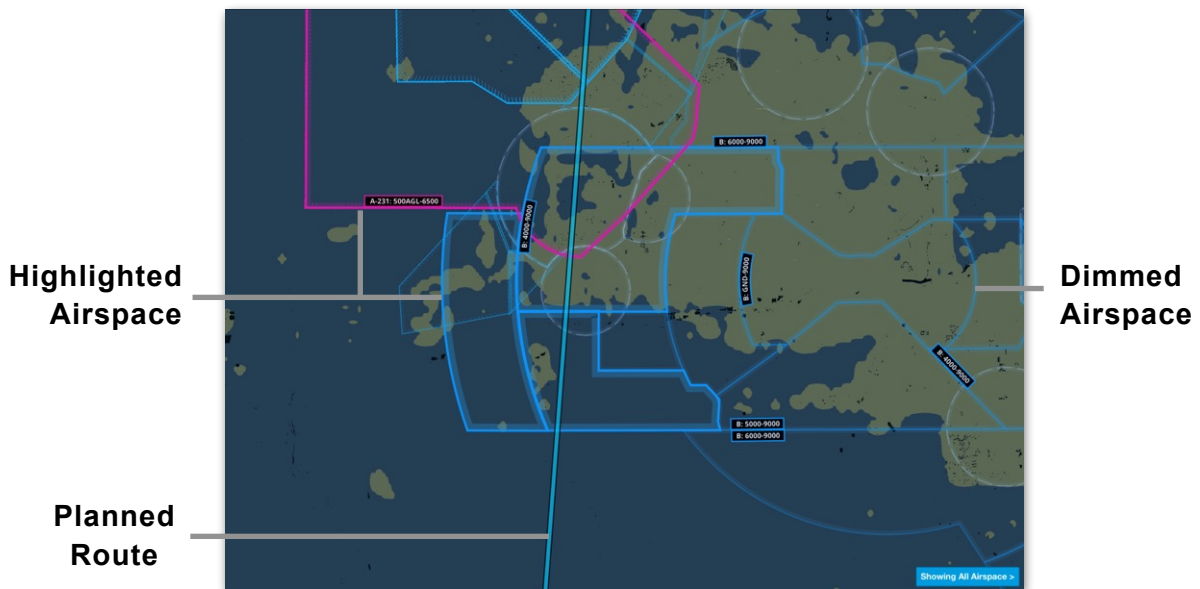
Auto Highlight evaluates your planned route and highlights the airspace the planned route will intersect based on the selected aircraft's climb, cruise, descent profile, or current in-flight track.

Airspace within 1,000 feet of the planned altitude and one nautical mile of the route is highlighted. In contrast, airspace outside 1,000 feet and one nautical mile is visible but dimmed to reduce clutter.

In-flight, airspace up to 50 nm ahead of the current track (also within +/- 1,000 feet of current altitude and within a 1-nautical mile corridor) is highlighted.



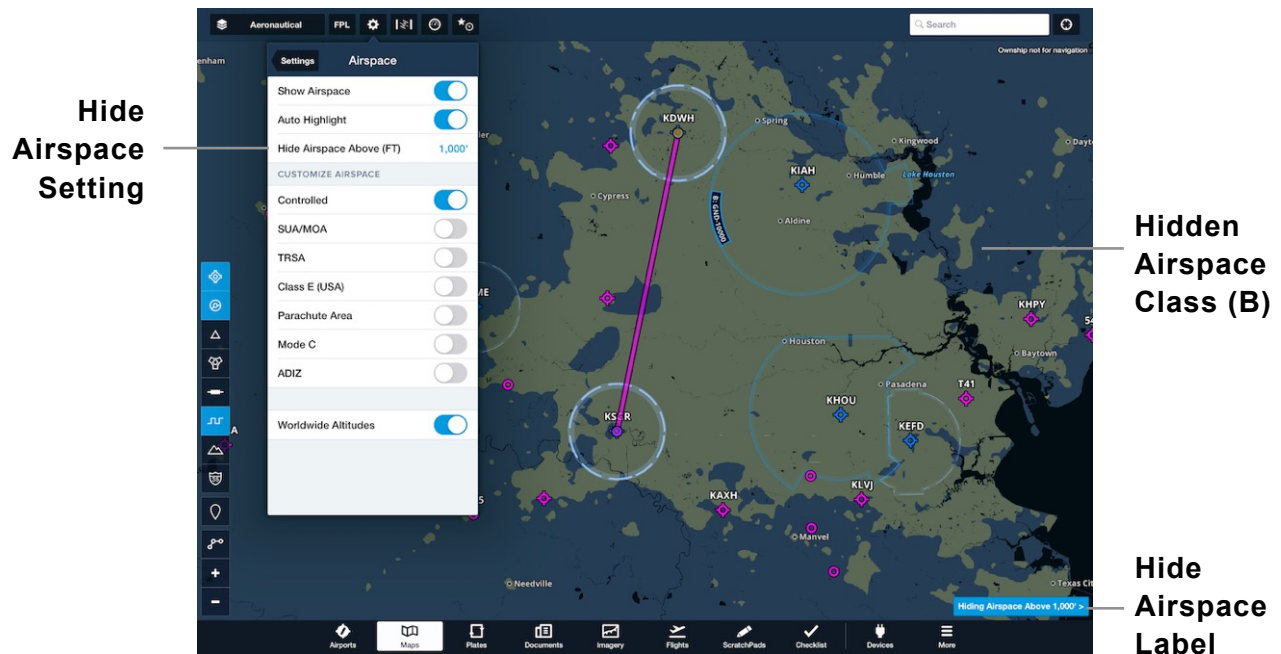
Airspace Settings



6. MAP SETTINGS

Hide Airspace Above filters airspace based on a user-specified altitude. When entering an altitude, values of 500 or more are treated as feet. Values from 5-499 are treated as flight levels.

For example, 65 is expanded to 6,500; 320 is expanded to 32,000. Entering zero allows all airspace to show. If you **plan** a flight or **climb** within 1,000 feet of hidden airspace along your route, the hidden airspace is automatically displayed. The Hide Airspace Above value is displayed as a label in the lower-right corner of the map.

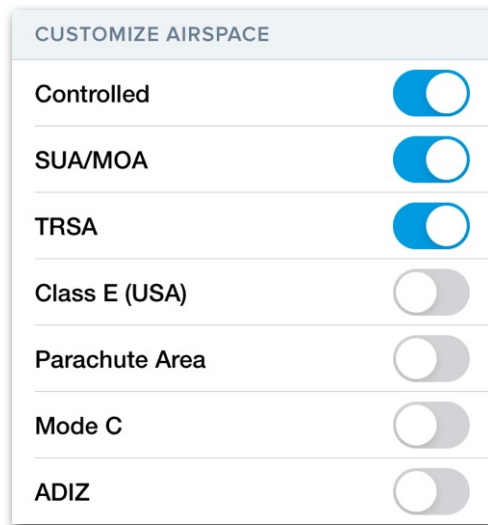


6. MAP SETTINGS

Customize Airspace

The Customize Airspace section allows for specific types of airspace to be filtered from the aeronautical map. Toggling a setting hides or shows all types of the selected airspace.

- Controlled - Airspace that is class B, C, D, E
- SUA/MOA - Special Use Airspace/Military Operating Areas
- TRSA - Terminal Radar Surveillance Area
- Class E (USA) - Surface class E airspace (USA)
- Parachute Areas - Designated parachute jump areas
- Mode C - Airspace requiring mode C transponder around class B airspace.
- ADIZ - Air Defense Identification Zone.



Customize Airspace

6. MAP SETTINGS

Worldwide Altitudes

The Worldwide Altitudes setting determines what type of airspace labels are displayed. When enabled, labels are dynamically displayed along the airspace border and reposition as the map is panned and zoomed. These labels depict the airspace class and vertical limits and are required to see airspace labels outside the United States.

When disabled, only the airspace vertical limits are displayed as a single label, similar to what can be found on a U.S. sectional chart. These label types do not adjust dynamically and are only available in the United States.



Worldwide Altitudes Enabled



Worldwide Altitudes Disabled (U.S. only)

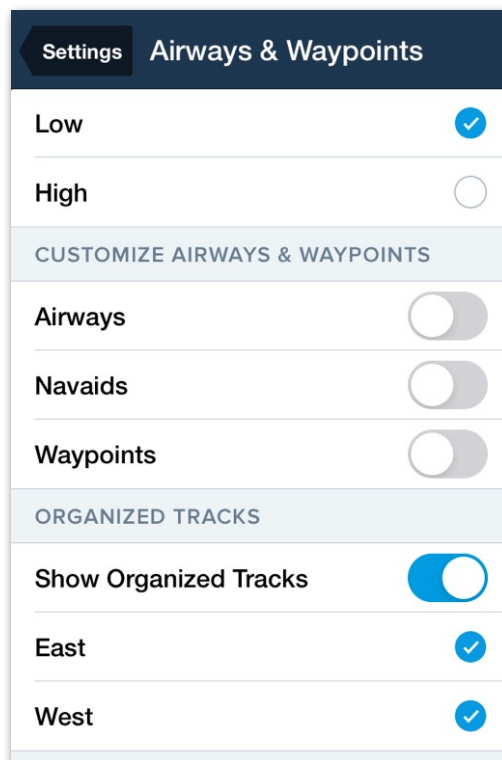
6. MAP SETTINGS

6.3.3 Airways & Waypoints

Airways & Waypoints settings specify the type of airways to display (Low or High) when Airways is enabled.

Airway components (airways, nav aids, and waypoints) can be toggled on and off to reduce map clutter. Quick filter buttons for airways, nav aids, and waypoints are available on the map when Quick Filters are enabled.

Display Organized Tracks with the settings in the Airways & Waypoints section. Organized tracks require a Performance Plus subscription.



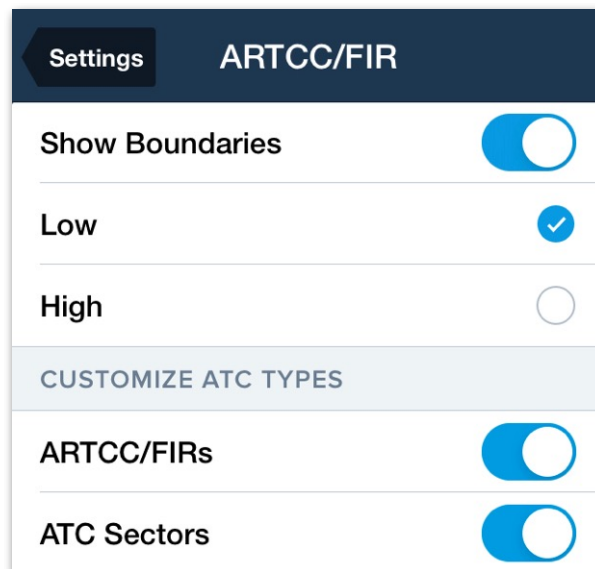
Airway & Waypoint Settings

6. MAP SETTINGS

6.3.4 ARTCC/FIR

The **Aeronautical Map** can display Air Route Traffic Control Center (ARTCC), Flight Information Region (FIR), and **ATC Sector Boundaries**. There are five related settings:

- **Show Boundaries** toggles ARTCC, FIR, and ATC Sector Boundaries on and off.
- **Low** displays low altitude ARTCC, FIR, and ATC Sector Boundaries (when Show Boundaries and ARTCC/FIR or ATC Sectors are enabled).
- **High** displays high altitude ARTCC, FIR, and ATC Sector Boundaries (when Show Boundaries and ARTCC/FIR or ATC Sectors are enabled).
- **ARTCC/FIRs** toggles global ARTCC and FIR boundaries on and off.
- **ATC Sectors** toggles European ATC Sectors on and off. ATC Sectors are only available in Europe.

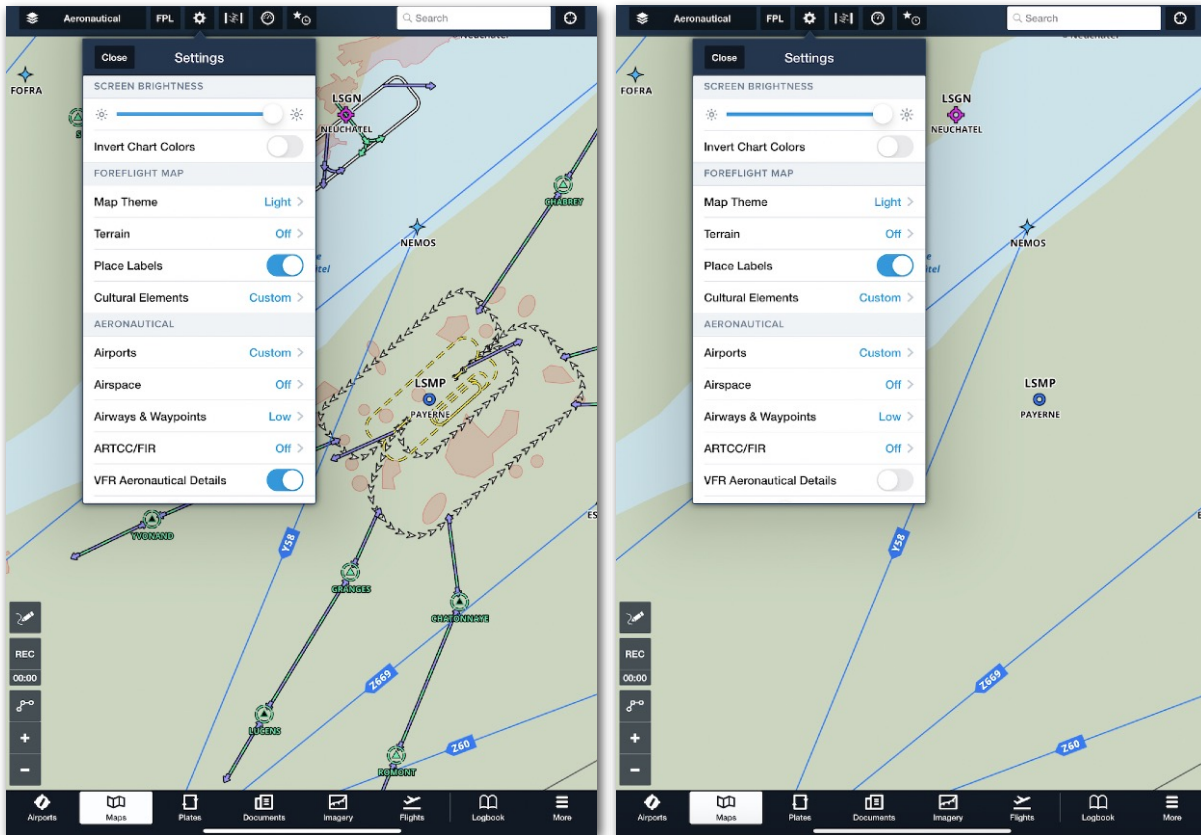


ARTCC/FIR Settings

6. MAP SETTINGS

6.3.5 VFR Aeronautical Details

VFR Aeronautical Details specifies whether the Aeronautical Map displays or hides map elements pertaining directly to VFR flight. VFR map elements are only available in the U.S., Europe, and Australia. See [VFR Aeronautical Map Symbols](#) for a list of supported elements.



toggling VFR Aeronautical Details On/Off

6.3.6 Text Size Adjustment

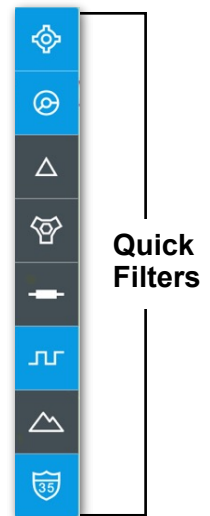
Below the ARTCC/FIR setting is a slider for adjusting the map's text size of aeronautical elements. The full range of the slider goes from 75% to 150% of normal text size. The slider does not affect place labels or text on other maps or charts.

6. MAP SETTINGS

6.3.7 Quick Filters

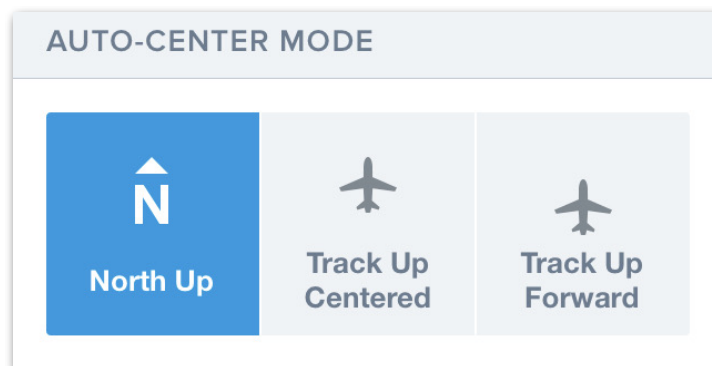
Quick Filters toggles the Aeronautical Map Layer quick filter buttons for Airports, Airspace, Waypoints, Navaids, Airways, ARTCC/FIR, Terrain, and Roads.

Quick filter buttons are located on the left side of the map and appear when Quick Filters are enabled and the Aeronautical Map is selected.



6.4 Auto-Center Mode

Auto Center Mode determines map orientation. The map can be orientated north up or track up. **Track Up** and **Track Up Forward** require the map to be centered on your location and motion must be detected. To center the map on your location, tap the auto-center (bullseye) button in the upper toolbar. When auto-center is enabled, the button is highlighted. If the map is not centered on your location or if motion is not detected, the map is orientated north up.



Auto-Center Mode Settings

6. MAP SETTINGS

6.5 Map Overlays

The map overlay section contains various settings for the features that can be overlaid on the map. Map overlay settings are dynamic and only display a setting if the applicable map layer is selected. For example, the Four Color Radar setting is only displayed when Radar is selected.

6.5.1 Hide Distant Traffic (ADS-B)

The Hide Distant Traffic settings is displayed when connected to an ADS-B receiver. Hide Distant Traffic (ADSB) hides traffic more than 15 nautical miles or 3,500' (above or below) your current GPS position. Only ADS-B traffic can be filtered with the Hide Distant Traffic setting.

6.5.2 Route Labels

Route Labels control if the waypoints in your route have labels on the map. Labels are dynamic and will adjust to prevent overlapping. Route labels must be enabled to display approach procedure waypoints and minimum descent altitudes.

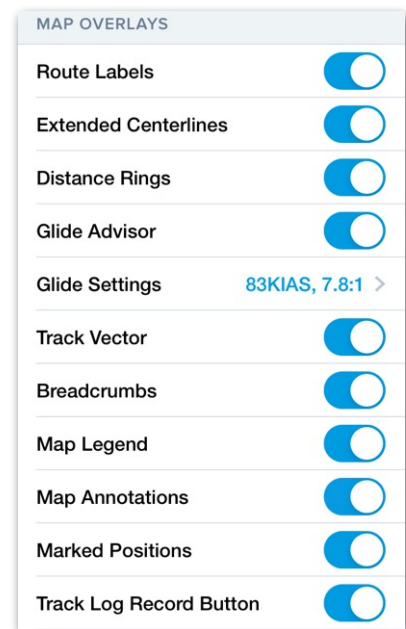
6.5.3 Operational Notes

The Operational Notes setting adds Operational Note Flags to the Maps view when a route is planned. Operational Note Flags are a Performance-tier feature.

6.5.4 Extended Centerlines

Extended Centerlines control if extended runway centerlines are displayed on the map. Extended centerlines are proportional to the runway length. For every 1,000 feet of runway, ForeFlight shows a 1 nm extended centerline. For example, a 5,000 foot runway displays a 5 nm extended centerline. Extended centerlines are only depicted for the runways at the airports in your route.

An extended centerline can display information about a runway, including winds, length, surface type, lighting, elevation, and associated procedures. Tap the runway label on the map to display runway information.



Map Overlay Settings

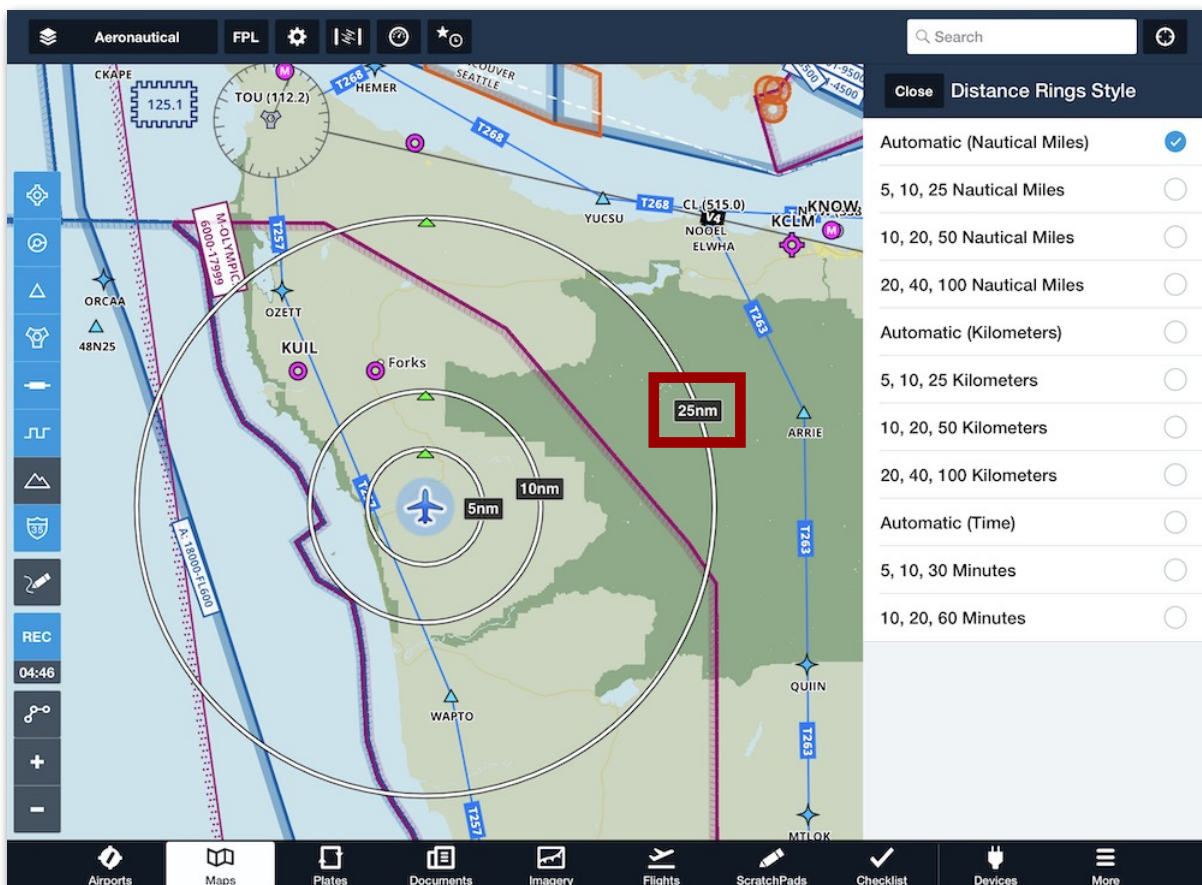
6. MAP SETTINGS

6.5.5 Distance Rings

Distance Rings display concentric rings around your aircraft's position that correlate to distance or time. No ring is displayed when zoomed out. As the map is zoomed in, rings will appear, with up to three being shown.

Distance Rings can display distance by time (minutes) or length (nm or km). To set the preferred style, with Distance Rings showing on the map, tap a distance ring label to reveal the sidebar. Select the preferred type from the list. Alternatively, go to **More > Settings > Distance Rings Style**.

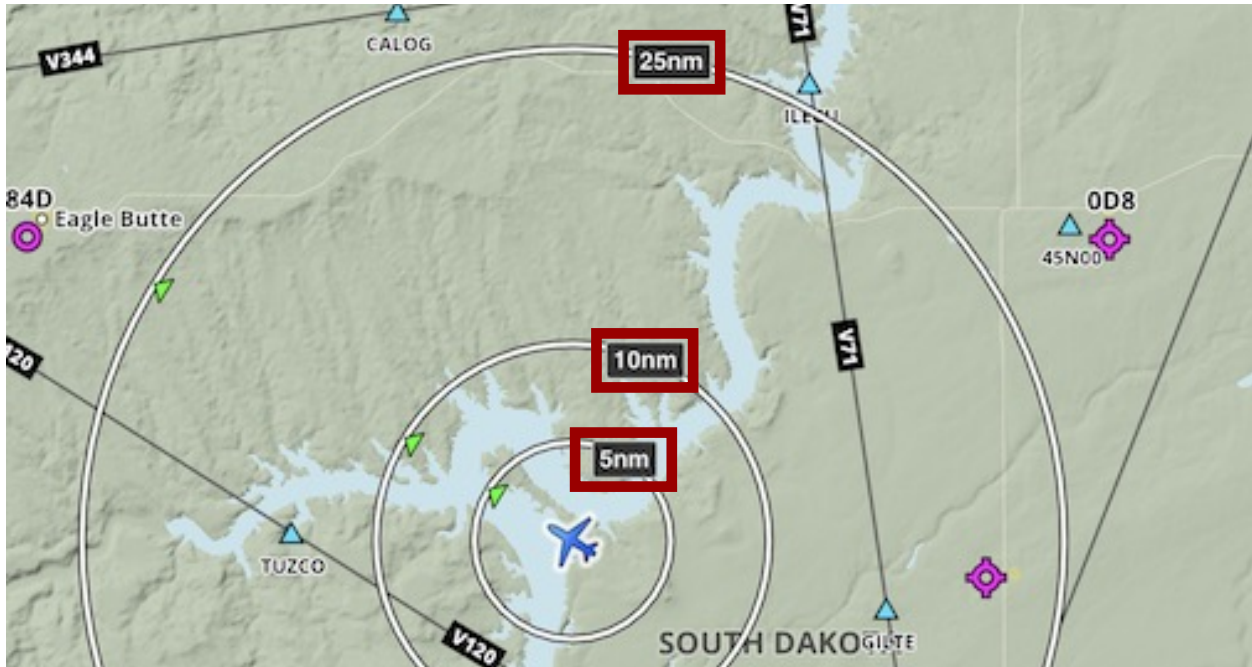
When any automatic style is selected, ring scales adjust automatically when the map is zoomed in or out. Range rings will only show if a GPS position is received. If a time-based style has been selected, the rings are only displayed when you have a GPS fix *and* are moving at more than 10 knots.



Tap a label on the Distance Rings to reveal the style slide over

6. MAP SETTINGS

Green triangles on the rings align with the track direction and project where the current track will take the aircraft in relation to the Distance Ring. Ring time and distance labels are always displayed off the right wing between the two and three o'clock positions, regardless of orientation.



Distance labels are always off of the right wing

6. MAP SETTINGS

6.5.7 Track Vector

Track Vector displays a vector (line) in front of your aircraft's icon in the direction of travel. The track vector length is set in the main settings menu by selecting **More > Settings > Track Vector Length**.

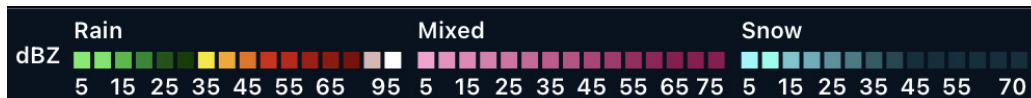
6.5.8 Breadcrumbs

Breadcrumbs are a thin green line indicating your aircraft's path since takeoff. Breadcrumbs remain on the map for a specified amount of time. The amount of time is set in the main settings menu by selecting **More > Settings > Breadcrumbs Clear After**.

6.5.9 Map Legend

Map Legend displays a legend at the bottom of the Maps view when the following layers are selected.

- Radar
- Enhanced Satellite
- Hazard Advisor
- Color IR Satellite
- Icing and Turbulence
- Clouds
- Winds (Temps/Speeds)



Map Legend (Radar)

6.5.10 Map Annotations

Map annotations display the annotation button on the left side of the maps view. Tap the annotation button to enter annotation mode. Map annotation mode remains active after annotation inactivity for the amount of time specified in **More > Settings > Annotations Timeout**.

6.5.11 Marked Positions

Marked Positions displays a button on the left side of the Maps view. Tap the button to drop a green position marker at your current location. Marked Positions are only available with a Performance Plus plan. See [Marked Positions](#) for additional information.

6. MAP SETTINGS

6.5.12 Track Log Record Button

The Track Log Record Button displays a **REC** button on the Maps view for manually starting and stopping **Track Logs**. When enabled, the Track Log timer is displayed below the button. The timer is an indication that a Track Log is actively recording.

6.5.13 Four-color Radar

Four-color Radar enables radar in a low-resolution, four-color scheme that complies with dBZ-to-color mapping standards defined by the Radio Technical Commission for Aeronautics.

6.5.14 Internet Radar Coverage

Internet Radar Coverage displays the area of available radar coverage while connected to the Internet. Areas with no coverage display a transparent mask with hash marks and “Radar not available” labels.

6.5.15 Map Touch Action

Map Touch Action controls the behavior of IFR and VFR charts. This setting is only available when an IFR or VFR en route chart is selected.

- **No Action** results in no map overlap changes when tapping on the map.
- **Bring chart to front** moves the chart to the top layer with a single tap. When a chart is on the top layer, it overlaps adjacent charts.
- **Bring chart to front with legends** moves the chart, chart legend, and chart border to the top layer with a single tap. When a chart is on the top layer, it overlaps adjacent charts.

6.5.16 Alerts

Alert settings control the behavior of in-app alerts. All alerts are displayed visually and can be announced audibly. See the **Alerts** chapter for more information.

6.6 Layer Selector

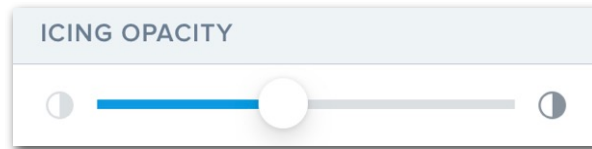
The layer selector section contains a single setting.

- **Multiple Selections** allows the maps layer selector menu to remain open while selecting various map layers. Tap outside the layer selector to close it.

6. MAP SETTINGS

6.7 Opacity Slider

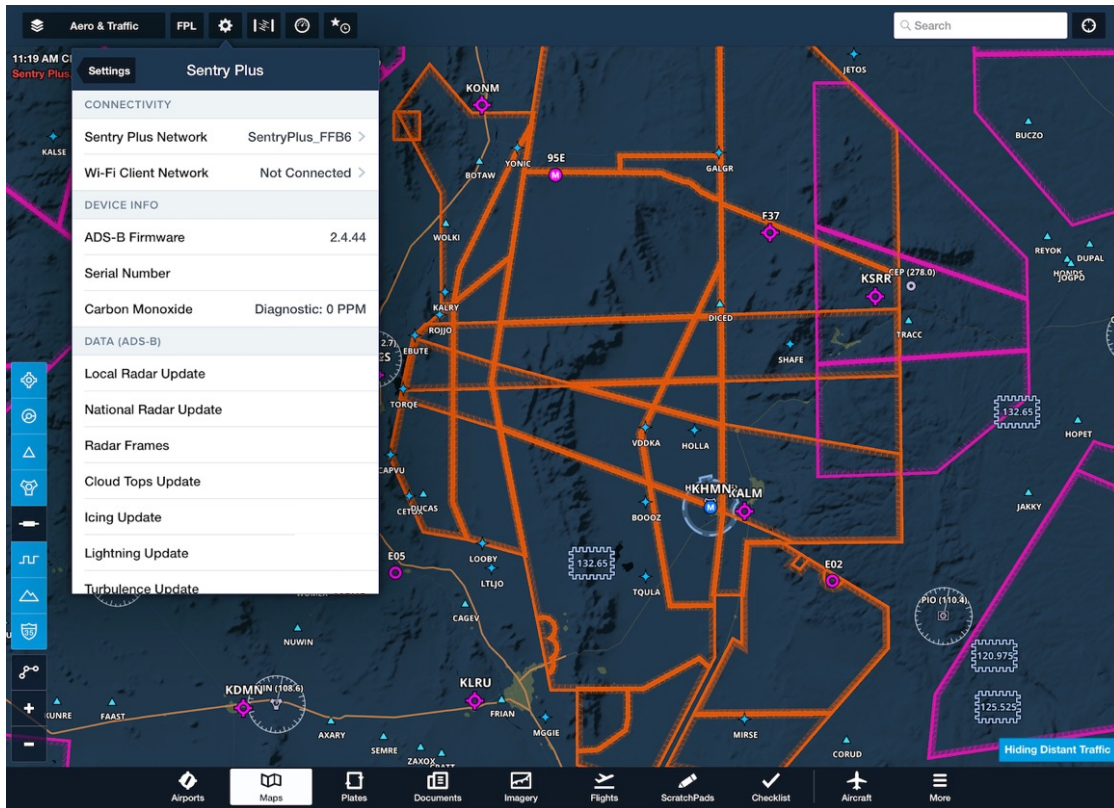
When a weather map layer or Hazard Advisor is selected, an opacity slider appears below the Multiple Selections setting. The slider adjusts map layer opacity.



Opacity Slider (Icing)

6.8 Devices

Connected device appears at the bottom of the map settings menu when connected. Tap the connected device to view the same information that's available by selecting **More > Devices**. See the **Connect** chapter for additional external device information.



Map Settings - Device View

iOS FEATURES AND SETTINGS

There are a few handy iPad features you'll want to know about when using ForeFlight Mobile:

- **iOS Multitasking:** ForeFlight Mobile 12.4 and later on the iPad supports iOS Multitasking, allowing you to use ForeFlight in Split Screen or Slide Over with other apps at the same time.
- **Multiple Orientations:** The iPad supports portrait and landscape orientation. When you rotate an iPad from one orientation to another, an application typically alters its user interface to better take advantage of the space supplied.
- **Rotation Lock:** Having the screen rotate isn't *always* a good thing. Rotation lock is helpful for preventing accidental rotation in turbulence. Newer iPads: Swipe down from the upper-right corner of the screen to open the Control Center and find the rotation lock soft-button. Older iPads: A physical switch is located above the volume buttons. When switched on, this prevents an application from changing its orientation. On some iPads, this switch instead functions as a "mute" switch. You can change the function of this back to a "lock" switch by using the iPad's Settings application. Tap General, and use the options in the Use Side Switch to: section. If this section is not displayed, you may need to update your iPad's version of the iOS operating system to enable this.
- **Settings App:** The iPad includes a special application called Settings. Within Settings, you can modify the way the iPad and its applications behave. ForeFlight-specific settings are addressed in the Settings section of this guide. All ForeFlight settings are available in the *More* view of ForeFlight Mobile as well.
- **Brightness Control:** There is a brightness control accessible in iPad Settings app. It is also available for quick access in the Control Center by swiping-down from the top of the screen. This control is helpful for reducing brightness at night, or for dimming the screen during the day to preserve battery life. For night use, if the iPad brightness control set to full dim (slider all the way to the bottom) doesn't dim the screen enough, use the brightness slider in ForeFlight Mobile in the More view or at the top of the **Maps Settings** menu to dim the screen further. The ForeFlight brightness slider integrates with the iPad's brightness slider, but allows for additional dimming beyond the lowest setting of the iPad's slider.

7. iOS FEATURES AND SETTINGS

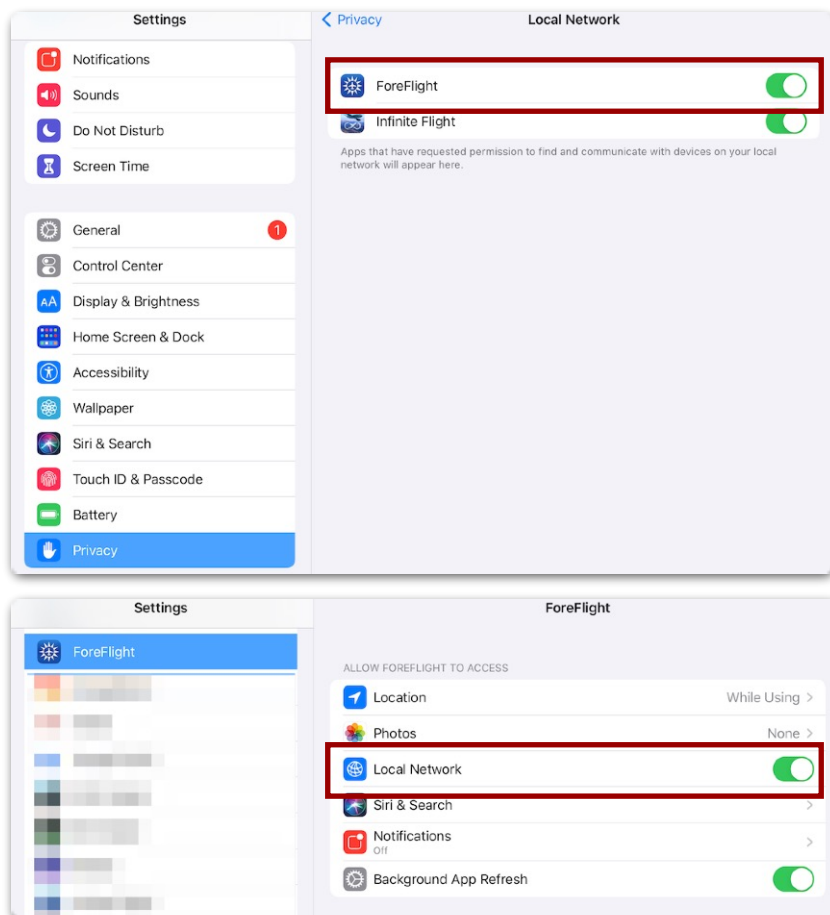
7.1 iOS Network Settings

iOS 14 requires that you grant specific permission for an app to connect to a “Local Network”, which includes the Wi-Fi connection made to ADS-B receivers and avionics such as the Sentry, Stratus, Avidyne IFD series, as well as Flight Simulators. **Cockpit Sharing** and ForeFlight Passenger also require the iOS Local Network setting be ON for **ForeFlight & Passenger**.

When you first open ForeFlight Mobile, you should see a pop-up asking you to allow ForeFlight to find and connect to devices on your local network. To permit this, tap **OK**.

If you tap **Don't Allow** but later need to enable Local Network access, you can do so in either of two areas in **Apple Settings**:

- **Privacy > Local Network > ForeFlight: ON**
- **ForeFlight > Local Network: ON**

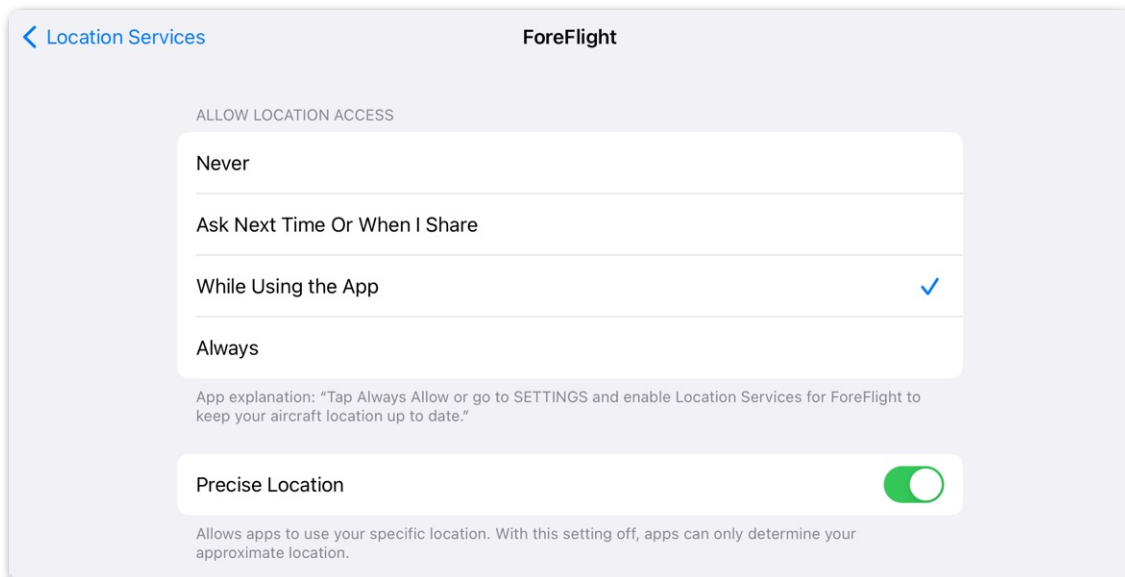


7. iOS FEATURES AND SETTINGS

7.2 iOS Location Settings

For best position accuracy, enable *Precise Location* for ForeFlight Mobile (iOS14 and later). Open the Settings app and follow one of the two options:

- **Privacy > Location Services > ForeFlight > Precise Location: ON**
- **ForeFlight > Location > Precise Location: ON**



Location Services iOS 14 and later

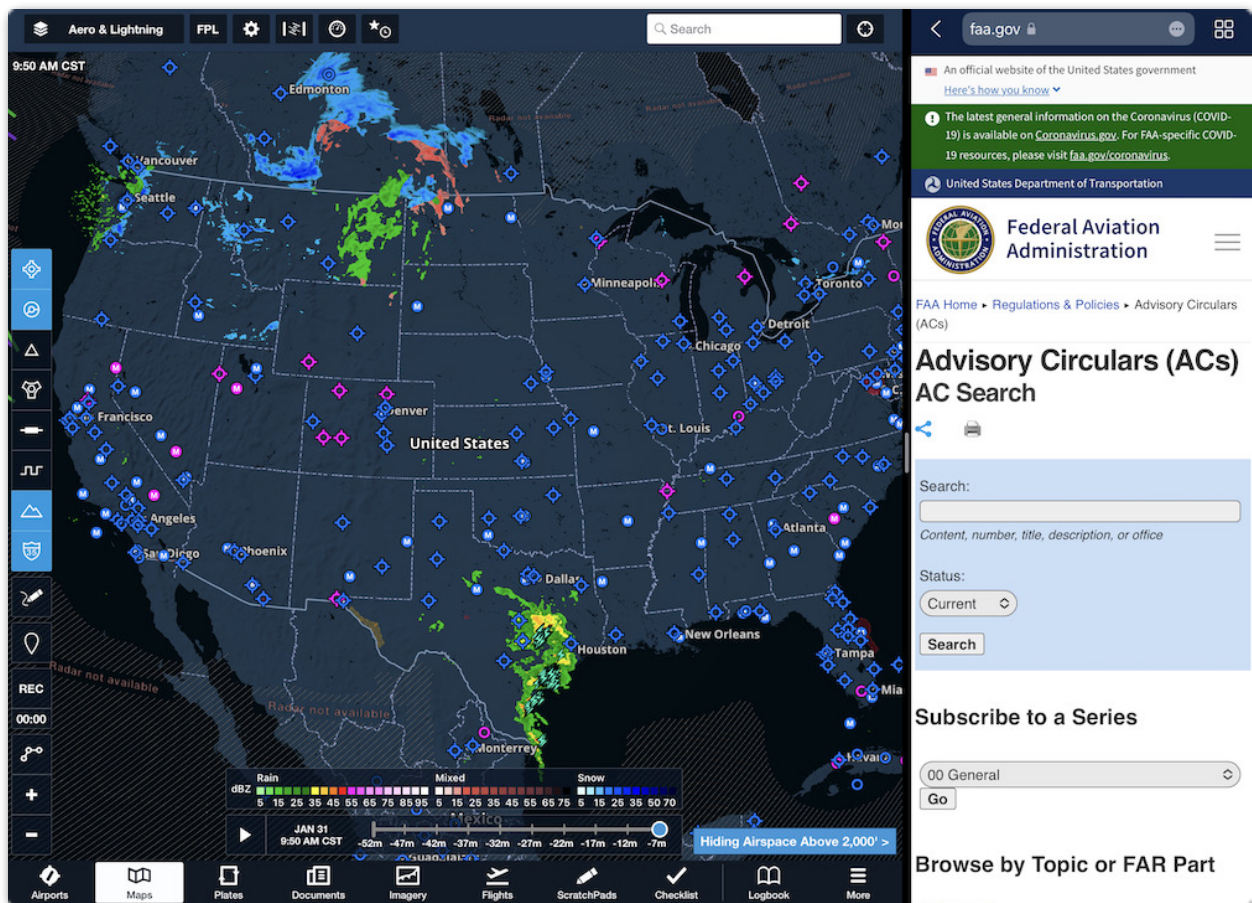
7. iOS FEATURES AND SETTINGS

7.3 iOS Multitasking and Split Screen

iOS Multitasking allows you to work with two apps at the same time. ForeFlight Mobile supports Multitasking, Split Screen, and Slide Over, on compatible iPads.

For full details about how this works in ForeFlight Mobile, please take a few minutes to review this video: [Multitasking Support & Major Design Improvements](#).

This article from Apple is an excellent resource for how Split Screen and Slide Over work on iPads: [Use multitasking on your iPad](#).

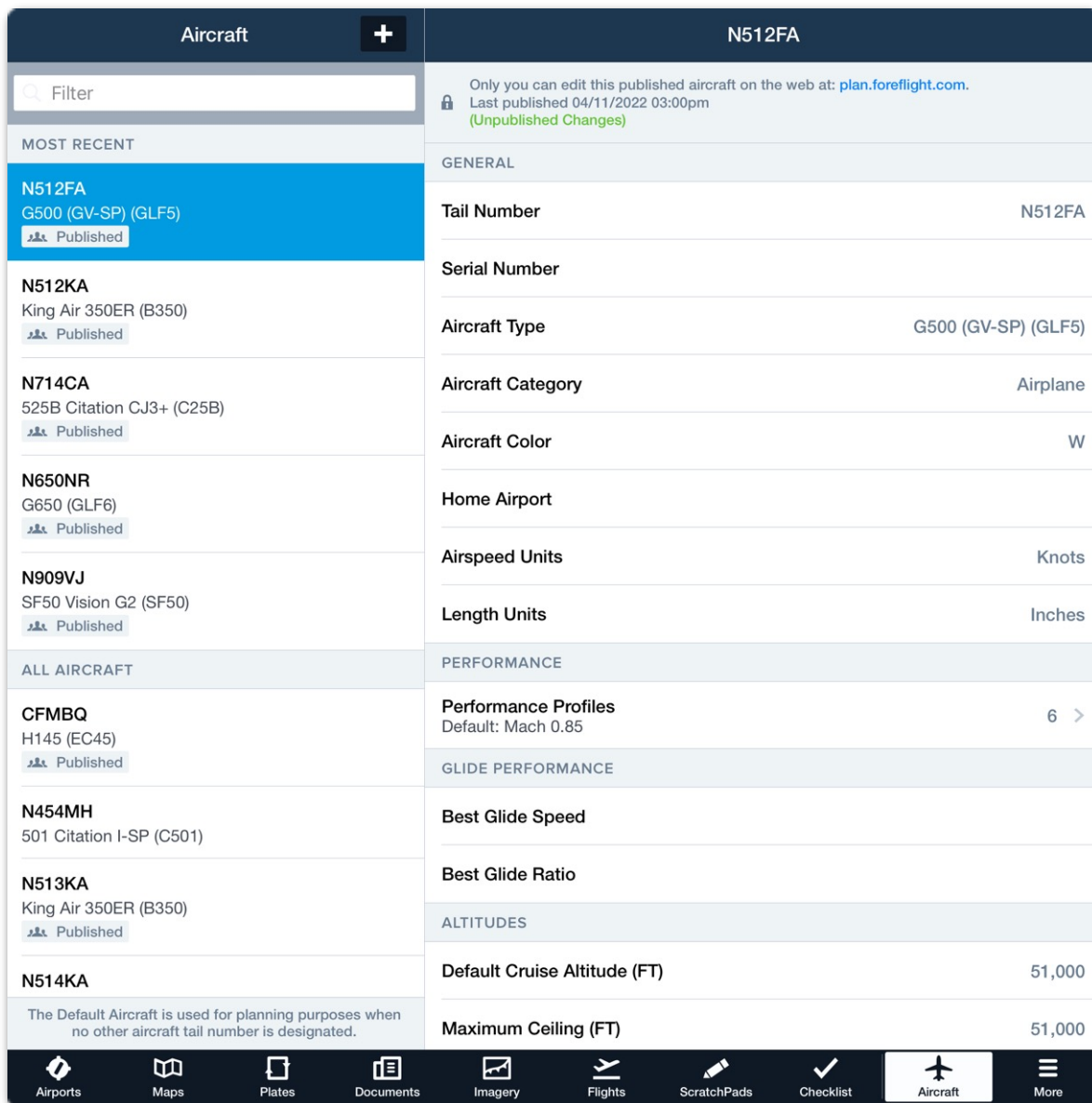


Multitasking with ForeFlight Mobile

AIRCRAFT

Successful flight planning begins with a complete aircraft profile. The Aircraft view is where aircraft profiles associated with your account are managed. When sync is enabled, aircraft profiles sync between the devices signed in to your account.

Select **More > Aircraft** to access the Aircraft view. Aircraft profiles can be managed with ForeFlight Web or ForeFlight Mobile. This guide primarily covers managing aircraft profiles with ForeFlight Mobile.



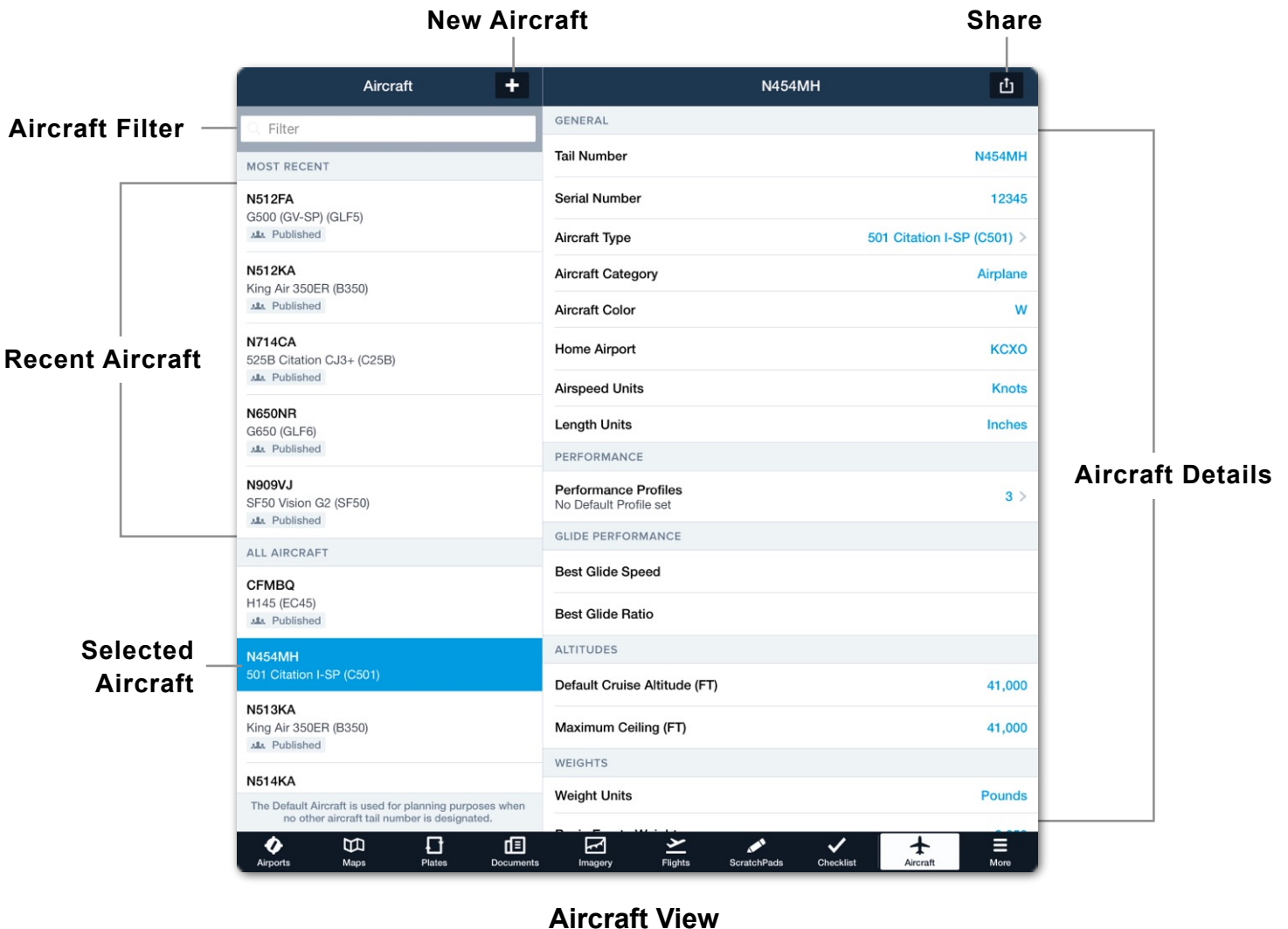
Aircraft View

8. AIRCRAFT

8.1 Design

The Aircraft View is divided into two columns. The left column lists the aircraft associated with the account. Aircraft recently used for flight planning are listed at the top.

When the Aircraft view is displayed, tap any aircraft to make it the active aircraft. The *selected* aircraft is highlighted in blue, and its details are shown in the right column. Accounts with many aircraft profiles can use the search bar at the top of the list to filter the number of aircraft displayed. Filter aircraft by type or tail number. There's no practical limit to the number of aircraft profiles associated with an account. When using an iPhone, navigate between the aircraft list and detail view by tapping the **Aircraft** back button in the upper toolbar.



8. AIRCRAFT

8.2 Creating an Aircraft Profile

To create a new aircraft profile, tap the [+] button in the upper toolbar and complete the aircraft details. Aircraft details are grouped into various sections. Some sections, such as the *Weights* section, may be automatically completed when an aircraft type is selected. If the automatically populated details are not correct, verify that the aircraft type is accurate, including any applicable supplemental type certificates (STC).

8.2.1 General

The General section is where basic information about the aircraft is specified. Manually enter or use the drop-down menus to complete the General section. Descriptions for each field are listed below.

Tail Number is for specifying the registration number, including the country code for the aircraft. Use only letters and numbers in the Tail Number field. The Tail Number field is copied to the filing form when filing a flight plan.

Serial Number is an optional field consisting of only letters and numbers.

Aircraft Type includes a built-in type code search engine. Enter the aircraft make or model in the search box. Scroll through the list to find your aircraft and select the appropriate type code.

NOTE: Ensure the aircraft type includes any applicable supplemental type certificates.

Aircraft Category offers a menu to select **Airplane**, **Rotorcraft**, or **Other**.

Aircraft Color is where the colors of your aircraft are entered. Use the color wheels to select the colors of your aircraft. The leftmost color is the base aircraft color.

Home Airport allows for the entry of the ICAO code for the airport where the aircraft is based.

Airspeed Units specify whether the aircraft shall use **Knots** or **MPH**.

Length Units specify if the aircraft uses Inches, Feet, Meters, Millimeters, or Centimeters to calculate weight and balance.

8. AIRCRAFT

8.2.2 Performance

The Performance section lists the aircraft's performance profiles, **Takeoff & Landing Performance**, and **Runway Analysis** settings. Performance profiles contain climb, cruise, and descent values for flight planning purposes.

There are three types of performance profiles. Aircraft can have multiple performance profiles of each type.

- Basic Performance Profiles
- By-Altitude Performance Profiles (Performance Plus Required)
- ForeFlight Performance Profiles (Performance Plus Required)

Basic Performance Profiles

The Basic Performance Profile is included with all plans. When creating a new aircraft, the basic profile must be manually completed. Basic profiles contain an individual set of climb, cruise, and descent values. Only the cruise values are required to generate flight planning results. However, completing the climb and descent fields is recommended. There are no limits to the number of basic profiles an aircraft can have.

6000' Lean	
GENERAL	
Profile Name	6000' Lean
CLIMB	
Climb TAS (KTS)	90
Climb Fuel Per Hour	13
Climb Rate (FPM)	600
CRUISE	
Cruise TAS (KTS)	128
Cruise Fuel Per Hour	10.5
DESCENT	
Descent TAS (KTS)	110
Descent Fuel Per Hour	7
Descent Rate (FPM)	600
<small>The fuel numbers above are in GALLONS PER HOUR. You can change this on the Aircraft view, under "Fuel Units."</small>	
Make Default	
Delete Profile	

Basic Performance Profile

8. AIRCRAFT

By-Altitude Profiles

By-Altitude performance profiles are only available with Performance Plus and Business Performance plans. The by-altitude profile is a custom, user-generated performance profile that specifies aircraft performance by altitude.

By-Altitude profiles can only be created with **ForeFlight Web**. To create a custom by-altitude profile, sign in to ForeFlight Web and select **Aircraft** from the sidebar. Select an aircraft > select **+ Add Basic Performance Profile** > **By-Altitude Profile** in the performance section.

Enter climb and descent information for your aircraft. Include climb and descent fuel flow at low and high ends of your aircraft's operating range. ForeFlight will interpolate climb and descent performance based on the entries.

Provide a name for the en route performance profile (e.g., Economy Cruise) and define your aircraft's Max Ceiling. Enter aircraft performance for every row up to the aircraft's max ceiling using the aircraft's performance charts/tables. When the table is complete, select **Save** at the bottom of the screen.

Multiple custom profiles can be created if necessary. The custom profile can be set as the aircraft's default by selecting **Make Default** near the top of the screen. Custom performance profiles can be selected in ForeFlight Mobile once complete.

CLIMB MODEL	Low altitude point fuel flow (pph)	High altitude point fuel flow (pph)
Climb Name Standard Climb	18	12

DESCENT MODEL	Low altitude point fuel flow (pph)	High altitude point fuel flow (pph)
Descent Name Standard 500 FPM descent	12	8

CRUISE MODEL	Aircraft Max Ceiling (ft)
Cruise Name Economy Cruise	35,000

PRESSURE ALT (FT)	CLIMB IAS (KTS)	RATE OF CLIMB (FPM)	CRUISE TAS (KTS)	FUEL FLOW (PPH)	DESCENT IAS (KTS)
0'	87	750	154	15	165
1,000'	87	730	155	15	165
2,000'	87	720	156	14	165
3,000'	86	700	156	14	165
4,000'	86	680	158	13	165
5,000'	86	660	160	12	165

By-Altitude Performance Profile

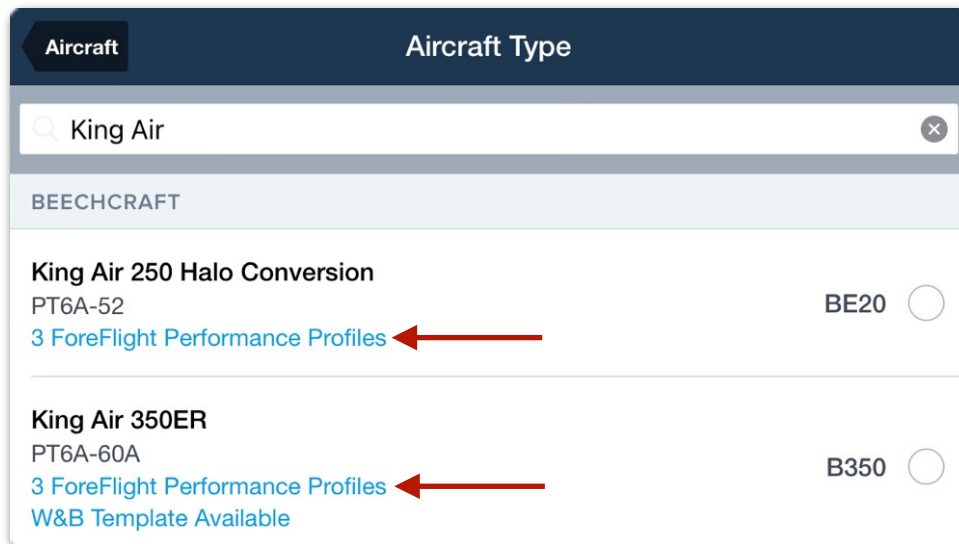
8. AIRCRAFT

ForeFlight Performance Profiles

ForeFlight performance profiles are only available with Performance Plus or Business Performance plans. ForeFlight performance profiles are created by ForeFlight using aircraft manufacturer performance data.

ForeFlight performance profiles are comprised of detailed by-altitude climb, cruise, and descent models for highly accurate flight planning results. When selecting an aircraft type, the number of en route cruise performance models is depicted in blue.

Available manufacturer data determines the number of profiles. The number of available profiles should match the number of performance profiles in your aircraft's flight manual.



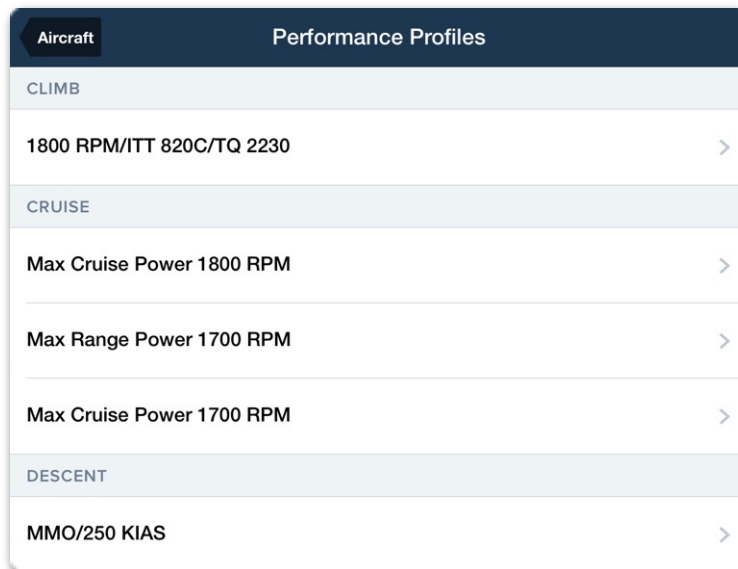
Available ForeFlight Performance Profiles (Cruise)

IMPORTANT: Ensure the correct aircraft type is selected including serial number, supplemental type certificate (STC), gross weight increase (GWI), and power plant conversion.

8. AIRCRAFT

When an aircraft with a ForeFlight Performance Profile is selected, the Performance section lists the available climb, cruise, and descent models. The profile names and values are derived from manufacturer data.

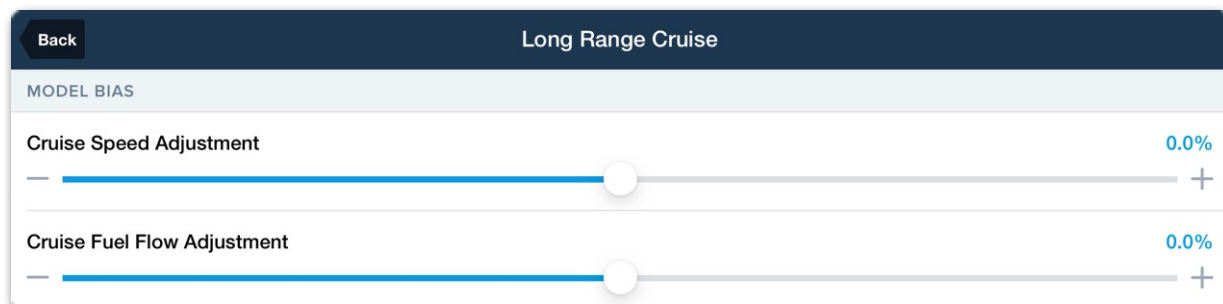
It's not possible to review specific performance values associated with a profile. For example, if you wanted to know the true airspeed for the Max Cruise Power 1700 RPM profile at FL180 and 4°C, you would not be able to do that in ForeFlight. To determine specific values, refer to the performance section of your aircraft's flight manual.



Three Available Cruise Models

Performance Model Adjustments

If your aircraft does not achieve the same performance specified by manufacturer data, use the performance model adjustments to get more accurate flight planning results. Performance model adjustments are synced to the aircraft profile.



Cruise Model Adjustments

8. AIRCRAFT

Model Adjustments (Climb and Descent)

Climb and descent performance models can be adjusted by a fixed time or fuel amount.

Climb biases are applied from the departure airport to the top of climb (TOC). Descent biases are applied from the top of descent (TOD) to the destination airport.

To determine how much bias to apply:

1. Plan a flight and generate a Navlog.
2. Conduct the flight and record actual time and fuel burn.
3. Compare your actual results to the Navlog.

For optimal results, multiple flights should be conducted to discover if a trend exists. For example, if your aircraft consistently burns 45 *more* pounds of fuel before reaching TOC, *add* a 45 pound fuel bias to the climb model. Similarly, if the aircraft burn less fuel during descent, enter a negative descent bias.

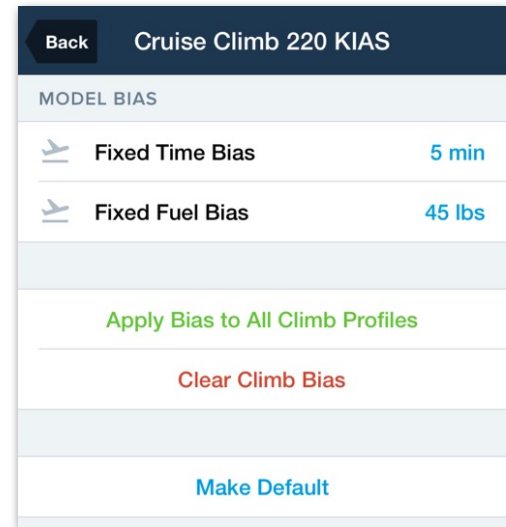
Model Adjustments (Cruise)

Cruise model adjustments are specified with a percentage. For example, if ForeFlight consistently calculates an estimated time en route that is 10% more than your actual results, tap the cruise model you've planned with and slide the **Cruise Speed Adjustment** to +10%.

A positive bias increases the planned true airspeed or fuel burn by the specific percentage. A negative bias reduces the planned true airspeed or fuel burn by the percentage specified.

Apply Bias to All

If the aircraft has more than one climb, cruise, or descent profile, tap **Apply Bias to All** to apply the bias to all the models. **Clear Bias** restores the profile to its original settings (zero bias). To make a performance profile the default for the aircraft, tap **Make Default**. **The default** profile calculates planning results when no other profile is selected.



Climb Model Bias

NOTE: Mach-based performance profiles do not offer cruise bias sliders.

8. AIRCRAFT

8.2.3 Glide Performance

The Glide Performance section allows for the specification of the aircraft's all-engines off glide characteristics. Entering a value in this section will affect the display of the Glide Advisor on the map.

To enter the aircraft's glide information, enter a whole or decimal number in the Best Glide Ratio field. For example, aircraft with an 8.5:1 glide ratio should enter 8.5. Similarly, aircraft with a 9:1 glide ratio should enter 9. This field may be auto-populated with manufacturer data.

8.2.4 Altitudes

The altitude section sets a default cruise and maximum altitude for the aircraft. The Maximum Ceiling field sets the upper cut-off for the Altitude Advisor. Not entering a value for Maximum Ceiling will result in the Altitude Advisor returning results up to FL570.

The default cruise altitude is used when planning with ForeFlight Mobile and ForeFlight Web. When planning with ForeFlight Dispatch, an optimal altitude for the route is determined, and the default cruise altitude is ignored.

8.2.5 Weights

The weights section specifies the various aircraft weight limits.

- **Weight Units** allow an aircraft to use pounds or kilograms for flight planning.
- **Basic Empty Weight** should be edited to reflect the actual basic empty weight of the aircraft.
- **Max Zero Fuel Weight** is an auto-populated value and should be verified. The maximum weight the aircraft can weigh with zero fuel onboard is the maximum zero fuel weight limit.
- **Max Ramp Weight** is an auto-populated value and should be verified.
- **Max Takeoff Weight** is an auto-populated value and should be verified.
- **Max Landing Weight** is an auto-populated value and should be verified.

8. AIRCRAFT

8.2.6 Weight and Balance

The Weight and Balance (W&B) section is used to create W&B profiles. W&B profiles are configured by defining the following variables for your aircraft:

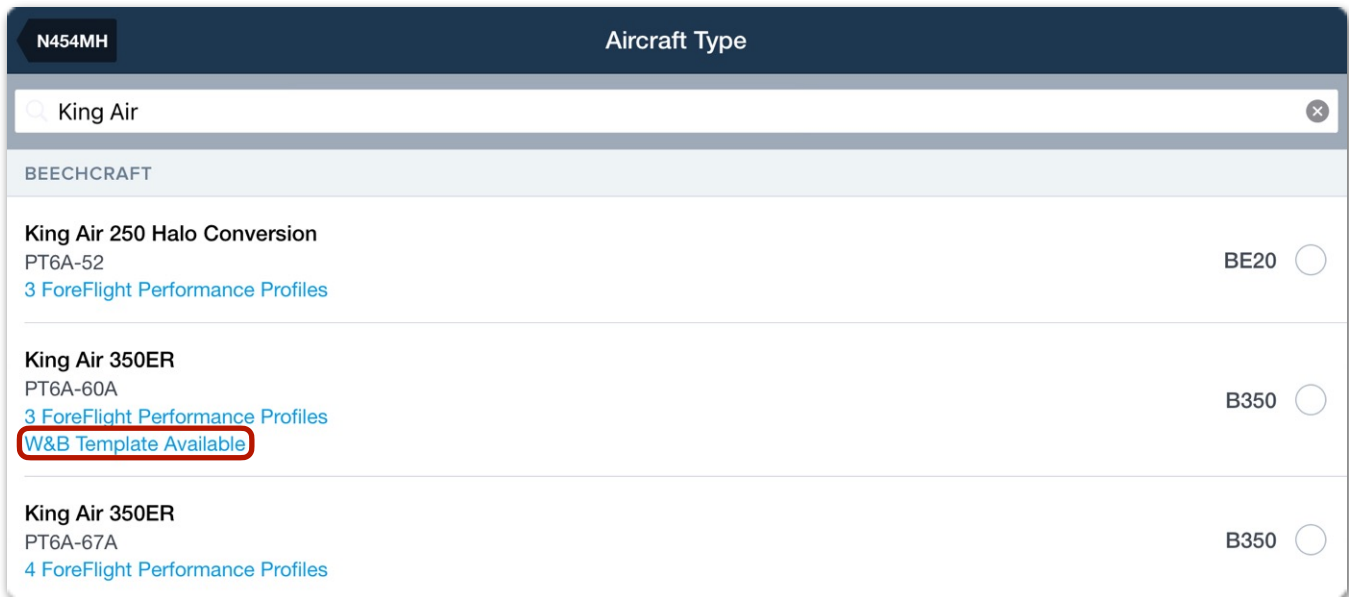
- W&B Profile Name
- Aircraft Basic Empty Weight (BEW)
- Aircraft Basic Empty CG
- Station Descriptions
- Station Locations (arm)
- Station Weight Limits (if applicable)
- Aircraft Forward and Aft CG Limits

8. AIRCRAFT

W&B Templates

Select aircraft have prebuilt W&B templates which only require the entry of basic operating weight, CG, and station verification to complete. Aircraft with prebuilt templates have a **W&B Template Available** label when selecting an aircraft type.

If a prebuilt template does not exist for your aircraft, you can create a custom W&B profile using the blank template. For detailed instructions on creating and using ForeFlight Weight & Balance, refer to the Weight & Balance guide available in **Documents > ForeFlight**.



Aircraft with W&B Template Available

NOTE: For detailed instructions on creating and using ForeFlight Weight & Balance, refer to the Weight & Balance Guide available in **Documents > ForeFlight**.

8. AIRCRAFT

8.2.7 Fuel

The fuel section specifies information about the aircraft's fuel system. The available fuel-related fields vary based on the subscription type.

FUEL	
Fuel Type	Jet-A
Fuel Units	Gallons
Start/Taxi/Takeoff Fuel	5.33

Basic Plus and Pro Plus

FUEL	
Fuel Type	Jet-A
Fuel Units	Pounds
Start/Taxi/Takeoff Fuel	42
Total Usable Fuel	1,147.5
Default Reserve Fuel	187

Performance Plus

- **Fuel Type** determines fuel weight based on the selected fuel's density.
 - **100LL** and **Other**: 6.0 pounds per gallon.
 - **Jet-A** and **Jet-A Prist**: 6.75 pounds per gallon.
- **Fuel Units** specify the aircraft's fuel consumption format. Choose between **Gallons**, **Liters**, **Pounds**, or **Kilograms**.
- **Start/Taxi/Takeoff Fuel** specifies the amount of fuel the aircraft will consume during Start, Taxi, and Takeoff.
- **Total Useable Fuel** is an auto-populated value and should be verified. This information should be in the aircraft's flight manual.
- **Default Reserve Fuel** specifies the minimum amount of reserve fuel each flight should be planned with.

8. AIRCRAFT

Reserve Fuel Policies

Business Performance accounts with a European, Australian, or Dispatch license have additional aircraft profile fuel fields. These fields are used to specify the default **Reserve Policy** for calculating a reserve fuel amount based on regulatory requirements.

New flights automatically use the default **Reserve Policy** specified on the aircraft profile unless edited on a per-flight basis.

FUEL	
Fuel Type	Jet-A
Fuel Units	Pounds
Start/Taxi/Takeoff Fuel	110
Total Usable Fuel	2,796
Reserve Policy	EASA Commercial
Default Contingency Fuel (%)	5

Performance Plus account with Dispatch License

8. AIRCRAFT

8.2.8 Filing Section

The filing section is where the aircraft's equipment, wake category, and special considerations for filing purposes are specified. For detailed information on choosing the correct codes, reference the ForeFlight Filing Guide available in-app at **Documents > ForeFlight > ForeFlight Filing Guide** or online at www.foreflight.com/filing-guide.

FAA & ICAO Equipment

Equipment codes specify the *communication* and *navigation* equipment installed on the aircraft. Select the appropriate equipment for your aircraft if it is installed, serviceable, and the flight crew is qualified to operate it. ForeFlight files all flight plans using the ICAO filing form. As a result, it is not necessary to enter FAA Equipment. The option to enter FAA Equipment will be removed from ForeFlight in the future.

ICAO Surveillance Codes

ICAO Surveillance codes specify the aircraft's transponder and ADS-B equipment types.

ICAO Wake Category

ICAO Wake Category is automatically selected based on manufacturer data and should be verified. The following table should be used to verify the ICAO wake category.

Light	7,000 kg (15,500 lbs.) or less
Medium	7,001 kg up to 135,999 kg (15,501 lbs. to 299,999 lbs.)
Heavy	136,000 kg (300,000 lbs.) or more

Aircraft - ICAO Wake Categories

ICAO Perf-Based Nav (PBN)

ICAO Performance Based Navigation (PBN) codes specify an aircraft's Area Navigation (RNAV) and Required Navigation Performance (RNP) capabilities. You can select *up to* 8 RNAV + RNP options.

8. AIRCRAFT

Other Information includes ICAO flight plan *optional* fields. Some entries may be required depending on the information you include in your flight plan.

Other Information Definitions	
CODE	Aircraft Mode S hex address (e.g., A519D9)(Recommended).
COM	Communication capabilities not otherwise specified in the ICAO Equipment field.
DAT	Other data applications (See AC 90-117).
DLE	Delay or holding (at a fix). Insert the point(s) where the delay is to occur followed by the length of the delay in hours and minutes (hhmm) (e.g., KZLA0120).
EET	Estimated Elapsed Time within an FIR boundary (e.g., KZNY0124). EET is automatically calculated and entered by ForeFlight.
NAV	Navigation capabilities not otherwise specified in the ICAO Equipment field.
OPR	Operator/Company Name
ORGN	Flight Plan Originator AFTN address or other appropriate contact details (e.g., KHOUARCW)(Not required by FAA).
PER	Performance Category (e.g. A)(Not required by FAA).
RALT	Four letter ICAO identifier for Enroute Alternates (e.g., EINN CYR KDTW).
REG	Registration (ex. N123AB, CJABC, DABC). Must be entered to receive CPDLC messages. May be entered if different from aircraft identification entered on flight plan. If a Tail Number is entered in the aircraft profile and a flight is filed with a call sign (optional), the tail number from the aircraft profile is automatically copied to this field.
RIF	Route to revised destination (e.g., DTA HEC KLAX).
RVR	Runway Visual Range Requirement in Metres (EuroControl support).
SEL	SELCAL is a signaling method for HF equipment which alerts aircraft that a ground station wishes to communicate with it. Codes are assigned to aircraft operators and not to individual aircraft.
STAY INFO	Additional information for delays at a waypoint. Utilized in EuroControl airspace.
SUR	Surveillance capability. For example, enter "260B" for 2020 ADS-B compliant 1090Mhz transceivers, "282B" for compliant 978UAT transceivers, or RSP180 for equipment meeting RSP performance standards.
TALT	Take-off Alternates (e.g., KTEB).
TYP	Non-standard aircraft type (e.g., homebuilt). Must provide type information if aircraft type is ZZZZ.

8. AIRCRAFT

STS Special Handling specifies the default handling status for the aircraft.

Flight Status	Definition
Altitude reservation (ALTRV)	A flight operated in accordance with an altitude reservation.
ATFM exempt (ATFMX)	A flight approved for exemption from ATFM measures by the appropriate ATS authority.
Firefighting (FFR)	Fire-fighting.
Flight check (FLTCK)	Flight check for calibration of nav aids.
Hazardous material (HAZMAT)	A flight carrying hazardous material.
Head of States (HEAD)	A flight with Head of State status.
Medical flight (HOSP)	A medical flight declared by medical authorities.
Humanitarian (HUM)	A flight operating on a humanitarian mission.
Military separation (MARSA)	A flight for which a military entity assumes responsibility for separation of military aircraft.
Medical Evacuation (MEDEVAC)	A life-critical medical emergency evacuation.
Non-RVSM in RVSM (NONRVSM)	A non-RVSM capable flight intending to operate in RVSM airspace.
Search and rescue (SAR)	A flight engaged in a search and rescue mission.
Military/police (STATE)	A flight engaged in military, customs or police services.

8. AIRCRAFT

Aircraft Filing Remarks

The aircraft Remarks field is used to enter filing remarks that apply specifically to the aircraft. This field is useful for when you want the same remarks included in all or most filed flight plans for the aircraft.

Aircraft Remarks appear on the flight plan form under the Remarks/Other Information section and can be edited on a per-flight basis if needed. When a flight plan is filed, the Aircraft Remarks are copied to the ICAO Flight Plan form under field 18 (Other Information) preceded by RMK/.

8.2.9 Dingy

The *Dinghy* section specifies the type, capacity, and color of any dinghies carried onboard the aircraft. If you carry more than one dingy, enter the count, total capacity (i.e., 2, 10-person dinghies = 20 Persons), and color.

DINGHY	
Count	1
Capacity (Persons)	8
Color	YELLOW
Covered	<input checked="" type="checkbox"/>

Aircraft - Dinghy

8. AIRCRAFT

8.2.10 Emergency

The *Emergency* section specifies the type of emergency equipment on board the aircraft. Choose the appropriate equipment from the drop-down menus if your aircraft carries Life Jackets, Radios, or Survival gear.

Life Jackets

- **Fluorescein** - Powder used to dye water (Sea dye)
- **Light** - Life preserver mounted light
- **UHF** - Ultra-high frequency portable radio
- **VHF** - Very-high frequency portable radio

Radios

- **ELT** - Emergency Locator Transmitter equipped
- **UHF** - Ultra-high frequency portable radio
- **VHF** - Very-high frequency portable radio

Survival

- **Desert** - Survival kit equipped for desert environments
- **Jungle** - Survival kit equipped for jungle environments
- **Maritime** - Survival kit equipped for maritime environments
- **Polar** - Survival kit equipped for polar environments

8. AIRCRAFT

8.2.11 Nav Canada

The Nav Canada section depicts options for specifying the aircraft's Undercarriage and ELT type. This section is only visible to ForeFlight Canada subscribers. Nav Canada information is transmitted to the appropriate FIC when filing *VFR* flight plans in Canada.

ForeFlight subscribers without Canada coverage can specify the information on the filing form when planning VFR flights in Canada. If an ELT is set in the Emergency section, the ELT Type should be specified in the Nav Canada section.

Undercarriage	
Wheels	<input checked="" type="radio"/>
Skis / Skids	<input type="radio"/>
Floats	<input type="radio"/>
Amphibious	<input type="radio"/>
Wheels and Skis	<input type="radio"/>

ELT Type	
None	<input checked="" type="radio"/>
Automatic	<input type="radio"/>
Automatic Deployable	<input type="radio"/>
Fixed	<input type="radio"/>
Automatic Fixed	<input type="radio"/>
Automatic Portable	<input type="radio"/>
Personal	<input type="radio"/>

NavCanada Section

8. AIRCRAFT

8.3 Sharing Aircraft

Aircraft profiles can be shared via AirDrop, message, or email. To share an aircraft, select the aircraft profile and tap the share button in the right corner of the upper toolbar. Choose how to share the profile: AirDrop, Message, or Mail.

If an aircraft is shared via email or message, the recipient must tap the link in the email or message to open ForeFlight Mobile. If shared via AirDrop, ForeFlight Mobile opens automatically. Once ForeFlight has opened on the recipient's device, tap **Accept** to add the shared aircraft.

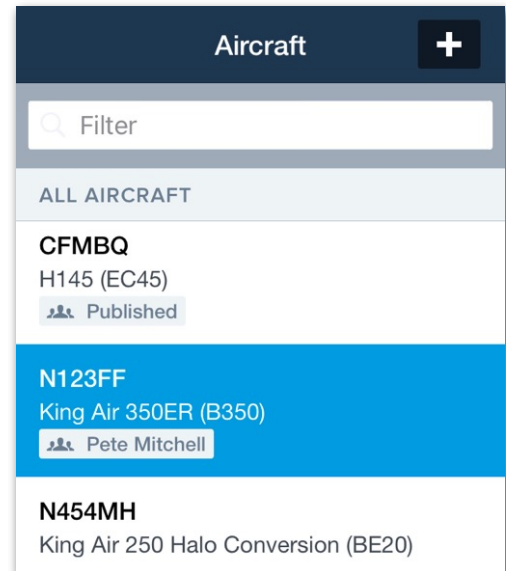
Shared aircraft appear in the Aircraft list with a grey icon and the name of the pilot who shared the aircraft.

If an aircraft is shared by a Performance Plus account to a Basic Plus or Pro Plus account, the recipient will not have access to ForeFlight Performance profiles or by-altitude profiles. Basic Performance Profiles are accessible by the recipient.

Aircraft are shared as read-only profiles. Shared aircraft are locked and cannot be edited by the recipient. Modifications to a shared aircraft by the profile's owner are reflected on the recipient's device.

To modify a shared aircraft as the recipient, the profile must be copied. Once a shared aircraft is copied, duplicate profiles will exist on the device.

The editable duplicate profile will not have the shared profile icon. Once a shared aircraft profile has been copied, the original locked (read-only) shared profile can be deleted if desired.



Shared Aircraft Profile

8. AIRCRAFT

8.4 Copying Aircraft

Published, shared, and user-created aircraft profiles can be copied from the Aircraft view. Copying aircraft create editable versions of read-only published or shared aircraft profiles. Copying is also helpful if you fly multiple aircraft of the same type. To copy an aircraft, open the profile and select **Copy Aircraft** from the bottom of the aircraft details view. Copied profiles are exact replicas of the original profile. There are no indications that a profile was copied.

8.5 Deleting Aircraft

To delete an aircraft, swipe your finger from right to left across the entry in the list view and tap **Delete**. Alternatively, open to profile and select **Delete Aircraft** from the bottom of the details view.

Published aircraft can not be deleted using ForeFlight Mobile. Read-only shared aircraft can only be deleted with the swipe/delete technique.

8. AIRCRAFT

8.6 Published Aircraft

Multi-pilot accounts can publish company aircraft profiles. When an aircraft profile is published, all devices signed in to the account can access the published profiles. Published aircraft profiles can not be edited in ForeFlight Mobile. Only account administrators can manage published aircraft profiles.

To set up company-managed aircraft profiles as the administrator of a multi-pilot account, sign in to www.plan.foreflight.com and select **Aircraft** from the sidebar.

Select an aircraft to publish or create a new profile. Once the aircraft profile is complete, click **Publish** in the lower-right corner of the screen. Published aircraft are available in ForeFlight Mobile once they're published. When an aircraft is published, a *Published* tag appears below the aircraft registration and type in the list view.

Published aircraft can only be edited by account administrators. Published aircraft changes are immediately reflected in ForeFlight Mobile.

Clicking **Unpublish** revokes access to the aircraft for all users other than the administrator. Unpublished aircraft do not appear in ForeFlight Mobile and cannot be selected for flight planning. Published aircraft cannot be deleted. To delete a published aircraft, the aircraft must first be unpublished.

FLIGHT PLANNING

Flight planning with ForeFlight is done with the Maps or Flights view. The views do not sync with one another, however, it is possible to send routes between them.

For most pilots, ForeFlight recommends planning with the Maps view. Start by specifying a departure and destination using the route editor or touch-planning. With departure and destination points specified, use the Route Advisor, Procedure Advisor, and Altitude Advisor to finish planning. As each leg of the route is planned, the **Route Line** is generated dynamically.

Once complete, send the route to Flights to brief and file the flight plan (if applicable). Customers new to ForeFlight are encouraged to watch the **Basics of Flight Plan Filing Webinar**. For additional webinars, visit www.foreflight.com/support/webinars.

9.1 Planning with Search

The Maps and Airports views provide a search bar in the upper toolbar. The search bar can be used to plan a route. Create a route with search by typing identifiers, separated by a space, in the correct order. Tap the route in the search results to add it to the route editor (FPL Editor).

NOTE: Only airports with ICAO, IATA, FAA, or other short-code identifiers can be entered in the search bar as part of a route. Airports without codes must be searched using their full names e.g. “Garbenheimer Weisen”, and these often have more than one word. But the search bar cannot recognize names with spaces as part of the same route element. To plan flights to or from these airports, use the **Touch-Planning** or **Route Rubber-Banding** methods.



Planning with Search

9. FLIGHT PLANNING

Airways, arrivals, departures, and custom waypoints are supported with search. Your current location, if it can be determined, can be used as the origin for your route. Enter “D” followed by an identifier to plan directly to a location. ForeFlight replaces the “D” with your position. For example, entering D KLAX, plans a route for your current location direct to Los Angeles International Airport.

Entire airways can be viewed on the map by searching for the airway identifier. For example, *V16*. Airways can also be used in a route. For example, *NIKOL V244 ILC*. ARINC 424 coordinates (5275N) can also be entered in the Search box or Route Editor.

Terminal procedures, as well as associated transitions, are supported in a route. If the procedure requires a runway, ForeFlight will prompt you for one and provide an example. When briefing and flying terminal procedures, it is critical to *always* refer to the published arrival/departure plate as the ForeFlight Maps view is *not able to show heading vectors and all altitude info*.

9. FLIGHT PLANNING

When building a route in the search box you can also provide basic performance information about your aircraft. These can be in any order, but must come after the route waypoints.

Example searches:

- **KJFK KSFO** - this is a simple direct route from NY to San Francisco.
- **D KSFO** - this is a direct route from your current position to San Francisco.
- **KJFK FLW 32.3N/99W** - this is a route from NY to the FLW VOR to a lat/lon waypoint.
- **KSFO FLW/320/15** - this is a route from KSFO to a point on the 320 radial 15nm from FLW VOR. If a VOR is not given as the reference waypoint, then the directional information is assumed to indicate a bearing, not a radial. Enter “M” or “T” after the bearing to position the point on the magnetic or true bearing.
- **KCLT RDU J209 ORF J121 SIE.CAMRN4 KJFK** - this route includes multiple jet airways and an arrival.
- **KUZA KOSH 8000ft** - this is a route from Rock Hill to Oshkosh at an altitude of 8,000'. The selected aircraft's performance profile is used because fuel burn and true airspeed cannot be entered in the Search box.
- **KJFK YQM V311 YQX 5050N 5330N 5315N EGLL** - This hypothetical route from JFK to London Heathrow uses ARINC 424 coordinates between Gander and Heathrow.

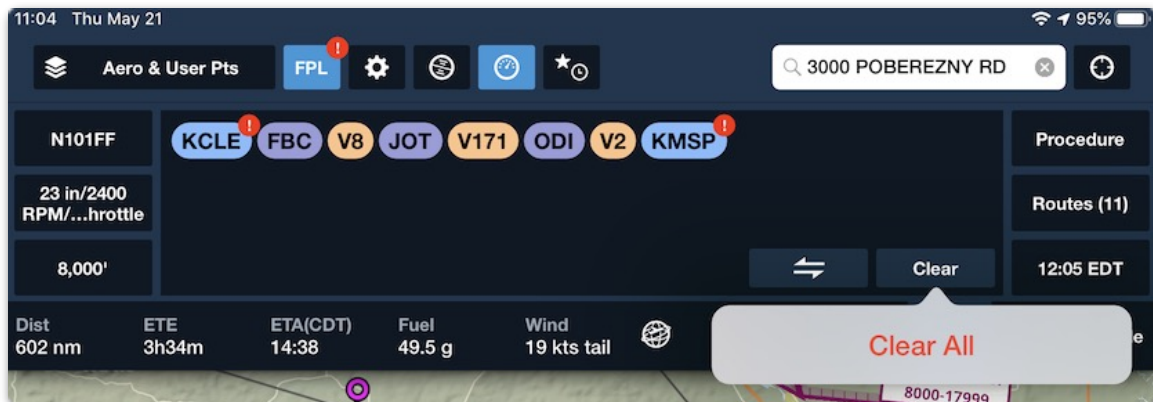
A route search can also include a tail number of an aircraft setup in the More > Aircraft view. When that aircraft has performance data it will be automatically used. Lastly, you can also indicate a departure time in your route search; ForeFlight will use this time to incorporate the proper winds aloft forecasts into your time and fuel usage calculations. If you don't provide a time, ForeFlight Mobile assumes you are departing ASAP.

9. FLIGHT PLANNING

You can include the departure time as a specific time or as a time relative to *now*, as a local time or Zulu time.

- **KUZA KOSH 8000 1315Z** - The route details will be calculated for conditions starting at 1315Z. The time can be designated in Zulu time, as in the example, or local time, such as: 13:15, 1:15p, 1:15pm, 1:15a, 1:15am, or 1:15 (with no am/pm given, ForeFlight will assume you intend the next upcoming 1:15).
- **KUZA KOSH 8000 +60** - The route details will be calculated for conditions starting 60 minutes from now. This relative time *must* begin with a + and may be specified in minutes, hours, or a combination; +60 or +60m for minutes, +2h for hours, +2:30 for 2 hours 30 minutes.

A route entered in search will automatically be transferred to the route editor. If you enter a new route in the search box it will replace the route in the route editor. To clear the current route from the search box, tap the “X” in the search bar. To clear the route from the route editor, change to the **Edit** view and tap the **Clear** button, then tap **Clear All**.



Clearing a Route

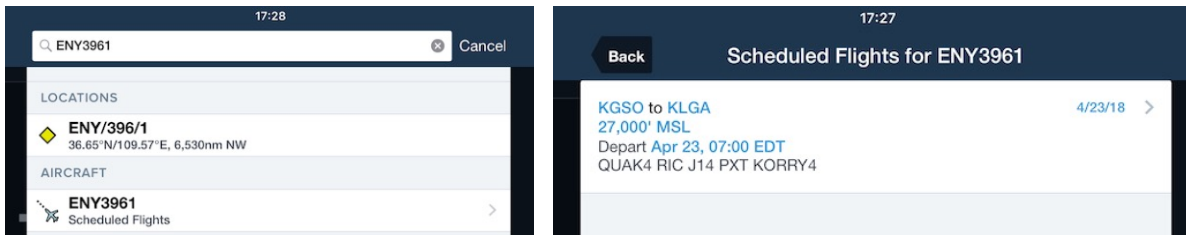
9. FLIGHT PLANNING

9.1.1 Scheduled Flight Search

You can use the search bar to find **scheduled (upcoming) flights** for an aircraft and load them into the Route Editor. Search by tail number (e.g. N12345), call sign (e.g. NGF345), or commercial flight number (e.g. SWA44).

ForeFlight searches FlightAware for any flights that are either currently en route or set to depart in the next 24 hours and displays those flights in a list. Each flight listed includes the departure and destination airports, the filed altitude, the departure time, and the filed route. Tap on a flight to load the route and altitude into ForeFlight's flight plan editor.

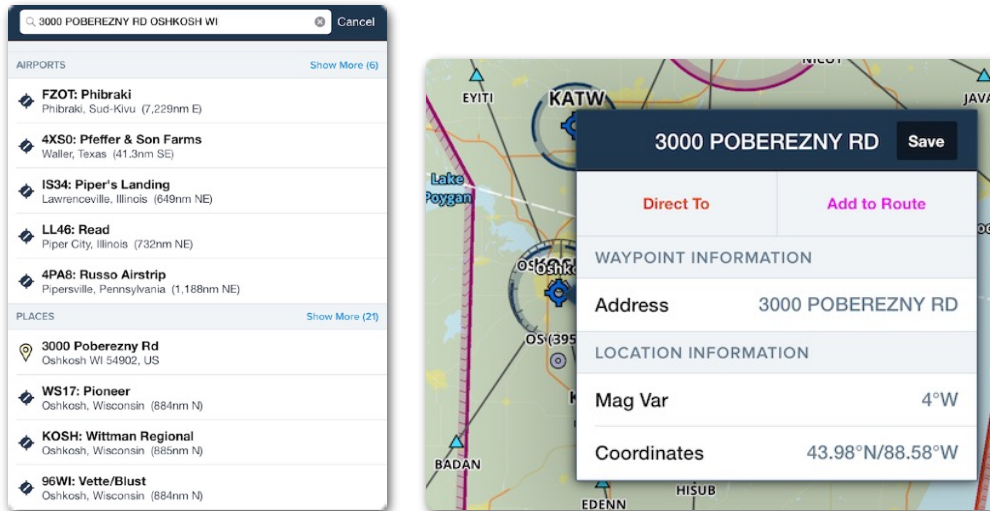
If ForeFlight Mobile is receiving ADS-B data while in-flight, you can also search for an N-number or callsign (full or partial) to locate that target on the Map.



9. FLIGHT PLANNING

9.1.2 Street Address Search

If your device is connected to the Internet, you can search for a Street Address. Tap on an address in the search results to locate it on the map and add it to your route (either “Direct To” or “Add to Route”) or save it as a **user waypoint** by tapping **Save**.



If you have a *Performance Plus* plan with U.S. coverage there is an available Offline Address Database that lets you search for U.S. state and territory street addresses while the device is in-flight without Internet access.

To use the Offline Search, tap **More** > **Downloads** > **Data Settings** > and enable **Street Addresses**. This will allow the Street Address database to download for each selected state.

Offline Search supports the standard format for U.S. street addresses, specifically the address number, street name, street suffix (including contractions), town/city name, two-letter state identifier, and zip code.

ForeFlight only requires the first two terms to begin searching and returning matches, and it prioritizes matches that are closer to your position. Finding addresses that are far away, especially those in other states, requires additional terms like the state and zip code.

9. FLIGHT PLANNING

9.2 Planning with Maps

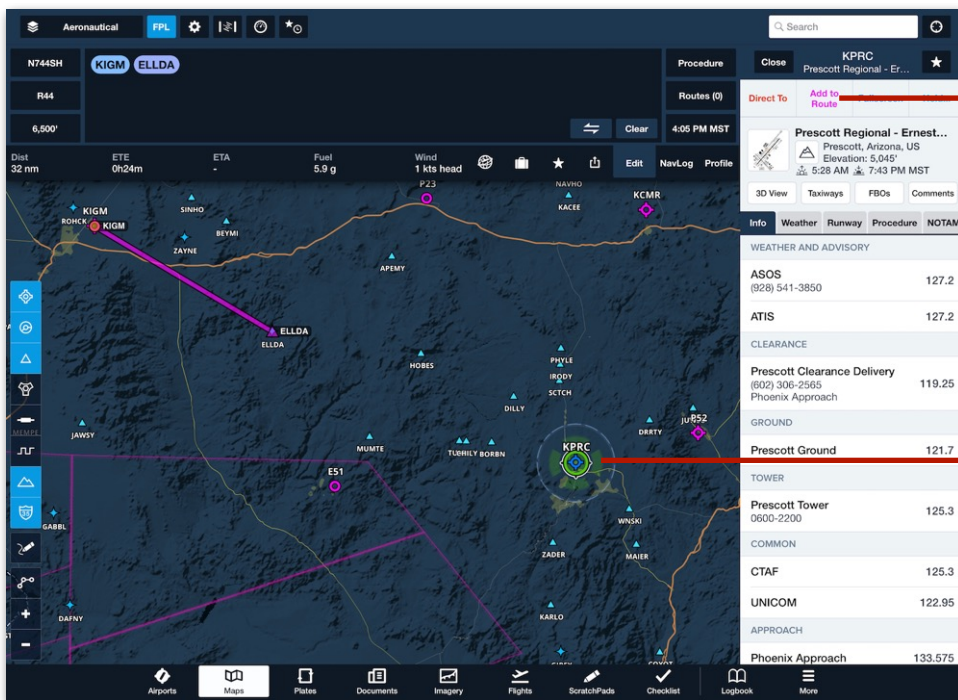
Planning a flight with the Maps view is accomplished using search, the route editor (FPL Edit mode), touch-planning, or a combination of the three. Procedure Advisor, Route Advisor, and Altitude Advisor are used for planning cruise altitudes, routes, and arrival, departure, or approach procedures.

When planning with touch, enabling the **Aeronautical Map** layer is recommended. Aeronautical map elements respond to a single tap reducing the number of taps necessary to plan a flight.

9.2.1 Touch-Planning

To plan a flight with touch-planning, tap an Aeronautical Map element (airport, waypoint, navaid) and use the **Direct To** or **Add to Route** options at the top of the sidebar. Selecting **Add to Route** appends the element to the end of the existing route. Selecting **Direct To** creates a route from your present position direct to the element.

When the Aeronautical map is not enabled, press and hold the map to reveal the **Add to Route** menu. Tap an element in the Nearby list to add it to the route. Tap **More > Details** in the Add to Route menu to reveal the Hold Advisor.



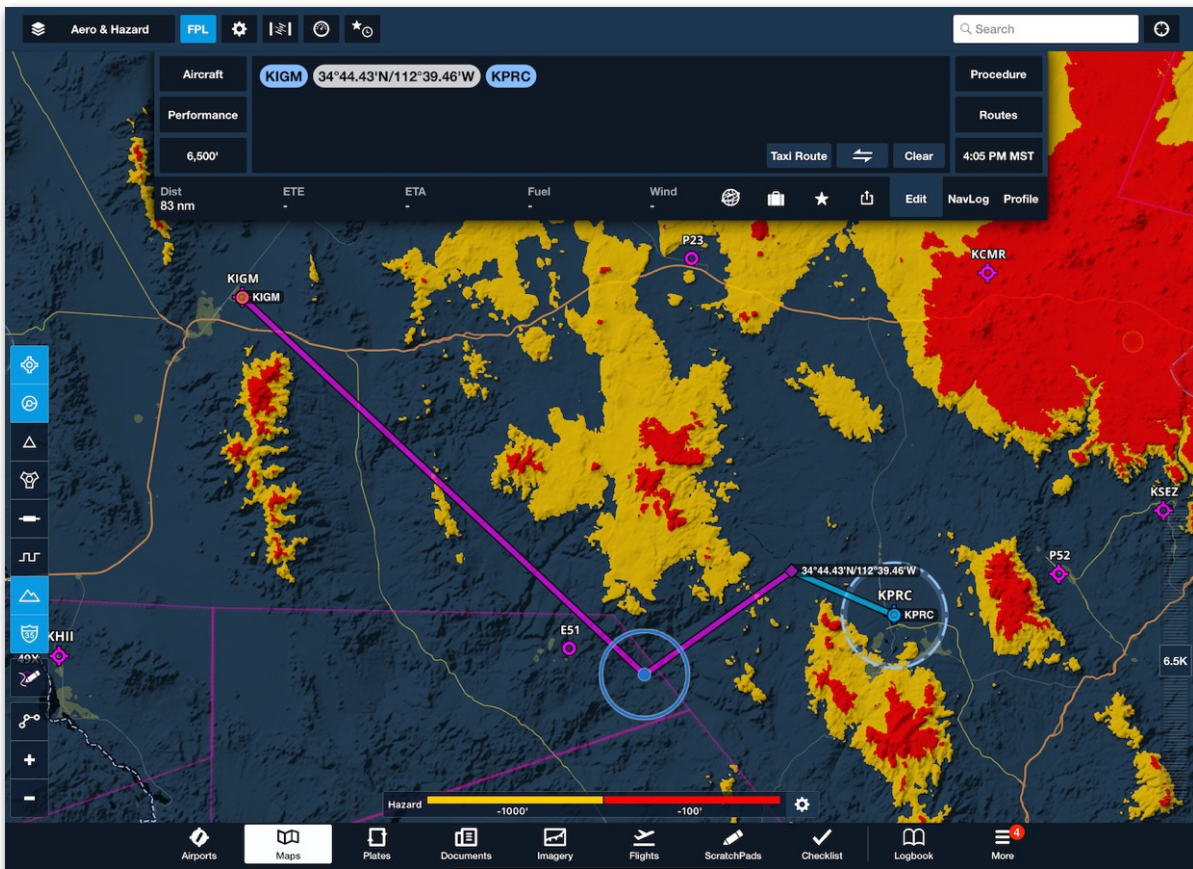
Touch-Planning

9. FLIGHT PLANNING

9.2.2 Route Rubber-Banding

The Maps view supports rubber-banding. Rubber-banding a route is useful for planning around terrain, inclement weather, and airspace. To use route rubber-banding, add two or more points to the route. Tap and hold the route line until a blue circle appears. Without lifting your finger, drag the route line on the map. When your finger is lifted from the screen, the *Insert into Route* menu appears in the sidebar.

The Insert into Route menu lists the coordinates where your finger was lifted and nearby airports, navaids, and waypoints. Use the buttons near the bottom of the menu to filter the nearby list. Tap the coordinates or a nearby element to insert it into the route.



Rubber-banding around terrain

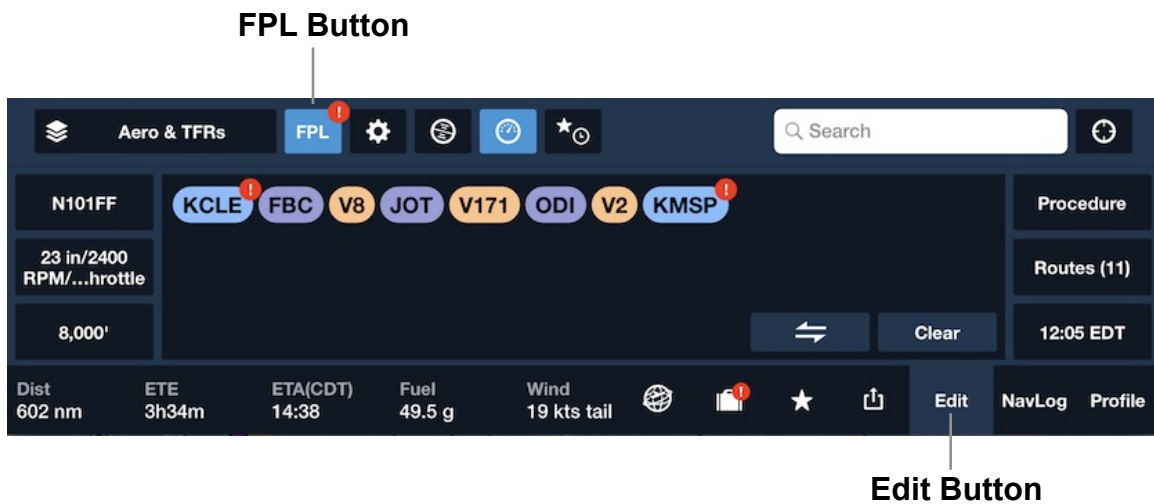
PRE FLIGHT

9. FLIGHT PLANNING

9.2.3 Route Editor

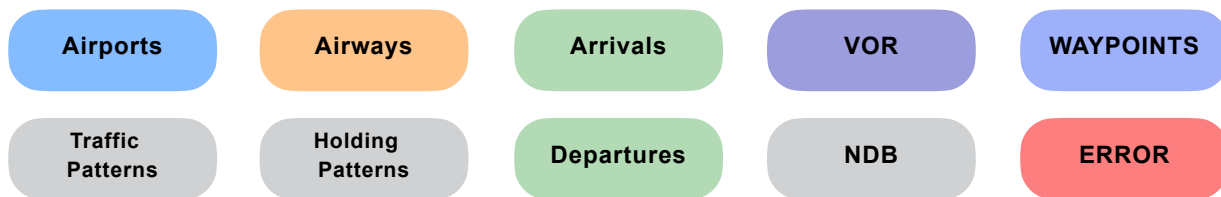
Planning with the route editor is accomplished with the keyboard. Tap the **FPL** button and select **Edit** to display the route editor. With the route editor displayed, tap in a dark blue blank space to reveal the keyboard.

Buttons on the left side of the route editor specify the aircraft, performance profile and cruise altitude. The right side buttons open **Route Advisor**, **Procedure Advisor**, and set the Estimated Time of Departure (ETD).



PRE FLIGHT

Manually enter airport, waypoint, and navaid identifiers to plan a route. Route elements are color-coded based on type.



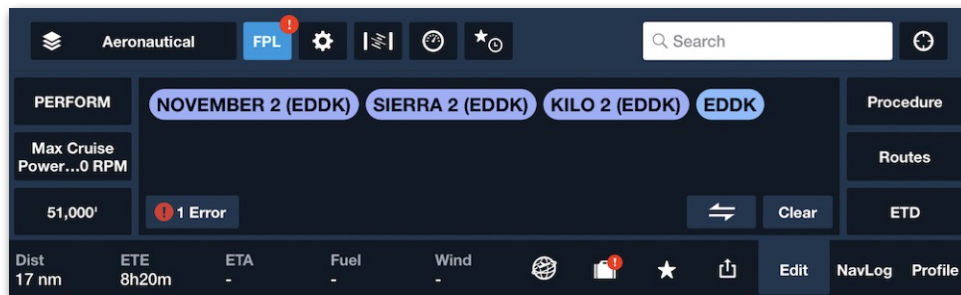
Route Editor - Element Icon Colors

NOTE: Only airports with ICAO, IATA, FAA, or other short-code identifiers can be entered in the Route Editor. Airports without codes are identified in ForeFlight using their full names e.g. “Garbenheimer Weisen”, and these often have more than one word. The Route Editor cannot accept names with spaces as part of the same route element. To plan flights to or from these airports, use the **Touch-Planning** or **Route Rubber-Banding** methods.

9. FLIGHT PLANNING

Waypoints with Associated Airports

If map elements such as VFR waypoints are associated with a nearby airport, they will appear in the Route Editor with their name, followed by the associated airport code in parentheses e.g. **NOVEMBER 2 (EDDK)** for the “November 2” waypoint associated with the Cologne-Bonn (EDDK) airport in Germany. These elements follow the same labeling convention in the Navlog, Profile View, and 3D View.



Route Element Menus

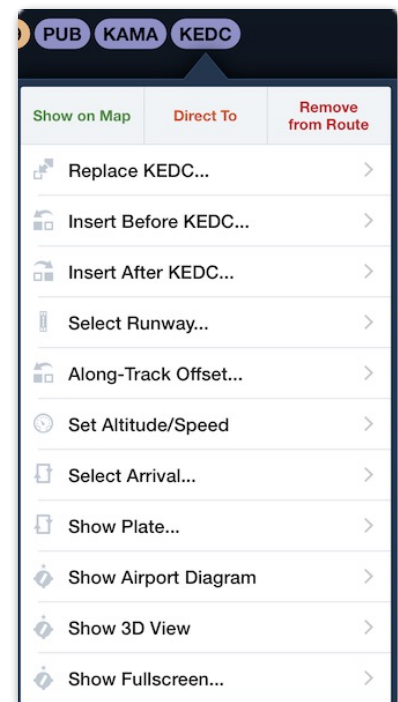
The route element bubbles respond to touch. Tap an element to reveal the menu. To pan the map to a point in the route, tap the entry and select **Show on Map**.

To plan a direct route to an entry, tap the route element and select **Direct To**.

To remove an entry, tap it and select **Remove from Route**. Alternatively, tap and hold your finger on an entry to pick it up and drag it out of the route editor. Release your finger from the screen to delete it.

To move an entry, touch-hold on it to pick it up then move it to the new location and lift your finger to let go.

To add a route item in the middle of the route, tap any existing item to display the action menu for that item. Tap either of the “Insert...” buttons to show the ID entry field. Type in the new entry to add and press Insert or tap the return key on the keyboard.

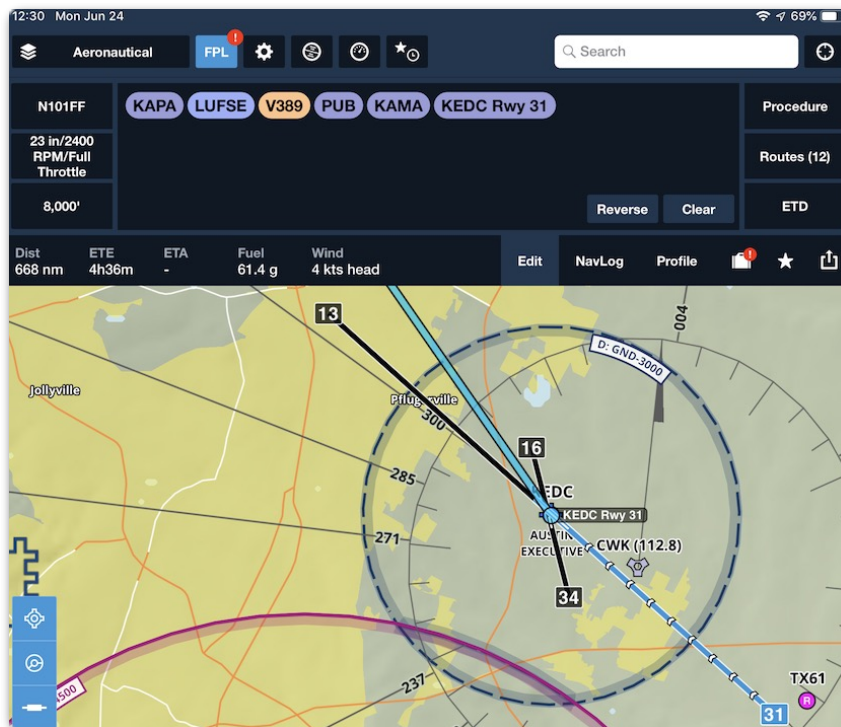


**Route Editor
Airport Menu**

9. FLIGHT PLANNING

Tap on the Departure or Destination bubble and choose **Select Runway...** to open the runway selection pop-up. The pop-up shows a list of available runways along with the most recent wind data.

When you choose a runway, that runway is then highlighted on the Maps page: at the Departure airport with blue chevrons on the runway and white chevrons extending out from the runway centerline, and at the Destination airport with an extended blue line with white chevrons leading to the runway centerline. If you choose a runway and traffic pattern via the Procedure Advisor, the blue chevrons will reflect that runway choice.



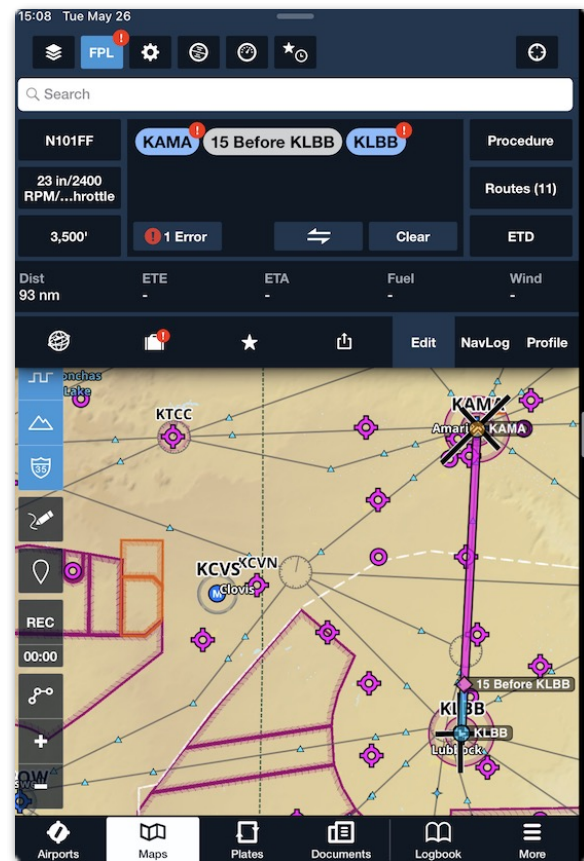
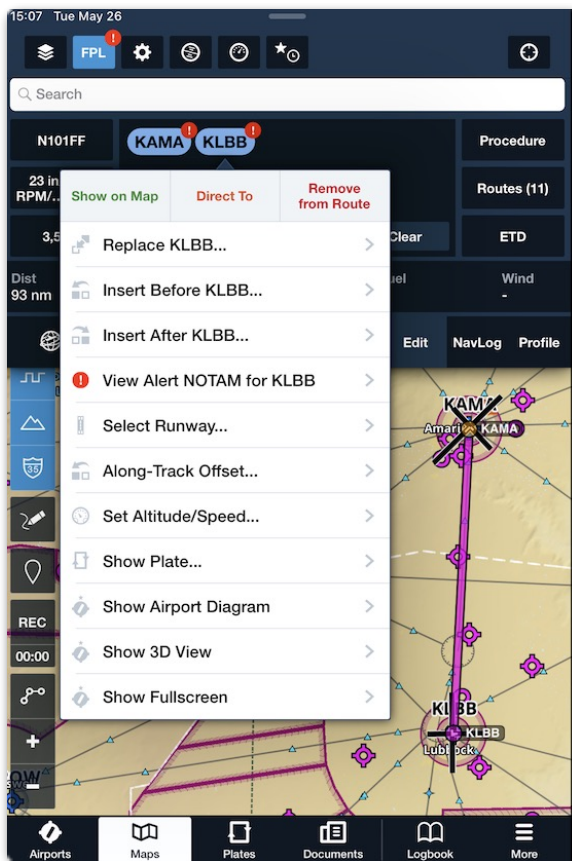
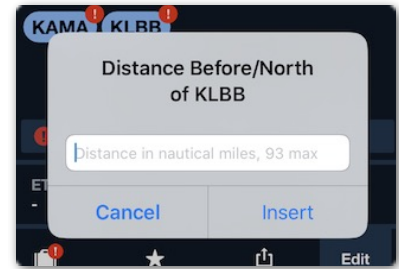
Arrival: blue line and white chevrons leading to runway

9. FLIGHT PLANNING

The **Along-Track Offset Before...** option allows you to add a point at an arbitrary distance before the end of the leg. Multiple Along-Track Offsets can be added to your route, and to an individual leg.

When you tap “Along-Track Offset Before...” the popup shows the total distance of that current leg. Enter the distance in nautical miles before the ending point (eg: a distance less than the total distance) at which you would like to add the point.

The point is then shown as in the example above “15 Before KLBB”. If you send the route to Flights, that point is then converted into a latitude/longitude coordinate.



Along Track Offset

9. FLIGHT PLANNING

Set Altitude/Speed is available to Basic Plus and Pro Plus subscribers. This feature allows pilots to specify an altitude, speed, or flight rule change at a waypoint.

Set Altitude/Speed/Time adds the ability to include a delay or stay at a waypoint. **Set Altitude/Speed/Time** is only available for Performance Plus and Business Performance subscribers.

When **Set Altitude/Speed/Time** is selected, a waypoint menu appears with options for entering a specific altitude, speed, delay duration, and flight rule change.

The waypoint menu can be accessed in three ways.

- Tap a waypoint in the FPL editor and select **Set Altitude/Speed/Time**.
- Tap a route element on the map and select **More > Set Altitude/Speed/Time**.
- Tap a waypoint in the Profile View.

The screenshot shows a 'Waypoint Menu' with a dark header and a light body. The menu is titled 'Altitude/Speed/Time for...' and has a 'Close' button. It is divided into sections: 'ALTITUDE' with 'Start At' (selected) and 'Cross At' buttons, and a value of '9,500'. 'Altitude Units' is set to 'Feet'. A note states: 'Altitude changes: Start At starts from a waypoint and Cross At completes at a waypoint'. The 'SPEED' section shows 'Speed' as 'No change' and 'Speed Units' as 'Knots'. The 'DELAY/STAY' section shows 'Duration' as 'Unavailable' and a note: 'Delay/STAY changes not permitted when Altitude or Speed defined'. The 'FLIGHT RULES' section shows 'Flight Rules' as 'No change'.

Waypoint Menu

Altitude Changes

The set altitude option allows pilots to plan routes with changing cruise altitudes. This may be useful when planning around airspace or terrain. En route altitude changes are reflected in the following locations:

- FPL editor in parenthesis next to the waypoint they're associated with.
- Maps view next to the waypoint when the Route Labels map setting is enabled.
- Profile View route line.



FPL Editor and Map Altitude Changes

9. FLIGHT PLANNING

When determining flight planning results, ForeFlight factors the selected aircraft's performance policy, forecast weather, and cruise altitude. Altitude changes are displayed in the Navlog. Altitude changes are also included in the route section of the filing form and are transmitted when filing.

NOTE: Altitude changes are displayed in the Navlog for all waypoints except latitude/longitude waypoints.

To add an altitude change to the route, select a waypoint from the Profile View, Map, or FPL editor. Select **Set Altitude/Speed/Time** (if necessary) and enter the new cruise altitude for the waypoint.

If the altitude change is to begin at the waypoint, select **Start At** when entering the new cruise altitude. If a climb or descent is to be started before the waypoint so that the altitude is reached at the waypoint, select **Cross At**. Multiple altitude changes can be added to a route provided:

- The altitude change does not require the aircraft to exceed its climb or descent capability.
- The altitude change does not occur during the initial climb or final descent phase of flight. If an altitude change is entered during the climb or descent phase, the altitude change will not be reflected in the Profile View or Navlog.

Using Profile View to add an altitude change is recommended to aid in evaluating airspace and hazards when making changes

Speed Changes

Speed change allows pilots to file flight plans with changes to the planned true airspeed. Speed changes are included in the route section of the filing form and are transmitted when filing. Speed changes are generally not required for flight plans outside of EuroControl airspace.

To add a speed change, select the waypoint where the change is to occur from the Profile View, Map, or FPL editor. Select **Set Altitude/Speed/Time** and enter the new cruise speed.

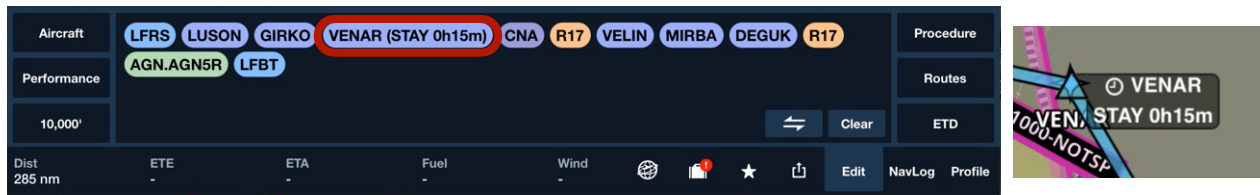
Speed changes are displayed in the FPL editor next to the waypoint in parentheses and on the map when Route Labels are enabled. ForeFlight does not factor in speed changes when determining flight planning results. Thus the Navlog does not reflect manual changes to speed.

9. FLIGHT PLANNING

Delays/Stays

ForeFlight Mobile supports delays (FAA/NavCanada) and stays (Eurocontrol) for flight planning and filing purposes. Add a delay to your flight plan with the **Set Altitude/Speed/Time** option (Performance Plus or Business Performance account required).

Basic Plus and Pro Plus customers can manually enter delays and stays using the formatting: *identifier/Dh+mm*. Below is an example of a 15-minute stay at the waypoint VENAR: **VENAR/D0+15** using a Performance Plus account.



15 minute stay at VENAR

Delays and stays can be added to en route waypoints, latitude-longitude, fix-radial-distance, intersections, and navaids.

A maximum of nine delays/stays are supported per flight. Stays are not supported for flights outside of Eurocontrol airspace. Delays (US) are not supported for international flights. Delays/Stays cannot be added to terminal arrival or departure procedures.

When a route containing a delay/stay is sent to Flights for filing purposes, the delay/stay is included in the flight's route section. When filing a flight plan with a stay, Eurocontrol requires remarks (STAYINFO).

To add a delay or stay using the **Set Altitude/Speed/Time** option:

1. Plan a route using the Maps flight plan editor.
2. Tap the route element where the delay/stay is to take place.
3. Tap **Set Altitude/Speed/Time**.
4. Enter a duration using the time picker.
5. Add remarks (EuroControl required).
6. Tap anywhere outside the pop-up window to save the changes.

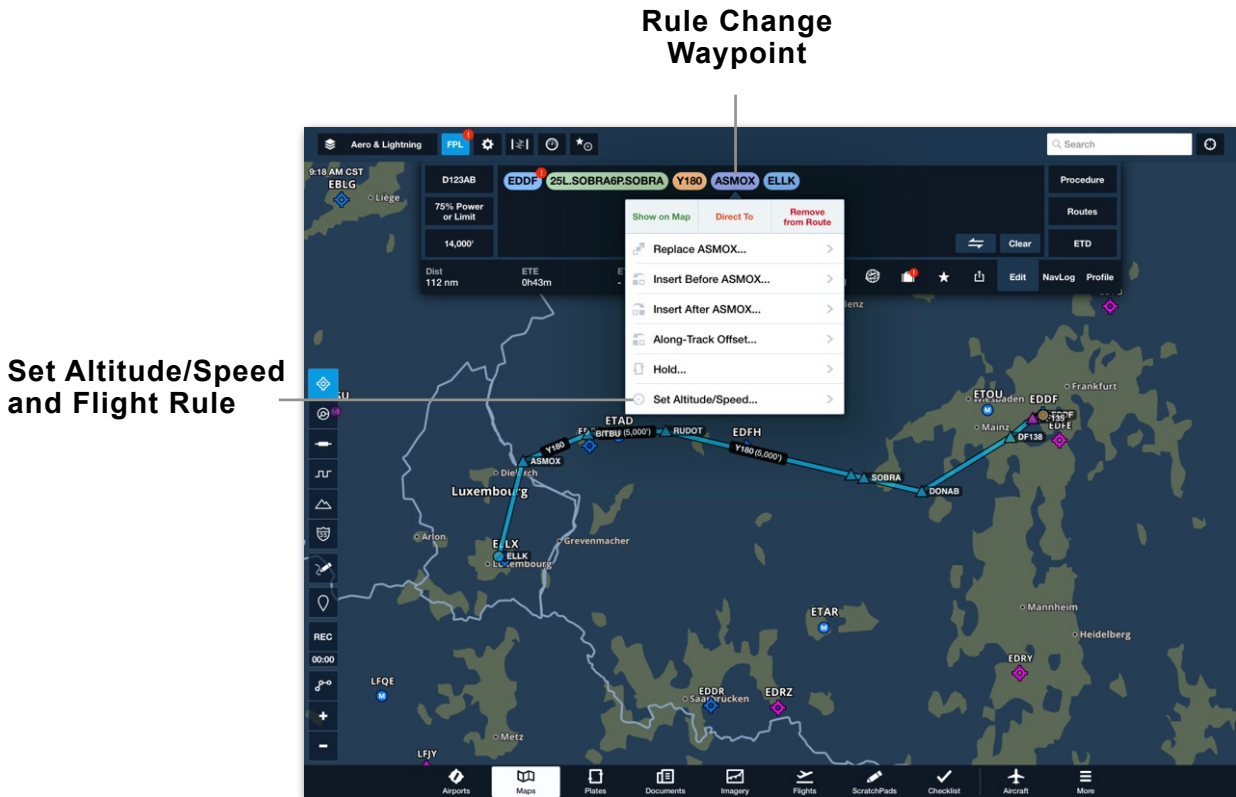
Remarks added with the flight plan editor pop-up are copied to field 18 (Other Information/STAYINFO) of the ICAO filing form.

9. FLIGHT PLANNING

Flight Rule Changes

The Flight Rule change option allows pilots to plan and file composite flight plans. Composite flight plans are generally only filed in Europe. To plan a composite flight:

1. Enter the route in the flight plan editor.
2. Tap the waypoint in the route where the flight rule transition is to occur.
3. Select **Set Altitude/Speed**.
4. Tap **Flight Rules** and select **VFR** or **IFR**.



Manually Changing Flight Rules

When a flight containing a rule change is sent from Maps to the Flights view, the flight rule change is automatically added to the route. When filing the flight plan, it is necessary to select the appropriate Flight Rule in the Flight Plan Type section.

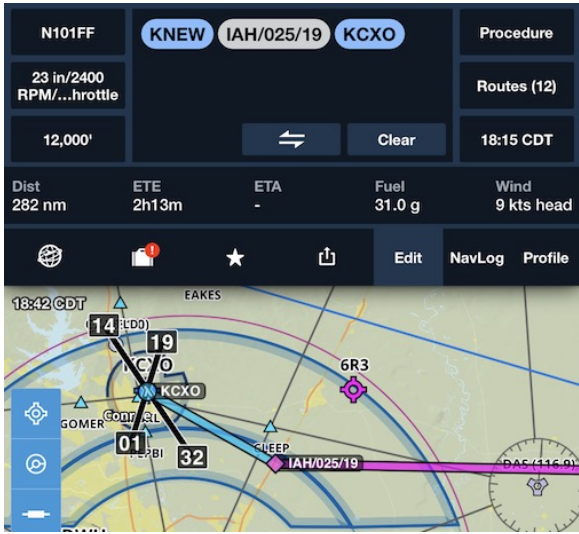

When filing a composite flight plan for the first time, pilots are encouraged to contact the appropriate agencies to ensure the plan was filed correctly.

NOTE: Flight Rules do not automatically update on the filing form when planning a composite flight. Flight rules must be *manually* changed on the filing form.

9. FLIGHT PLANNING

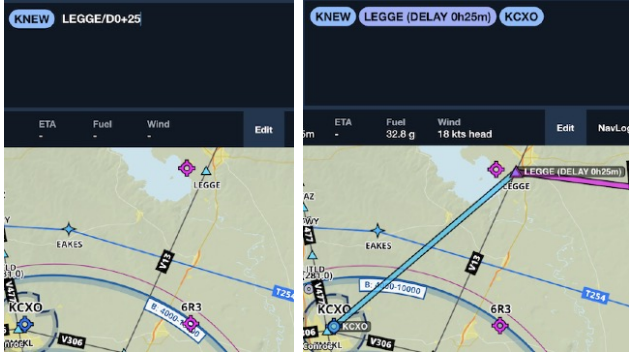

9.2.4 Slash Codes

The Route Editor supports various elements that are defined with a forward slash.

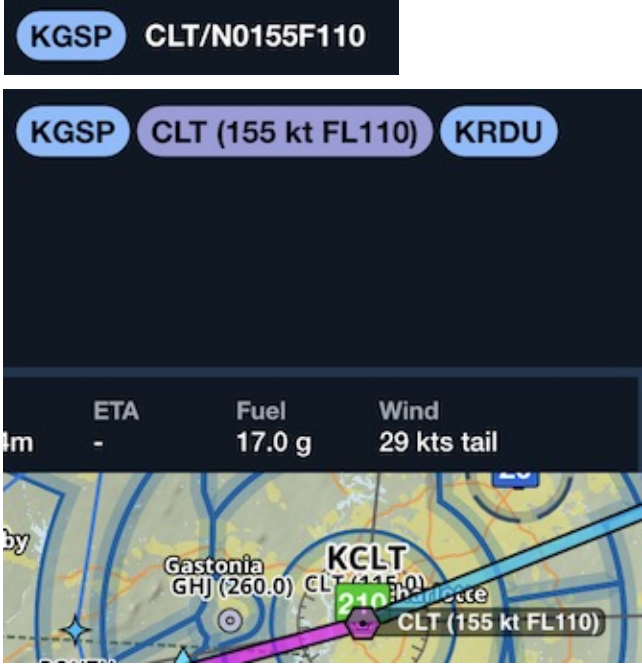
Slash Code	Example	Usage
<p>FIX/RAD/DIST</p> <p>Fix, radial, distance.</p> <p>Ex: IAH/025/19</p> <p>19nm from IAH on the 025 radial</p>		Worldwide
<p>FIXRADDIST</p> <p>Ex: LFK225030</p> <p>30nm from LFK on the 225 radial</p>	<p>Alternative not using “slash” to separate elements.</p> <p>RAD & DIST = 3 digits, with leading 0’s if needed</p>	US only
<p>FIXRAD/FIXRAD</p> <p>Plots a point at the intersection of one fix and radial with the other fix & radial.</p> <p>Ex: LFK270/CLL030</p>		Worldwide

PRE FLIGHT

9. FLIGHT PLANNING

<p>FIX/Dh+mm</p> <p>Delay h hours, mm minutes, at the fix, which can be a VOR, Waypoint, Airport identifier, or FIXRADDIST.</p> <p>Ex: LEGGE/D0+25 Delay 25 minutes at LEGGE</p> <p>Ex: CTF090010/D1+05 Delay 1h 5min at a point 10 east of CTF VOR</p>		<p>US only</p>
<p>STAY/hhmm</p> <p>Stay (delay) at the preceding waypoint for hh hours and mm minutes.</p> <p>Ex: EKLAD/STAY0010 Delay 10 minutes at EKLAD</p>	 <p>See How do I file a STAY at a waypoint within my flight plan in Europe for more details.</p> <p>NOTE: STAY requires a waypoint after the “STAY”. If you are adding a STAY at the final waypoint in your route before the airport you must enter it directly in the Flights: Route box. In the Flights: Route box enter the waypoint, then the STAY, then DCT the same waypoint.</p> <p>eg: for a route ending ...SHA EINN where you wanted to STAY/0030 at SHA, enter it in the Flights: Route box as:</p> <p>...SHA STAY/0030 DCT SHA</p>	<p>Europe only</p>

9. FLIGHT PLANNING

<p>FIX/N0000F000</p> <p>FIX/F000</p> <p>FIX/N0000</p> <p>Change Speed (N0000 in knots) or Altitude (F000 in flight level) at that fix.</p> <p>Ex:</p> <p>CLT/N0155/F110</p> <p>Change to 155 kts and 11000' at CLT</p>	 <p>NOTE: Can also be selected by tapping the route “bubble” and choosing “Set Altitude/ Speed”.</p>	<p>Worldwide</p>
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9. FLIGHT PLANNING

9.3 Route Advisor

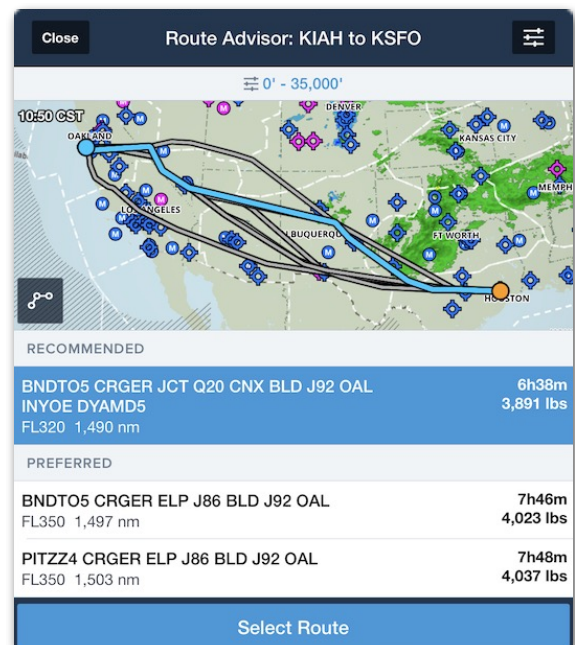
The Routes button opens Route Advisor, which displays a list of potential routes that you can select for a pair of departure and destination airports. To the right of the list is a Route Preview, showing the path of every route on an interactive map. Tap on a route in the list to highlight it on the map. You can pan and zoom around the Route Preview map and tap the Zoom to Route button in the bottom left to return to a view of the full route. Tap Select Route after tapping on a route in the list to add the route in the Route Editor. This will replace any route that is already there.

When a Performance Profile has been selected, the estimated time enroute and fuel burn based on that profile are shown for each route on the right, along with the route's total distance.

Route Advisor requires an internet connection to load new routes for an airport pair, but once those routes are loaded they can be viewed offline as long as the same departure and destination airports are entered in the Route Editor.

Types of routes shown include:

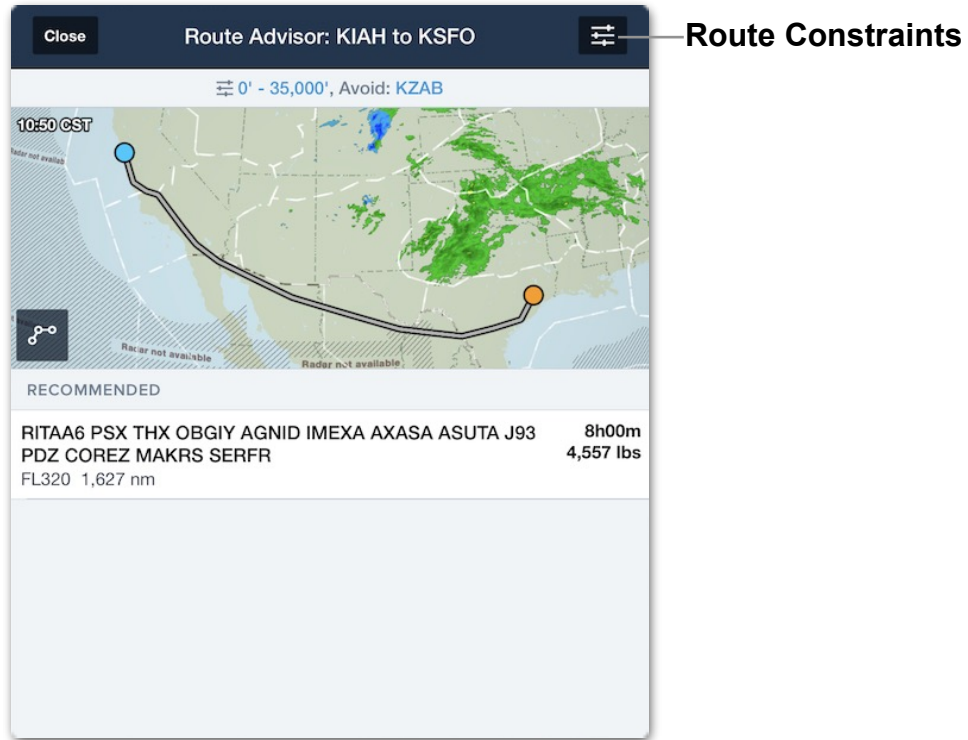
- **Recommended** (Performance-tier only) - provide the best route based on the winds, aircraft, time/fuel savings, and chance of being cleared as filed. Recommended routes do not explicitly analyze terrain.
- **TEC/Preferred** - these routes are commonly used and may include an altitude or range of altitudes that are typically given with the route.
- **ATC Cleared** - these are routes that ATC has cleared in the recent past. These show the departure time of the most recently-cleared flight, the number of times a route has been cleared in the past year, and the type of aircraft and clearance altitude for which the route was given.
- **Airway** - these are victor-airway based routes.



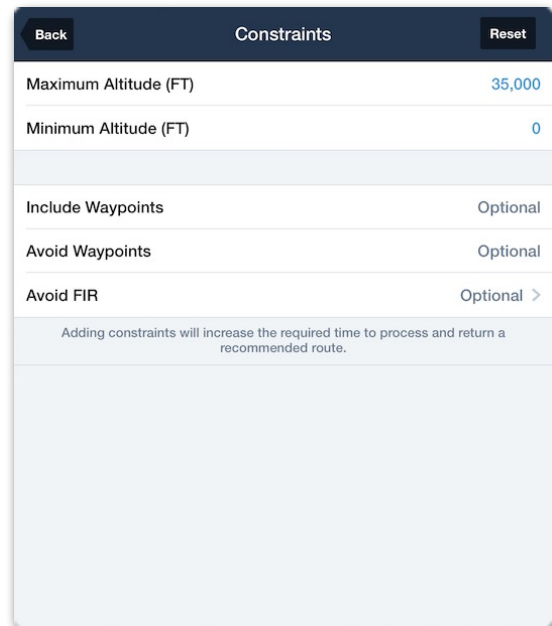
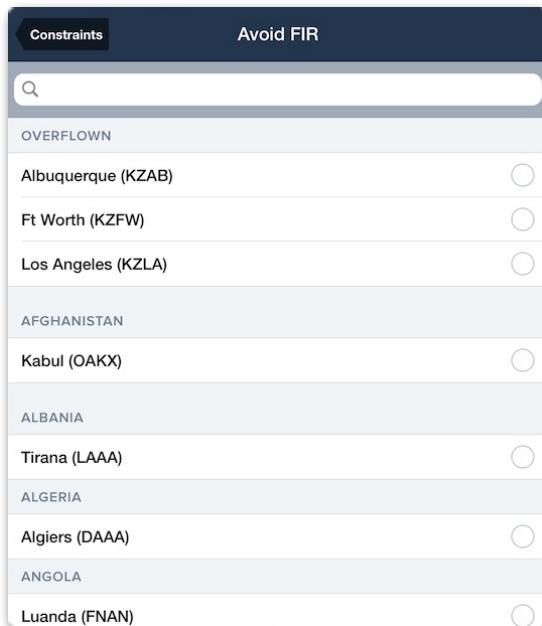
9. FLIGHT PLANNING

9.3.1 Route Constraints

If needed you can specify constraints to include or exclude any waypoint from your route, and avoid any FIR. Tap **Constraints** in the upper-right to specify the waypoints to include or avoid, or the FIR(s) to avoid.



PRE FLIGHT

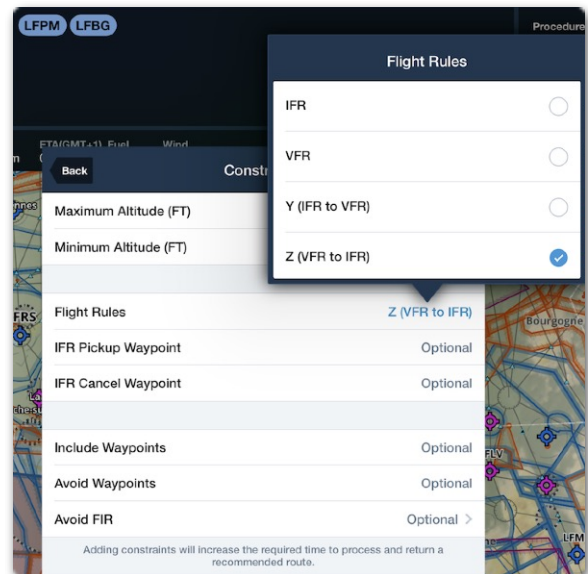
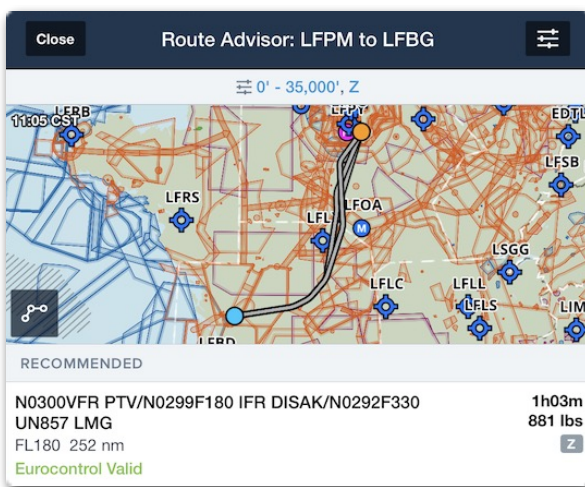


9. FLIGHT PLANNING

9.3.2 Eurocontrol Valid and Invalid Routes

For any route that passes through Eurocontrol airspace, Route Advisor will evaluate the route against Eurocontrol’s complex system of route constraints and display a “**Eurocontrol Valid**” or “**Eurocontrol Invalid**” label beneath the route. For European routes the Route Advisor will also show if a route is Y or Z.

If needed to find a “**Eurocontrol Valid**” route through complicated European airspace, tap the “Constraints” button in the upper-right corner of the Route Advisor window to choose maximum and minimum altitudes, as well as flight rules (VFR, IFR, Y, Z).



IMPORTANT: Eurocontrol validation may fail if your aircraft’s ICAO configuration is incomplete or incorrect. Before planning a flight, make sure to correctly set up your aircraft’s ICAO configuration in [More > Aircraft](#).

9. FLIGHT PLANNING

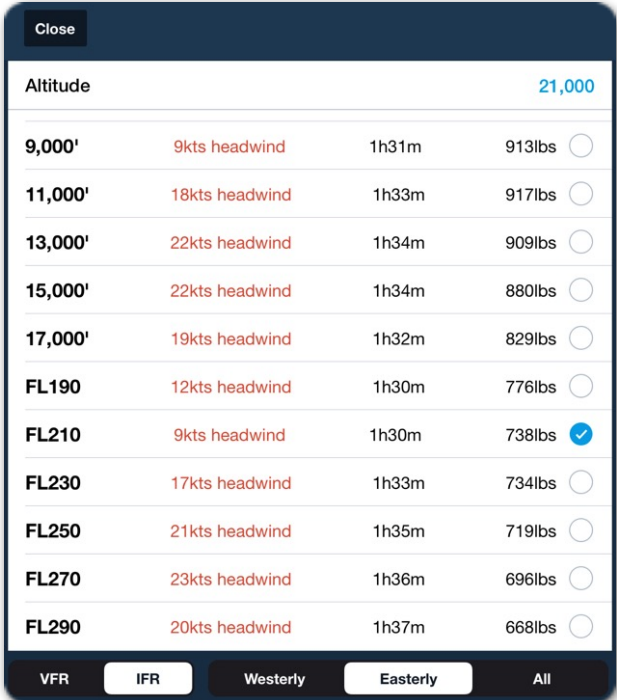
9.4 Altitude Advisor

When you create a new flight, the altitude is automatically set to your aircraft's default cruise altitude. Open Altitude Advisor to review other altitudes. The highest altitude shown is based on the value for your aircraft's maximum ceiling altitude.

All altitude options are evaluated by ForeFlight's planning engine and performance results are shown next to each one, including the average head/tailwind component over the entire route.

If performance results are not shown for a given altitude (eg: "-----") it means that your aircraft cannot achieve the desired cruise speed quickly at that altitude, due to warmer than standard temperatures, payload/fuel weight, a cruise speed that is faster than can be achieved at that altitude, or a route too short to achieve that altitude.

The buttons along the bottom of Altitude Advisor allow you to filter the altitudes shown. The VFR/IFR buttons on the left filter the altitudes to those permissible for the selected flight rules. The Westerly/Easterly/All buttons on the right filter altitudes to those that are fileable based on your flight's direction. ForeFlight will automatically filter this list to only show relevant altitudes as you make changes to a flight.



The screenshot shows the Altitude Advisor interface. At the top right, the current altitude is 21,000 feet. The main list contains the following data:

Altitude	Wind	Time	Weight	Selection
9,000'	9kts headwind	1h31m	913lbs	<input type="radio"/>
11,000'	18kts headwind	1h33m	917lbs	<input type="radio"/>
13,000'	22kts headwind	1h34m	909lbs	<input type="radio"/>
15,000'	22kts headwind	1h34m	880lbs	<input type="radio"/>
17,000'	19kts headwind	1h32m	829lbs	<input type="radio"/>
FL190	12kts headwind	1h30m	776lbs	<input type="radio"/>
FL210	9kts headwind	1h30m	738lbs	<input checked="" type="radio"/>
FL230	17kts headwind	1h33m	734lbs	<input type="radio"/>
FL250	21kts headwind	1h35m	719lbs	<input type="radio"/>
FL270	23kts headwind	1h36m	696lbs	<input type="radio"/>
FL290	20kts headwind	1h37m	668lbs	<input type="radio"/>

At the bottom, there are filter buttons: VFR, IFR, Westerly, Easterly, and All.

Altitude Advisor

If you have entered your aircraft's climb performance on the **More > Aircraft** page, the Altitude Advisor will automatically calculate whether it is possible to reach the listed altitude based on your aircraft's rate of climb and the distance of the route.

When connected to a Sentry or other ADS-B or SiriusXM receiver, Altitude Advisor™ will only display wind effects if you have received recent winds aloft data for the entire route.

9. FLIGHT PLANNING

9.5 Procedure Advisor

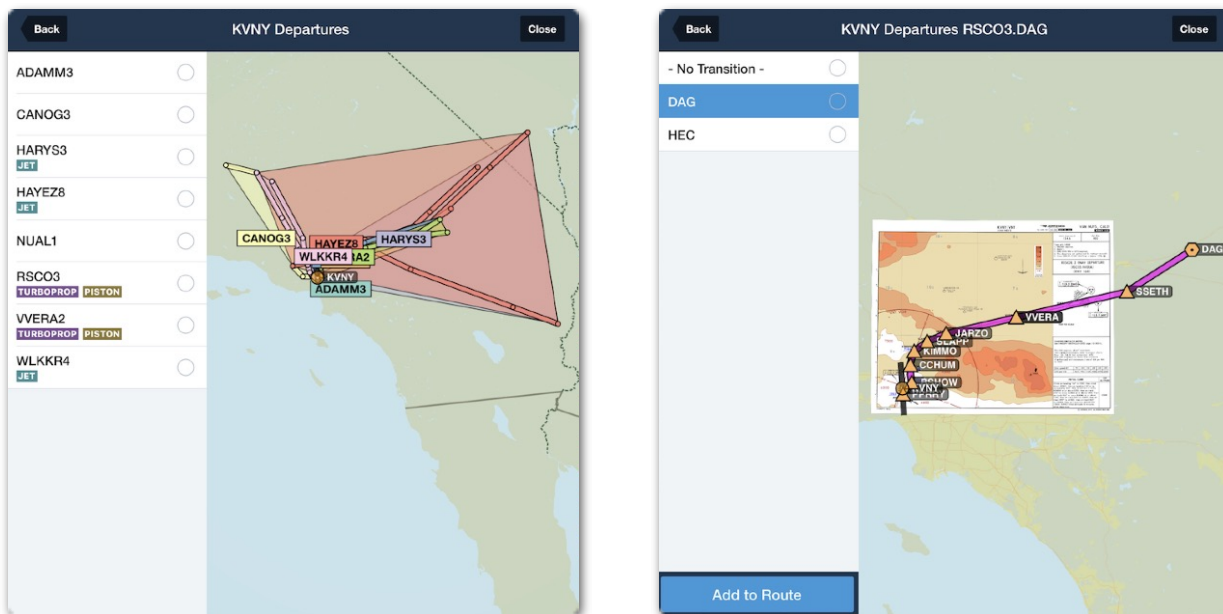
The Procedure button in the top right of the Flight Plan Edit view opens the Procedure Advisor allowing you to add or replace Arrival procedures (STAR), Departure procedures (SID), Approaches, VFR traffic patterns and Search & Rescue (SAR) patterns in the route.

Departures, Arrivals, Approaches and Traffic Patterns require that at least one airport be entered in the Route Editor. SAR patterns can be entered without an airport in the Route Editor.

9.5.1 Departure or Arrival

Tap **Departure** or **Arrival** to see an inset map of the different STARs and SIDs available from the airport. The inset map can be panned and pinch-zoomed so you can see details of the different options. If the departure or arrival has an aircraft type restriction, it is indicated by a colored tag: Piston, Turboprop, or Jet.

Tap a name in the list on the left to see all of the transition options for that procedure.



Then tap the Transition (and runway if required), and tap **Add to Route** to insert that procedure into the route.

9. FLIGHT PLANNING

If you have Pro Plus or Performance Plus as well as Jeppesen coverage (purchased directly through ForeFlight or via a linked Jeppesen account) georeferenced SIDs/STARs will also be shown in the Procedure Advisor.

To close the Procedure Advisor window and return to the Maps view, tap **Close** or tap anywhere not on the Procedure Preview window.

Once the Departure or Arrival has been added you can change it or the selected runway by tapping the colored Departure oval in the Route Editor and choose **Change Departure...** or **Change Runway...**

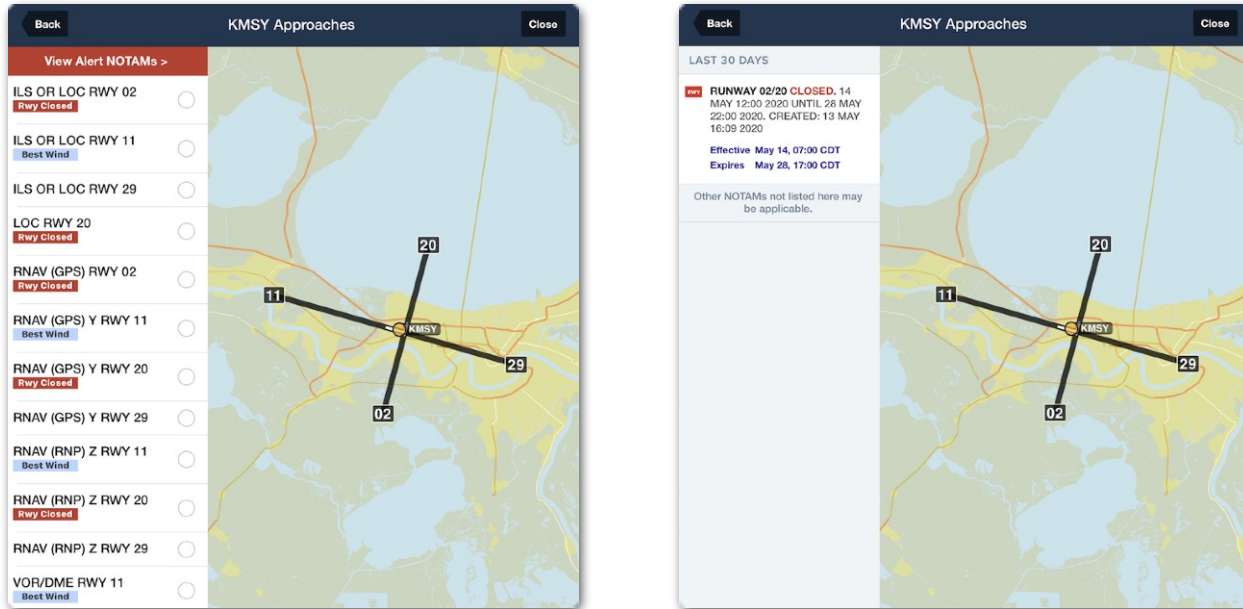
Once the Arrival has been added you can change it or the selected runway by tapping the colored Arrival oval in the Route Editor and choose **Change Arrival...** or **Change Runway...**

Tap **Approach** to see the available approaches for that airport. If a current METAR is available, the runways with the most favorable winds are highlighted in the list.

9. FLIGHT PLANNING

Procedure Advisor NOTAMs

If a NOTAM affects an available runway, a red tag is displayed. Tap the **View Alert NOTAM** banner at the top of the runway list to view the relevant NOTAM or NOTAMs.



Tap an Approach to see the preview including the available IAFs. If you have a Pro Plus or Performance Plus subscription, the plate associated with a given approach will automatically appear on the inset map when you select the approach, and will automatically be added to the Map when you close the Procedure Advisor.

Choose an IAF by tapping in the list on the left, or on the preview Map, then tap **Add to Route**.

If you have a Performance Plus or Business Performance plan the **Enhanced Approach Procedure Markers** will show the IAF and FAF with unique icons, and the waypoint labels include any crossing speed & altitude restrictions for each point. You can also specify the **Approach Minimum altitude**, which appears as a magenta marker for easy reference during the approach. **NOTE:** Route Labels must be ON (in **Maps Settings**) for Approach Minimums to be displayed.

9. FLIGHT PLANNING

Augmented Procedures expand on the Custom Approach Minimum field by pairing high-quality Jeppesen data with pilot-entered inoperative airport equipment to show the relevant minimums, supplementing the information on the approach plate and helping to reduce the chance of errors.

Back
KJHW Approaches KRAUS ILS RWY 25
Close

TRANSITION

JHW

KRAUS (IAF)

Vectors to Final

MINIMUM

Aircraft Category **Cat A** >

Equipment Status **Full** >

ILS

1,971' DA | ½ mi VIS

250' DH

ILS

2,161' DA | 1 ¼ mi VIS

440' DH

With KDKK Altimeter

Circling

2,200' MDA | 1 mi VIS

477' MDH

CIRCLING TO RWY 13/31 NOT AUTHORIZED AT NIGHT WITH DIPRE. DME REQUIRED.

Circling

2,400' MDA | 1 mi VIS

677' MDH

CIRCLING TO RWY 13/31 NOT AUTHORIZED AT NIGHT WITH DIPRE. DME REQUIRED.

Circling

2,420' MDA | 1 mi VIS

697' MDH

CIRCLING TO RWY 13/31 NOT AUTHORIZED AT NIGHT WITHOUT DIPRE.

Add to Route

EQUIPMENT STATUS

Full

All systems functioning

ALS Out

Approach lighting system out

RAIL Out

Runway alignment indicator lights out

Multiple selections will display the highest applicable minima

AIRCRAFT CATEGORY

Cat A

< 91 kts

Cat B

91 to 120 kts

Cat C

121 to 140 kts

Cat D

141 to 165 kts

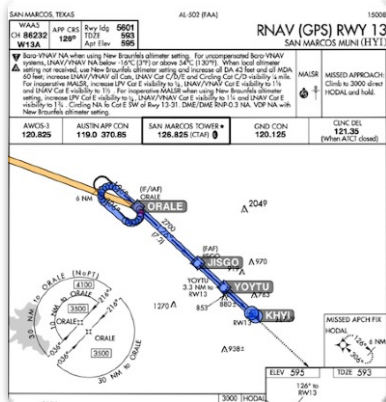
Speeds are V_{at} based on ICAO Doc 8168

PRE FLIGHT

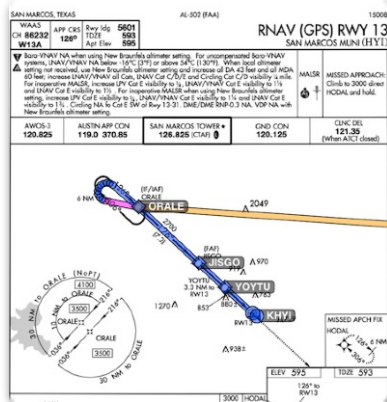
9. FLIGHT PLANNING

Once the Approach has been added you can change between approaches or IAFs by tapping the Procedure Advisor button again and selecting a new Approach.

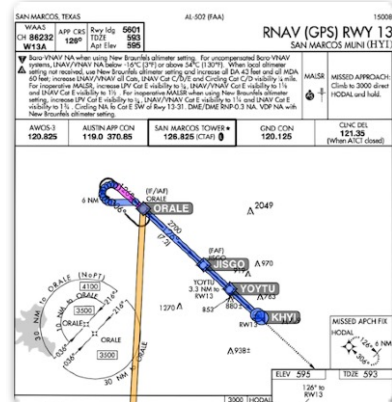
If an Approach entry includes a hold, ForeFlight Mobile will automatically insert the correct Direct, Parallel, or Teardrop entry based on the direction you're coming from.



Direct Entry



Teardrop Entry



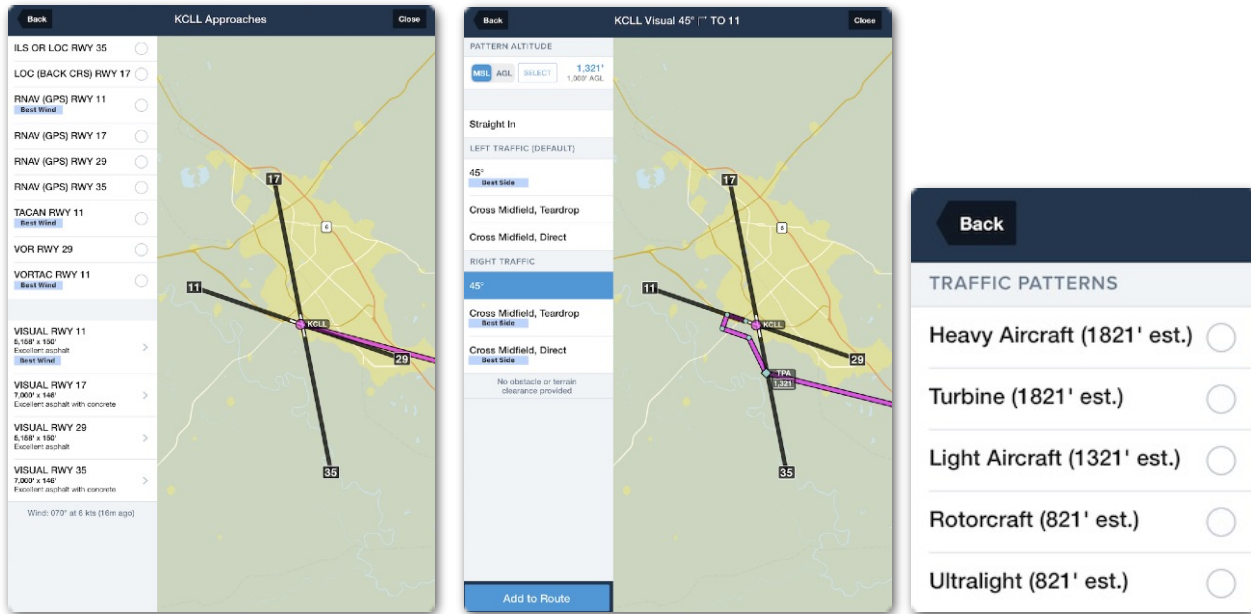
Parallel Entry

PRE FLIGHT

9. FLIGHT PLANNING

Visual Approach

Visual Approaches are available in both the Approach and Traffic Pattern menus. Open Procedure Advisor by tapping the Procedure button, select the Visual for the desired runway, specify the Traffic Pattern Altitude in MSL or AGL (either from the selection list or by entering your desired altitude) then add the Visual Approach (with or without Traffic Pattern entry) to the route.



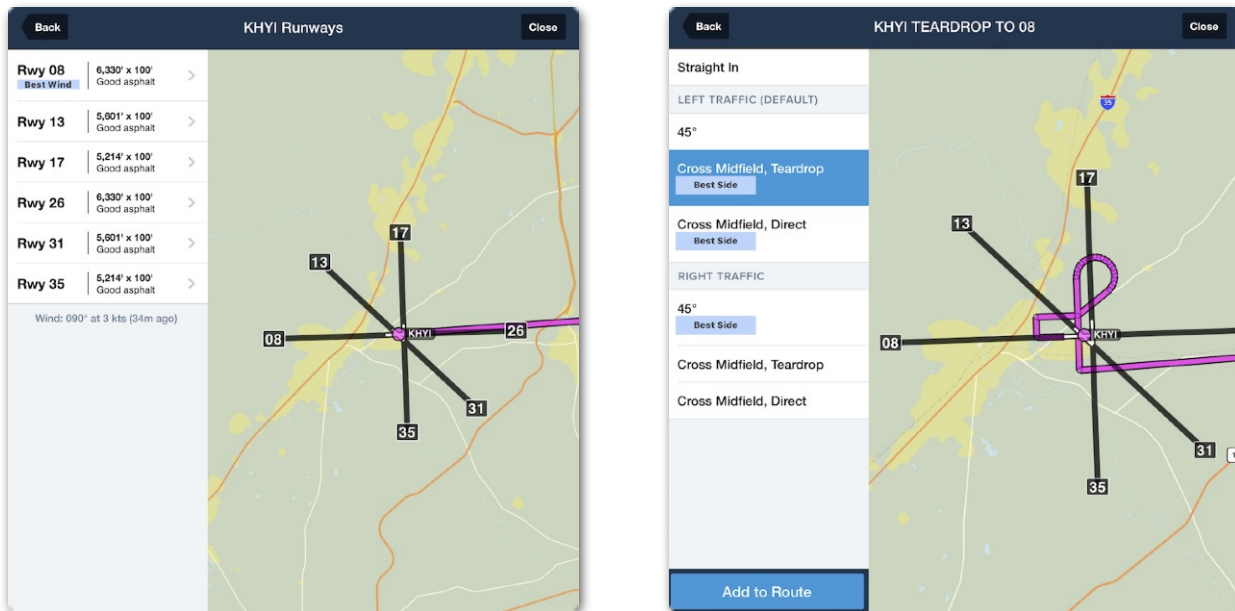
After adding the Visual Approach, a TPA (in MSL) pattern entry waypoint marker is added to the route.



9. FLIGHT PLANNING

Traffic Pattern

Tap the **Procedure** button, then tap **Traffic Pattern** to display VFR traffic patterns for the airport at the end of the current route. If current winds are available, the runway selections with the best winds are highlighted in the list. Wind direction, speed and age of observation are also shown at the bottom of the list (scroll down if necessary to see the winds). If a NOTAM affects an available runway, a red tag is displayed. Tap the View Alert NOTAM” banner at the top of the runway list to view the relevant NOTAM or NOTAMs.



After selecting a runway the available pattern entry options are displayed, such as Cross Midfield or Straight-in. Selecting **Straight In** adds a 4 nm final to the route.

For non-towered airports the entries are sorted based on each runway’s pattern side (right or left).

Additionally, entries are highlighted that make the most sense for your route’s direction of flight. Tap an entry to add it to the end of the current route (or to replace one already in the route). Traffic patterns are automatically removed from a route when certain route edits are made, such as reversing the route.

9. FLIGHT PLANNING

Hold Advisor

Insert a Hold from within Procedure Advisor by tapping the **Procedure** button, then tap **Holding Pattern** to insert a hold at the point in the route preceding the destination, or if the route is direct to the airport, to insert a hold immediately before the destination airport.



Tap any waypoint in your route, or tap a navigation point elsewhere on the map to add a hold at that location or tap a colored oval in the route editor and choose “Hold...” to insert a hold at that point:

Regardless of which method is used to insert a hold, Hold Advisor includes an option to select the fix, and customize parameters for inbound or outbound legs, the pattern’s length (defined by either time or distance), left or right turns, and optional altitude, speed, and EFC (Expect Further Clearance) settings.

After adjusting any settings tap **Add to Route** to add the Hold to the route. The Hold Advisor also automatically inserts the correct Direct, Parallel, or Teardrop entry based on the direction of the hold and the direction you’re coming from.

9. FLIGHT PLANNING

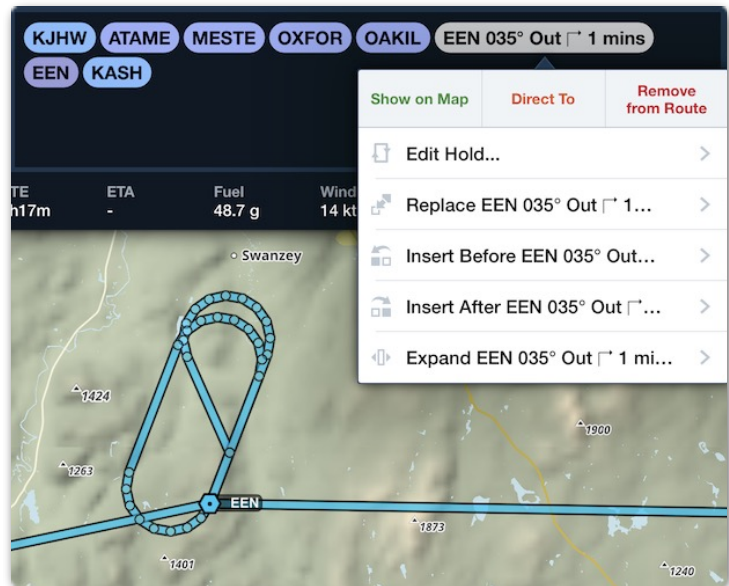
Editing Holds

After adding the holding pattern to your route you can make additional changes to it by tapping the grey "Hold" bubble in the FPL Editor, or by tapping the point on the route where the hold was inserted.

Tap "Expand..." to change the hold into individual points.

ForeFlight Mobile does not currently support sending holding patterns added using Hold Advisor to connected avionics via Flight Plan Transfer. Holds that are a part of an approach can be sent to connected avionics.

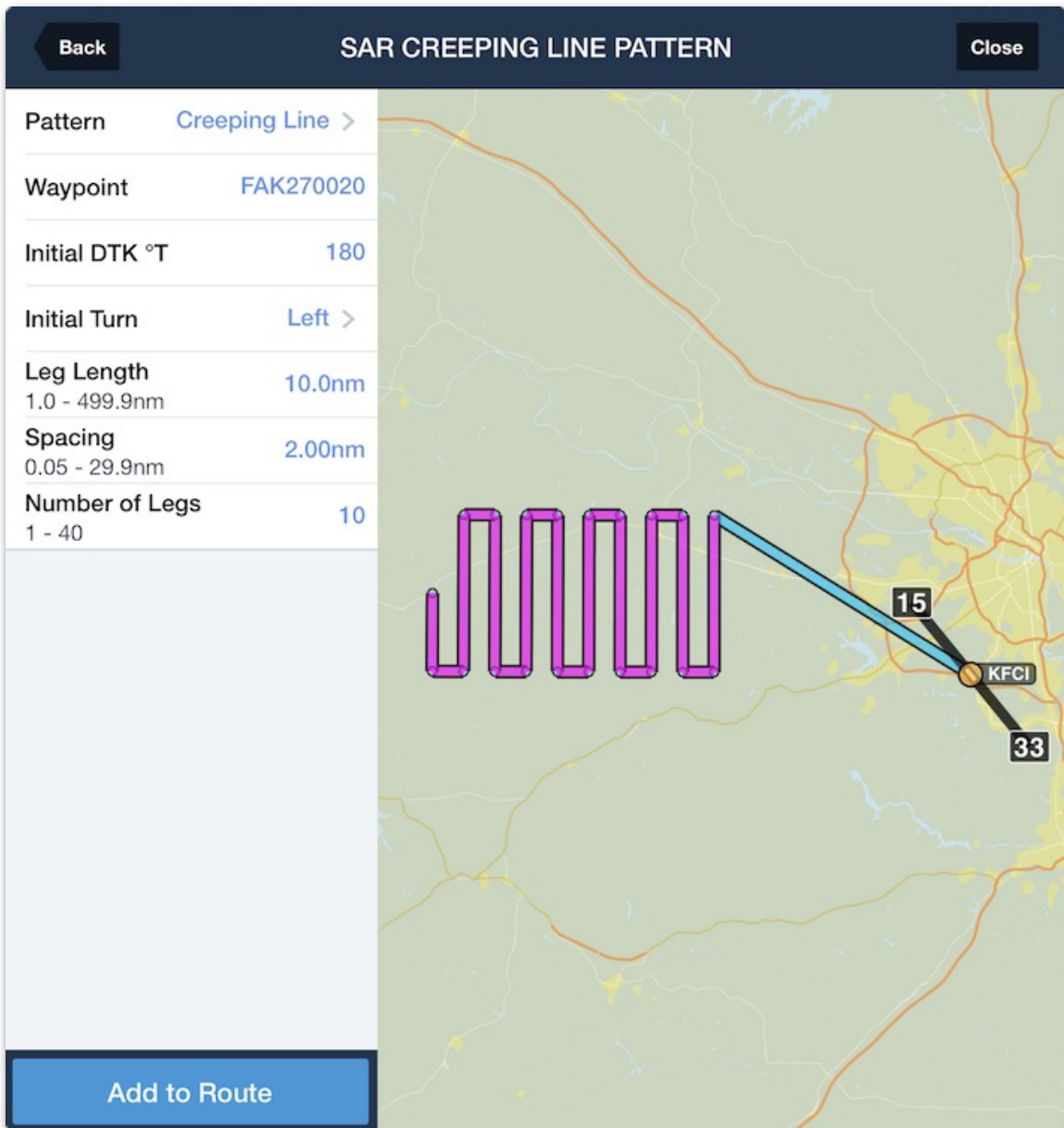
If you send a build a route including a hold then send it to another pilot via email, the hold is automatically expanded in the route in the "FPL" file attached to the email.



9. FLIGHT PLANNING

Search and Rescue

On the iPad, **Search and Rescue** (SAR) patterns can also be inserted using the **Procedure** button (when the Enable Search and Rescue setting is ON). For more details about SAR features, see the Search and Rescue Supplement, in **Documents > ForeFlight**.



9. FLIGHT PLANNING

Procedure Actions - Tap green approach "oval" in the Route Editor

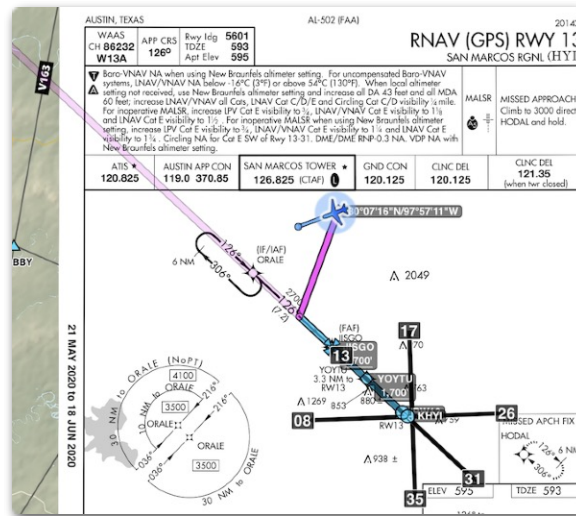
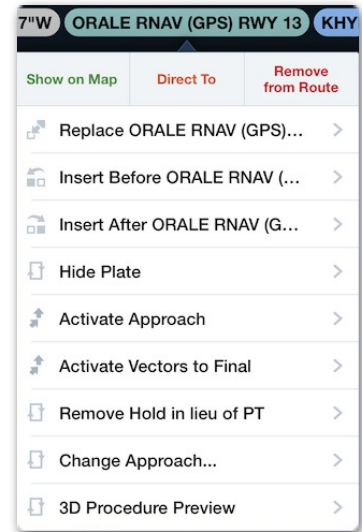
Once an approach has been added to the Route you can perform several actions by tapping the green approach oval in the Route Editor and choosing the desired action:

Change between Approaches or IAFs by tapping **Change Approach...** or **Change IAF...**

If a hold is automatically added as part of an approach but you want to remove it, tap **Remove Hold in lieu of PT**. If you need to re-add the hold to the approach tap **Add Hold in lieu of PT**.

Vectors to Final

Tap **Activate Vectors to Final** to plot a direct-to route from your present position to a point 3nm outside the FAF. This erases any existing IAF and draws a light magenta 30nm extension from the FAF. You can reactivate Vectors to Final anytime to redraw the line from your current position to the point 3nm from the FAF.



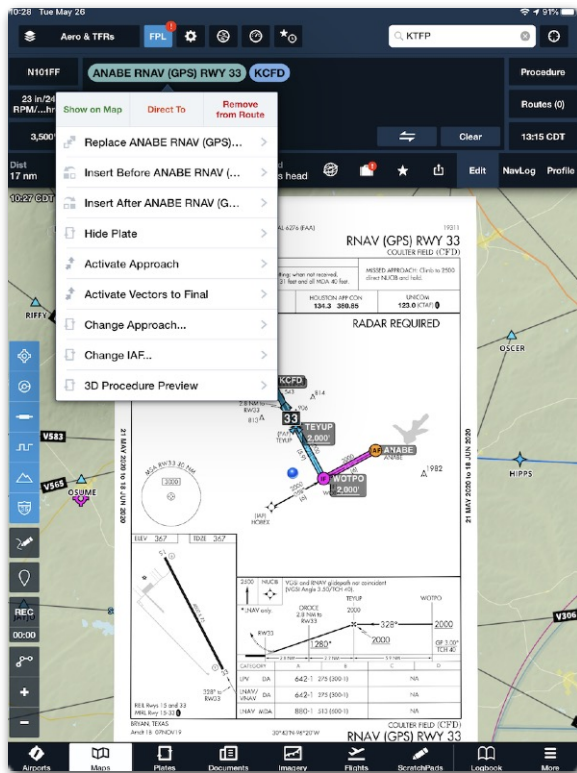
Vectors to Final can also be activated via the Procedure Advisor button: re-select the approach and choose Activate Vectors to Final.

9. FLIGHT PLANNING

3D Procedure Preview

Tap the green approach oval in the Route Editor then tap **3D Procedure Preview** to see a 3D preview of the approach, including the IAF, IF, and FAF. The navlog in 3D Procedure Preview includes any altitude and speed restrictions included in the approach.

If an approach has already been added to the route, it will also be included when doing a 3D Preview of the entire route.



PRE FLIGHT

Reverse

The Reverse button reverses the current route, and removes SIDs, STARs and Approaches.

9. FLIGHT PLANNING

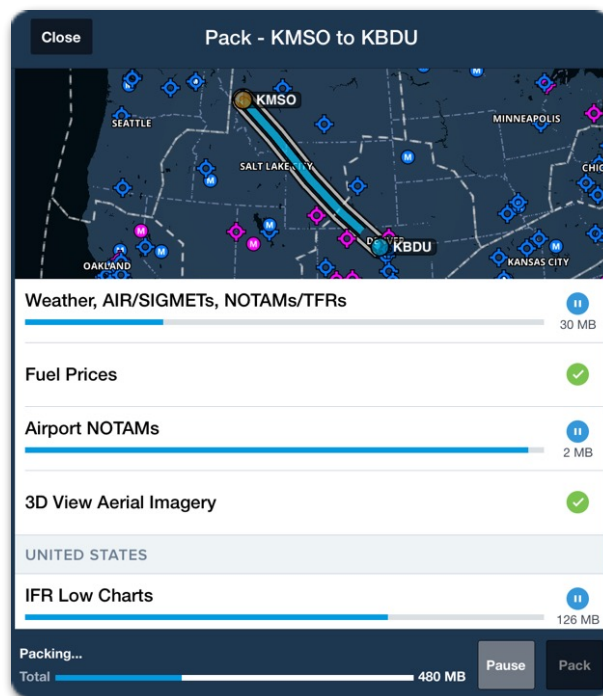
9.6 Pack

Pack is an optional preflight planning tool that downloads charts, plates, weather, NOTAMs, fuel price data, and more to your device for offline use. Pack is included with all subscriptions and can be accessed from the Maps or Flights views.

The data included in a Pack download varies based on your download selections, planned route, and ForeFlight subscription. Weather, NOTAM, and fuel data downloaded via Pack are temporarily stored on your device and automatically deleted once they become obsolete or more current data becomes available (via the internet, ADS-B, or SiriusXM).

Information downloaded with Pack is accessed using the same techniques as when your device is connected to the internet. For example, to access packed weather, select one of the map weather layers (e.g., Flight Category) using the layer selector.

Pack should be relied on as a secondary tool for flight planning. It is better to configure **download selections** to include plates and charts that you use on a regular basis, and use Pack to gather additional data specific to each flight. This ensures you may have the necessary data even if you forget to Pack, and cuts down on the time it takes to Pack additional data for each flight.



Packing Data for Offline Use

9. FLIGHT PLANNING

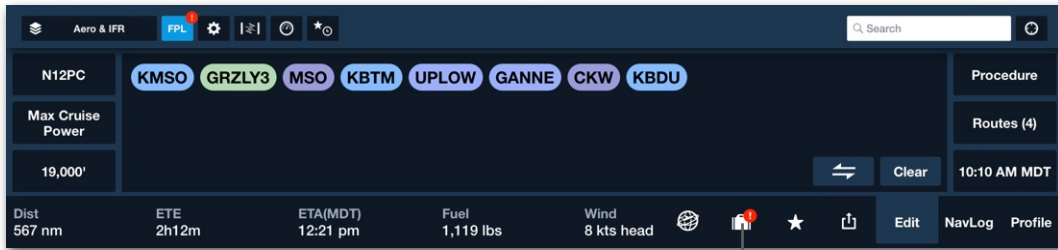
9.6.1 How to Pack

You can Pack for a flight with Maps or Flights. When planning with Maps and the **Enable Auto-Check** setting is on, a red exclamation point (!) is displayed on both the Pack (suitcase) and FPL buttons when data is available to download.

Packing with the Maps view

To Pack with the Maps view:

1. Plan a route in the Maps view.
2. Tap the **Pack** (suitcase) button to open the Pack menu.

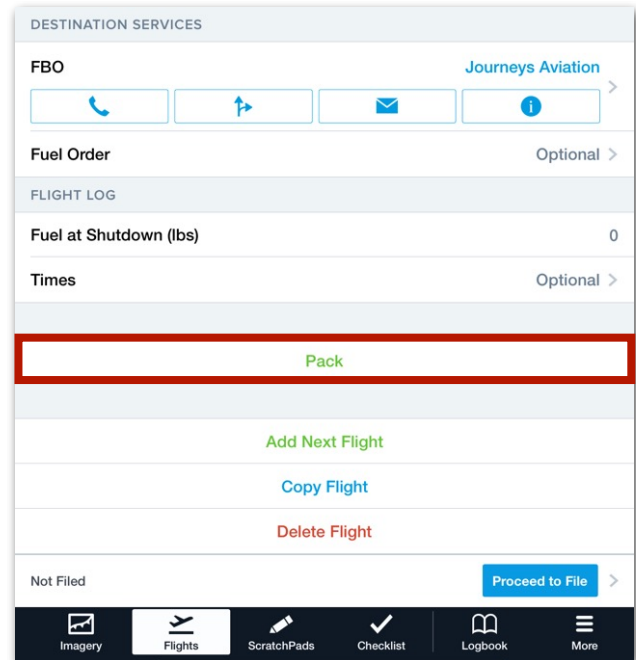


Pack Button

Packing with the Flights view

To Pack with the Flights view:

1. Enter a route in the Flights view.
2. Scroll to the bottom.
3. Tap **Pack** to open the Pack menu.



Packing with Flights

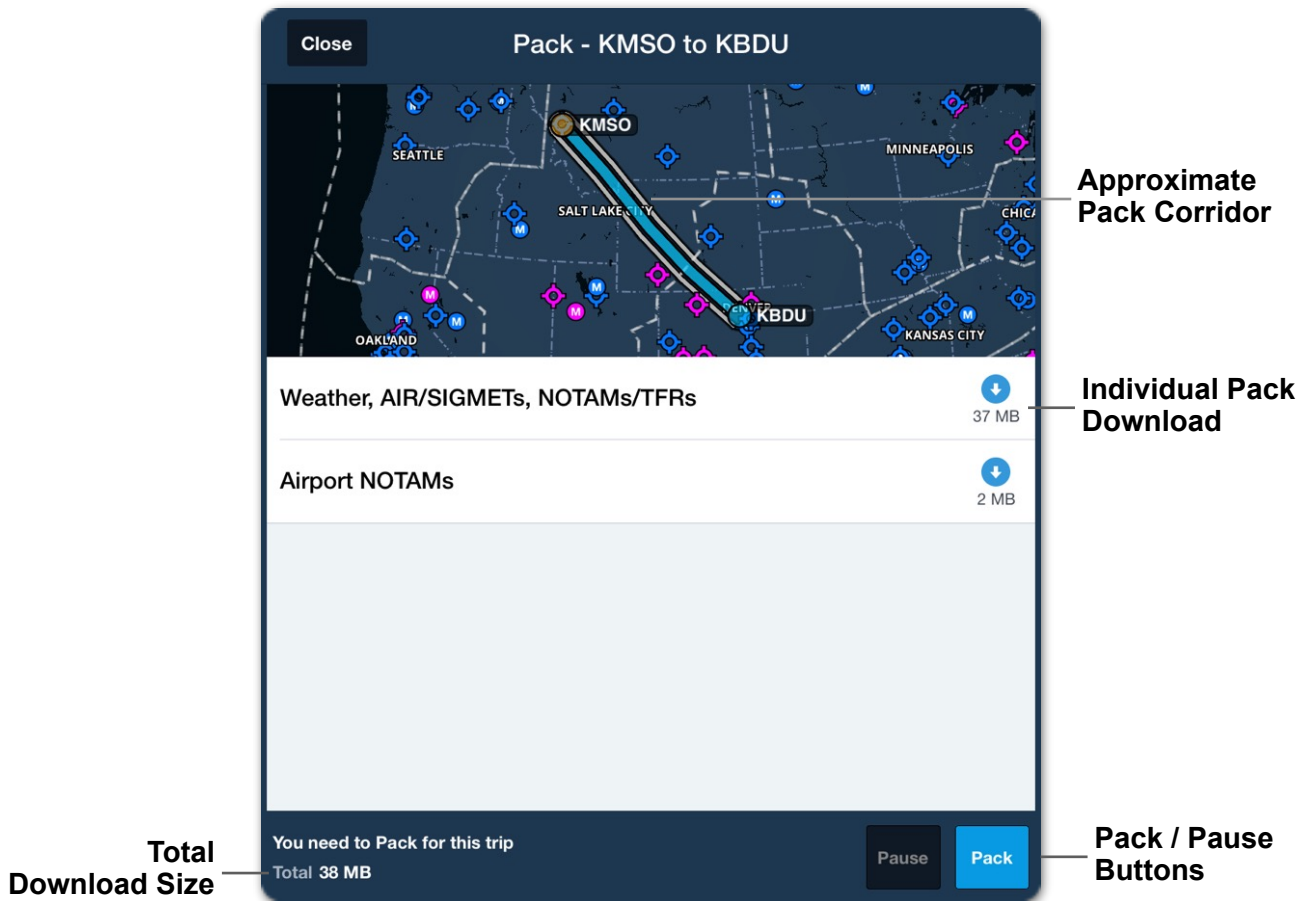
9. FLIGHT PLANNING

Pack Menu

The Pack pop-up menu is displayed whenever the Pack button is tapped. Hide the menu by tapping **Close** or somewhere on the screen outside the menu. The Pack menu includes an interactive map. The map displays the planned route in blue and an approximate Pack coverage corridor in grey. The map's Pack coverage corridor encompasses 25 nm of airspace on either side of the route. However, the data that gets packed can exceed the depicted corridor. See the following sections for additional information.

Pack can only download data for one flight at a time. If you attempt to pack a new flight while Pack is actively downloading data, a pop-up will appear with an option to pause the current Pack download.

The Pack menu lists downloads as individual items. The estimated file size and an option to download are displayed on the right side of the menu. To download an individual item, tap the single **download** button (blue circle with down arrow). To download all Pack items, tap **Pack** at the bottom of the menu.



Pack Menu

9. FLIGHT PLANNING

9.6.2 Packed Weather and NOTAM Data Overview

Pack downloads METARs, TAFs, MOS forecasts, and (textual) Airport NOTAMs for the airports within 25 nm of the planned route and 50 nm of the departure and destination airports. Pack only downloads Daily Weather forecasts for the airports that are included in the planned route.

Pack downloads the following map layers on a *global* scale:

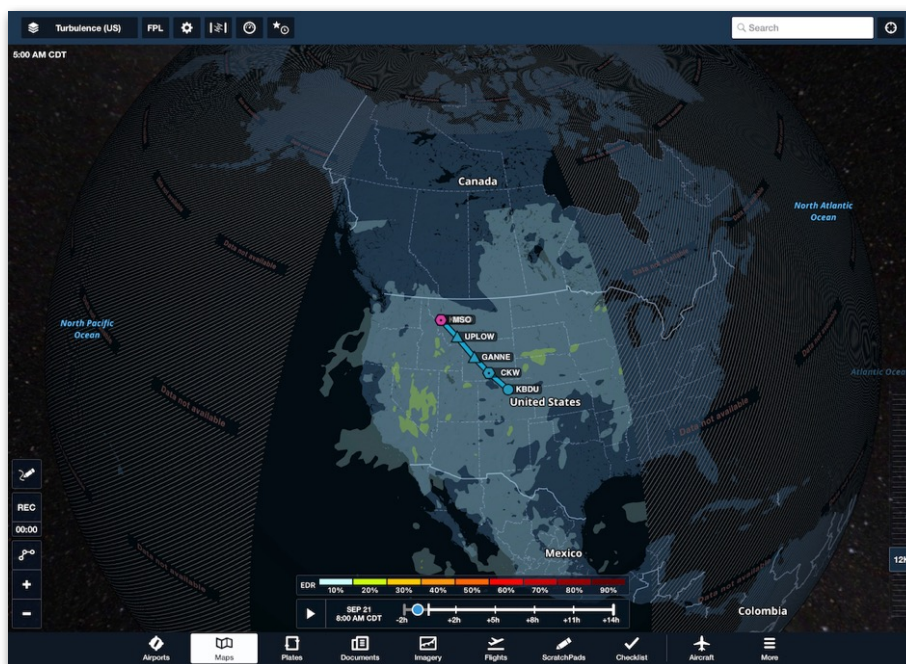
- AIR/SIGMET/CWAs
- NOTAMs (graphically depicted NOTAMs)
- Fuel: 100LL and Jet A

Packing with a Pro-Tier subscription

If you have a Pro-tier subscription or higher, Pack downloads the data discussed above in addition to the following map layers:

- Clouds
- Surface Analysis
- Icing (US) and Icing (Global)
- Turbulence (US) and Turbulence (Global)

Pack does not download *global* data for the above map layers. These map layers are broken into large rectangular sections that are hundreds of miles across. Pack only downloads the sections that the planned route intersects.



Packed Turbulence (US) Data

9. FLIGHT PLANNING

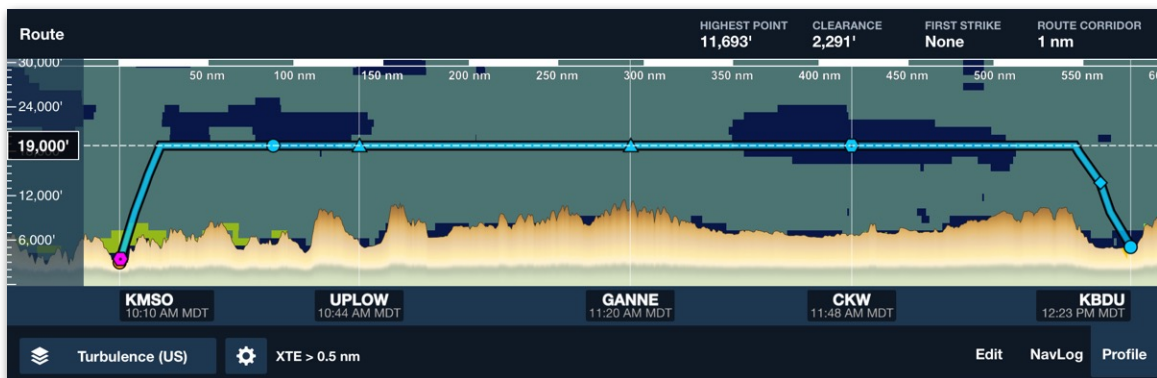
Packing with a Performance-Tier subscription

If you have a Performance-tier subscription, Pack downloads all data in addition to:

- **Digital ATIS (D-ATIS)** for the airports within 25 nm of the route and 50 nm of departure and destination airports.
- **Dynamic Winds** for the area around the route. Dynamic Wind data is broken into rectangular sections that are hundreds of miles across. Pack downloads the Winds (Temps) and Winds (Speeds) map layers for the sections the route intersects.
- **3D Imagery** for the areas approximately 25 nm from the airports that are in the planned route. Packed 3D Imagery can be viewed using the 3D Route Preview feature or by tapping the **3D View** button from the route's airport view. When Packing 3D Imagery, only the satellite imagery that is overlaid on the downloaded high-resolution terrain data is Packed to the device.

Packed Data - Profile View

Packed Icing, Turbulence, and Cloud data can be viewed in the Profile view with a Performance-tier plan. Profile View displays the appropriate forecast data for the flight's estimated time en route.



Packed Turbulence Data in Profile View

9. FLIGHT PLANNING

9.6.3 Packed Charts and Terminal Information

Using Pack to download charts is not recommended as it increases the amount of time required to Pack. Pilots should configure their download selections for the regions they normally operate in. See [Downloads](#) for additional information.

Pack evaluates the planned route for the missing downloads to include:

- VFR and IFR en route charts.
- Terminal Procedures (Airport Diagrams, and Departure, Arrival, and Approach Procedures).
- Airport Information / Flight Supplements (A/FD, AIP, and CFS).

If a route is missing downloads, Pack downloads the data according to the logic below.

Terminal Procedures and Airport Information

When planning in the United States, Canada, or Australia, Pack downloads Terminal Procedures and Airport Information for the entire state, province, or region if it is within 25 nm of the route or 50 nm of the destination or departure airport.

When planning in Europe, Pack only downloads Terminal Procedures and Airport Information if the route intersects the country.

Charts

Pack downloads all *selected* chart types if the route intersects the chart and it is not already downloaded. Charts and plates downloaded using Pack are only valid for the current data cycle and will not automatically update.

Charts are only downloaded with Pack if the chart type is selected. For example, if a route intersects California, Pack will only download the U.S. IFR (High) P-1 chart for California if **IFR High Charts** is enabled in **More > Downloads > Data Settings**. If a chart type is not selected in Data Settings, Pack will not download it.

9. FLIGHT PLANNING

9.6.4 Accessing Packed Data

Packed data is not accessed from a different location than internet, ADS-B, or SiriusXM data. For example, to access charts that are downloaded with Pack, select a VFR or IFR chart from the Maps layer drop-down menu. If the chart was downloaded with Pack, it will appear the same as if it were downloaded as part of your download selections.

To access packed weather and NOTAM data, select the appropriate map layer (e.g., Flight Category) or Airport weather view (while offline).

NOTE: You can verify that data will be available offline by packing for a flight, disconnecting from the internet, ADS-B, and SiriusXM, and then viewing weather, NOTAMs, plates, and charts.

9.6.5 Deleting Packed Data

Weather, NOTAM, and fuel data downloaded with Pack is automatically removed when the information becomes obsolete or new information becomes available via the internet, ADS-B, or SiriusXM. In other words, once your device connects to the internet after your flight, the packed data is automatically deleted.

If your device does not connect to the internet, ADS-B, or SiriusXM for an extended period of time, refer to the table below to determine when data becomes obsolete and thus removed from the device.

Packed Data Type	Time to Obsolete
METAR	3 Hours
Winds Aloft	12 Hours
Dynamic Winds	Up to 28 Hours
TFR	14 Days
Fuel Price	1 Month
Airport NOTAMs	4 Days

Deleting Packed Charts and Plates

Packed charts appear in the Downloads view under the Packed and Unselected Regions. You can manually delete these charts at anytime by swiping from right to left on the download. To delete packed charts and plates after they expire, tap **More > Downloads > Delete > Delete Expired**.

AIRPORTS

The Airports view contains information about more than 20,000 airports worldwide. It provides airport information comparable to official print publications, including geographical location, airport diagrams, procedures, frequencies, and available services. It also provides dynamic features such as the latest weather, NOTAMs, active runways, traffic patterns, and user-entered comments.

KHOU: William P Hobby
Houston, Texas, US
29.65°N/95.28°W
7:12 AM 5:27 PM CST

Latest Weather **MVFR, 320° at 11 kts, 8 sm, Overcast 1,500'** ☁
Elevation **46' MSL**
Pattern altitude **1,046' MSL (est.)** ▶
Fuel **Jet A, Jet A+, 100LL**
Procedures **ILS, GPS, LOC, RNAV**

ATIS **124.6**
Clearance **PDC 125.45**
Ground **121.9**
Tower **118.7, 119.1**
Appr, Dep **Multiple**

Buttons: 3D View, FBOs, Taxiways, Comments

FREQUENCIES	APPROACH
Weather and Advisory >	Houston Approach 119.175
Clearance >	Houston Approach 119.625
Ground >	Houston Approach EAST Initial Contact 120.05
Tower >	Houston Approach WEST Initial Contact 124.35
Common >	Houston Approach SOUTH 134.45
Approach >	
Departure >	
Flight Service >	
Emergency >	
Other >	
CHART SUPPLEMENT	
A/FD >	

Bottom Navigation Bar: Airports, Maps, Plates, Documents, Imagery, Flights, ScratchPads, Checklist, Devices, More

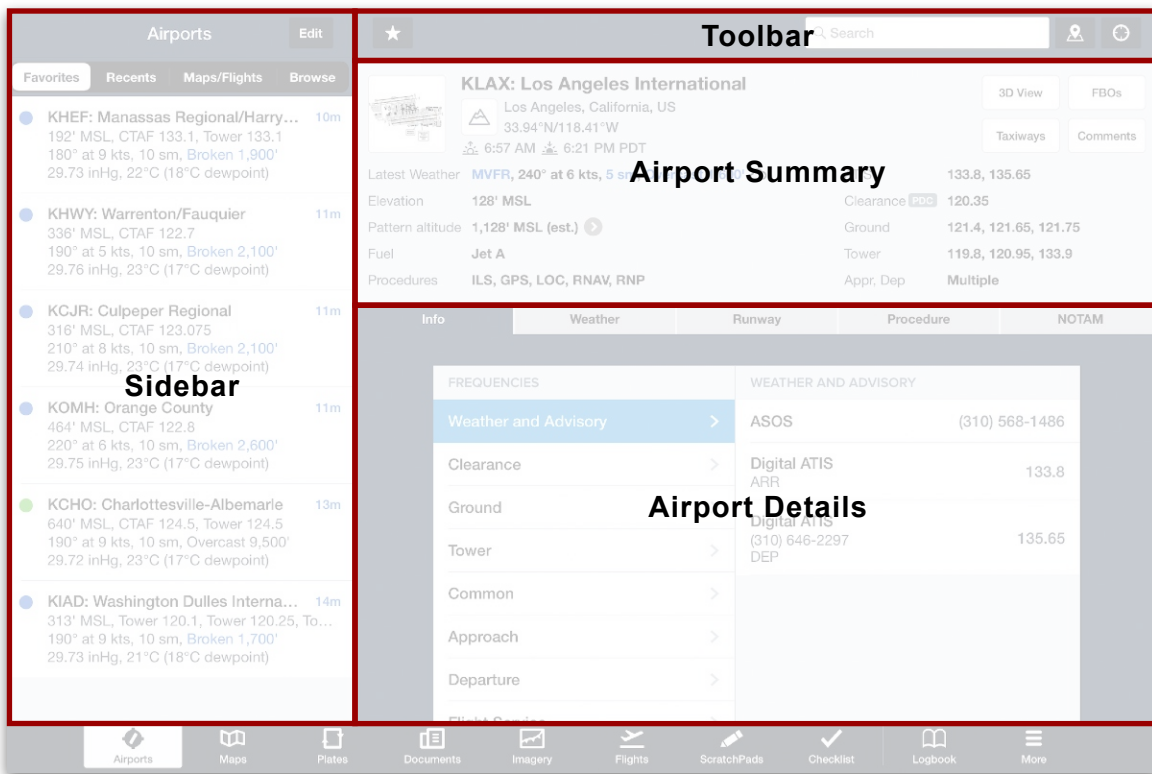
Airports View

10. AIRPORTS

10.1 Design

The Airports view is separated into four components. Each of these is summarized below, and its detailed functionality is described later in this chapter:

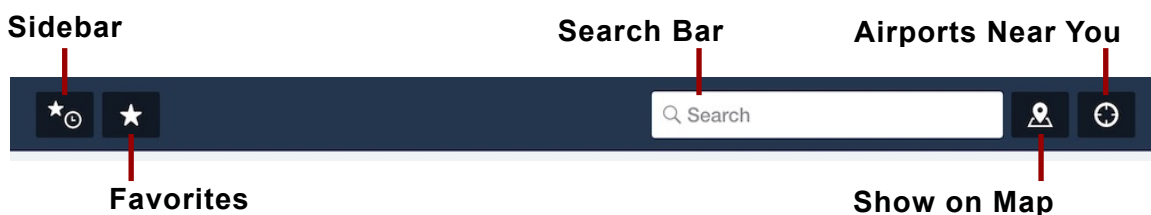
- The **Toolbar** provides the ability to search for airports and related data based on keywords or proximity to your device, assign airports as favorites, display an airport on the Maps view, and toggle the Sidebar.
- The **Sidebar** lists the user's favorite airports, recently displayed airports, airports from recently created flights, and airports from the active route on the Maps view, as well as an alphabetized airport directory.
- The **Airport Summary** section provides a condensed overview of information about the selected airport.
- The **Airport Details** section provides detailed information about the selected airport divided into five tabs.



10. AIRPORTS

10.2 Toolbar

The Toolbar at the top of the Airports view provides the ability to toggle the Sidebar, assign airports as favorites, perform a keyword search for airports and related data, display an airport on the Maps view, and generate a list of airports near your device. Each feature is described below.



10.2.1 Sidebar Toggle Button

When the Airports view is displayed in landscape orientation, the **Sidebar** is always visible on the left side of the device screen. In portrait orientation, the Sidebar is hidden to save space. To display it, tap the button in the upper left corner of the screen (shaped like a star and clock).

Once opened in portrait orientation, the Sidebar can be hidden by tapping the **Close** button in its upper left corner.



Sidebar Toggle Button

10.2.2 Favorites Button

When an airport is displayed in the Airports view, tapping the star-shaped button in the upper left corner adds the airport to the bottom of the Favorites list (which can be viewed in the Sidebar). When an airport is selected that is already in the Favorites list, the button is yellow.



Favorite Airport Button

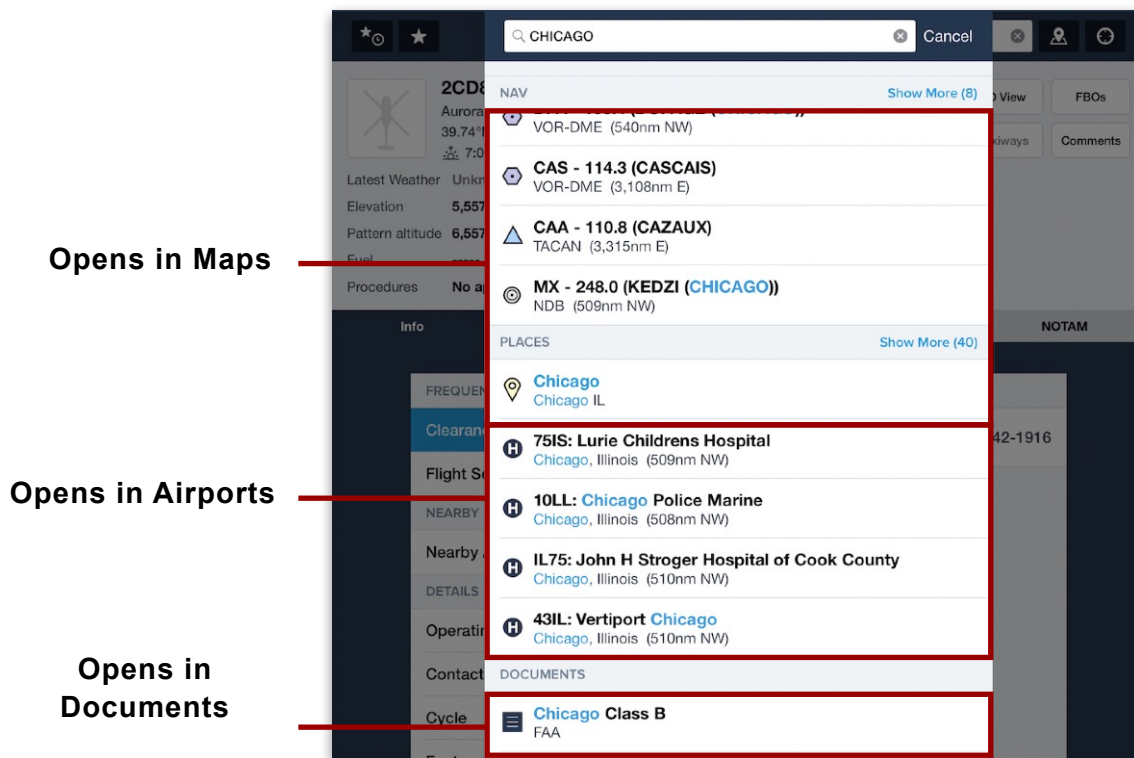
10. AIRPORTS

10.2.3 Search Bar

While the Search bar is designed to search for airports, it can produce various results based on the user's entry including but not limited to airports, aircraft registration (FAA registration only), cities, nav aids, documents, waypoints, and addresses. Each search result is depicted with an icon to convey its category (such as airport, document, or nav aid).

To use the Search bar:

1. Tap the Search bar to open a list of recent search results divided by category.
2. Enter text in the Search bar to dynamically generate results divided into categories (such as Airports and Heliports, Procedures, Places, Documents, and Recent Searches).
3. Tap **Show More** to expand the list of search results within one category.
4. Tap one of the search results to open the Maps, Airports, or Documents view. Each item has a different effect depending on the category of data.



Airport View Search Results

10. AIRPORTS

10.2.4 Show on Map Button

The Show on Map button (marker icon) in the upper right corner opens the Maps view, with the airport selected and its details displayed in the Maps sidebar.

NOTE: The Show on Map button displays the airport displayed onscreen, not the text entered in the Search bar.

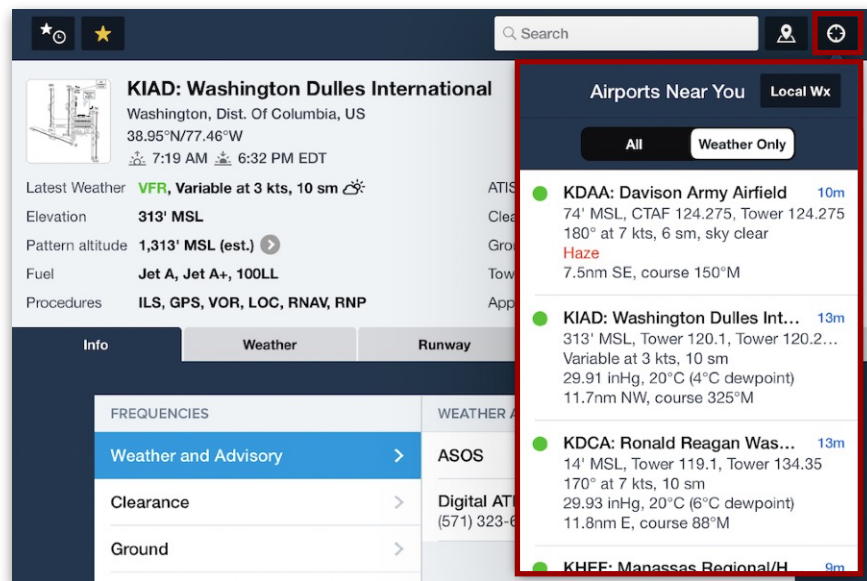


Show on Map Button

10.2.5 Airports Near You Button

Tapping the Airports Near You button (shaped like a bullseye) on the top right corner opens a menu with information pertaining to your location. The menu includes a button to retrieve weather information for your location and a list of nearby airports which can be filtered to show all airports or only those with weather data.

NOTE: The Airports Near You menu can also be opened directly from the device home screen by long-tapping the ForeFlight Mobile app icon and selecting **Nearest**.



Airports Near You

10. AIRPORTS

Filtering Airports Near You Results

The Airports Near You search results can be filtered depending on whether or not you need to see weather.

- Tap **All** to display nearby airports regardless of whether or not they have weather data. All results include the airport elevation in MSL, applicable communications frequencies, and both the distance and magnetic course to the airport from the device's location.
- Tap **Weather Only** to show only airports that are actively providing METAR data to ForeFlight. In addition to the standard data, “Weather Only” results display wind speed and direction, visibility, ceiling, obscuration hazards (if applicable), and the time since the weather was last updated. Ceiling and visibility are color-coded according to their severity. The results also display an icon color-coded according to flight category.



Airports Near You Result with Weather

Displaying Daily/Hourly Forecast

In the Airports Near You menu, tapping **Local Wx** opens the **Daily/Hourly Forecast**.

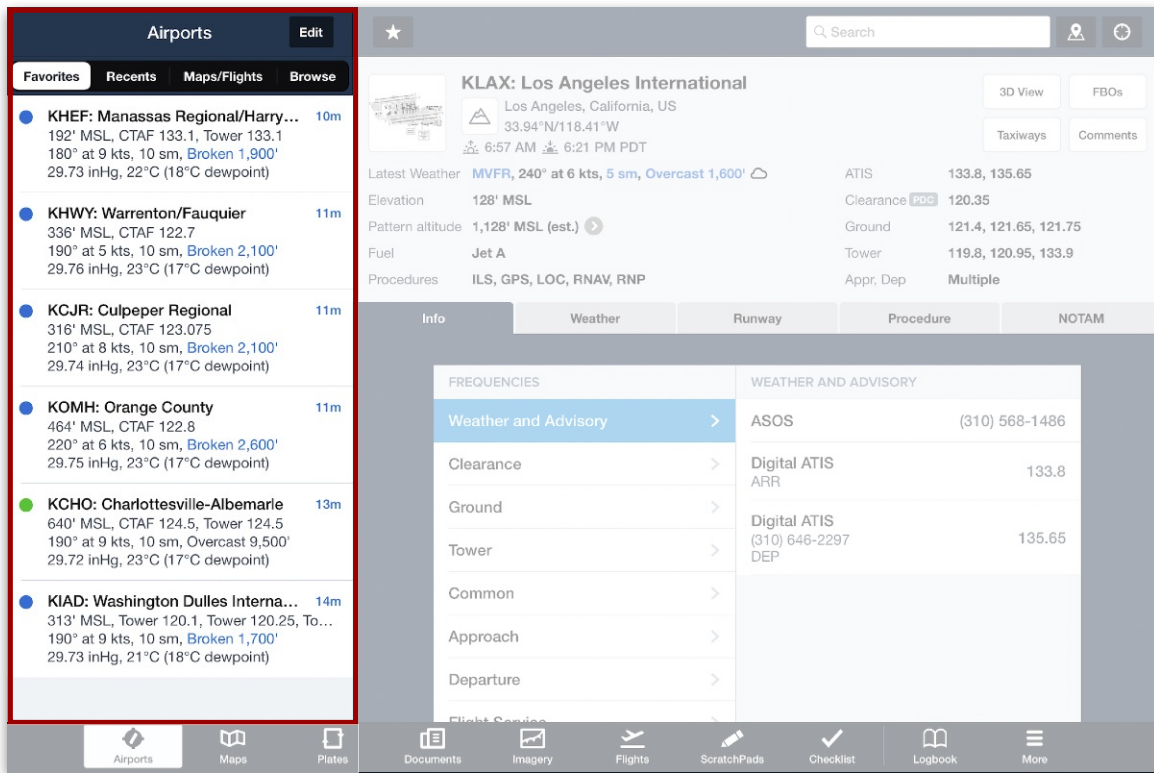
10. AIRPORTS

10.3 Sidebar

The Sidebar on the left side of the Airports view provides five ways for users to find airports most relevant to them:

- **Favorites:** a list of user-defined favorites
- **Recents:** a list of recently displayed airports
- **Maps/Flights:** a list of airports from the active route in the Maps view and from recent flights in the Flights view
- **Browse:** an alphabetized directory of all airports in ForeFlight's database

Each of these lists can be opened using a category button at the top of the Sidebar. Their functionalities are described in the sections below.



Airports View Sidebar

10. AIRPORTS

10.3.1 Sidebar Toggle Button

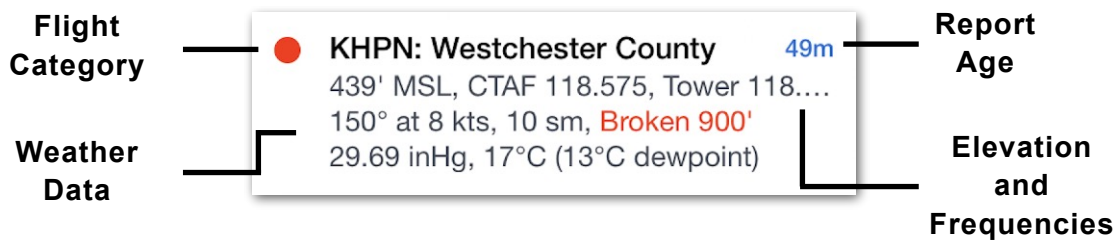
The Sidebar is automatically visible when the Airports view is displayed in landscape orientation. In portrait orientation, the Sidebar is hidden by default and can be displayed by tapping a button (shaped like a star and clock) in the upper left corner of the **Toolbar**.



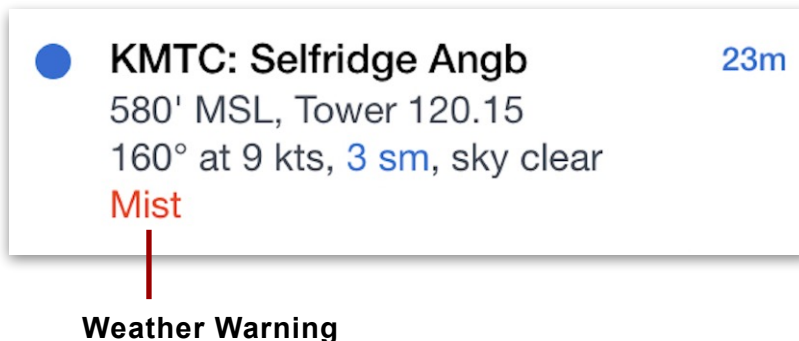
10.3.2 Airport Listings

With the exception of the **Browse** menu, all airport listings in the Sidebar look similar. Each listing includes the airport elevation in MSL and any applicable communications frequencies.

Weather data is also displayed if available. This may include wind speed and direction, visibility, ceiling, obscuration hazards (if applicable), density altitude, temperature, dew point, the time since the airport's METAR was last updated, red-highlighted weather warnings, and an icon colored according to flight category.



Weather warnings (e.g., fog, thunderstorms, cumulonimbus clouds, lightning, mist) are always displayed in **red** at the bottom of the airport listing. ForeFlight Mobile checks for updated weather observations every minute. If a more current observation is available, it is downloaded immediately and the display is updated.



10. AIRPORTS

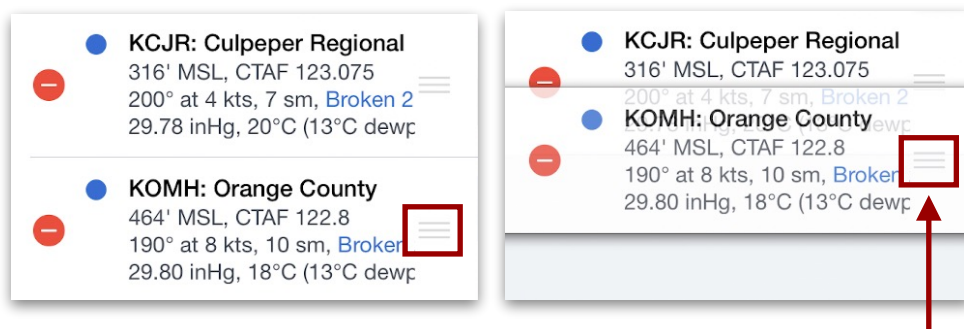
10.3.3 Favorites

Open the Sidebar and tap **Favorites** to display a list of airports that have been **marked as favorites**. Tap any airport in the list to bring up the airport in the Airports view. The order of the Favorites list can be changed and airports can be removed from the list.

Reordering Favorites List

Airports are listed in the order in which they were added as favorites. To change the order of the Favorites list, follow these steps:

1. In the Favorites list, tap **Edit**.
2. Tap and hold the three horizontal lines to the right of an airport listing.
3. Drag the listing up or down to change its position in the list.
4. When reordering is complete, tap **Done**.



Removing Favorites

There are three different methods for removing airports from the Favorites list:

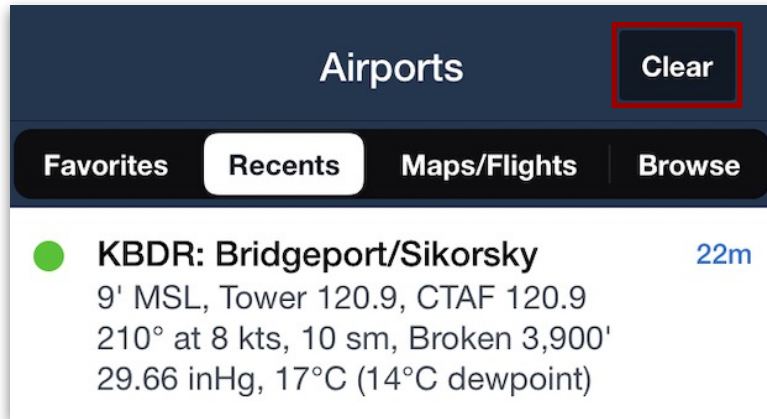
- When actively viewing a favorite airport, tap the star-shaped button in the toolbar.
- While displaying the Favorites menu, swipe left on an airport and tap **Delete**.
- Tap **Edit** at the top of the Favorites menu, tap the red circle to the left of the airport you want to delete, tap **Delete** to the right of the airport to confirm, and then tap **Done**.



10. AIRPORTS

10.3.4 Recents

Open the Sidebar and tap **Recents** to display a list of airports that were recently displayed in the Airports view. Airports are listed in the order in which they were last viewed, starting with the most recently viewed airport on top. The list cannot be reordered, but individual airports can be removed from the list by swiping left and tapping **Delete**, and all airports can be removed simultaneously by tapping the **Clear** button in the top right corner.



Recent Airports Clear Button

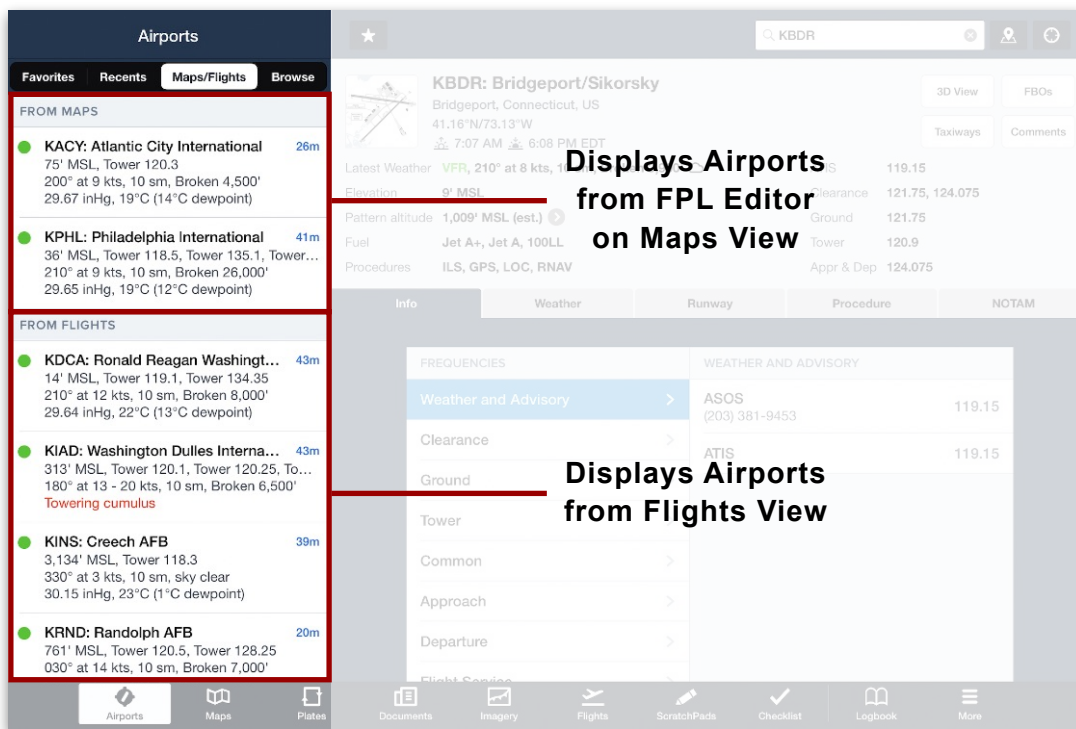
NOTE: The Recents menu is synced. Tapping Clear on one device will also clear the list of recent airports from all devices signed into the account.

10. AIRPORTS

10.3.5 Maps/Flights

The Maps/Flights button (or category) displays a list of airports based on the flights you have planned on the **Maps** and **Flights** views. The list is divided in two sections:

- **From Maps** displays airports from the active route in the Maps FPL Editor if one exists, in top-down order starting with the departure airport on the route and ending with the destination airport in the route. The From Maps list only displays a given airport once, even if it is entered more than once in the route. En-route airports are also included.
- **From Flights** displays airports from recent flights in the Flights view. Airports from the most-recent flight are grouped first (according to departure, destination, and alternate), followed by the next most-recent flight, and so on. The From Flights list only displays a given airport once, even if it is used more than once on the same flight or on other flights in the list.



Maps/Flights List on the Sidebar

NOTE: Reordering or removing airports from the Maps/Flights list cannot be done directly from within the Airports sidebar.

10. AIRPORTS

10.3.6 Browse

Open the Sidebar and tap **Browse** to display an alphabetized directory of airports in ForeFlight's database. There are two databases to choose from.

Toggling Between USA and World Directories

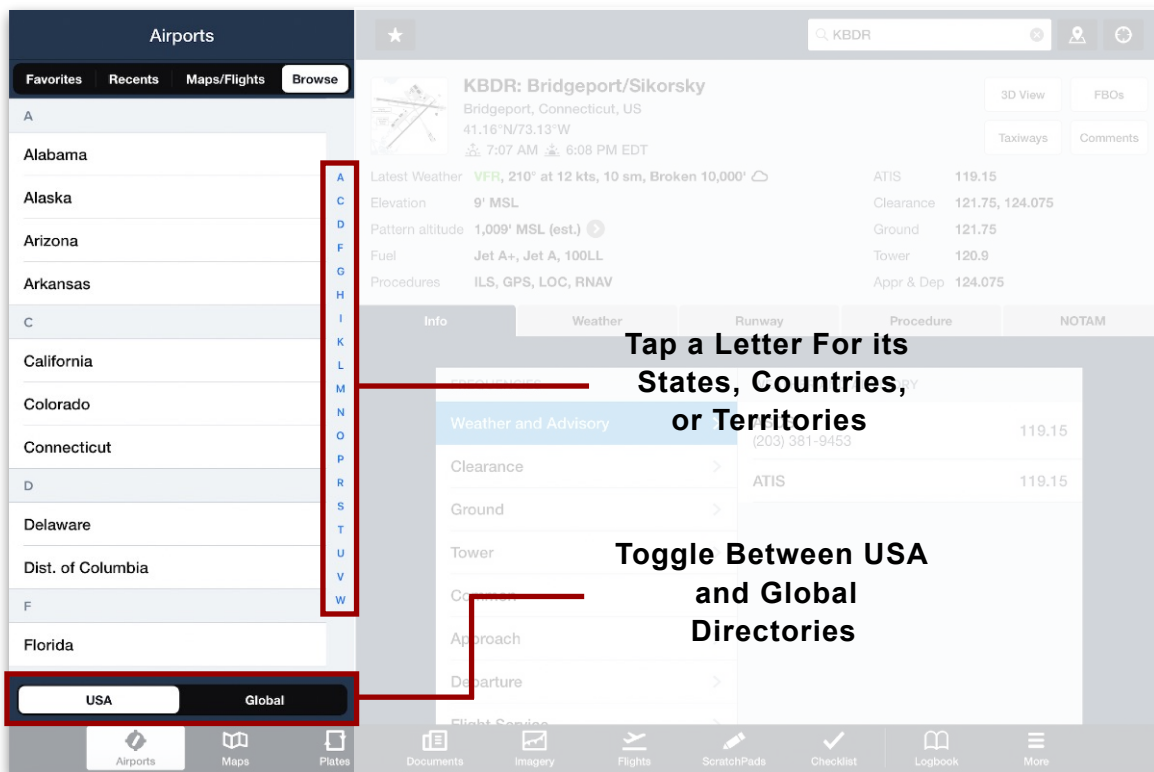
To toggle between a **Global** list alphabetized by country/territory and a smaller **USA** list alphabetized by state, tap the buttons at the bottom of the sidebar.

Browsing the Directory

With the USA or Global directory displaying, scroll up and down to navigate the directory in alphabetical order, or tap a letter on the right to jump to its section of the directory.

Displaying an Airport

Tap a country, territory, or U.S. state to open its list of airports. Tap an airport to display it in the Airports view.

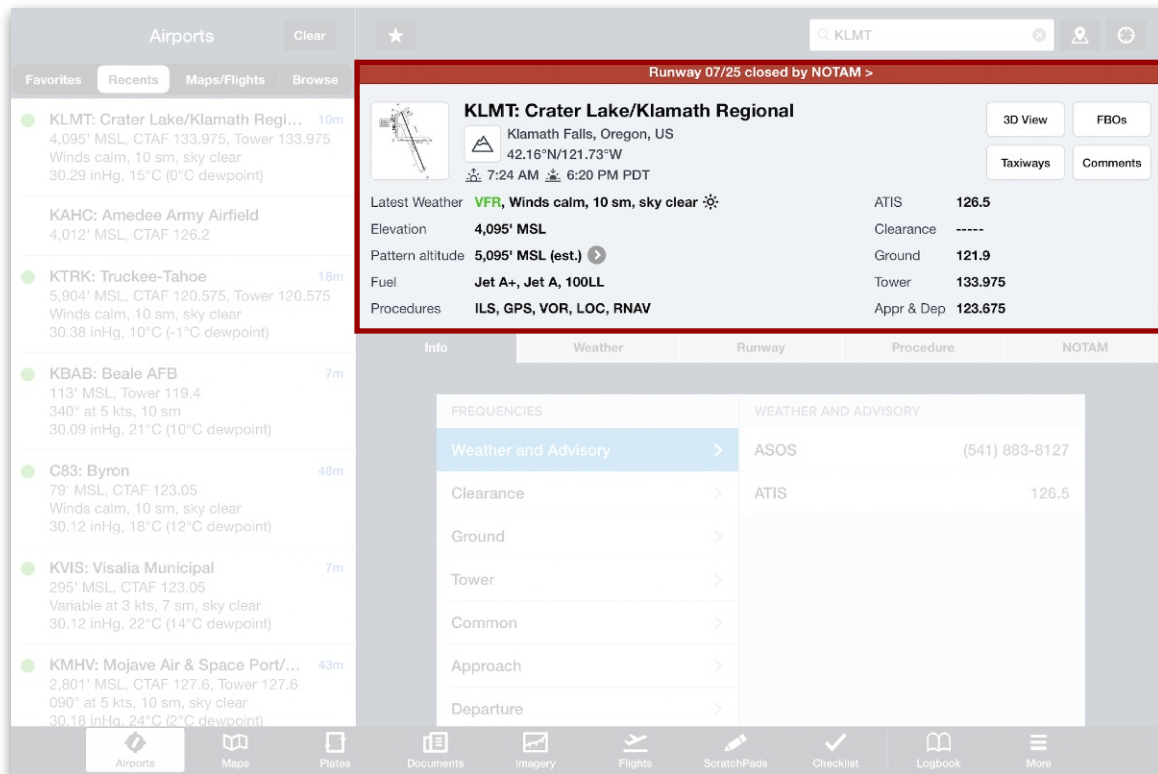


Browsing the Airports Directory

10. AIRPORTS

10.4 Airport Summary

The Airport Summary section on the upper-right side of the Airports view provides a condensed overview of the currently displayed airport, including location, local time, weather, elevation, terrain hazards, traffic patterns, fuel availability, procedures, frequencies, and important airport or runway closure NOTAMs. The four buttons in the upper right corner of the view open a dynamic 3D view of the airport, an FBO view, airport and taxiway diagrams, user-entered comments, and remarks from the controlling agency.

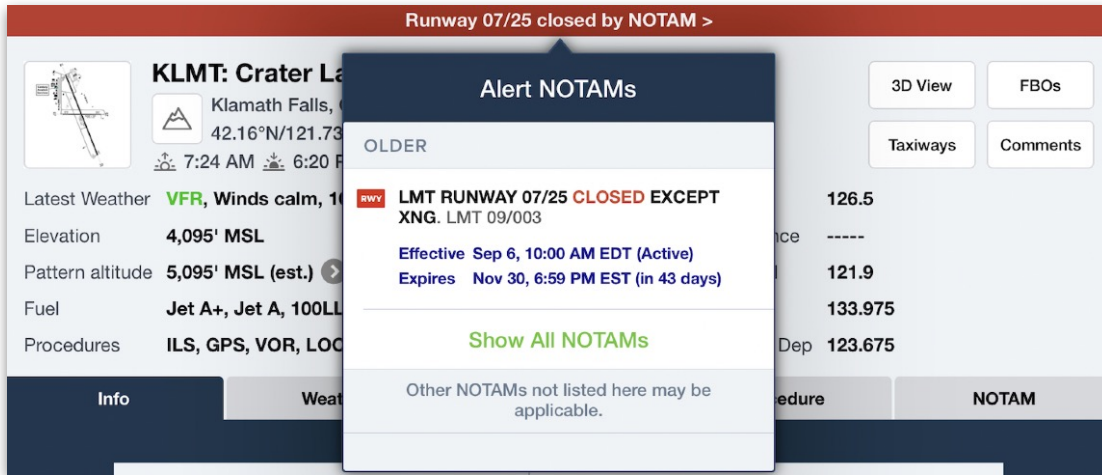


Airports Summary

10. AIRPORTS

10.4.1 Alert NOTAMs

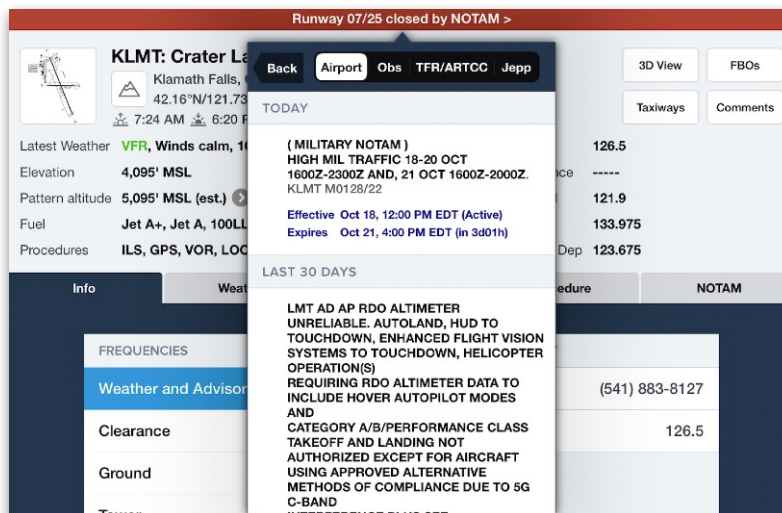
If any runway or airport closure NOTAMs are in effect for an airport, a prominent banner across the top of the Airports view is displayed. Tap the NOTAM banner to display the applicable Alert NOTAMs.



Alert NOTAMs

WARNING: Alert NOTAMs do not represent the full list of NOTAMs pertinent to the airport. Do not use the Alert NOTAMs banner as a replacement for reviewing all NOTAMs prior to a flight.

Tapping **Show All NOTAMs** opens a menu with that airport's full list of effective airport, obstruction, TFR/ARTCC, and Jeppesen NOTAMs.



Show All NOTAMs

10. AIRPORTS

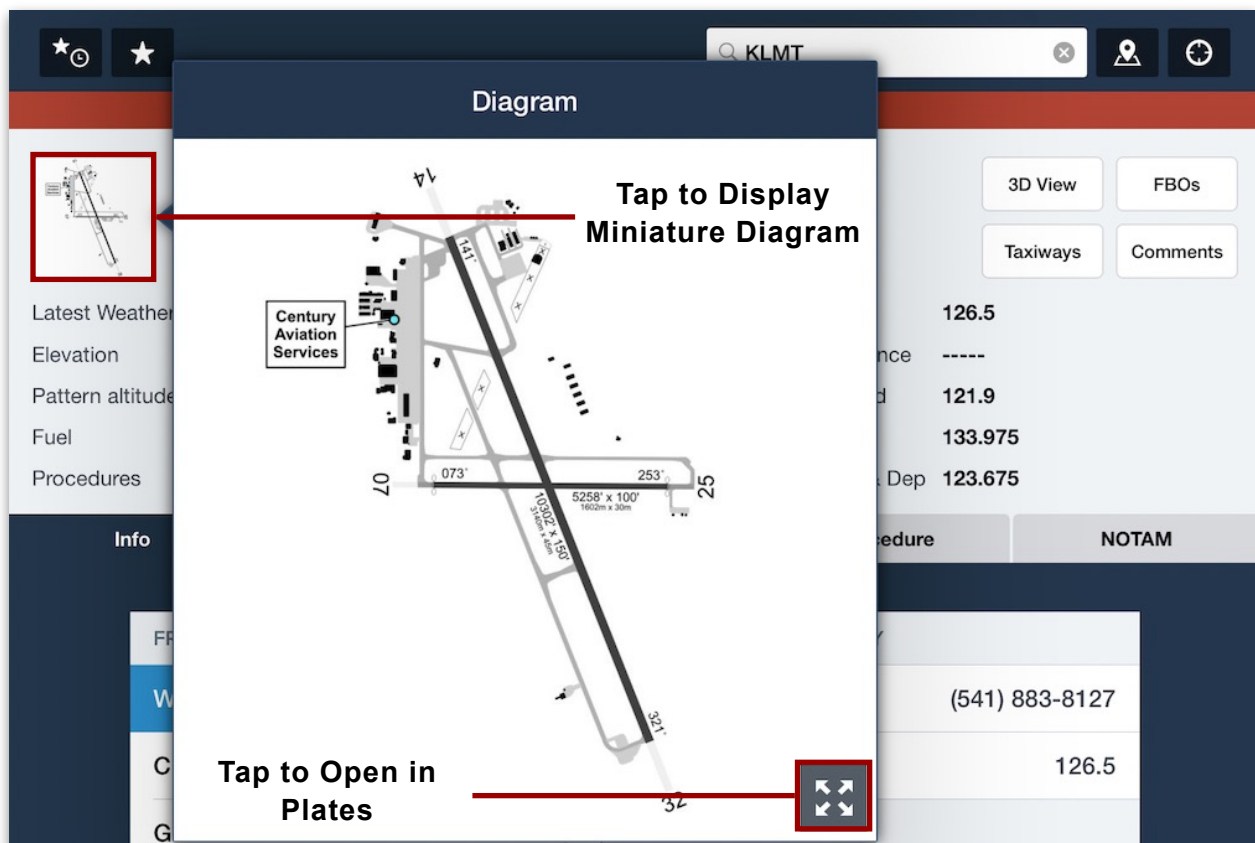
10.4.2 ForeFlight Airport Diagram

The Airport Summary section displays a thumbnail image of an airport diagram in its upper-left corner.

Tap this thumbnail to open a popover window displaying a miniature airport diagram generated by ForeFlight using satellite imagery. This miniature diagram does not show NOTAM alerts, nor are its FBO labels interactive.

Tap the expand icon in the bottom right corner to open a standard-sized, interactive ForeFlight diagram in the **Plates** view.

NOTE: The ForeFlight diagram is not an official publication by the FAA, NavCanada, EUROCONTROL, or Jeppesen. It is meant as a visual reference only and should not be used in place of official plates.



Airport Diagram Preview

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10.4.3 Basic Information

To the right of the ForeFlight airport diagram, the Airport Summary section displays basic information about each airport. This includes location, latitude and longitude coordinates, sunrise and sunset times, and timezone. For airports in Europe, the Transition altitude (from VFR to IFR) is shown next to the lat/long coordinates.

LIRN: Napoli Capodichino
Napoli, Napoli, IT
40.88°N/14.29°E, Transition: 8,000'
6:36 AM 4:55 PM GMT+1

Latest Weather **VFR**, 240° at 4 kts (220° - 280°), 6+ sm ☁

Elevation **285' MSL**

Pattern altitude -----

Fuel **Jet A**

Procedures **ILS, LOC, VISUAL, RNP**

3D View FBOs
Taxiways Comments

ATIS -----
Clearance -----
Ground **121.9**
Tower **118.5, 120.95**
Radar **124.35, 134.2**

Basic Airport Info

10.4.4 Terrain Icon

The Airport Summary section displays the terrain icon (shaped like a small mountain) whenever the terrain elevation changes by more than +/- 1,500 ft within 10 nm of the airport. Tapping the icon opens a window listing the airport elevation, maximum terrain elevation, and minimum terrain elevation. All values are in MSL.

KLMT Terrain

Max Terrain	6,509' MSL
Min Terrain	4,071' MSL
Airport Elevation	4,095' MSL

Terrain info based on 10nm radius

KLMT
7:24

Latest Weather **VFR**, 240° at 4 kts (220° - 280°), 6+ sm ☁

Elevation **4,095' MSL**

Pattern altitude **5,095' MSL (est.)**

Fuel **Jet A+, Jet A, 100LL**

Procedures **ILS, GPS, VOR, LOC, RNAV**

3D View FBOs
Taxiways Comments

NOTAM >

ATIS **126.5**
Clearance -----
Ground **121.9**
Tower **133.975**
Apr & Dep **123.675**

Max/Min Elevation Changes Within 10 NM

10. AIRPORTS

10.4.5 Latest Weather

If weather data exist for the currently selected airport, the Latest Weather field displays a textual and visual summary. This includes from left to right: color-coded flight category, wind speed and direction, visibility, color-coded ceiling, and icon depicting prevailing weather such as rain, gusting winds, or low ceilings. If weather data is not available, the Latest Weather field displays the text “Unknown”.

KGOV: Grayling Army Airfield
Grayling, Michigan, US
44.68°N/84.73°W
☀️ 8:10 AM 🌧️ 6:36 PM EDT

3D View FBOs
Taxiways Comments

Latest Weather **MVFR, 330° at 13 - 22 kts, 8 sm, Broken 1,700'** 🌧️

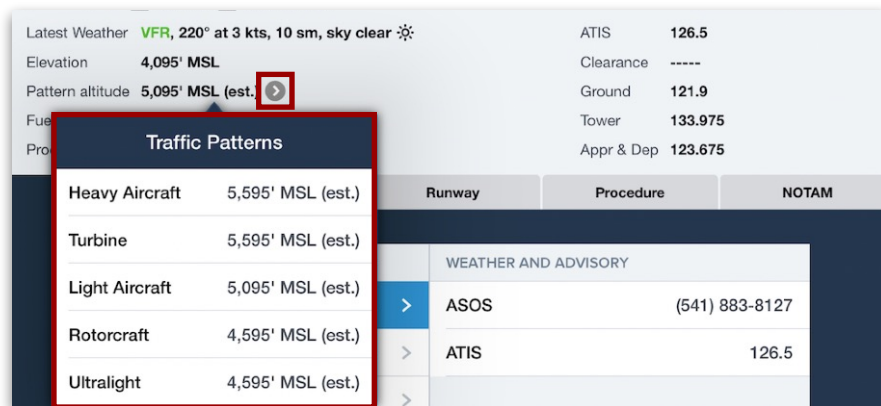
Elevation	1,158' MSL	ATIS	119.075
Pattern altitude	2,158' MSL (est.) ▶	Clearance	-----
Fuel	Jet A, 100LL	Ground	121.9
Procedures	GPS, VOR, RNAV, NDB	Tower	126.2
		Center	125.475

Latest Weather

10. AIRPORTS

10.4.6 Pattern Altitudes

The Airport Summary section by default displays the traffic pattern altitude in MSL for light aircraft. To see a comprehensive list of pattern altitudes including for heavy aircraft, turbine aircraft, light aircraft, rotorcraft, and ultralight aircraft, tap the button next to the displayed pattern altitude. ForeFlight sources traffic pattern altitude (TPA) data from the FAA's eNASR database for U.S. airports and the Jeppesen database for international airports. If specific data is not available, ForeFlight uses standard rules from publications such as the FAA AIM 4-3-3 and Transport Canada AIM RAC 4.5.2. Whenever standard rules are applied, the TPA includes the notation **(est.)**



Pattern Altitudes

10.4.7 3D View

The **3D View** button on the right side of the Airport Summary section opens a dynamic 3D representation of the airport environment. This functionality, available to Performance-tier subscribers, is described in [Airport 3D View](#).

10.4.8 FBOs

The **FBOs** button on the right side of the Airport Summary section opens the FBO List view, which displays a list of pilot services located at that airport. This functionality is described in [Airport FBOs](#).

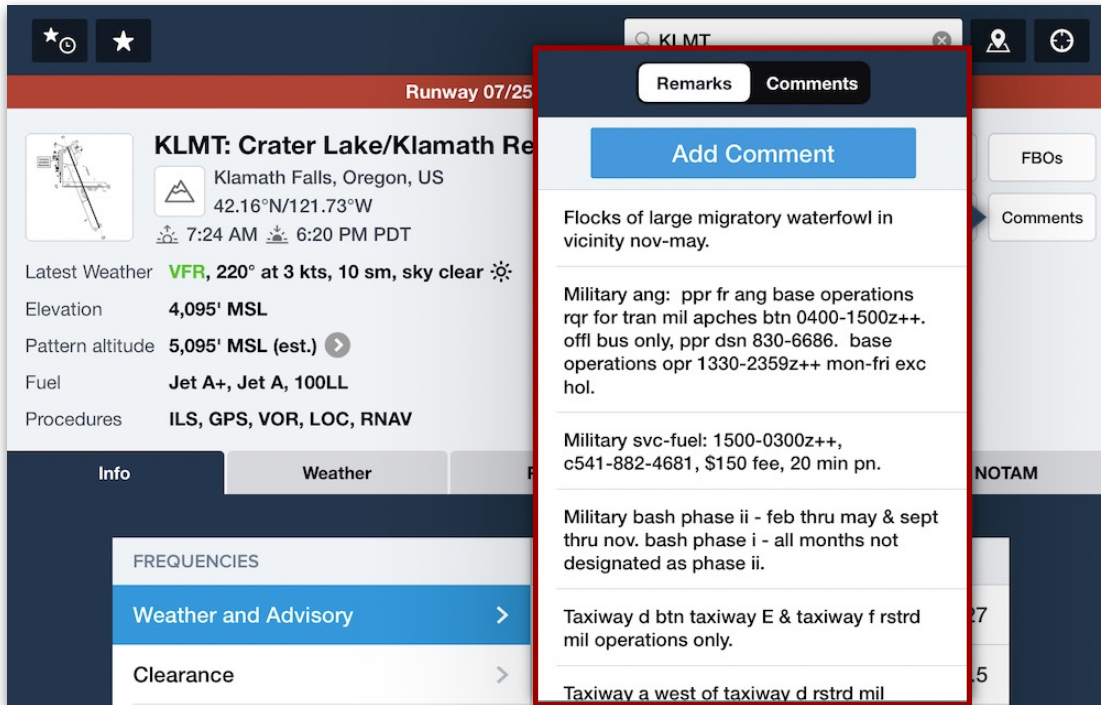
10.4.9 Taxiways

The **Taxiways** button on the right side of the Airport Summary section opens the government e.g., FAA airport diagram (or Jeppesen diagram for subscribers) in the **Plates** view.

10. AIRPORTS

10.4.10 Comments

Tapping the **Comments** button on the right side of the Airport Summary section opens a popover window displaying remarks from official sources and user-entered comments.



Airport Comments

Remarks

Tapping the **Remarks** button displays a list of official remarks about the airport from the controlling agency e.g. FAA.

Comments

Tapping the **Comments** button displays a list of comments about the airport entered by ForeFlight users.

Adding Comments

From the Comments or Remarks view, tap **Add Comment** to open a window and type a plaintext comment about the airport. Then tap **Submit** to add the comment to the Comments list, or **Cancel** to delete the draft comment. Note that, while the Add Comment button is visible in both lists, ForeFlight users cannot add to the Remarks list.

10. AIRPORTS

Prohibited Comments

ForeFlight moderates all comment submissions and will not publish the following content:

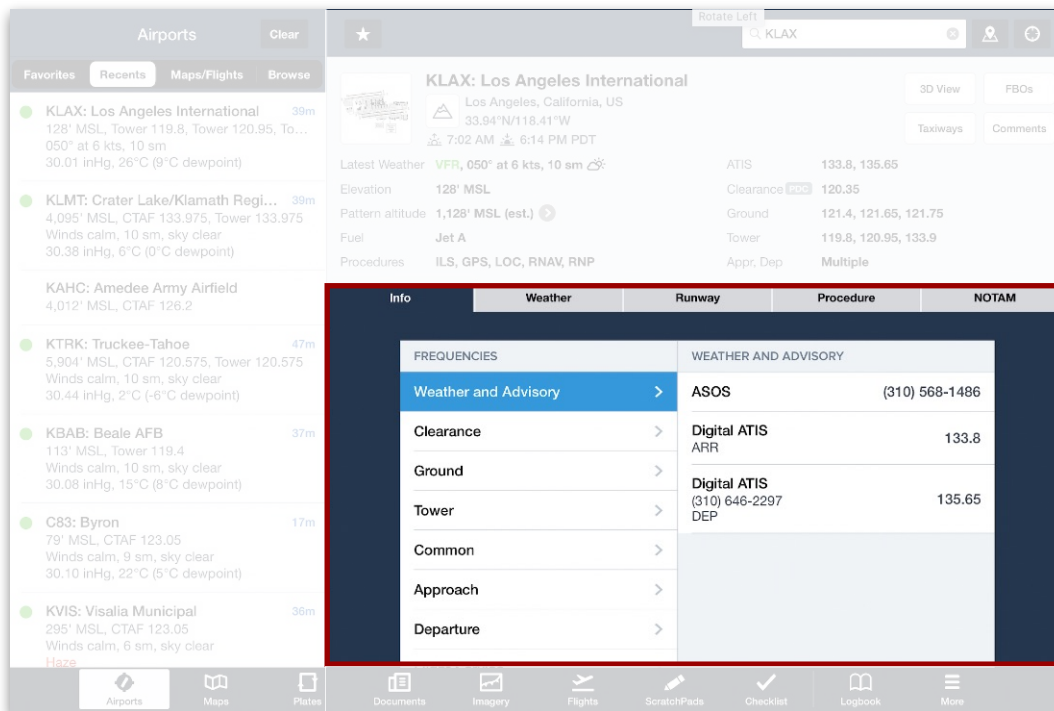
- Gate codes
- Fuel prices
- Landing fees (without date and aircraft type)
- Promotional comments
- Personal attacks
- Vulgarity
- Libelous remarks
- Certain other airport data

10. AIRPORTS

10.5 Airport Details

The lower-right side of the Airports view provides details about the currently displayed airport separated into the following five categories:

- The **Info** tab displays airport frequencies, chart supplements, nearby airports, operating hours, points of contact, AIRAC cycle data, flight tracking widgets, airport features, and onsite services.
- The **Weather** tab displays data from METARs, D-ATIS broadcasts (for Performance-tier subscribers only), TAFs, Forecast Discussion, MOSs, 10-day daily/hourly forecasts, and Winds Aloft forecasts.
- The **Runway** tab shows information including runway wind components, runway ends with best wind, runway dimensions and type, traffic patterns, glideslope, runway slope, lighting, elevation, and runway-specific procedures.
- The **Procedure** tab lists all available airport, departure, arrival, and approach procedures (sourced from ForeFlight, controlling agency, and Jeppesen if subscribed), and serves as a shortcut to open these in the Plates view.
- The **NOTAM** tab lists applicable airport, obstacle, TFR/ARTCC, and Jeppesen (if installed) NOTAMs, and provides a search bar to filter the list.

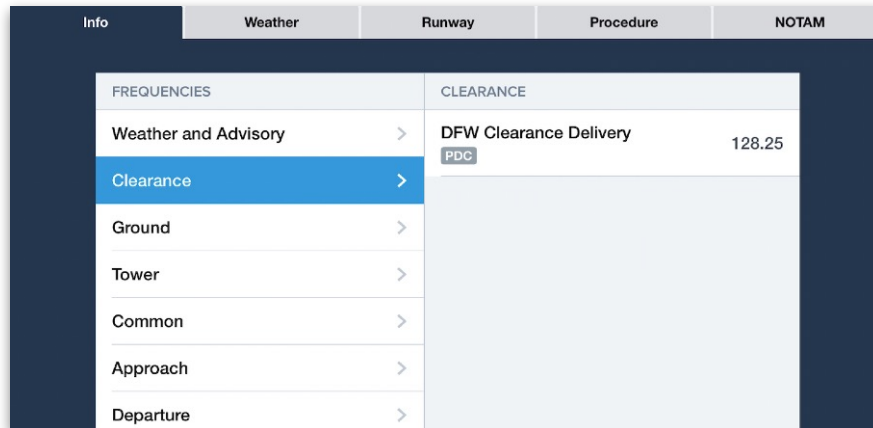


Airports Details

10. AIRPORTS

10.5.1 Info tab

The **Info** tab at the top of the Airport Details section displays a list of general airport information subcategories on the left. Tap a specific item to reveal its details. Some details display to the right of the list, while others open in a new window or view. Each is described below.



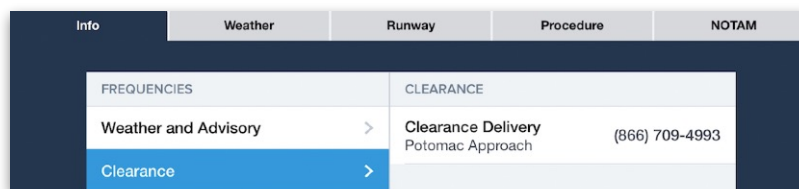
Airports View Info Tab

Frequencies

The Frequencies subcategory lists airport frequencies according to their type (such as Clearance, Ground, or Tower). Tap one of these rows to display specific frequencies and other pertinent information on the right.

NOTE: For Performance Plus and Business Performance customers, larger U.S. airports where electronic Pre-Departure Clearances (PDC) are available for IFR flights are noted with the “PDC” badge next to the Clearance frequency.

ForeFlight displays the phone number and facility name for a pilot to call to obtain an IFR clearance directly from the appropriate overlying Air Route Traffic Control Center (ARTCC) or approach control facility. When using ForeFlight Mobile on an iPhone, tap on the number to initiate a phone call to that facility.



Tap Phone # for Clearance Delivery

10. AIRPORTS

Chart Supplement

The Chart Supplement subcategory lists official publications about the currently selected airport. Depending on the controlling agency, these will be from the FAA's Airport/Facility Directory (A/FD), Canada Flight Supplement (CFS), or Europe's Airport Information Publication (AIP). Tap one of these rows to open its details in the **Plates** view.

Nearby

The Nearby subcategory lists other airports, heliports, and facilities near the currently selected airport. Tap a row to display a new list of facilities on the right. This list shares functionality similar to the **Airports Near You** menu, but relies on the airport's location rather than the device's.

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Details

The Details subcategory lists various logistical details about the currently selected airport. Tap a row to display a new list on the right. Each row and its functionality is described below:

- Tap **Operating Hours** to display the airport's monthly, weekly, and hourly operating schedule.
- Tap **Aircraft Rescue and Firefighting** to see the maximum size of aircraft that can be supported by the airport's fire suppression and emergency response personnel. Each entry includes **Category**, **Max. Aircraft Length**, and, if applicable, **Max Fuselage Width** fields defined by the controlling agency (FAA or ICAO). An entry may say "Unknown" if the airport's capabilities are unknown, or "Not Available" if it lacks any capabilities.
- Tap **Contacts** to display the names, mailing addresses, and phone numbers of the airport owner and manager. Then tap an address to open its location in iOS Maps, or tap a phone number to place a call (using iPhones only).
- Tap **Cycle** to see the current AIRAC cycle version and dates of the airport data in ForeFlight.
- Tap **Features** to see various geographical and logistical information about the airport such as its elevation, controlling facilities, magnetic variation, and timezone. With a working internet connection, tap **Show in Maps** to display the airport in iOS Maps, or tap **Wikipedia** to open the airport's wiki page.
- Tap **Flight Tracking** to display options to query flightaware.com about the airport's scheduled arrivals, scheduled departures, and en-route traffic. This feature requires a working internet connection and a FlightAware account.

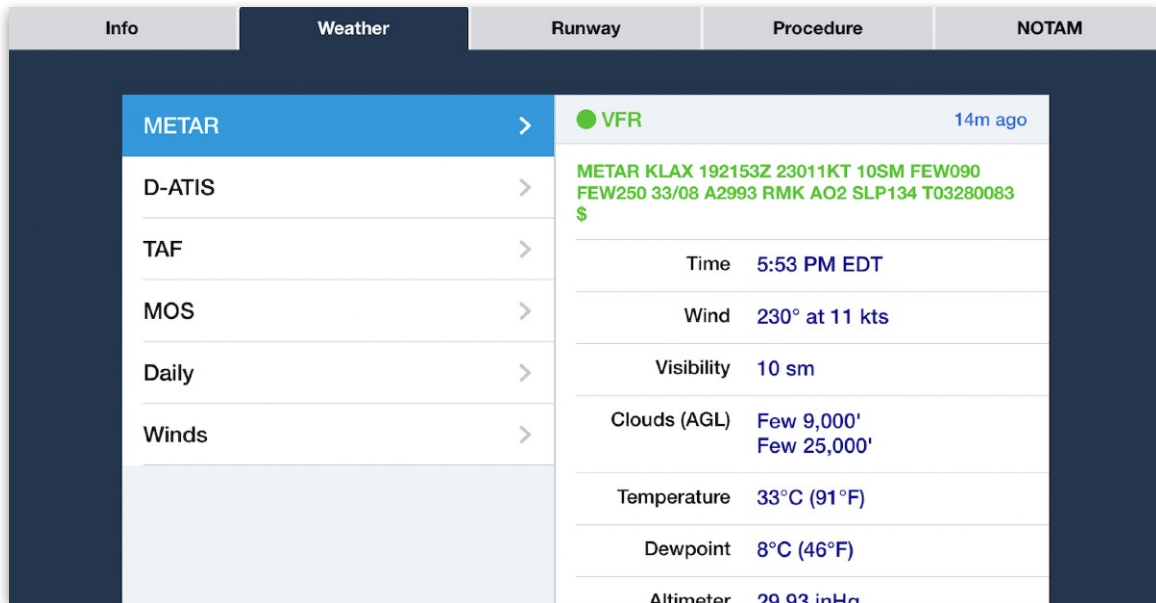
Services

The Services subcategory lists various visitor services available at or near the airport such as car rentals, lodgings, and restaurants. Tap a row to display each service of that type on the right, as well as its phone number and distance from the airport if applicable.

10. AIRPORTS

10.5.2 Weather Tab

The **Weather** tab displays a list of the selected airport's weather reports and forecasts. Tap a row in the list to display its details on the right. Each row and its functionality are described below.



Airports View Weather Tab

METAR

Tap **METAR** to display the airport's current meteorological report. The METAR view displays the color-coded flight category, the age of the weather data, and both the coded and decoded METAR.

Beneath the decoded METAR is a Nearby Weather section listing nearby airports. Tapping one of these airports switches to it in the Airports view and displays its METAR.

D-ATIS

Tap **D-ATIS** to display the airport's current digital ATIS message, including the information letter and the time since the message was last updated. This row requires an active internet connection, is only available to Performance-tier subscribers.

NOTE: Digital ATIS is only available from large airports in the United States, Australia, and Norway.

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TAF

Tap **TAF** to display the TAF for the currently selected airport (or the nearest airport with a TAF), including the time since the forecast was last updated. Swipe the TAF details down to see, in order: the name, direction, and distance of the originating airport, the coded TAF format with color-coded sections, a button to display the Forecast Discussion, and a decoded breakdown of conditions including a color-coded flight category icon.

If the TAF includes more than one forecast during its 24-hour period, each one is decoded and listed in chronological order.

MOS

Tap **MOS** to display the airport's MOS forecast, including the time since the forecast was last updated. Swipe the MOS details down to see a breakdown of conditions during each forecast period.

Daily

Tap **Daily** to display a summary of the airport's Daily/Hourly Forecast. Scroll down to see a row for each day in the forecast. Tap any day to open the Local Forecast window showing the full Daily/Hourly Forecast.

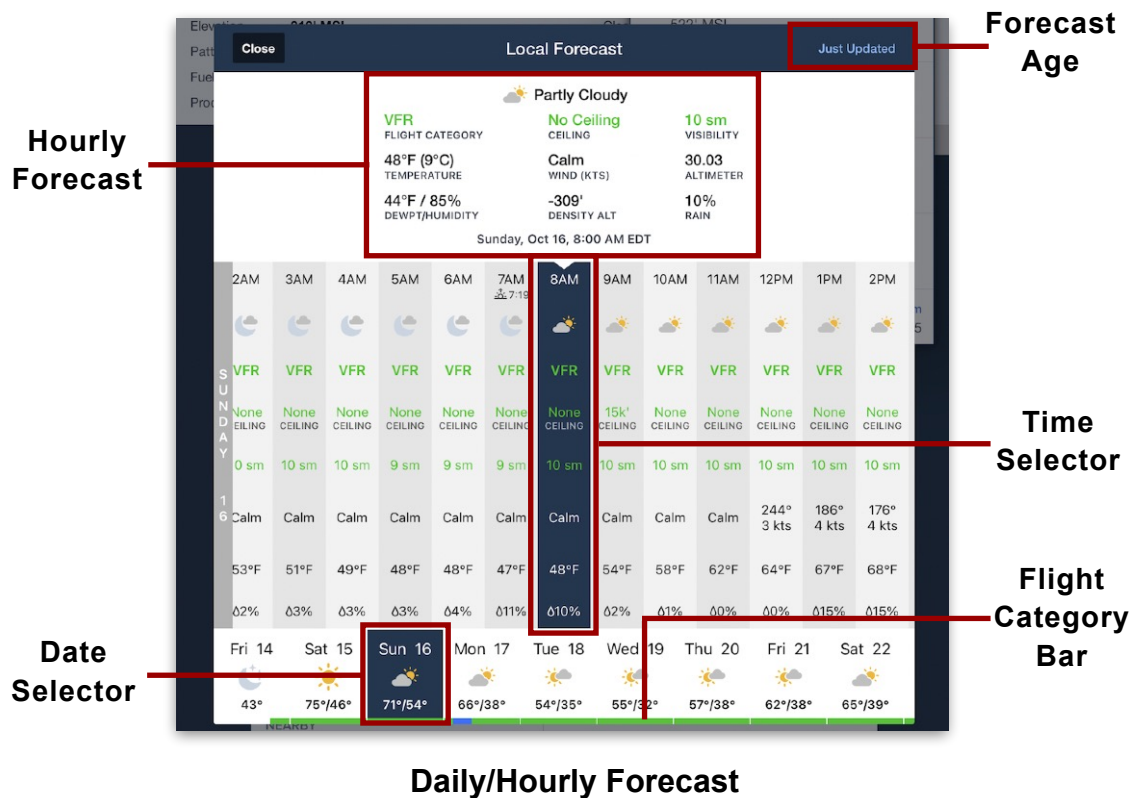
The upper right corner of the Local Forecast window displays the age of the forecast. When your device is connected to the Internet, forecast data is automatically refreshed after 1 hour.

The bottom portion of the window shows an hourly breakdown that can be swiped left or right to see the entire 10-day forecast. The bottom edge, along with text throughout the window, is color-coded according to flight category.

10. AIRPORTS

The Local Forecast window can be interacted with using a bottom-up approach:

1. Along the bottom edge, read the color-coded bar to see how the flight category fluctuates across the entire 10-day forecast.
2. Above the bar, swipe left and right to find and tap the desired date.
3. Above the date selector, swipe left and right to find/tap the desired time.
4. At the top, read the weather forecast for the selected date/time.
5. Note that any weather information responsible for the flight category is displayed in the appropriate color.



NOTE: ForeFlight also provides Daily/Hourly Forecasts for non-airport locations:

- To see a forecast at your device's current location, long-tap the ForeFlight Mobile app icon on your device home screen and select **Local Forecast**.
- To see a forecast at a specific location on the Maps view, tap and hold the location on the Maps view and select **Wx Forecast**.

For more information, see ForeFlight's [Daily/Hourly Forecast](#).

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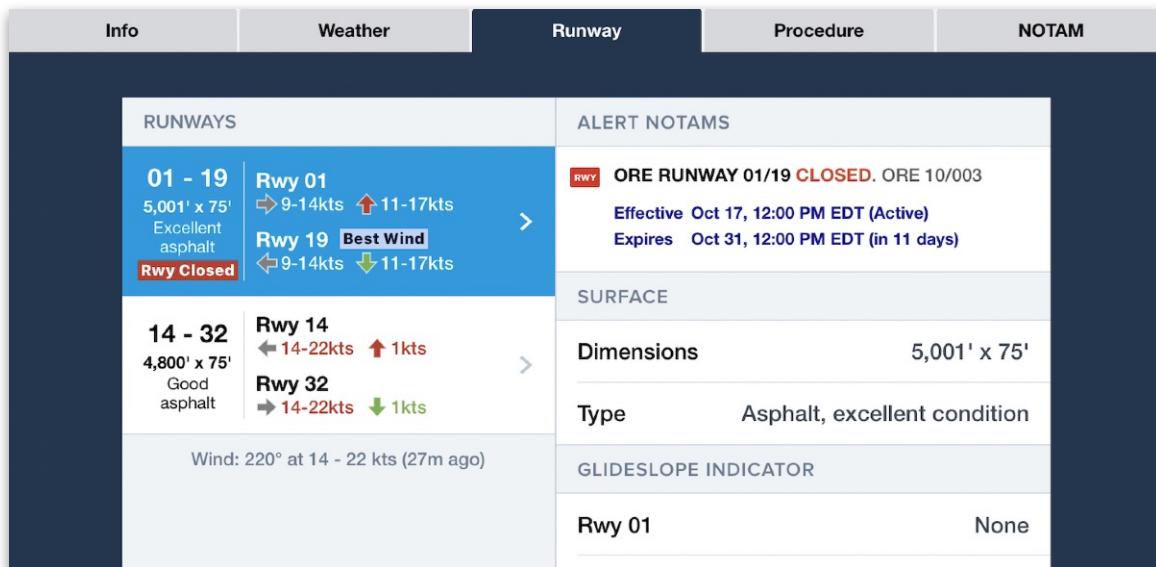
Winds

Tap **Winds** to display the airport's Temperatures and Winds Aloft forecast in 3,000-foot increments. The time since the forecast was last updated is provided in the upper right corner. Swipe the Winds details down to see wind and temperature data at each 3,000-ft MSL increment and for each forecast period. Temperature values are color-coded based on temperature range:

- **Grey** above +2° C
- **Magenta** between +2° C to -25° C
- **Tan** below -26° C

10.5.3 Runway Tab

The **Runway** tab at the top of the Airport Details section displays information about the selected airport's runways. The left side displays a list of runways and a summary of their characteristics. Each runway in the list can be tapped to display additional information. Below the last item in the list, the airport's wind direction and speed are provided along with the time since the current wind data was reported. Each section of the Runways view is described in detail below.



Airports View Runway Tab

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Runway Summary

The left side of the Runway view lists each runway at the airport. Each list item is a summary of runway characteristics, including length, width, surface condition, and surface material. If applicable, runway-related NOTAM alerts, color-coded wind speeds and directions (in degrees True North), a **Right Traffic** label, and runways with the best wind for takeoffs and landings may also be provided.

A summary card for Runway 01-19. On the left, it lists '01 - 19', '5,001' x 75'', 'Excellent asphalt', and a red 'Rwy Closed' tag. On the right, it shows 'Rwy 01' with wind '9-14kts' and '11-17kts' (red arrow up), and 'Rwy 19' with a blue 'Best Wind' tag, wind '9-14kts', and '11-17kts' (green arrow down). A right-pointing chevron is on the far right.

Runway Summary

Tap an item in the Runway List to display its details on the right. These details and their functionality are described below.

Surface

The Surface section provides the runway dimensions (length and width) and type (surface material and condition).

A detailed card for Runway 16L-34R. The left side shows '16L - 34R', '6,200' x 100'', 'Good asphalt', and a right-pointing chevron. It lists 'Rwy 16L' with a blue 'Best Wind' tag and wind '6-10kts' (green arrow down) and '7-12kts' (green arrow down). It also lists 'Rwy 34R' with 'Right Traffic' and wind '6-10kts' (red arrow right) and '7-12kts' (red arrow up). The right side is divided into 'SURFACE' and 'TRAFFIC PATTERN' sections. 'SURFACE' includes 'Dimensions' (6,200' x 100') and 'Type' (Asphalt, good condition). 'TRAFFIC PATTERN' is currently empty.

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Traffic Pattern

The Traffic Pattern section only displays in the Runway Details if either runway is subject to a right traffic pattern. In this case, the appropriate runway is listed with a **Right traffic** label.

RUNWAYS	TRAFFIC PATTERN
16L - 34R 6,200' x 100' Good asphalt	Rwy 16L Best Wind ⬅️ 6-10kts ⬇️ 7-12kts
	Rwy 34R Right Traffic ➡️ 6-10kts ⬆️ 7-12kts
	GLIDESLOPE INDICATOR
	Rwy 16L 4-light PAPI (on left)

Glideslope Indicator

The Glideslope Indicator section lists any VASI, PAPI, or other visual descent guidance systems, along with their relative positions. If no system is installed, the runway is labeled with **None**.

RUNWAYS	GLIDESLOPE INDICATOR
16L - 34R 6,200' x 100' Good asphalt	Rwy 16L Best Wind ⬅️ 7-12kts ⬇️ 6-10kts
	Rwy 34R Right Traffic ➡️ 7-12kts ⬆️ 6-10kts
	Rwy 16L 4-light PAPI (on left)
	Rwy 34R 4-light PAPI (on left)
	SLOPE

10. AIRPORTS

Slope

The Slope section lists the gradient or slope of each runway end communicated as a positive or negative percentage. If the gradient is -0.24%, the runway height decreases by 0.24 feet at every 100 feet of runway length.

NOTE: The Slope section refers to terrain gradients and should not be confused with the Glideslope information above it.

RUNWAYS		SLOPE	
16L - 34R 6,200' x 100' Good asphalt	Rwy 16L Best Wind ⬅️ 7-12kts ⬇️ 6-10kts	Rwy 16L	-0.24%
	Rwy 34R Right Traffic ➡️ 7-12kts ⬆️ 6-10kts	Rwy 34R	0.24%
		HEADING	

Displaced Threshold

If the runway has a displaced threshold, a Displaced Threshold section is displayed and provides the position of the threshold beyond the start of the applicable runway end.

RUNWAYS		DISPLACED THRESHOLD	
12 - 30 6,562' x 150' Good asphalt	Rwy 12 Winds variable	Rwy 12	917'
	Rwy 30 Winds variable	HEADING	

Heading

The Heading section displays the Magnetic heading of each runway.

RUNWAYS		HEADING	
16L - 34R 6,200' x 100' Good asphalt	Rwy 16L Best Wind ⬅️ 7-12kts ⬇️ 6-10kts	Rwy 16L	161°M
	Rwy 34R Right Traffic ➡️ 7-12kts ⬆️ 6-10kts	Rwy 34R	341°M
		LIGHTING	

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Lighting

The Lighting section lists the type and intensity of the approach lighting system installed at each runway, as well as the runway's edge lighting. If no system is installed, the entry is labeled with **None**.

RUNWAYS		LIGHTING
16L - 34R 6,200' x 100' Good asphalt	Rwy 16L Best Wind ⬅️ 8-13kts ⬇️ 7-11kts	Appr. Rwy 16L 1,400' med. intensity & RAIL
	Rwy 34R Right Traffic ➡️ 8-13kts ⬆️ 7-11kts	Appr. Rwy 34R 1,400' med. intensity & sequenced flashers
16R - 34L	Rwy 16R Best Wind Right Traffic ⬅️ 8-13kts ⬇️ 7-11kts	Edge High Intensity

Elevation







The Elevation section shows touchdown zone elevation in MSL for each runway.

RUNWAYS		ELEVATION
16L - 34R 6,200' x 100' Good asphalt	Rwy 16L Best Wind ⬅️ 8-13kts ⬇️ 7-11kts	Rwy 16L Touchdown 192' MSL
	Rwy 34R Right Traffic ➡️ 8-13kts ⬆️ 7-11kts	Rwy 34R Touchdown 178' MSL
		PROCEDURES

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Procedures

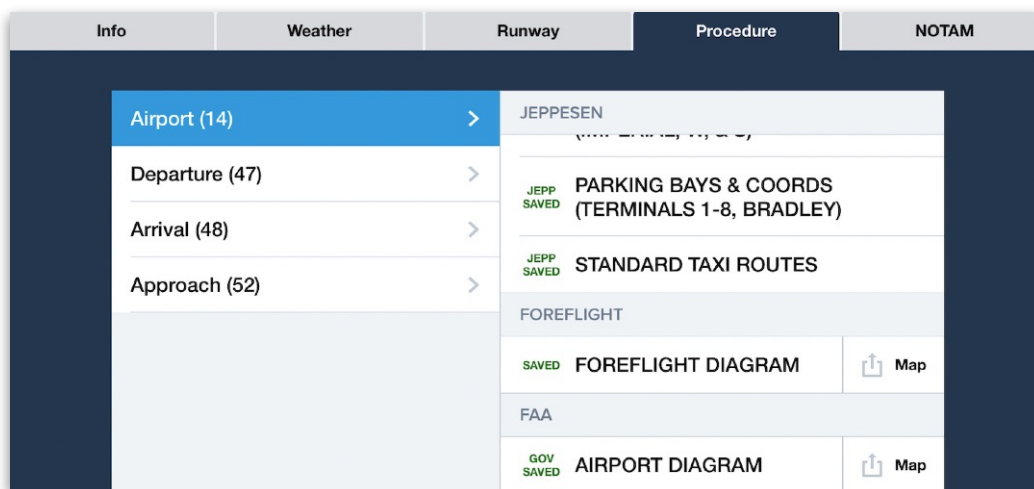
The Procedures section lists any FAA, NavCanada, Eurocontrol, or Jeppesen approach procedures available for the runway, along with any **custom procedures** added by the user. Tapping a procedure's name opens it in the Plates view. Tapping the Send To Map icon to the right of a procedure's name opens it on the Maps view (only available to ForeFlight Pro Plus, Performance Plus, Business Pro, or Business Performance subscribers).

RUNWAYS	PROCEDURES
16L - 34R 6,200' x 100' Good asphalt	J-EPP SAVED ILS or LOC Rwy 16L  Map
16R - 34L 3,715' x 75' Excellent asphalt	J-EPP SAVED RNAV (GPS) Rwy 16L  Map
Rwy 16L Best Wind ← 8-13kts ↓ 7-11kts	J-EPP SAVED RNAV (GPS) Rwy 34R  Map
Rwy 34R Right Traffic → 8-13kts ↑ 7-11kts	GOV SAVED ILS or LOC Rwy 16L  Map
Wind: 200° at 10 - 17 kts (27m ago)	GOV SAVED RNAV (GPS) Rwy 16L  Map
	GOV SAVED RNAV (GPS) Rwy 34R  Map

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10.5.4 Procedure Tab

The **Procedure** tab displays terminal procedures for the selected airport. The left side shows four procedure categories: Airport, Departure, Arrival, and Approach. Tapping one of these categories displays its list of individual procedures on the right, subdivided by source: Jeppesen (if installed), ForeFlight, FAA, and EUROCONTROL. The order of sources cannot be changed.



Airports View Procedure Tab

Procedures are marked as **Saved** or **Not Saved**. Procedures marked *Saved (in green)* are downloaded locally on your device and are available when offline. By viewing a plate, it is downloaded to the device. Plates can be **downloaded** as part of an entire region's download.

Tapping a procedure's name opens it in the **Plates** view. Tapping the Send To Map icon to the right of the procedure's name opens it on the Maps view (only available to ForeFlight Pro Plus, Performance Plus, Business Pro, or Business Performance subscribers). The contents of each procedure category are described on the next page.



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Airport

The Airport category includes publications about the airport environment such as airport diagrams, airspace diagrams, construction diagrams, taxi route diagrams, chart supplements excerpts, and notes on hot spots, takeoff minimums, and parking bays.

Departure

The Departure category includes the airport's departure procedures and their related notes. When a departure procedure is restricted to aircraft with a particular propulsion type such as jet or piston, it is labeled with the aircraft propulsion system(s) to which applies.

Arrival

The Arrival category includes the airport's arrival procedures and their related notes. When an arrival procedure is restricted to aircraft with a particular propulsion type such as jet or piston, it is labeled with the aircraft propulsion system(s) to which applies.

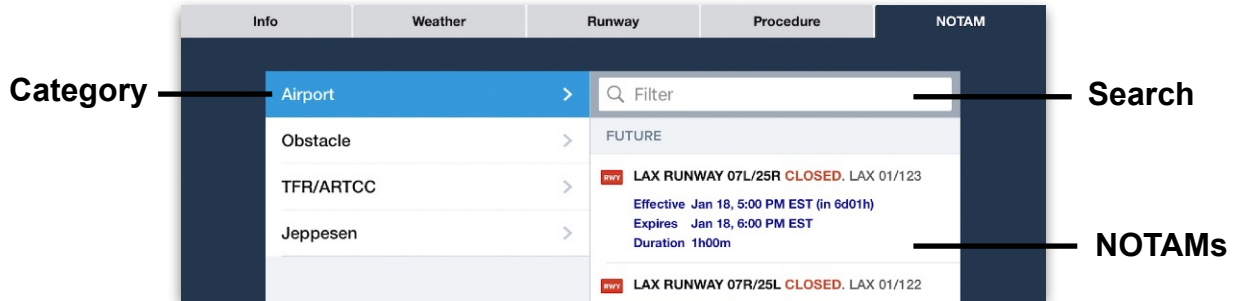
Approach

The Approach category includes the airport's instrument approach procedures and their related notes.

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10.5.5 NOTAM Tab

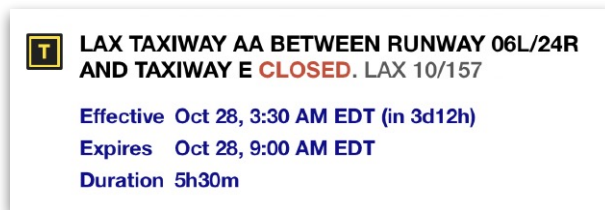
The **NOTAM** tab displays NOTAMs for the selected airport. The left side shows four NOTAM categories: Airport, Obstacle, TFR/ARTCC, and Jeppesen (if installed). Each category displays its list of individual NOTAMs on the right and a search bar that can be used to filter NOTAMs within that category.



Airports View NOTAM Tab

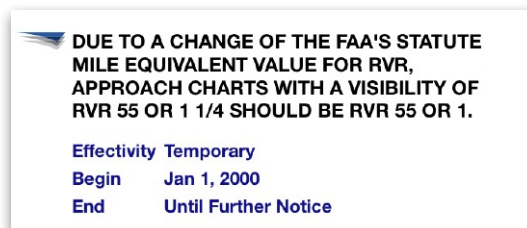
NOTAMs

NOTAMs are listed in order of recency: Future, Today, Last 7 Days, Last 30 Days, Older. Each individual NOTAM row displays the NOTAM's number, text, effective date, expiration date, and duration if applicable, as well as an icon conveying the NOTAM type (such as runway, taxiway, obstacle, airspace, or navigation). If a NOTAM communicates a closure or out-of-service message, certain keywords will be in red text.



Jeppesen NOTAMs

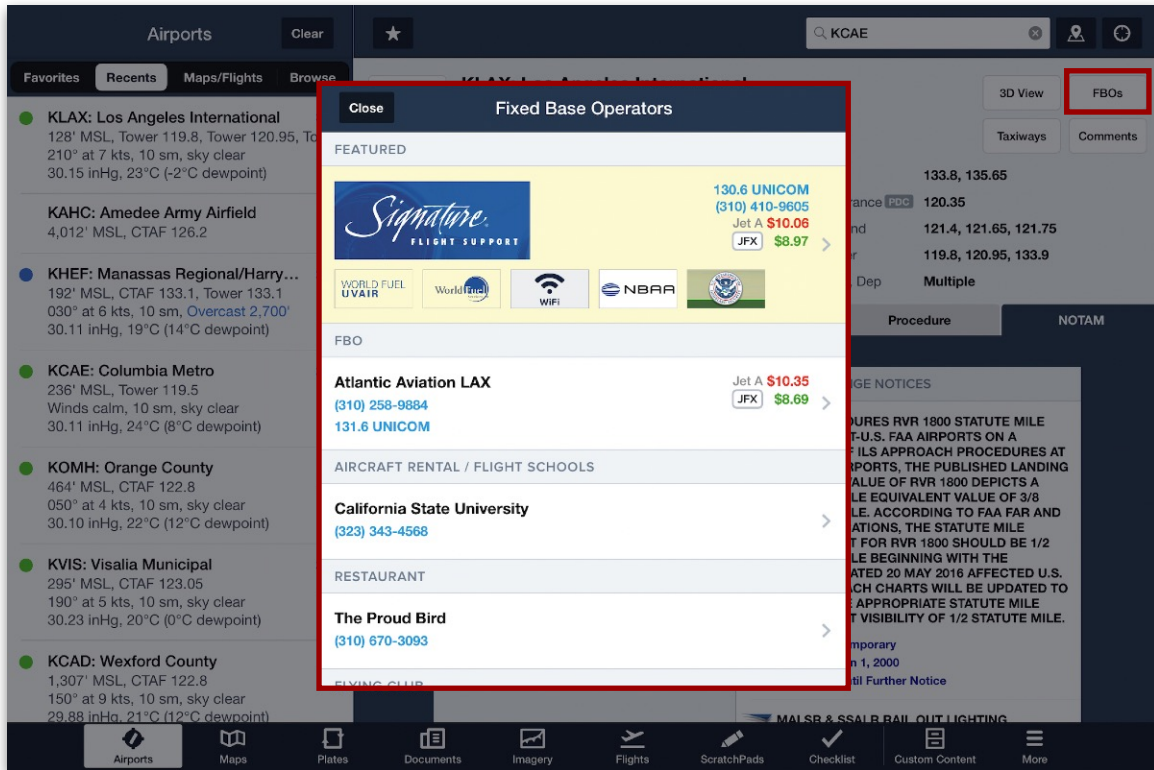
Jeppesen NOTAM rows display the NOTAM's effectivity, beginning and ending dates, and text. All Jeppesen NOTAMs display the Jeppesen icon regardless of their subject.



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10.6 FBO List

The **FBOs** button on the right side of the **Airport Summary** section opens the FBO List view, which displays a list of pilot services available at that airport. Tapping any service listed in the window displays additional information about it in the **FBO Details** view. The window is divided into several sections depending on the types of pilot services available. These sections are described below.



FBO List View

10.6.1 Featured

FBOs, contract fuel vendors, and other pilot services located at the airport can display their services prominently in a yellow Featured section at the top of the FBO List view. The exact layout of each row in the Featured section depends on the type of service using the space and may include one or more corporate logos but otherwise tends to mirror the layouts described below.

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10.6.2 FBO

The FBOs section lists any fixed base operators located at the airport. FBO listings tend to display the FBO name, phone number, and UNICOM frequency on the left, along with fuel prices on the right. Fuel prices in the FBO List view are **color-coded** in the same way as on the Maps view. If the user's account is set up with JetFuelX and the FBO hosts contract fuel vendors, a white JFX label is displayed next to the lowest available contract fuel price.

10.6.3 Other Services

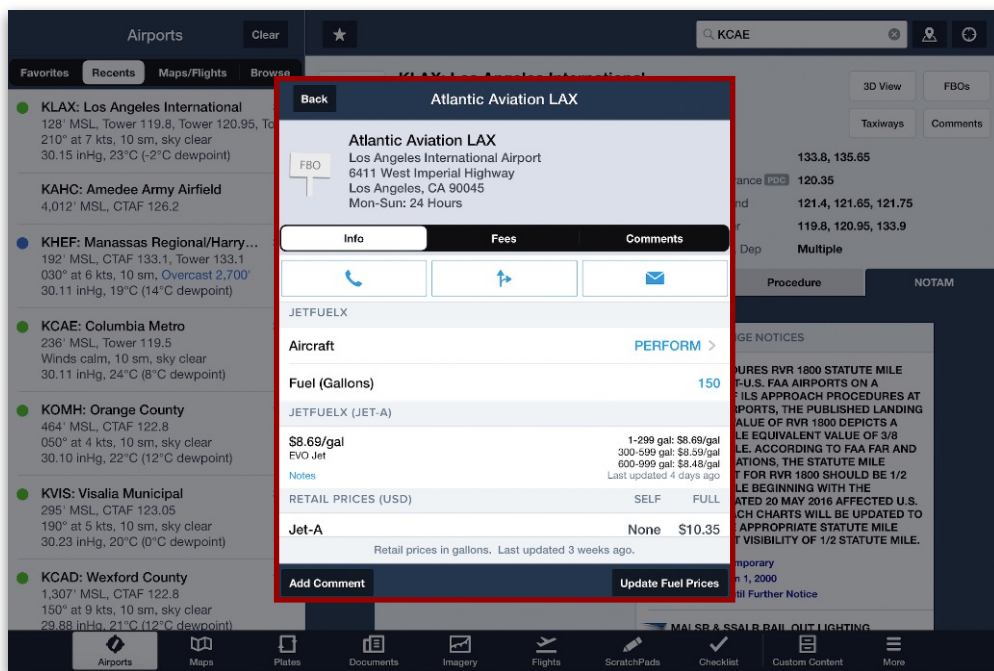
Various other pilot services may have their own sections in the FBO List view. Possible section headers include but are not limited to the following: Aircraft Rental / Flight Schools, Restaurants, Flying Club, and Other.

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10.7 FBO Details

Tapping the name of a pilot service listing in the FBO List opens the FBO Details view, which provides additional details and functionality related to the service.

The top of the FBO Details view displays the service's name, corporate logo (if applicable), mailing address, and hours of operation. Below that, it displays up to four tabs with additional details: Info, Fees, Photos, and Comments. At the bottom, it displays two buttons: Add Comment, and Update Fuel Prices. These features are described below.



FBO Details View

10.7.1 Info

When the FBO Details view is opened, the Info tab is selected by default. The top row displays three blue buttons for users to call the service (using an iPhone), find directions to the service (using iOS Maps), or email the service. If the service provider has not listed a phone number, mailing address, or email address, the appropriate button will be disabled.



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Additional details in the Info tab may include the following:

- **JetFuelIX, JetFuelIX (Jet-A), and Retail Prices (USD):** These sections display available retail and contract fuel prices, and provide additional functionality described in [JetFuelIX](#).
- **About:** This section includes information provided by the pilot service.
- **Contacts:** This section lists various ways to contact the pilot service, such as UNICOM frequencies, phone and fax numbers, email addresses, and website URLs.
- **Amenities:** This section lists the pilot service's onsite amenities, such as ATMs, restrooms, and Wifi.
- **Services:** This section lists the pilot services available, such as aircraft charters, aircraft hangars, aircraft maintenance, pilot supplies, catering, and rental cars.
- **Fuel Types:** This section lists the types of aircraft fuel offered by the pilot service.
- **Credit Cards:** this section lists the credit card types accepted by the pilot service.

10.7.2 Fees

The Fees tab displays a list of ground power unit (GPU), handling, landing, overnight, and other fees charged by the FBO.

10.7.3 Photos

The Photos tab displays thumbnail images provided by the FBO or pilot service.

10.7.4 Comments

The Comments tab displays user-entered comments about the FBO or pilot service. Once you access comments, they are saved to your device so you'll be able to view them again later - even when you are offline.

10.7.5 Adding Comments

To add a comment, tap the [Add Comment](#) button near the bottom of the FBO Details view. Comments are moderated by ForeFlight and will appear for all users to see after they are [reviewed](#).

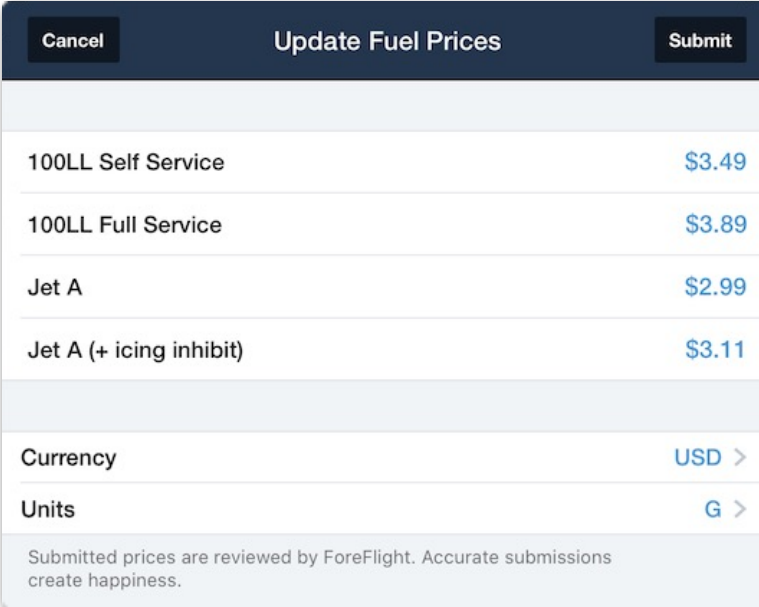
10. AIRPORTS

10.7.6 Updating Fuel Prices

Fuel price data is provided for thousands of FBOs. Fuel prices are not guaranteed so it is important to verify the price information with the FBO when complete accuracy is required. The price data do not differentiate between cash or credit pricing, nor will they reflect any discounts that may be available.

Tap **Update Fuel Prices** when viewing an FBO's details to submit updated fuel prices for Jet A, 100LL, and UL94. It is not possible to update Mogas or UL91/96 fuel prices.

When submitting price data, leave unknown prices blank. Blank values will be ignored when the prices are updated.



Update Fuel Prices	
100LL Self Service	\$3.49
100LL Full Service	\$3.89
Jet A	\$2.99
Jet A (+ icing inhibit)	\$3.11
Currency	USD >
Units	G >
Submitted prices are reviewed by ForeFlight. Accurate submissions create happiness.	

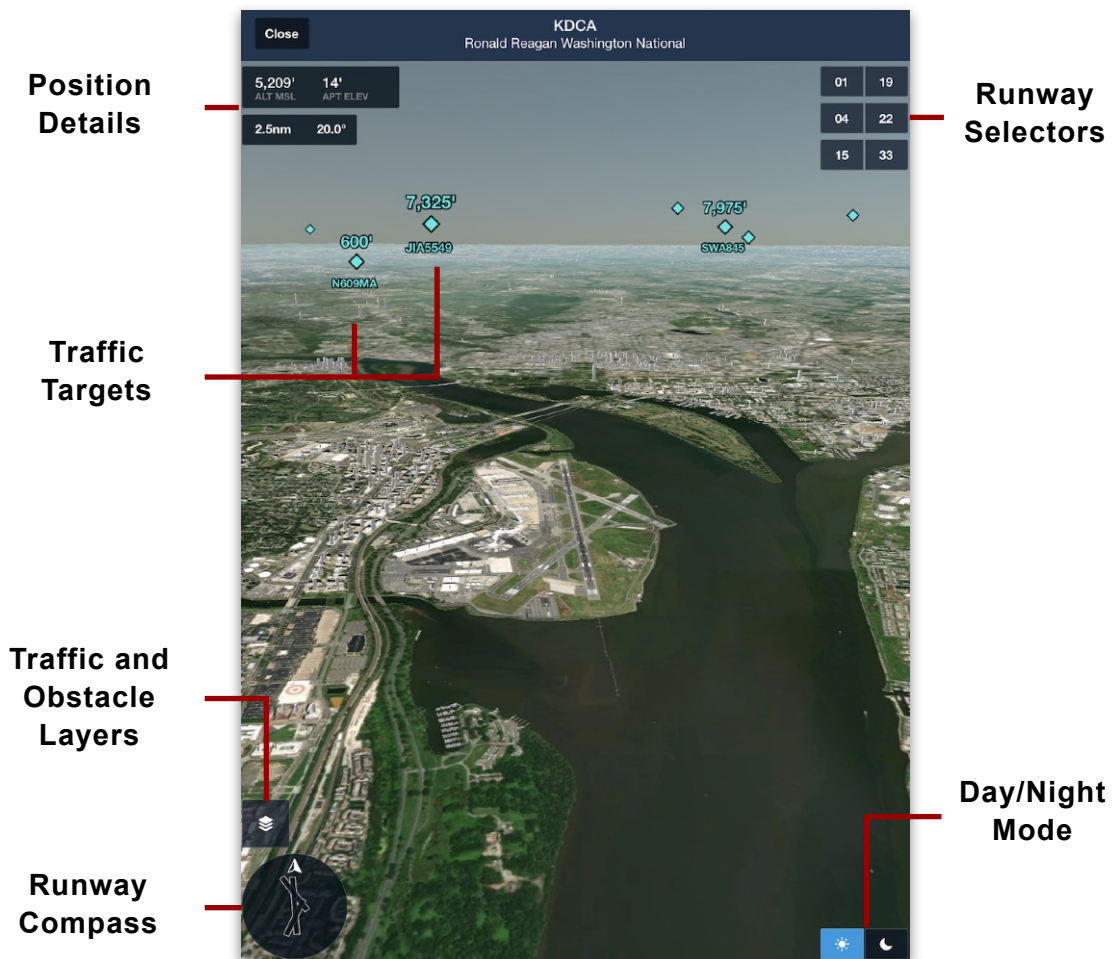
Updating Fuel Prices

10. AIRPORTS

10.8 Airport 3D View

On the **Airport Summary** section, tap the **3D View** button to open a dynamic 3D preview of the currently selected airport.

Airport 3D View combines high-resolution terrain data and aerial imagery to help pilots familiarize themselves with the airport environment before arrival. Airport 3D View is included in Performance Plus, Business Performance, and MFB Performance subscription plans.



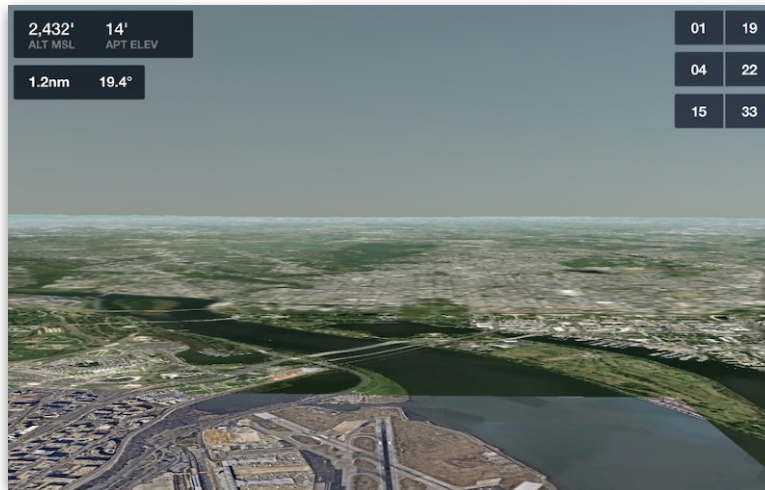
10.8.1 Changing Orientation

Use a single finger to pan the view around and the 2-finger “pinch to zoom” to zoom the view out up to 15 nm from the airport.

10. AIRPORTS

10.8.2 Position Details

The top left corner of the Airport 3D View displays position details from the current camera perspective. By default, these describe the altitude in MSL, airport elevation in MSL, distance from the airport center point in nm, and camera angle.



Position Details

If a **runway is selected**, the position details instead describe the camera altitude in MSL, runway touchdown zone elevation in MSL, distance from the runway end in nm, and camera angle from the runway.



Position Details with Runway Selected

10. AIRPORTS

10.8.3 Airport Compass

The airport compass at the bottom left corner of the Airport 3D View includes an arrow pointing toward true north and a diagram showing the current relative alignment of the airport runways. Any currently selected runway is highlighted in blue.

If a runway is selected and airport METAR data is available, the compass will display a windsock icon over the runway. The wider red end of the windsock faces the direction of the wind. In the example below, runway 22 is selected and its windsock displays a headwind with a left crosswind.



**Airport Compass and
Windsock**

10.8.4 Traffic/Obstacles Layers

The Airport 3D View can display real-time traffic and obstacles. To display these layers, tap the layer icon and toggle the Traffic or Obstacle layer.



Displaying 3D View Layers

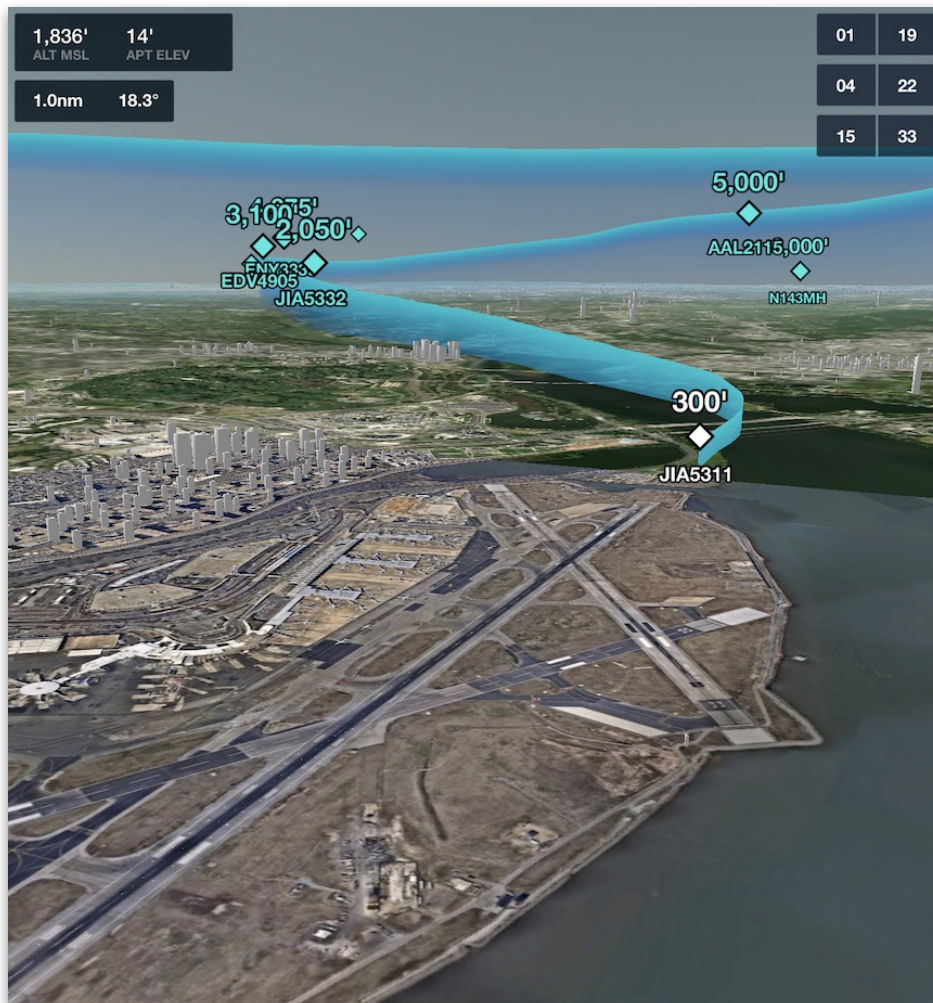
10. AIRPORTS

Traffic Layer

To display traffic on the Airport 3D view, tap the layer icon and select **Traffic**. Air traffic is displayed as turquoise diamonds moving in real time around the airport environment. Nearby air traffic is also displayed with tail numbers or callsigns, along with their altitude in MSL.

Aircraft Flight Tracks

Airport 3D View can display air traffic flight paths. Tapping a traffic target causes it to turn white and begin trailing a blue ribbon representing the aircraft's flight track and altitude. The ribbon extends straight up from the ground toward the aircraft and grows more opaque near its present altitude.

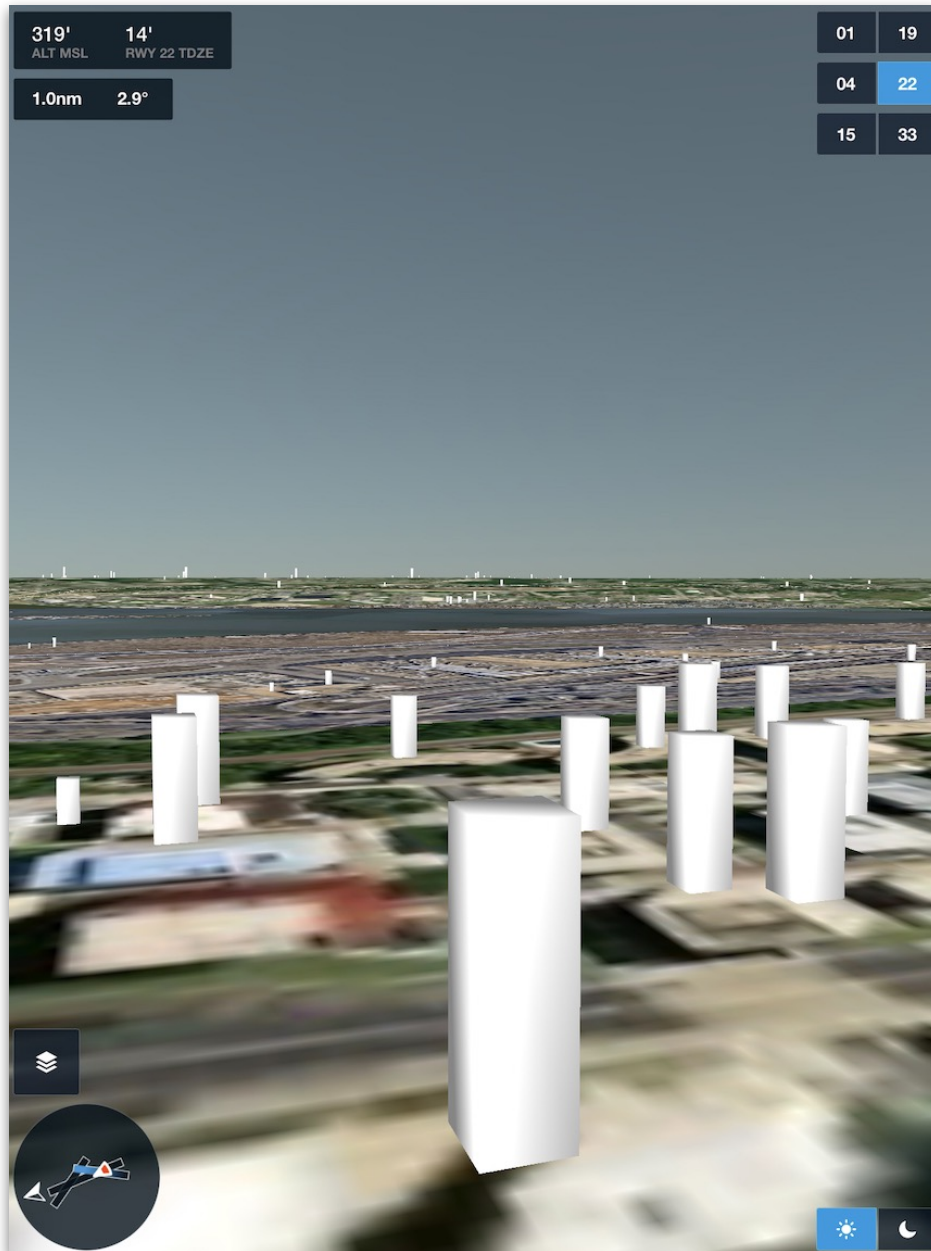


Displaying Air Traffic Flight Track

10. AIRPORTS

Obstacles Layer

To display or hide obstacles in the airport environment, tap the layer icon and select **Obstacles**. White obstacle graphics convey the obstacle's height and position, but not its real-world shape or appearance.



Obstacles in the Airport 3D View

10. AIRPORTS

10.8.5 Runway Selection

Tapping a runway button in the upper-right corner reorients the Airport 3D View to visualize a straight-in approach by automatically positioning the camera 1 nm from the runway threshold along the published glideslope (or at an inclination of 6° if no glideslope information is available).



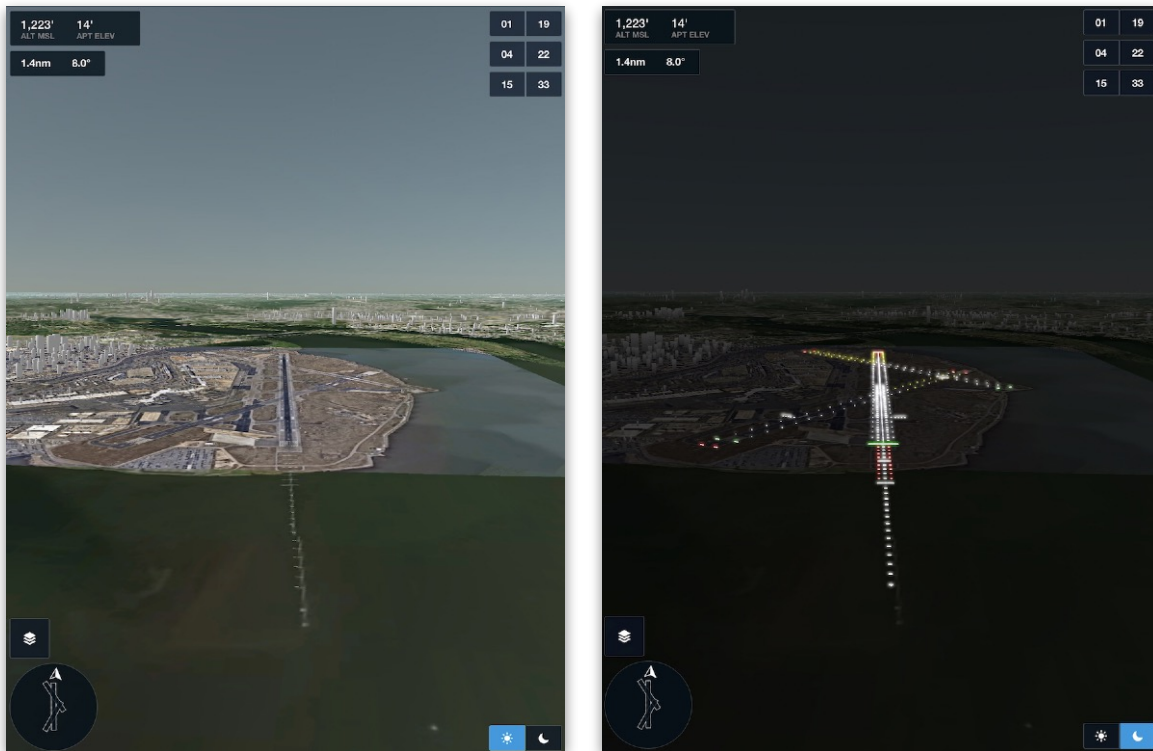
3D View of 1 NM Approach to Runway 08R

10. AIRPORTS

10.8.6 Day/Night Mode

Tap the Day/Night buttons in the lower-right to switch between Day and Night view. The Night view dims the surrounding terrain and displays realistic runway lights.

Runway edge lighting is supported for most paved airports around the world, while larger airports may also display touchdown zone lights, PAPI lights, displaced threshold lights with approach light system if available, centerline lights, end light flashers, and more.



Airport 3D View Day/Night Mode

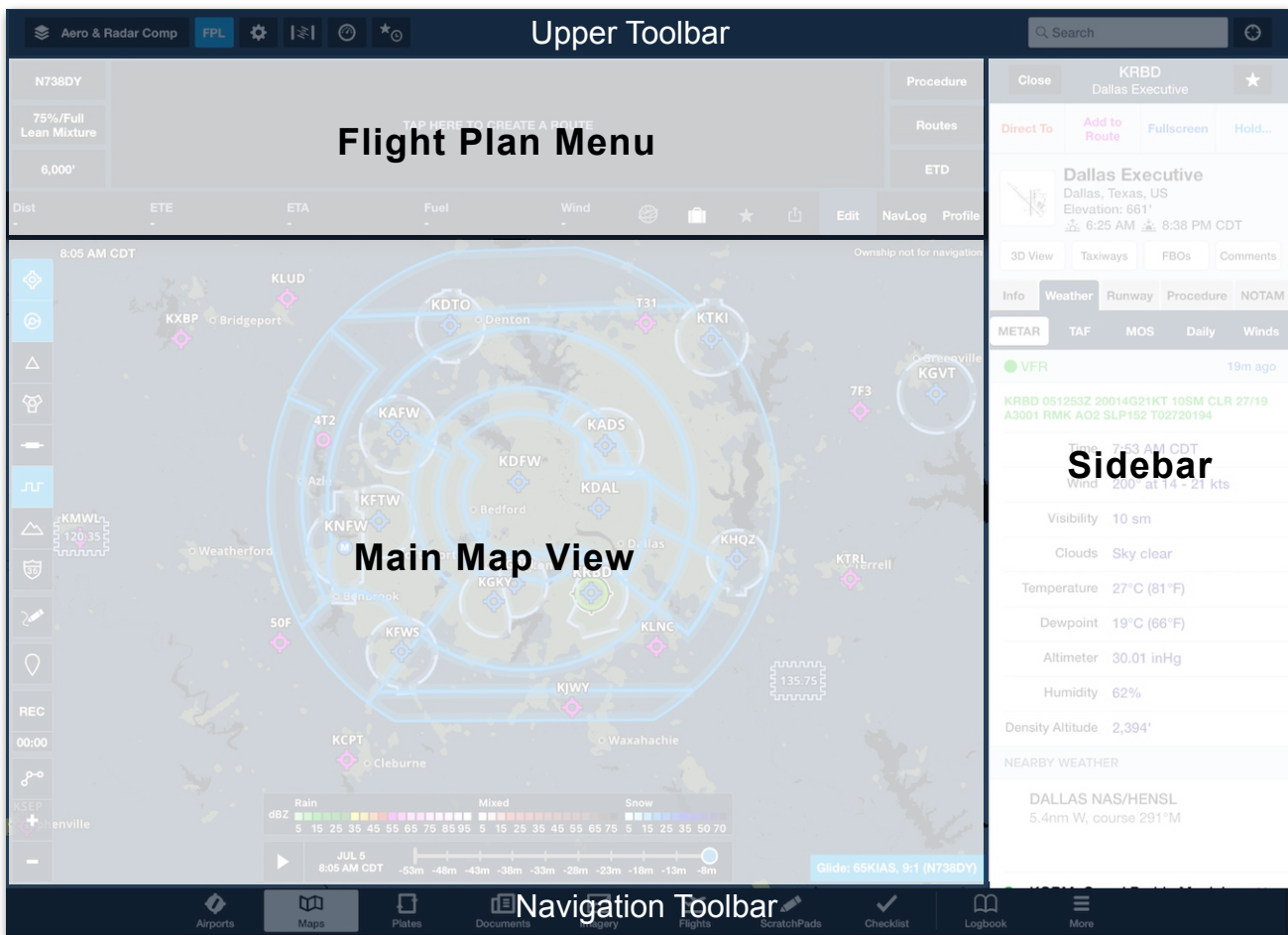
MAPS

The Maps view is primarily used for planning flights and is an aid to situational awareness while in flight. The Maps view can display airspace, weather, terrain, traffic, aeronautical information, aeronautical charts, terminal procedures, planned routes, custom content, and more.

11.1 Design

Access the Maps view by tapping **Maps** in the navigation toolbar at the bottom of the screen. Buttons in the upper toolbar control what's displayed on the map.

Aeronautical information is displayed in a collapsible sidebar on the right side of the screen. Filters on the left side of the screen allow map features to be toggled on and off.



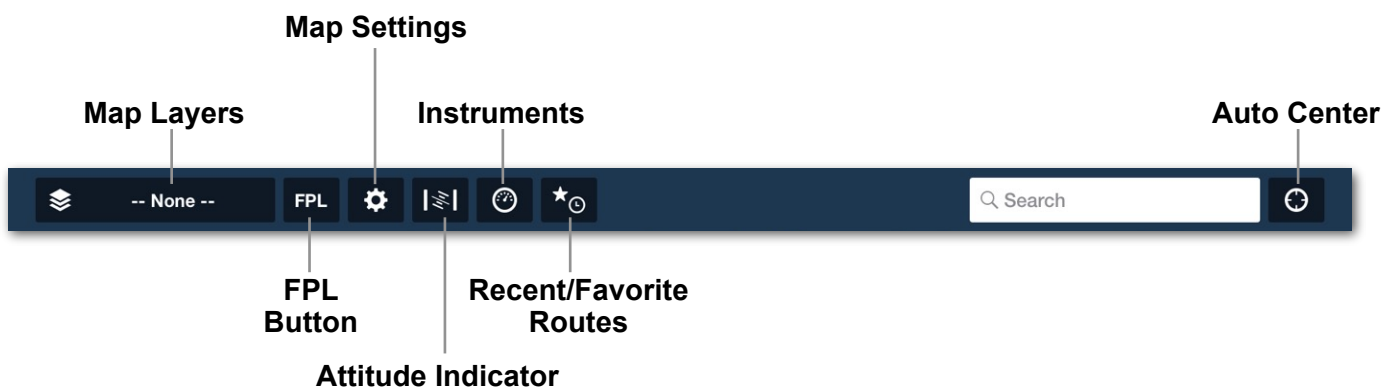
Maps View Design

11. MAPS

11.1.1 Upper Toolbar

The upper toolbar contains a drop-down layer selector and buttons for toggling different features. From left to right, the upper toolbar consists of:

- **Map Layer Menu** - Displays a drop-down map layer selector. The items selected in the drop-down menu are displayed on the main map view. The map layer menu contains charts, maps, weather layers, aeronautical information, and custom content. When map layers are enabled, the names of the selected layers are displayed in the map layer menu button.
- **FPL Button** - Toggles the Flight Plan (FPL) menu. The FPL menu is used to plan routes, display the Navlog, and display Profile View.
- **Map Settings** - Toggles the Map Settings menu. Maps settings are used to customize the look of the map.
- **Attitude Indicator** - Toggles the Attitude Indicator. The attitude indicator displays GPS track, altitude, ground speed, climb or descent rate, and pitch and bank if connected to an external device with an attitude (AHRS) sensor.
- **Instrument Panel** - Toggles the Instrument Panel on and off. The instrument panel is located at the bottom of the Maps view. The instrument panel displays user-selected flight details.
- **Favorite and Recent Routes** - Toggles the recent and favorite routes menu.
- **Search Bar** - Search bar for searching points of interest, aeronautical data, routes, and more.
- **Auto Center Button** - The auto-center (crosshair) button centers the map on the aircraft's location. When auto-center is activated, the button is highlighted.

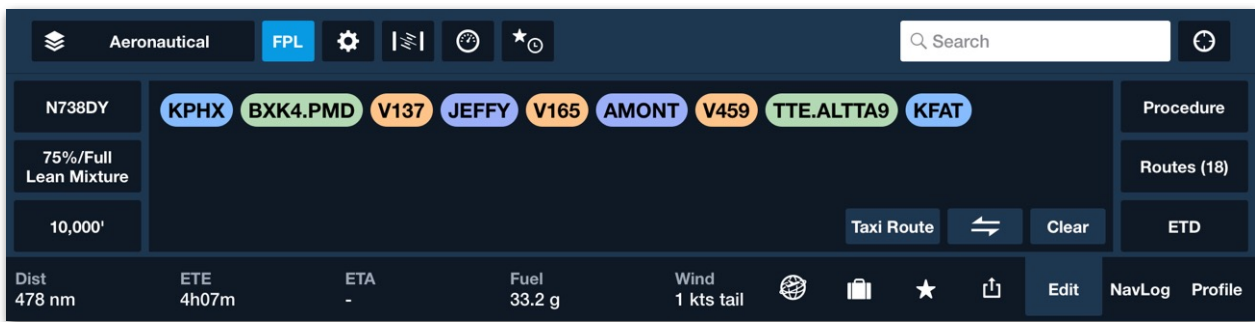


11. MAPS

11.1.2 Flight Plan Menu

The Flight Plan Menu contains three views. The views are accessed with buttons located near the bottom right corner of the FPL menu. To access the views, tap the **FPL** button in the upper toolbar to display the menu. See the **Flight Plan Menu** section for additional information.

- **Edit** - Displays the Flight Plan Editor.
- **NavLog** - Displays the navlog for the planned route.
- **Profile** - Displays the Profile View (Pro Plus subscription or higher required).

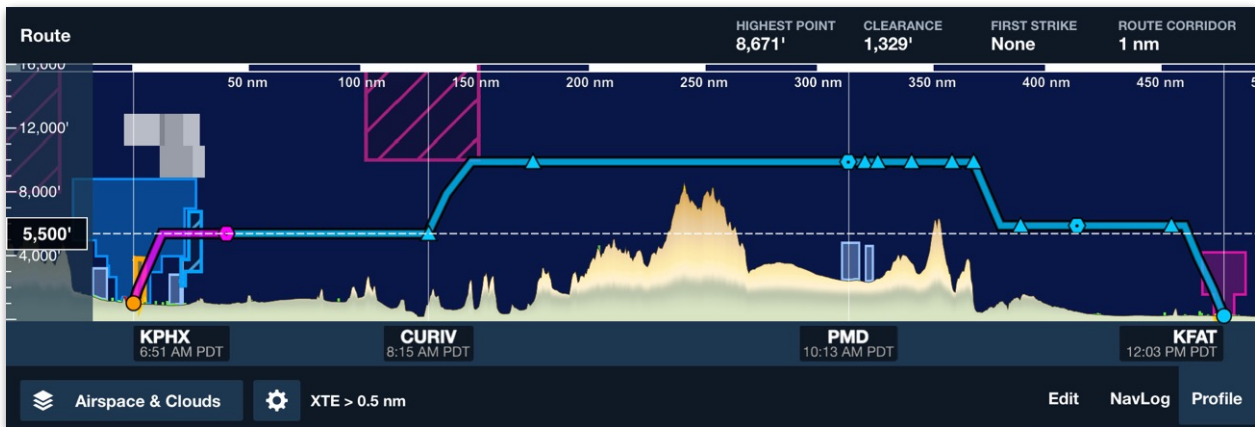


Flight Plan Editor

FROM	TO	HDG	TOTALS	LEG	REMAINING	ETA
KPHX	BXK	258°M	41 nm, 5.6 g, 0h28m	41 nm, 4.5 g, 0h28m	-----	---:--
BXK	CURIV	264°M	129 nm, 11.0 g, 1h10m	88 nm, 5.3 g, 0h42m	-----	---:--
CURIV	DECAS	260°M	175 nm, 13.9 g, 1h33m	46 nm, 2.9 g, 0h23m	-----	---:--

Dist 478 nm, ETE 4h07m, ETA -, Fuel 33.2 g, Wind 1 kts tail, Edit, NavLog, Profile

NavLog View



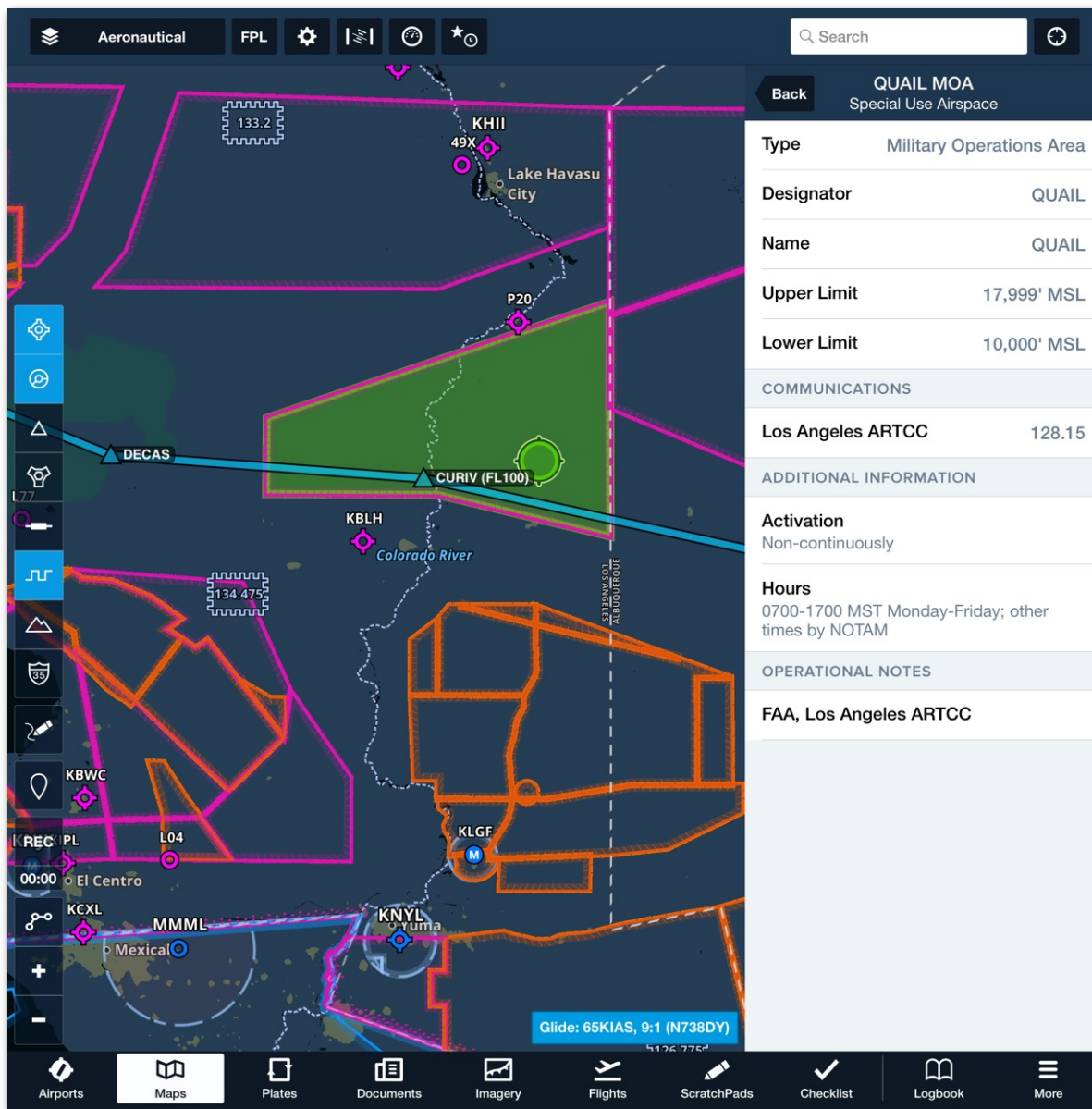
Profile View

11. MAPS

11.1.3 Maps Sidebar

The sidebar appears with a single map element tap or when the map is tapped and held. The sidebar remains open until a blank area of the map or the **Close** button is tapped.

When a map element is tapped (airport, waypoint, navaid) a green marker highlights the selected element. When a geographic element such as airspace is tapped and held, the airspace is highlighted in green. See the [Sidebar](#) section for more information.



Maps Sidebar (Special Use Airspace)

11. MAPS

11.1.4 Main Map View

The main map view displays the layers selected in the map layer drop-down menu. When no map layers are selected, the base map is displayed. Base map appearance can be adjusted by tapping the map setting (gear button) and changing the options in the ForeFlight Map section.

The map view does not resize as the FPL menu, sidebar, instrument panel, or layer selector menus are toggled. The map automatically resizes when the attitude indicator is toggled on and off.

Pinch, Zoom, and Pan

The map supports the standard iPad gestures for zooming and panning. Drag your finger on the map to slide it to a new region. Use two fingers in a pinch or expand motion to change the zoom scale of the map. You can also double-tap the map to zoom in one level or tap once with two fingers simultaneously to zoom out one level. Anytime you display a new route on the map, the zoom level and region shown will auto-adjust to bring your route into view. Tap the Zoom to Route button in the lower left of the Maps screen to automatically zoom the map in or out to show the entire Route.



ForeFlight Base Map

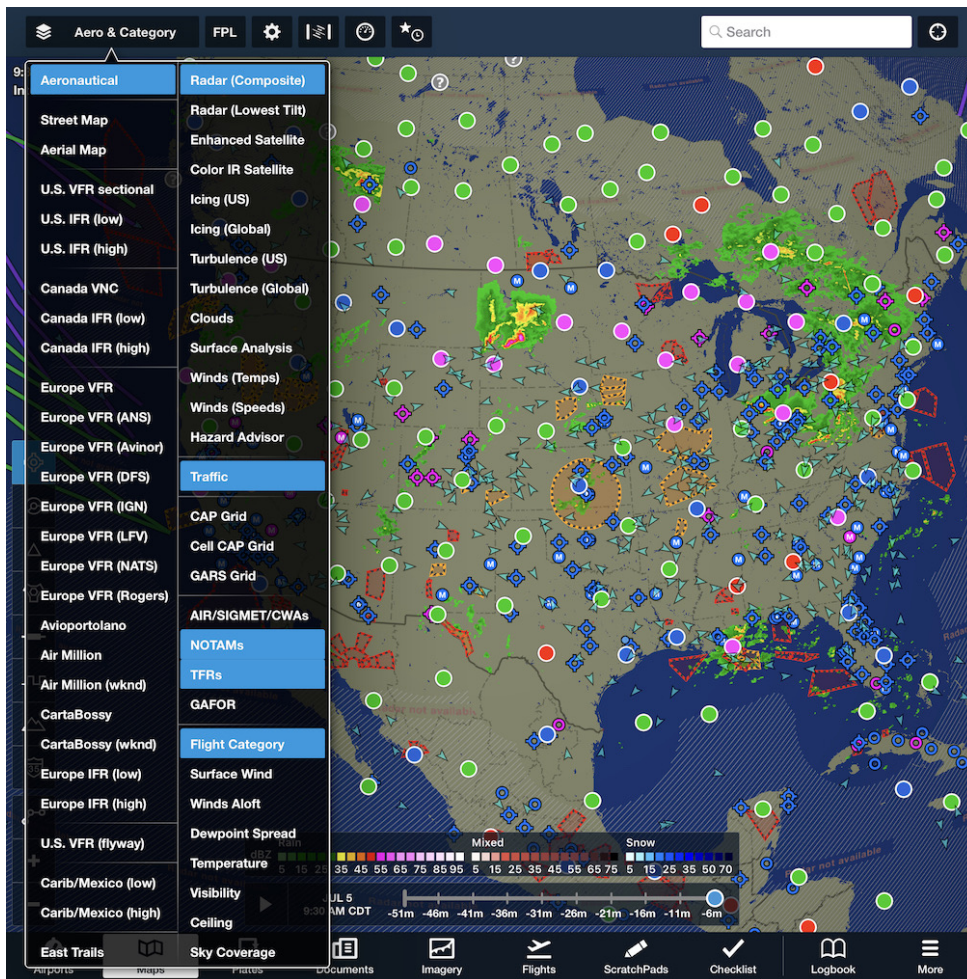
11. MAPS

Map Layer Menu

Various map layers are selectable from the map layer menu. Available layers are determined by your subscription, region, and download selections. If a feature is not included in your subscription or if it is not selected for download, it is hidden in the drop-down menu.

Map layers are grouped with thin horizontal lines. Charts and weather layers can only display one active layer at a time. Selecting a map layer in a group with an already active layer may result in automatically deselecting the active layer. For example, selecting the satellite layer automatically deselects radar if the radar layer is enabled.

The map layer menu is dismissed each time a map layer is selected. To make multiple selections without dismissing the map layer menu, enable **Multiple Selections** in the **Map Settings** menu.



Performance Plus Map Layer Menu

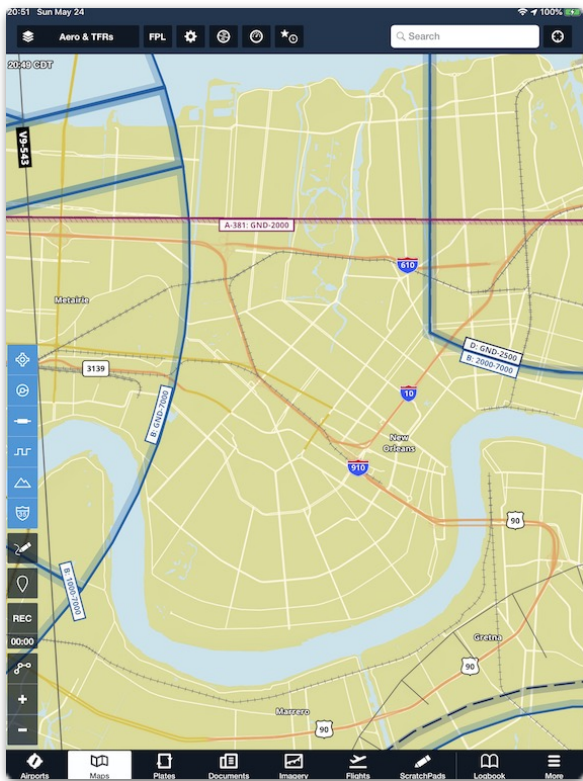
11. MAPS

When downloading ForeFlight Mobile for the first time, a low-resolution base map is automatically downloaded and available offline. The base map includes basic geographic features and is displayed when no other layers are selected. All charts and map layers are overlaid on the base map.

11.2 High-Resolution Base Map

The high-resolution base map depicts ground features and cultural elements in much greater detail than the default base map. The high-resolution base map includes higher-resolution roads and railroads, detailed coastlines, terrain peak markers with associated altitudes, mountain peaks, mountain passes, and highway labels. Individual base map elements can be toggled on and off in **Map Settings > Cultural Elements**.

The high-resolution base map is not automatically displayed. Select and download the high-resolution base map by selecting **More > Downloads > Data Settings** and selecting the data for the region where you fly. When high-resolution data is downloaded, it is automatically displayed when no other charts are chosen.



High-Resolution Base Map and Terrain

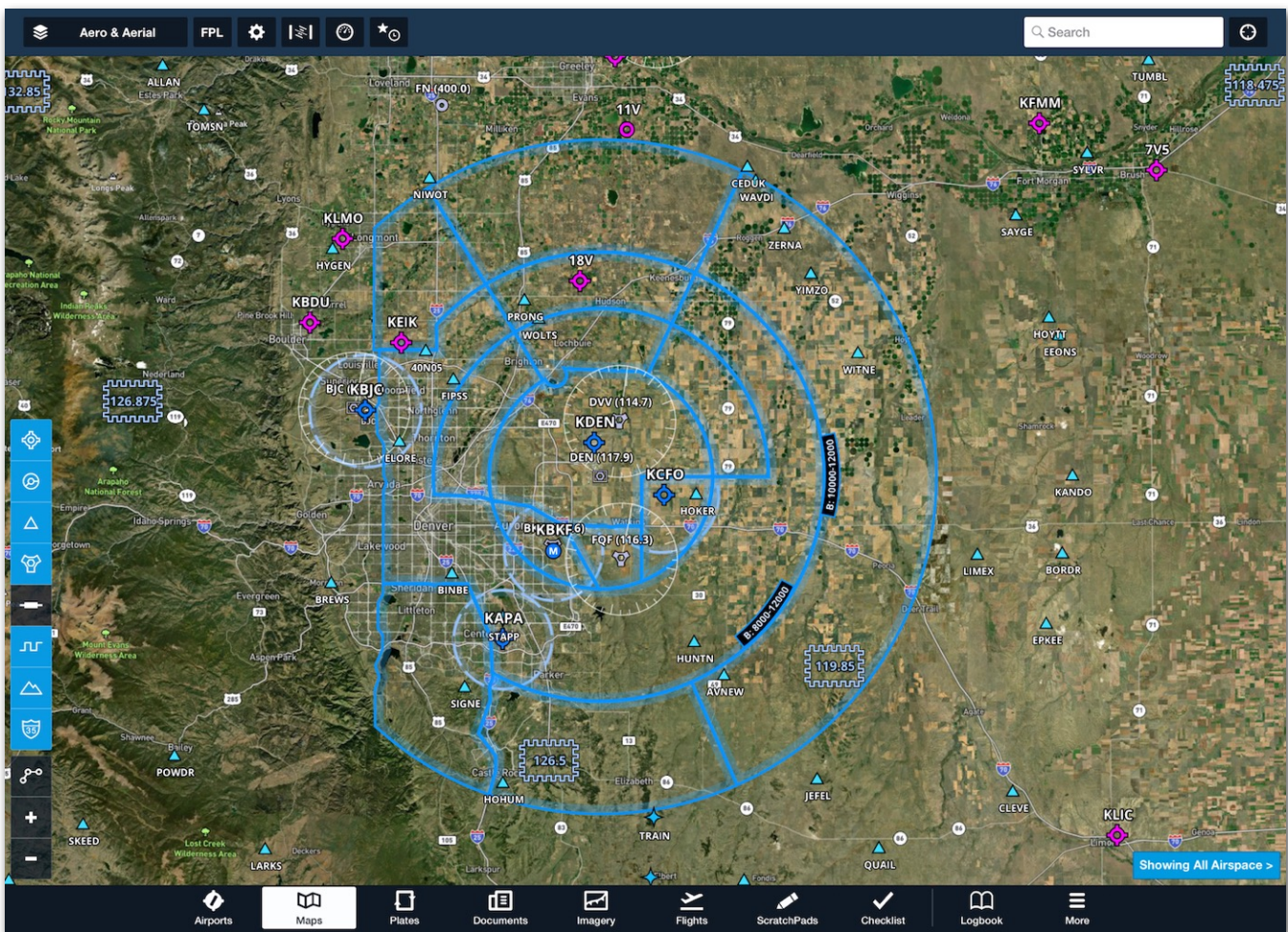
11. MAPS

11.3 Aeronautical Map

ForeFlight's Aeronautical Map displays (Jeppesen-sourced) digital aeronautical data. The Aeronautical Map dynamically updates to display the most relevant information as you pan and zoom. Enable the **Aeronautical** map with the layer selector menu in the upper left corner of the Maps page.

Individual aeronautical elements (e.g., navaids, airports, and airspace) can be displayed or hidden. See **Map Settings** for additional information. The Aeronautical map must be enabled to adjust its settings.

Updates to the Aeronautical Map are made available every 28 days (or sooner) as part of the Airport and Nav Database. The Aeronautical map is automatically overlaid on all other maps and charts.



Aeronautical Map on top of Aerial Map

11. MAPS

11.3.1 Aeronautical Map Features

The Aeronautical Map includes the following features.

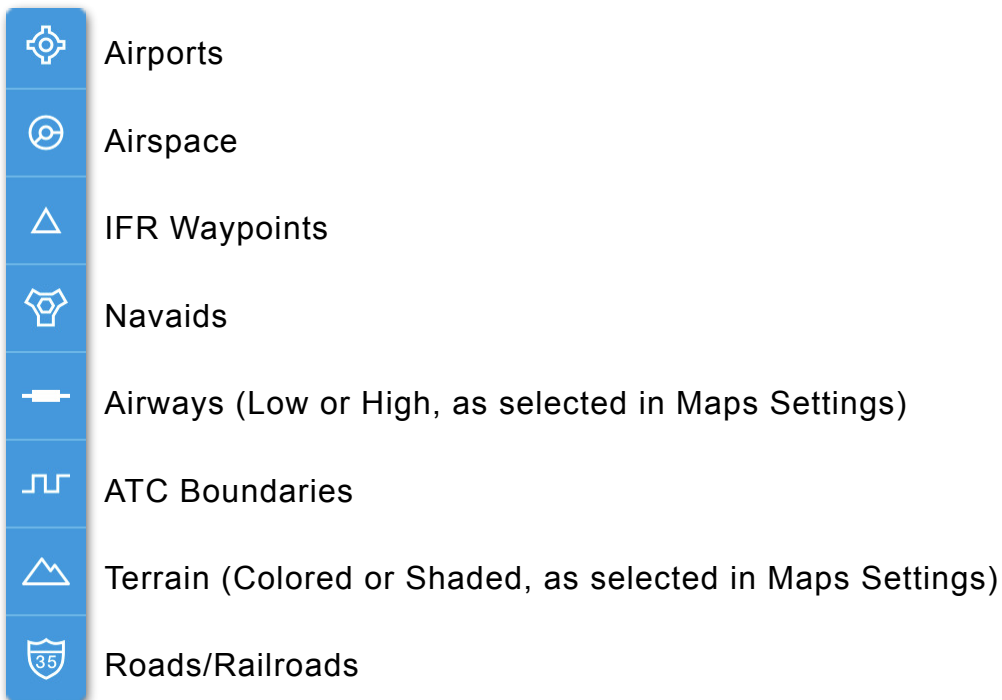
- **Continuous Zoom** - Icons, shapes, and text labels smoothly fade in and out as the zoom level changes, in contrast to traditional (raster) charts which have to re-render at certain zoom levels to maintain their clarity.
- **Decluttering** - The information shown on the map changes along with the zoom level, with large-scale features like ARTCC boundaries and major airports appearing when zoomed out and small-scale features like waypoints, VORs, and smaller airports appearing as you zoom in. This prevents the map from cluttering and ensures that the most relevant information at any zoom level is shown.
- **Automatic Airspace Highlighting** - Automatically highlights airspace within an altitude of +/- 1,000' and a 1-nautical mile corridor of your planned route, and dims all other airspaces to reduce clutter. When determining which airspace to highlight, your aircraft's climb, cruise, and descent trajectory is considered. In-flight, airspace ahead of your current track is highlighted. Automatic airspace highlight settings are available in **Map Settings > Airspace**.
- **Always-Up Labels** - Labels for airports, waypoints, and other map features always appear in the proper orientation, even when the rest of the map is upside down, as when flying south in Track Up mode.
- **Customizable Data** - The data shown on the map can be customized to the type of planning or flying you're doing. Airspaces can be turned on or off, airways can be set to high or low IFR, and ARTCC borders, heliports, and private airports can be toggled on or off. See **Map Settings** for more information.
- **Adjustable Text Size** - The text size of labels for every map element can be adjusted using a slider. See **Map Settings** for more information.
- **Single Tap** - When the Aeronautical layer is enabled, single tap a map element to open the sidebar and display information about the element.
- **Embedded Airport Diagrams** - ForeFlight airport diagrams are directly integrated with the Aeronautical Map. Airport diagrams automatically fade in and out with zoom. Embedded airport diagrams include runways, taxiways, hold pads, FBO labels, towers, windsocks, and parking areas.

11. MAPS

11.3.2 Aeronautical Map Quick Filters

A column of toggle buttons enables and disables Aeronautical Map features. The buttons *only* show when the Aeronautical Map layer is selected and the **Quick Filters** setting is enabled. Tap a quick filter button to show/hide the feature.

Aeronautical quick filters:



Controlling Aeronautical Map features without Quick Filters

When the Quick Filters are disabled or unavailable due to a lack of available screen space, tap the **Maps Settings** (gear) button and scroll down to the **Aeronautical** section to select each of the Airports, Airspace, Airways & Waypoints, and ARTCC/FIRs ON or OFF. Terrain & Cultural Elements (Roads and Railroads) are found under the ForeFlight Map section.

To view Quick Filters on an iPhone, some features may need to be disabled for the Quick Filters buttons to show on the Maps Page. Depending on your iPhone version, you may need to turn off up to three features: Marked Positions, Track Log Start/Stop Control, and Map Annotations.

NOTE: Compass roses are only depicted if airways (high or low) intersects the navigational aid.

11. MAPS



























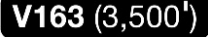
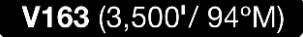
11.3.3 Aeronautical Map Symbols

The following symbols are shown on the Aeronautical Map layer.

NOTE: For VFR flight-specific elements on the Aeronautical Map Layer, see [VFR Aeronautical Map Symbols](#).

Symbol	Meaning	Symbol	Meaning
	Civil Airports with Services (with and without tower)		Civil Airports without Services (with and without tower)
	Military Airports (with and without tower)		Private Airports (with and without tower)
	Seaplane Bases with Services (w/ and w/o tower)		Seaplane Bases without Services (w/ and w/o tower)
	Glider Airfield		Hang Glider Airfield
	Balloon Airfield		Ultralight Airfield
	Heliports (light map color scheme)		Heliports (dark map color scheme)
	Standard fix		RNAV fix
	Standard fix (Compulsory)		RNAV Fix (Compulsory)
	VOR Navaid		VOR/DME Navaid
	VORTAC Navaid		NDB Navaid
	NDB/DME Navaid		FBO Location (on ForeFlight airport diagram)
	ARTCC Boundary		ADIZ

















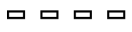


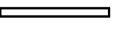










11. MAPS

	Class B/TMA/CTA Airspace		Class B Altitude (U.S.A)
	Class C Airspace		Class C Altitude (U.S.A)
	Class D Airspace		Class D Altitude (U.S.A)
	Class E to Surface (U.S.A)		Mode C (U.S.A)
	TRSA (U.S.A)		SATR Area (U.S.A)
	CTR		MOA/Alert/Training Airspace
	RMZ		ATZ/TIZ/TIA
	MATZ		TSA/TRA
	Caution/Warning/Danger Airspace		Prohibited/Restricted Airspace
	Other Airspace		Parachute Areas
	VOR Airways/Jetways		RNAV Routes
	Model Flights		ARTCC Sector Stamps
	Global Airspace Altitude Labels		Helipad
		Airway ID (MEA)	
		Airway ID (MEA / Heading based on route)	

11. MAPS

11.3.4 VFR Aeronautical Map Symbols

The following VFR elements are found in the U.S., Europe, and Australia. They can be displayed or hidden by toggling the **VFR Aeronautical Details** setting.

Symbol	Meaning	Symbol	Meaning
	- VFR Waypoint - Tracking Point		VFR Waypoint/Checkpoint
	VFR Checkpoint		- VFR Waypoint (Compulsory) - Enroute Reporting Point
	VFR Helicopter Waypoint		VFR Helicopter Waypoint (Compulsory)
	- Landmarks - Windsocks		HIRTA (High Intensity Radio Transmission Area)
	Low Point		Bird Refuge
	FIS Boundary		VFR Arrival
	VFR Departure		VFR Arrival & Departure
	VFR Flight Corridors		IFR Flight Corridors
	Helicopter Procedure		VFR Transit Route
	Traffic Circuit (Non-standard aircraft)		Traffic Circuit
	Directional Traffic Circuit (Non-standard aircraft)		Directional Traffic Circuit
	Nature Area		No Overfly Area
	Fuel		Parking
	Tower		Cashier
	Beacon		Tower (Lit)

11. MAPS

11.3.5 Airspace Alerts

Airspace Alerts are an optional feature that provide app-wide audible and visual alerts for approaching, entering, and exiting airspace. When an approaching airspace alert is issued, the corresponding airspace on the Aeronautical Map is also highlighted green. Airspace Alerts are enabled by default. For more information, see the [Alerts](#) chapter.

11.3.6 ATC Boundaries

The Aeronautical Map includes global (high and low) ARTCC and FIR boundaries. To display these boundaries, enable the **Show Boundaries** setting using the [Map Settings](#) menu or toggle the ATC **quick filter** on.

ATC Sectors

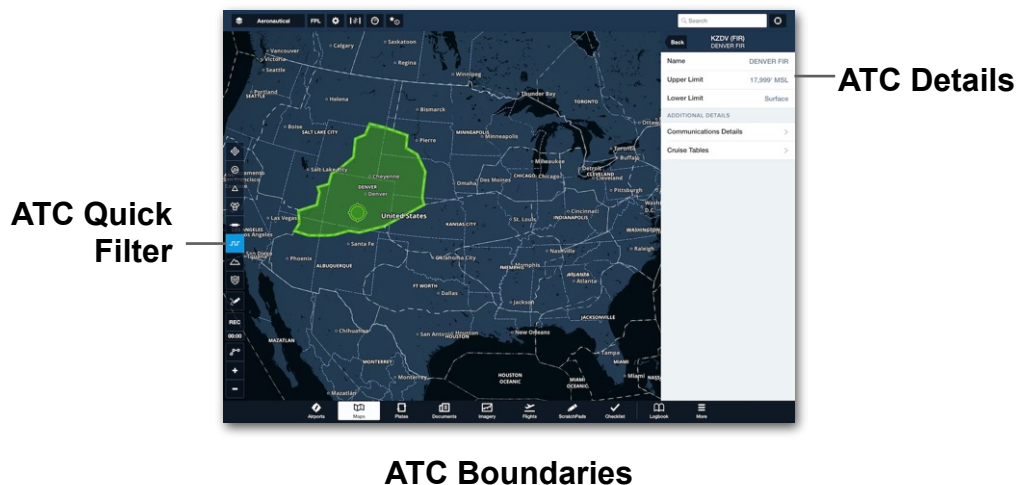
The Aeronautical Map also includes EUROCONTROL Area Control Center (ACC) and Upper Area Control Center (UAC) ATC sector boundaries. To display these boundaries, open the [Map Settings](#) menu, tap **ARTCC/FIR**, and toggle the **ATC Sectors** setting on.

NOTE: ATC Sectors are only available for EUROCONTROL airspace.

ATC Details

ATC details, such as upper and lower altitude limits, operational notes, RVSM, and communication details can be accessed in the sidebar. To reveal airspace details:

1. Tap and hold map.
2. Locate the airspace of interest in the Airspace section.
3. Tap **Details**.



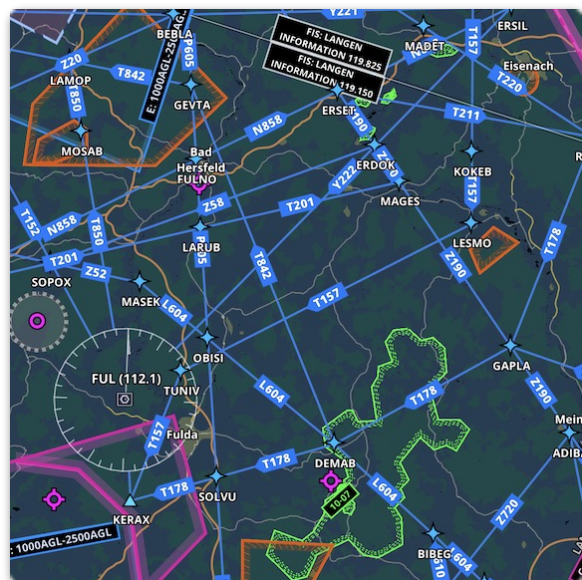
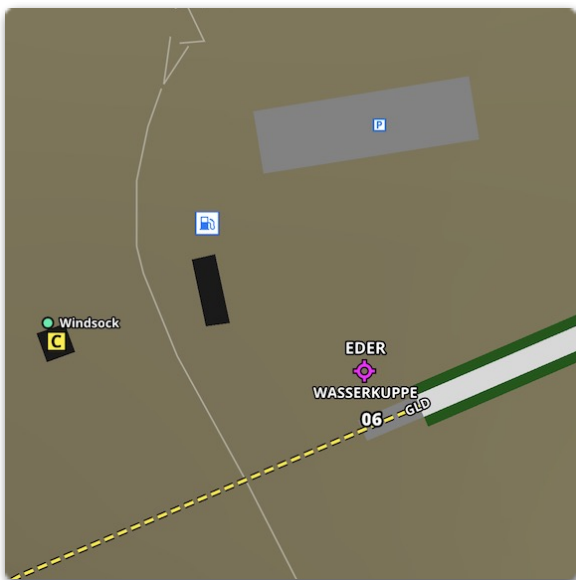
11. MAPS

11.3.7 European Airspace

With a Europe subscription, the Aeronautical Map includes Jeppesen’s European VFR navigation and airport data in addition to IFR data, supporting both VFR and IFR flying in Europe.

Data includes VFR Waypoints (Standard and Helicopter), VFR Procedures including Entries & Exits, Traffic Circuits, Holds, No Overfly Areas, Nature Areas, Bird Sanctuaries, and Model Flight Areas.

These examples show how the airspace is depicted at various levels of zoom, all the way from the Airport level showing the location of Parking, Fuel, and the Cashier, up to large areas of airspace, including FIR boundaries.



11. MAPS

11.4 Charts

Charts are selected from the left column of the map layer drop-down menu. The charts column includes the Aeronautical Map, Street Map, Aerial Map, and all downloaded published and custom charts. This section describes each chart.

- **Street Map** - The global street map is made available over the internet from a third-party provider (OpenStreetMaps). The street map is dynamic and will show more detail as the map is zoomed in. The screen map can not be downloaded and is only available when connected to the Internet.
- **Aerial Map** - The global aerial map is satellite-based imagery with street data. The aerial map is provided by a third-party agency and can only be used when connected to the Internet. Due to the infrequency of satellite imaging, some imagery may be outdated.
- **U.S. VFR Sectional** - Terminal Area Charts (TACs) are automatically displayed when a VFR sectional is zoomed in to major cities containing a TAC inset.
- **U.S. IFR** - low or high IFR enroute charts from FAA.
- **Canada VNC** - VFR Terminal Area Charts (VTAs) are automatically displayed when a VNC is zoomed in to major cities containing a VTA inset.
- **Canada IFR** - low or high IFR enroute charts from NavCanada.
- **Europe VFR** - visual navigation charts from European national AIP providers (e.g., DFS for Germany), available as optional add-ons to the Europe region.
- **Europe IFR** - low or high IFR enroute charts via EUROCONTROL.
- **Australia VFR** - VFR World Aeronautical Chart (1 : 1,000,000) and Visual Navigation Charts (1 : 500,000) from Airservices Australia. VNCs are automatically displayed when the map is zoomed into an area containing a VNC.
- **Australia IFR (low)** - IFR low charts from Airservices Australia.
- **Australia IFR (high)** - IFR high charts from Airservices Australia.
- **Planning Chart (PCA)** - contains meteorological Area Forecast boundaries and locations, communication coverage outside controlled airspace and WAC coverage.
- **U.S. IFR (planning)** - IFR planning chart covering contiguous 48 states.
- **U.S. IFR (ocean)** - Atlantic and Pacific ocean IFR charts.

11. MAPS

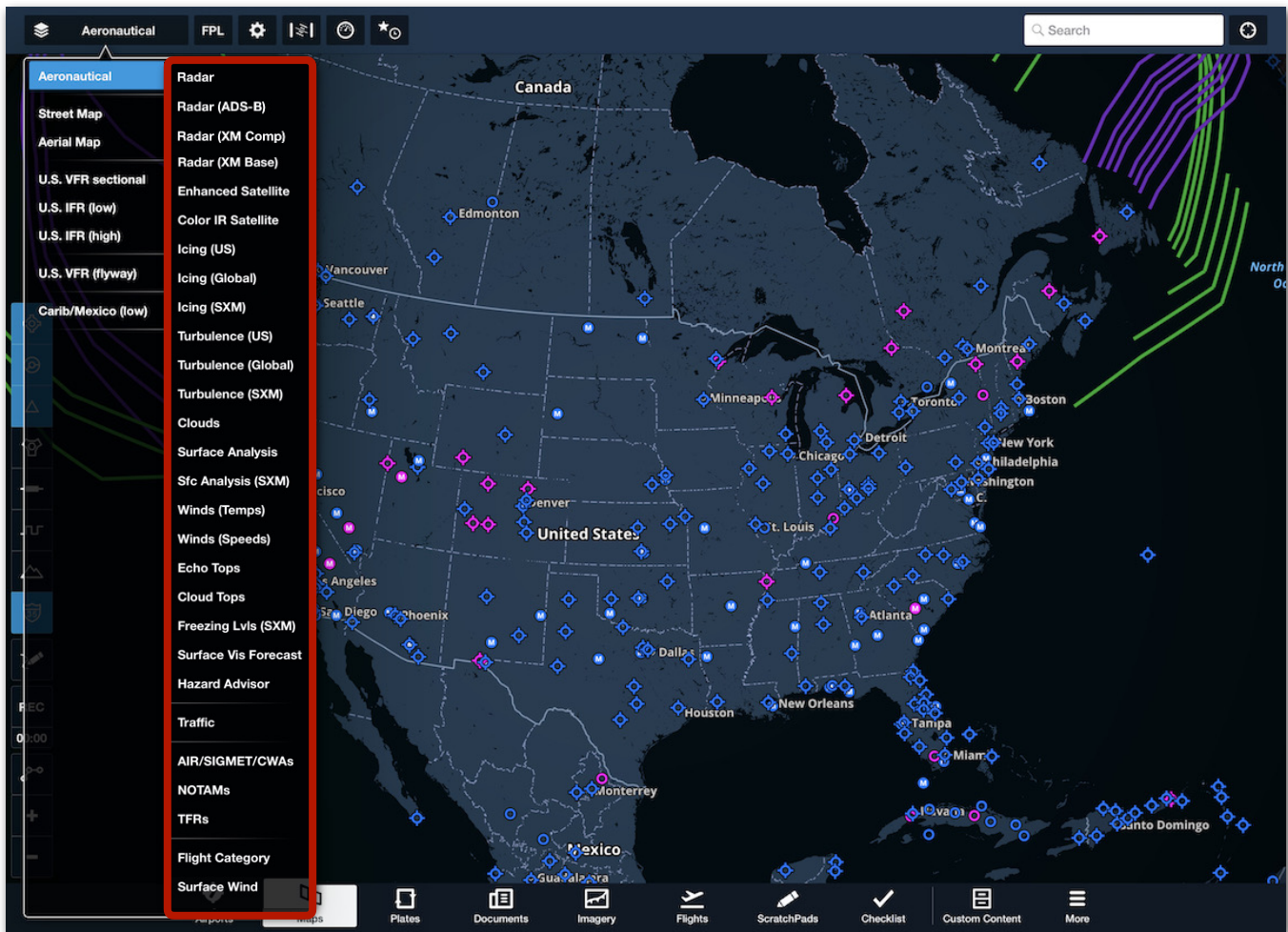
- **U.S. VFR (flyway)** - VFR planning charts (from the “back” of the TAC charts).
- **Carib/Mexico IFR** - IFR Low or High charts covering Mexico and the Caribbean. Tap More > Downloads > Region Settings > United States > Canada, Mexico, Central America.
- **U.S. Helicopter** - Three-color charts showing aeronautical information useful to helicopter pilots navigating nine major metro areas with heavy helicopter activity. Includes helicopter routes, heliports, navaids, and obstructions.
- **Heli Gulf VFR** - U.S. VFR Sectional-style chart of the Gulf of Mexico (GOM) showing airspace, GOM blocks, airspace, and oil rig and weather station locations. Can be selected with any U.S. base map.
- **Heli Gulf IFR** - IFR style chart of the Gulf of Mexico (GOM) showing GOM blocks, GPS waypoints, airspace and weather station locations. Can be selected with any U.S. base map.
- **Custom Charts** - display a custom .mbtiles chart on the map. Multiple Custom charts can be imported and displayed at a time. See the **Custom Content** chapter for details about creating and importing files.

11. MAPS

11.5 Map Layers

Map layers are selected from the right column of the layer menu. The available layers are dependent upon your ForeFlight subscription, region, and external device connection. If a subscription, region, or connected external device does not include a product, it is hidden from the layer menu. For example, if you're not connected to an external device that provides SiriusXM data, the SiriusXM weather layers are hidden.

CAUTION: When a cellular-capable iPad or iPhone is connected to an external device via Wi-Fi (e.g., Sentry), cellular data in ForeFlight Mobile is disabled. As a result, weather layers which require internet data (e.g., Radar) can be selected, however they will not display updated data.



Map Layers

11. MAPS

11.5.1 Map Layer Sections

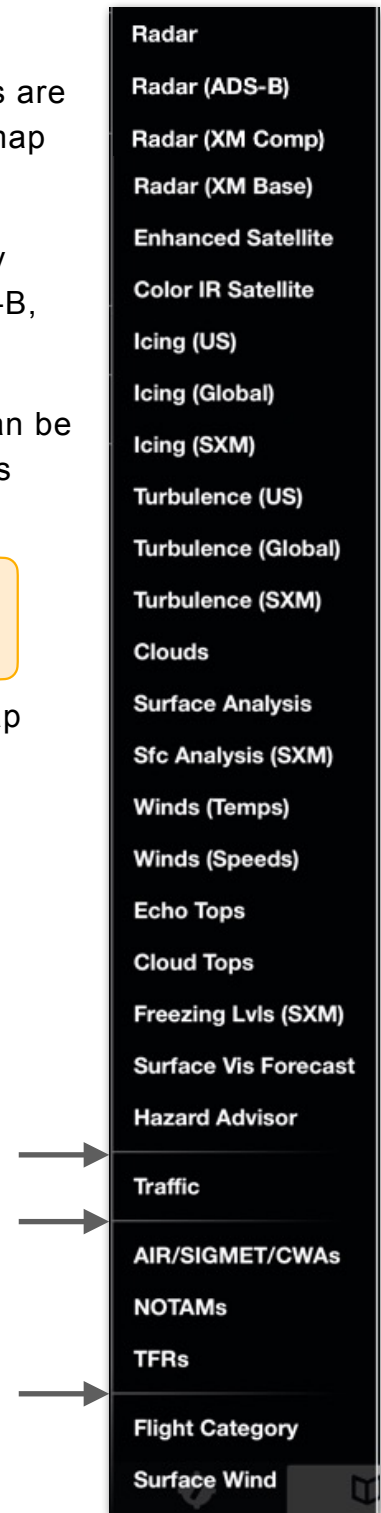
The Map Layer menu is divided into multiple sections. Sections are defined by thin horizontal lines. Most sections only allow one map layer to be selected at a time.

Map layers can be selected at any time, however, they will only display updated information if the corresponding internet, ADS-B, or SiriusXM connection is available.

For example, when connected to a Sentry, the ADS-B layers can be selected, however, they will not display data until your device is receiving ADS-B data from a ground-based tower.

CAUTION: When connected to an external device via Wi-Fi (e.g., Sentry), cellular data in ForeFlight Mobile is disabled.

The remainder of this section provides descriptions of each map layer available in ForeFlight Mobile.



Map Layer Sections

11. MAPS

11.5.2 Radar

Radar imagery is generated by ground-based stations that bounce (reflect) radio waves off precipitation to create echoes. To find precipitation, radar waves are broadcast into the sky at various angles.

An echo's reflectivity (measured in decibels) reveals the intensity of the precipitation. The maximum echo reflectivity from *all* radar tilt angles are compiled to generate a *composite* image. The composite radar image is displayed on the map when the following map layers are selected.

- **Radar** is an internet-based map layer primarily used for preflight planning.
- **Radar (ADS-B)** is a low-resolution source of in-flight radar.
- **Radar (XM Comp)** is a higher-resolution source of in-flight radar.

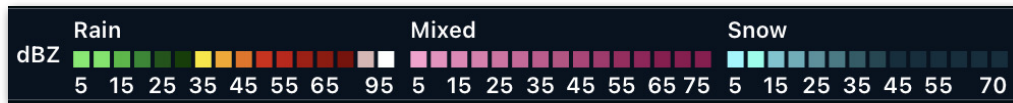


Radar (Internet)

11. MAPS

Radar Color Scale

ForeFlight displays precipitation type and intensity using a graduated color scale. Display the color scale on the map by enabling the **Map Legend** setting and selecting a Radar map layer.



Graduated Color Scale (Internet-Based Radar)

Types of Radar

ForeFlight can display up to four unique types of radar. Each radar type displays the intensity, location, movement, and type of precipitation (with varying resolutions).

ADS-B and SiriusXM Radar require a **supported external device**.

	Radar	Radar (ADS-B)	Radar (XM Comp)	Radar (XM Base)
Source	Internet	ADS-B	SiriusXM	SiriusXM
Resolution	High	Low	Medium	Medium
Type	Composite	Composite	Composite	Lowest Tilt

Radar Map Layer Types

Radar

The Radar map layer displays high-resolution composite internet radar data for much of the United States, southern Canada, northern Mexico, Australia, and Europe.

The Radar map layer can be selected at any time but will only display updated radar imagery with an active (Wi-Fi or cellular) internet connection.

Connecting to a Wi-Fi device that is not connected to the internet (e.g., Sentry) prohibits this map layer from being updated. Radar is updated every five minutes, with approximately 55 minutes of radar data being available to animate.

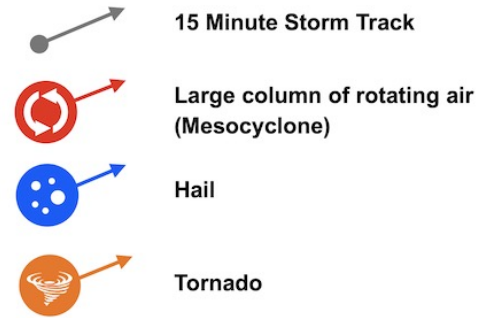
11. MAPS

Radar Timestamp

When displaying the internet Radar map layer, the time radar data was last updated is displayed in the upper-left corner of the map. The time is displayed in white text and changes to yellow when the data is 25 minutes old and red when it's 30 or more minutes old.

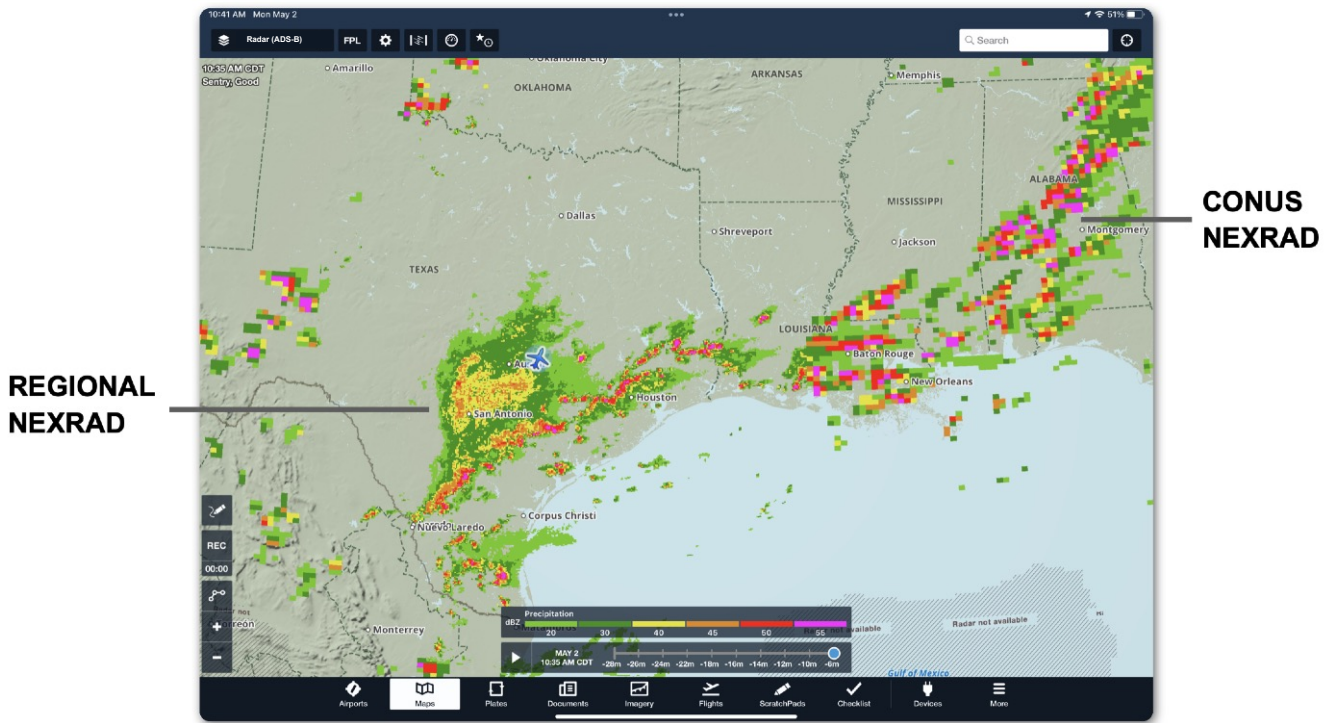
Storm Cell Attributes

The internet Radar layer includes storm cell attributes and echo tops (in hundreds of feet). If storm movement is detected, an arrow representing the storm's forecasted 15-minute path is displayed. The image to the right displays the icons that are used for storm cell attributes.



Radar (ADS-B)

The Radar (ADS-B) map layer can be selected when connected to an external ADS-B device. ADS-B radar data is generally only available while airborne near the United States. See [Radar ADS-B](#) for additional information.



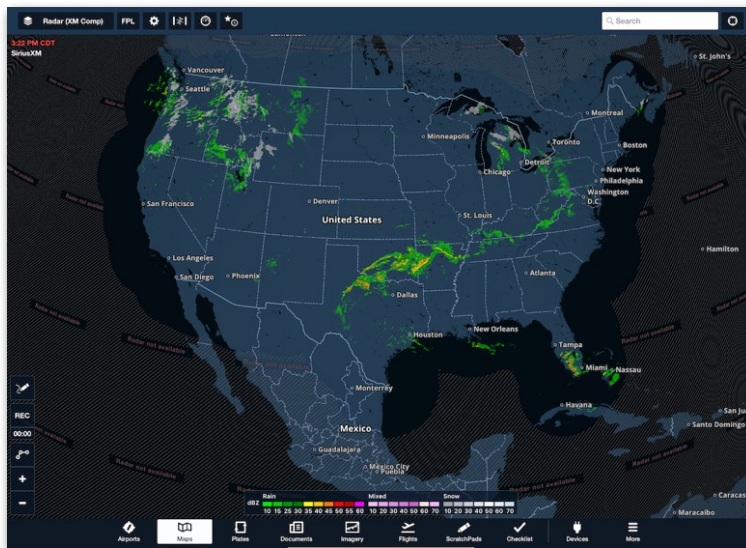
ADS-B Radar (Composite)

11. MAPS

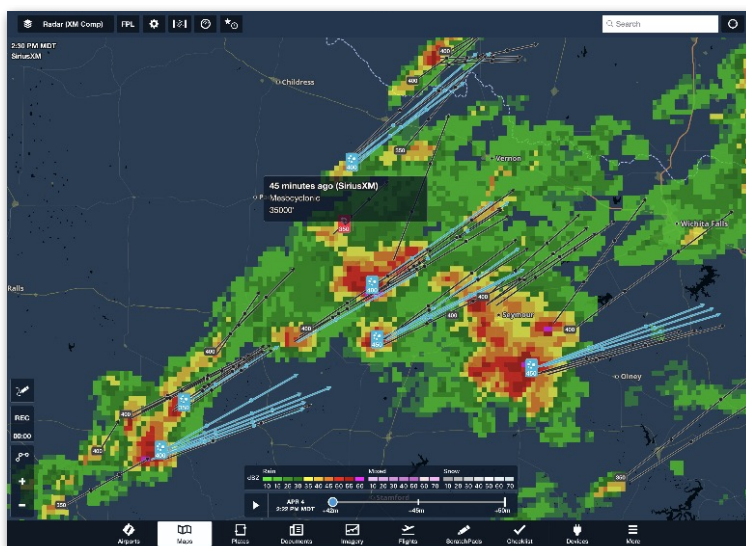
SiriusXM Radar

The Radar (XM Comp) and Radar (XM Base) map layers are available for the United States, southern Canada, and northern Mexico when connected to a supported SiriusXM receiver.

SiriusXM composite and base radar provide a higher resolution radar picture than ADS-B, but lower resolution than internet radar. SiriusXM composite and base radar include storm track, hail, echo top, and mesocyclonic indicators. See [SiriusXM Radar](#) for additional information.



Radar (XM Comp) Coverage Area



Radar (XM Comp) Storm Cell Indicators

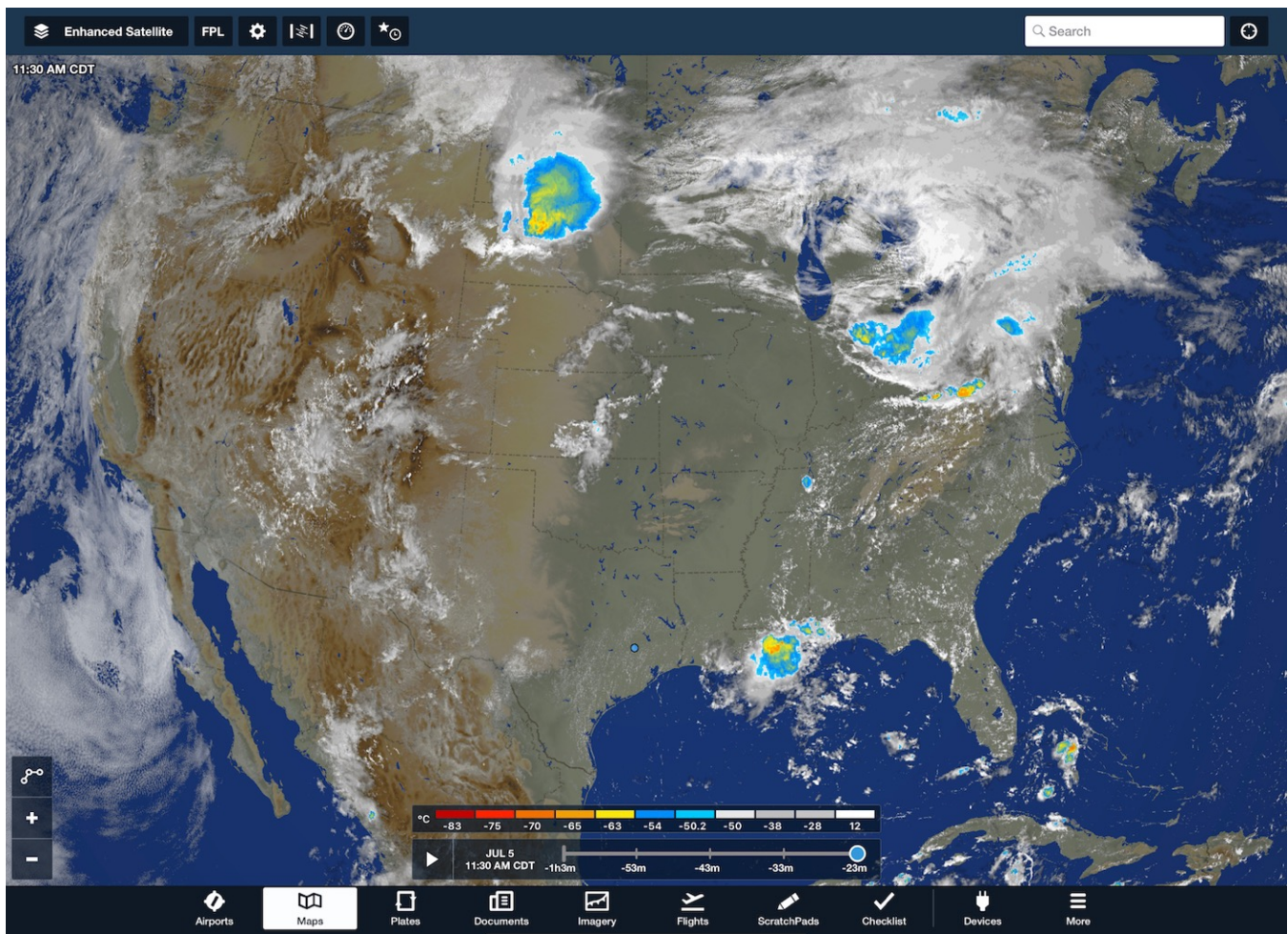
11. MAPS

11.5.3 Satellite

Two satellite map layers are available when receiving data from the internet.

Enhanced Satellite - Visible- or infrared-derived (depending on the time of day) grayscale satellite with color infrared highlights for high-altitude cloud tops.

Color IR Satellite - Infrared satellite is colorized to depict the temperature of the cloud tops. Ground temperature depictions are masked out to show regions without clouds. Color-temperature scale is the same as used in the Infrared Satellite imagery. You can animate the satellite layers using the time slider. The satellite layers check for updates every three minutes, but new images are typically transmitted every 30 minutes. Satellite requires an active Internet connection or Baron Mobile Link weather receiver (IR Satellite is unavailable with Baron Mobile Link).



Enhanced Satellite

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11.5.4 Icing

Up to four Icing map layers are available in ForeFlight Mobile. Each map layer provides an altitude slider on the right side of the screen for viewing icing severity at different altitudes. When in flight, the **Auto** button at the top of the slider sets the selected altitude to your GPS altitude.

Icing (US) (requires a Pro Plus or higher subscription) is an internet-sourced map layer that displays icing severity forecasts (light, moderate, heavy) based on the Forecast Icing Product (FIP) run hourly and is extended 18 hours into the future. The Icing US layer covers the continental United States, northern Mexico, and southern Canada, generally between 16N and 59N Latitude.

Icing (Global) (requires a Pro Plus or higher subscription) is an internet-sourced map layer that displays icing severity forecasts (light, moderate, heavy) based on the Global Forecast System (GFS). The forecast is run four times per day and extends 24 hours into the future.

Icing (XM) (requires GDL 51 or GDL 52) displays icing severity levels (light, moderate, heavy), plus SLD threat. Covers CONUS plus northern Mexico and southern Canada generally between 16N and 59N .

Icing (ADS-B) (requires ADS-B receiver) is an NWS graphical forecast with a look ahead range of 150 nm to 250 nm. Forecast icing severity and anticipated presence of super-cooled large droplets (SLD) are provided for every 2,000 ft up to 24,000ft MSL. This information comes from the NWS Forecast Icing Potential model, available only in the continental United States. Forecast icing information is unavailable for Alaska, Hawaii, Guam, or Puerto Rico. This model is run on an hourly basis. The transmission interval is every 15 minutes.

11. MAPS

11.5.5 Turbulence

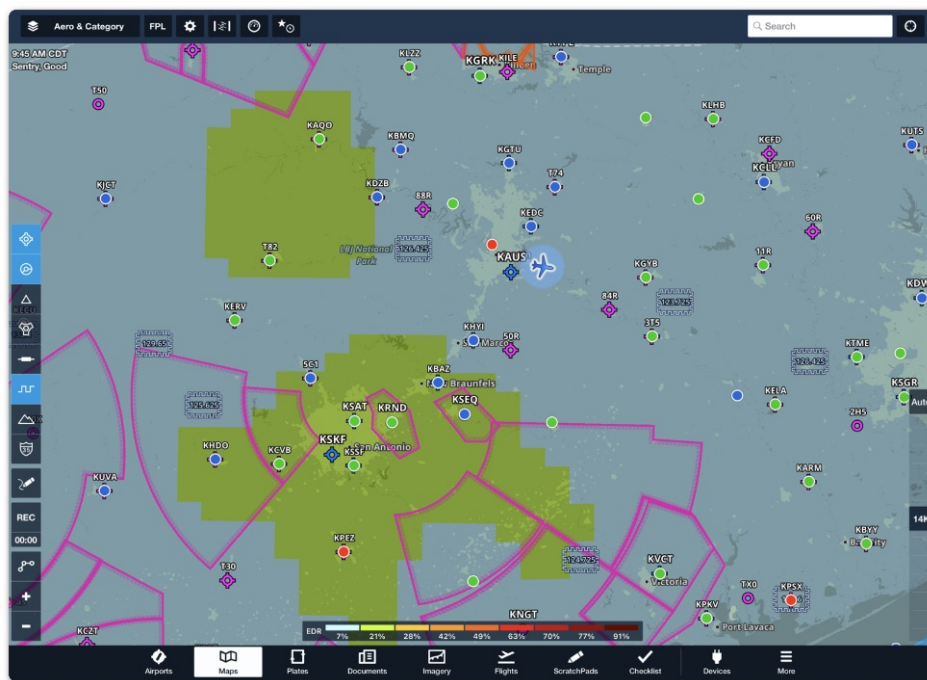
Up to four turbulence map layers are available in ForeFlight Mobile. Each map layer provides an altitude slider on the right side of the screen for viewing turbulence intensity at different altitudes. When in flight, the **Auto** button at the top of the slider sets the selected altitude to your GPS altitude.

Turbulence (US) (requires a Pro Plus or higher subscription) displays EDR (eddy dissipation rate) forecasts which translate into turbulence severity based on aircraft weight. The Turbulence US layer covers the continental United States, northern Mexico, and southern Canada, up to FL 450 in 1,000 ft increments.

Turbulence (Global) (requires a Pro Plus or higher subscription) displays EDR (eddy dissipation rate) forecasts which translate into turbulence severity based on aircraft weight. Turbulence data is available from FL 120 to FL 450 in 3,000 ft increments.

Turbulence (XM) (requires GDL 51 or GDL 52) displays turbulence intensity forecast based on a medium aircraft weight category. Covers the continental United States plus northern Mexico and southern Canada.

Turbulence (ADS-B) is an NWS *forecast* map layer with a look-ahead range of 150 nm to 250 nm. Turbulence (ADS-B) displays the forecast eddy dissipation rate (EDR) (i.e., turbulence intensity) based on a medium aircraft weight category.



Turbulence (ADS-B)

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11.5.6 Clouds

Clouds - Displays a global view of forecast cloud coverage at a selectable altitude (using the altitude slider on the right) and time (using the time slider at the bottom). The forecast is based on the GFS Cloud Coverage product and depicts the forecast percentages of cloud cover using different shades of gray. The forecast data is included in Pack for offline use during the valid forecast period. The Clouds map layer is included in Pro Plus, Performance Plus, and Business Performance plans.

11.5.7 Surface Analysis

Sfc Analysis (XM) (requires GDL 51 or GDL 52) - Displays isobars, pressure readings, and other weather features associated with a surface analysis product. Covers almost all of North and Central America (excluding northernmost Canada and Alaska) and as far west as Hawaii.

Surface Analysis - Displays isobars, pressure readings, and other weather features associated with a surface analysis product. Use the time slider to view different frames in the forecast. Provides global isobar and pressure readings and more detailed weather features for North America. Requires a Pro Plus, Performance Plus, or Business Performance subscription.

11.5.8 Winds

Winds (Temps) - Displays forecast global temperatures in °C up to 24 hours in the future, as colors at a selectable altitude with wind direction and speed represented by smoothly-flowing particle animations. The layer features a dynamic legend at the bottom of the Maps page, showing the color range corresponding to the temperatures. The layer is included when packing for a flight. Included in Performance Plus and Business Performance.

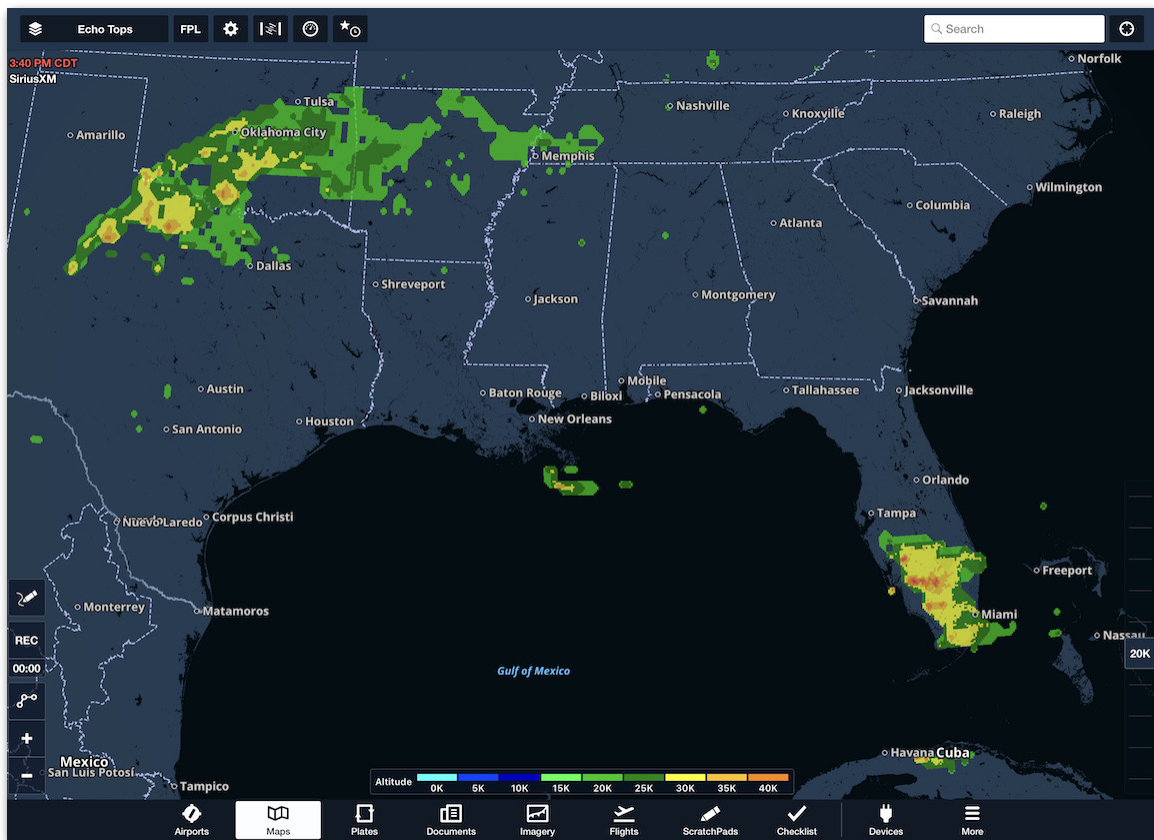
Winds (Speeds) - Displays forecast global wind speeds in knots up to 24 hours in the future, as colors at a selectable altitude with wind direction and speed represented by smoothly-flowing particle animations. The layer features a dynamic legend at the bottom of the Maps page, showing the color range corresponding to the wind speed. The layer is included when packing for a flight. Included in Performance Plus and Business Performance plans.

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11.5.9 Echo Tops (XM)

Echo Tops require a SiriusXM compatible receiver (GDL 51/52). The echo top map layer displays the height where ground-based radar detects reflectivities above 18 dBZ.

Use the altitude slider on the right to filter out echo tops at lower altitudes. Covers CONUS plus northern Mexico and southern Canada. 5000' increments from 0' to FL450.



Echo Tops (XM)

11. MAPS

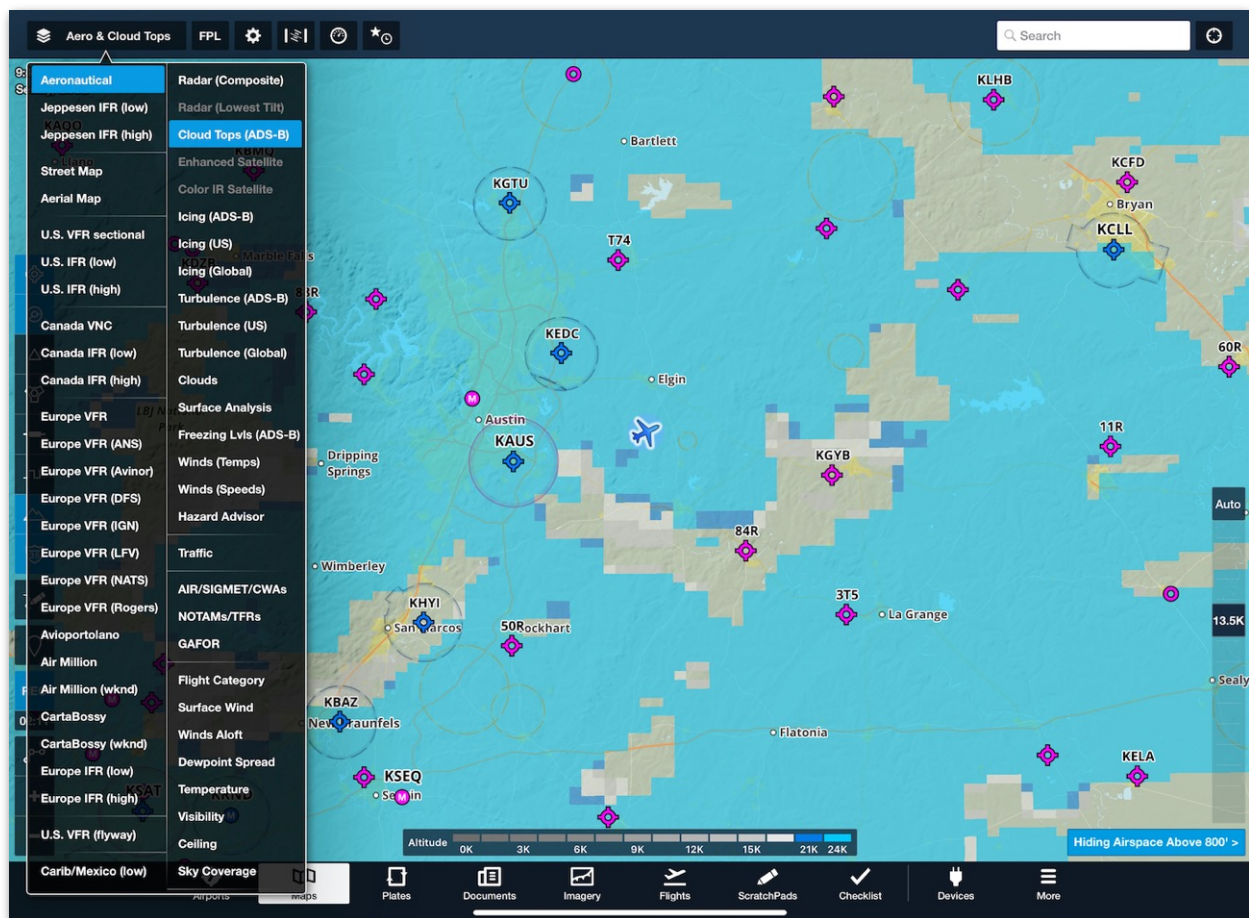
11.5.10 Cloud Tops

There are up to two Cloud Top map layers. Each map layer provides an altitude slider on the right side of the screen for filtering cloud tops at lower altitudes. When in flight, the **Auto** button at the top of the slider sets the selected altitude to your GPS altitude.

Cloud Tops (XM) (requires GDL 51/52) displays cloud top height derived from satellite temperature sensors. Covers the continental United States plus northern Mexico and southern Canada. Displays cloud tops in 5000' increments from 0' to FL400.

Cloud Tops (ADS-B) (requires ADS-B receiver) is a National Weather Service (NWS) forecast map layer. Using the High-Resolution Rapid Refresh (HRRR) model, cloud tops are derived from satellite temperature sensors.

Cloud Tops are only available for the continental United States. Cloud tops are unavailable for Alaska, Hawaii, Guam, or Puerto Rico. The Cloud Top forecast is generated by NWS every hour and transmitted over ADS-B every 15 minutes.

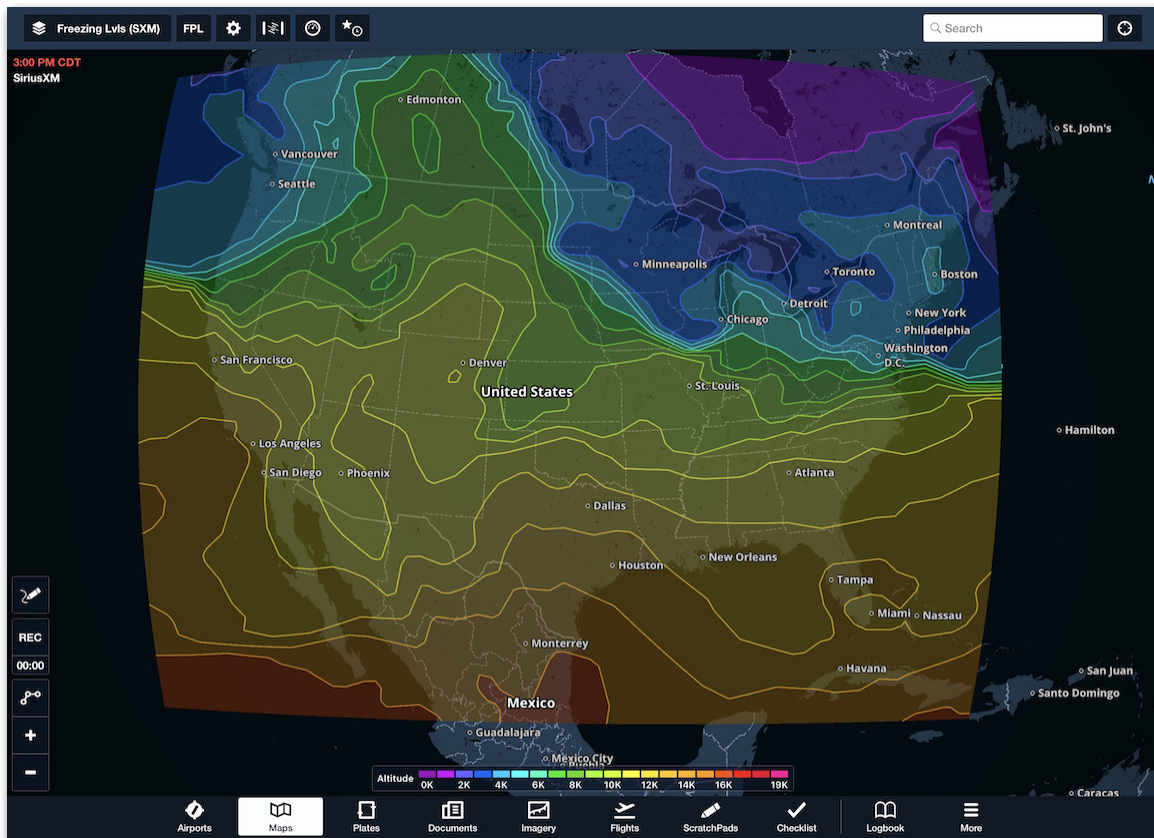


Cloud Tops (ADS-B)

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11.5.11 Freezing Levels

Freezing Levels (requires GDL 51/52) displays freezing level boundaries in 1,000-foot intervals using a colored overlay. It covers the Continental United States plus northern Mexico and southern Canada.



Freezing Levels (SiriusXM)

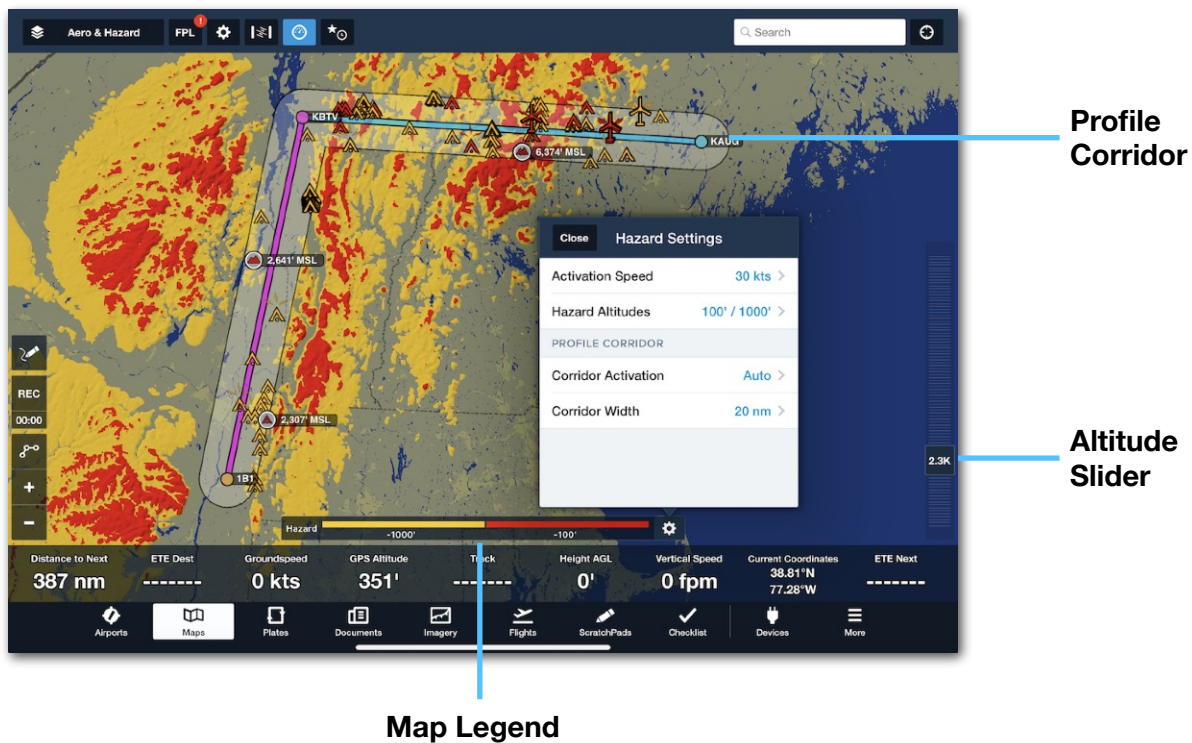
11. MAPS

11.5.12 Hazard Advisor

Hazard Advisor is a map overlay that highlights terrain as it relates to the aircraft or a user-specified altitude. The purpose of Hazard Advisor is to identify potential hazards at different altitudes. Hazard Advisor will automatically use **your current altitude** when the user-set groundspeed is exceeded. This feature requires a Pro Plus subscription or higher.

Map Elements

When the Hazard Advisor map layer is selected, it displays map coloration showing hazardous terrain at the current altitude and a slider on the right that can be used to analyze hazards at different altitudes. Hazard Advisor can also display a **Map Legend** showing hazard colors and **settings**, as well as a **Profile Corridor** showing obstacles along the route.



NOTE: Hazard Advisor only displays obstacles while airborne or when on the ground and the Profile Corridor is enabled.

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Hazard Advisor Settings

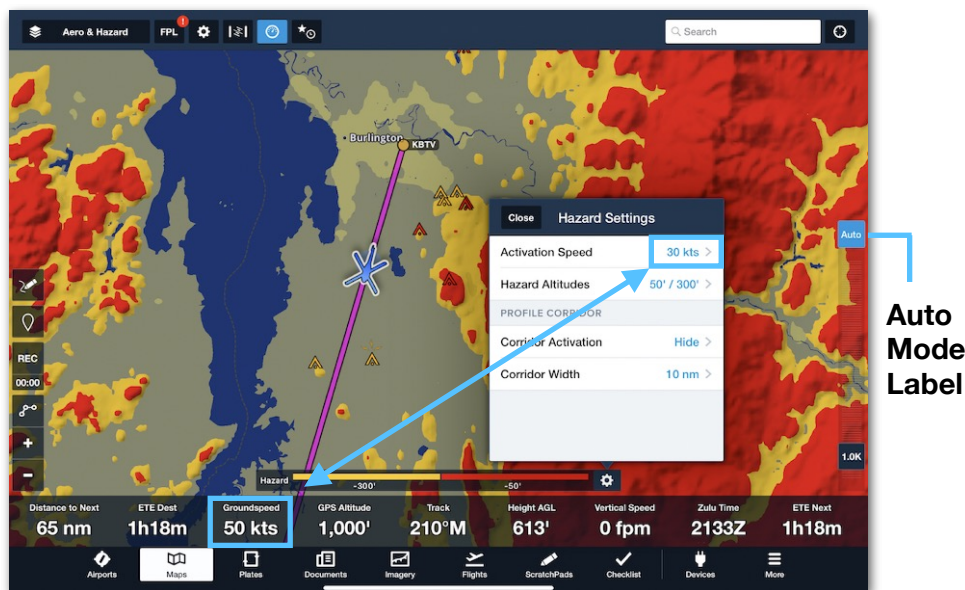
The following options in the **Hazard Settings** menu control the Hazard Advisor:

- **Activation Speed** specifies a minimum groundspeed above which Hazard Advisor enters Active Mode. Active mode should reflect the minimum groundspeed required for flight in your aircraft. Once Active Mode begins, hazardous obstacles appear on the map even if the **Profile Corridor** is inactive and the Hazard Altitude Slider is set to Auto.
- **Hazard Altitudes** specifies the maximum altitude clearance required to color nearby obstacle and terrain hazards. There are four settings with different vertical clearances.
- **Corridor Activation** controls when the **Profile Corridor** displays along the route: Show (always), Hide (never), or Automatic (whenever the Profile View or Hazard View are displayed). When active, the Profile Corridor displays hazards along your route even if Hazard Advisor is not in Active Mode.
- **Corridor Width** determines the total width of the Profile Corridor around the route centerline. For example, a 20 nm Corridor Width shows hazards 10 nm on either side of the route centerline.

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Active Mode

When Hazard Advisor is enabled and ForeFlight detects a groundspeed greater than the selected Activation Speed (ranging from 0 to 140 knots), Hazard Advisor enters Active Mode. This is indicated by a blue **Auto** label above the slider. When Auto Mode begins, the altitude slider switches from MSL to GPS altitude and automatically adjusts to the device's current GPS altitude, and the map displays nearby hazards (including obstacles) to your aircraft. Any changes made to the altitude slider once this mode is active are reset to the GPS altitude after six seconds as indicated by a radial timer.



Auto Mode starts when Groundspeed exceeds Activation Speed.

11. MAPS

11.5.13 Traffic

When connected to a compatible ADS-B receiver or while on the ground and connected to the Internet (Wi-Fi or Cellular Data), the **Traffic** map layer is shown. While on the ground and connected to the Internet, global traffic is streamed from FlightAware.

Traffic (Internet)

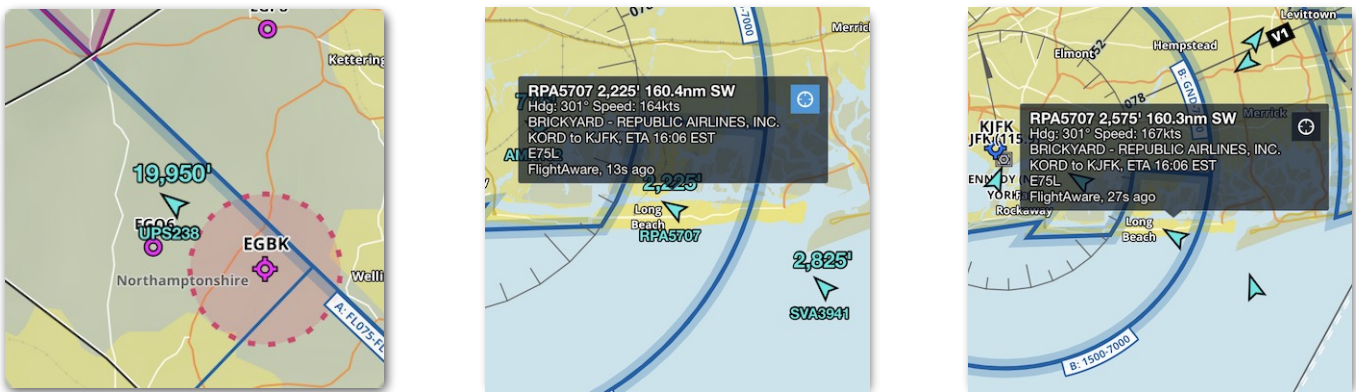
In partnership with FlightAware, when on the ground and connected to the Internet (Wi-Fi or Cellular Data) you can stream live global traffic (including decoded callsign, Departure, Destination, and ETA).

Internet Traffic is disabled automatically after takeoff unless connected to the internet via Wi-Fi or hotspot. It is impossible to display Internet Traffic while connected to an ADS-B receiver.

WARNING: Internet Traffic should not be used as a primary means of traffic information in flight due to the potential for latency.

The tail number and altitude are hidden when zoomed out and come into view as you zoom in. Tap on a target to see additional information, including when the last position update was received from FlightAware.

Tap the auto-center button in the upper-right of the traffic target pop-up to keep it in view. Tap the auto-center button a 2nd time, or tap away from the target, to disengage auto-center



Internet Traffic

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Internet Traffic Search

To search for a traffic target, tap the search box and enter the registration (eg: N-number) or callsign (eg: EDV4653 or SWA1257) and if the target's position is available from FlightAware, the map will automatically center on the traffic target and display its additional information.



Traffic Search

Traffic (ADS-B)

ADS-B traffic is the primary source of in-flight traffic information. ADS-B traffic requires a supported external receiver. When connected, the Traffic layer is automatically enabled and ForeFlight displays traffic detected by the receiver on the Maps view.

Aircraft need not be ADS-B Out equipped for ForeFlight to receive ADS-B traffic. However, if your aircraft is not ADS-B Out equipped, ForeFlight may show significant relative altitude discrepancies. For additional information, see [ADS-B Traffic](#).

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11.5.14 Search & Rescue







Map layers which are intended for use in Search & Rescue operations are available when Search and Rescue is enabled in **More > Settings**. For more details, see the Search and Rescue Guide in **Documents > ForeFlight**.

11.5.15 AIR/SIGMET/CWAs

AIR/SIGMET/CWAs cover regions provided by FAA and international SIGMETs. The shapes are colored-coded based on type:

Center Weather Advisories receive the same color as their underlying report (eg, Purple for IFR, etc...). These types can be selectively filtered from the map using the five buttons at the bottom of the screen when the layer is selected.

Tap an **AIR/SIGMET/CWA** shape to display the sidebar listing all advisories at that location, then tap on one to see full details about the advisory, including the highlighted lateral boundary (thick orange border in the image at right); this is especially useful when multiple *METs overlap in one place.

Overlay Color	Meaning
	Freezing level and icing conditions.
	Turbulence and high winds
	IFR conditions
	Mountain obscuration
	Convective outlook
	SIGMETs of all types

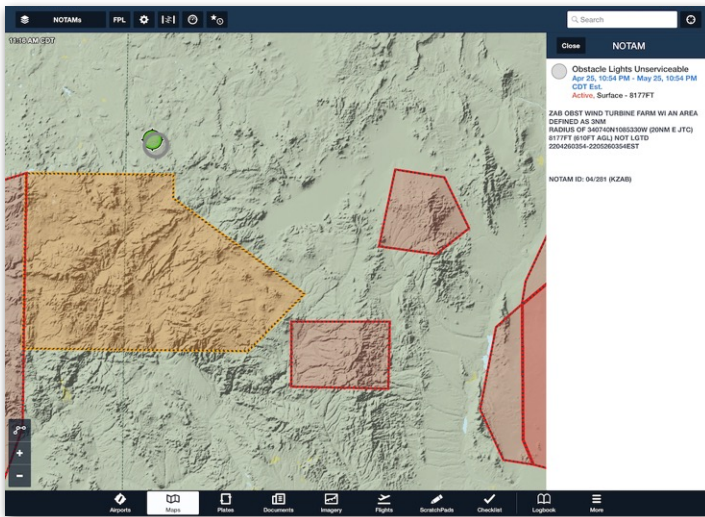
AIRMET SIGMET CWA Legend

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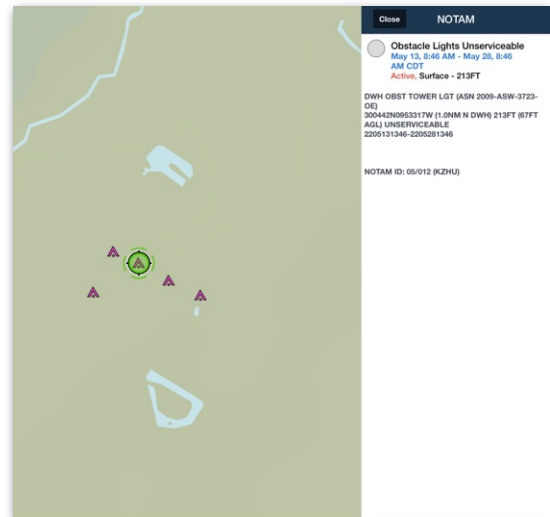
11.5.16 NOTAMs

Global graphical NOTAMs, including geographic and obstacle NOTAMs, can be displayed on the map. NOTAMs are displayed on the map two hours prior to becoming active and are *not* affected by the Hide Airspace setting.

Red and yellow NOTAMs will appear before grey NOTAMs. Zoom in on the map to display grey and obstacle NOTAMs. Tap a NOTAM to reveal NOTAM details in the sidebar. Graphical NOTAMs can be displayed in flight if the Pack feature is used. Graphical NOTAMs are not provided with ADS-B.



Graphical NOTAMs

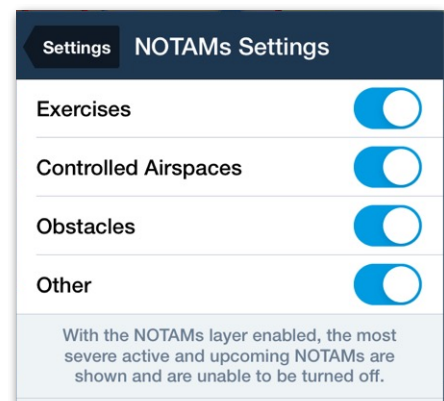


Obstacle NOTAMs

NOTAM Settings

NOTAMs can be filtered based on type. To filter NOTAMs, open the Map Settings (gear button) when the NOTAM layer is selected and tap **NOTAMs Settings**.

When the NOTAMs map layer is enabled, NOTAMs which restrict airspace or potentially present a danger to non-participating aircraft are unable to be turned off with the settings. This includes scheduled and active NOTAMs associated with Military Operating Areas, Warning Areas, Controlled Firing Areas, and Danger Areas (Europe).







NOTAM Settings

11. MAPS

NOTAM Color Coding

NOTAMs are color-coded based on NOTAM type and activation status. NOTAMs that are red when active (Special Use Airspace, Danger, and Restricted NOTAMs) are yellow two hours prior to becoming active.

NOTAM Color	NOTAM Type
	Airspace <ul style="list-style-type: none">• Active Special Use Airspace• Active Danger and Restricted Areas
	Airspace and exercises <ul style="list-style-type: none">• Scheduled Special Use Airspace• Scheduled Danger and Restricted Areas• Scheduled and Active Exercises
	Other NOTAMS <ul style="list-style-type: none">• Unmanned aircraft operations• Parachute operations• Training areas• Multiple obstacles covering an area
	Obstacle NOTAMS

NOTE: A red NOTAM does not guarantee the airspace is restricted. Tap a NOTAM to reveal NOTAM details to determine the status of the airspace.

11.5.17 TFR

The Temporary Flight Restriction (TFR) map layer is available when the iOS device region is set to the United States. TFRs are issued exclusively for the United States and are yellow until 8 hours before the scheduled start time. Within 8 hours of a TFR being active, it is shown in **Red** until the end of the TFR.

TFRs IMPORTANT NOTICE:

Graphical TFR information is ONLY updated and displayed if you select the TFR Map layer while connected to the Internet or while using an in-flight weather receiver.

If the FAA publishes a TFR without associated graphical shape information, it may not be possible for ForeFlight Mobile to show the graphical TFR on the Map. Therefore you should also check the Airports page, under NOTAMS > TFRs for airports along your route, and contact FSS or ATC to confirm that your route does not cross any such TFRs.

While connected to the Internet, use the **Pack** feature to ensure all relevant TFR and weather data is downloaded. TFRs issued **after** you Pack will not be shown, unless you are using an ADS-B or SiriusXM in-flight weather receiver.

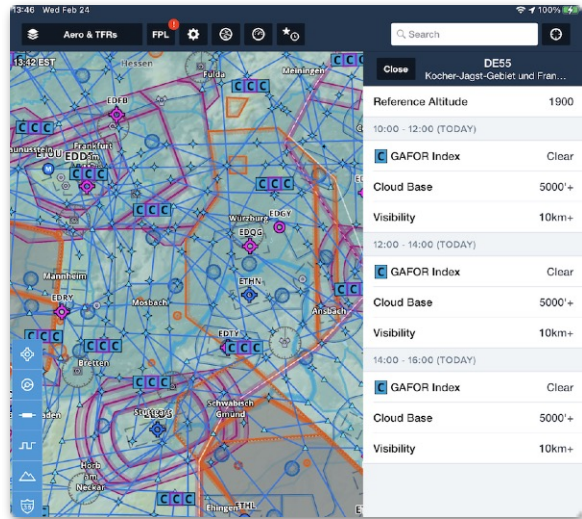
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11.5.18 GAFOR

GAFOR (Europe only) - The General Aviation Forecasts layer displays color-coded GAFOR indexes in regions for Germany and GAFOR routes for Switzerland, Austria, and Slovenia.

GAFOR is updated multiple times per day but is not available later at night (typically between 0000Z-0300Z). During this time, selecting the layer will display hash marks and “Data not available.”

Tap on a GAFOR icon to see the Index, periods, and additional weather information: the reference altitude for that region or route, the cloud base height in feet, and the visibility in kilometers.



GAFOR

Index	Germany & others	Switzerland
C - Clear	Visibility > 10km and cloud bases > 5,000ft (Germany only)	
O - Open	Visibility ≥ 8km and cloud bases ≥ 2,000ft	
D - Difficult	Visibility ≥ 5km and bases ≥ 1000ft < 2000ft	Visibility ≥ 5km < 8km and cloud bases ≥ 1500ft < 2000ft
M - Marginal	Visibility ≥ 1.5km and cloud bases ≥ 500ft < 1000ft	Visibility ≥ 2km < 5km and cloud bases ≥ 1000ft < 1500ft
X - Closed	Visibility < 1.5km and any cloud bases or Any Visibility and cloud bases < 500ft	Visibility < 2km and cloud bases < 1000ft

/ - Data Unavailable

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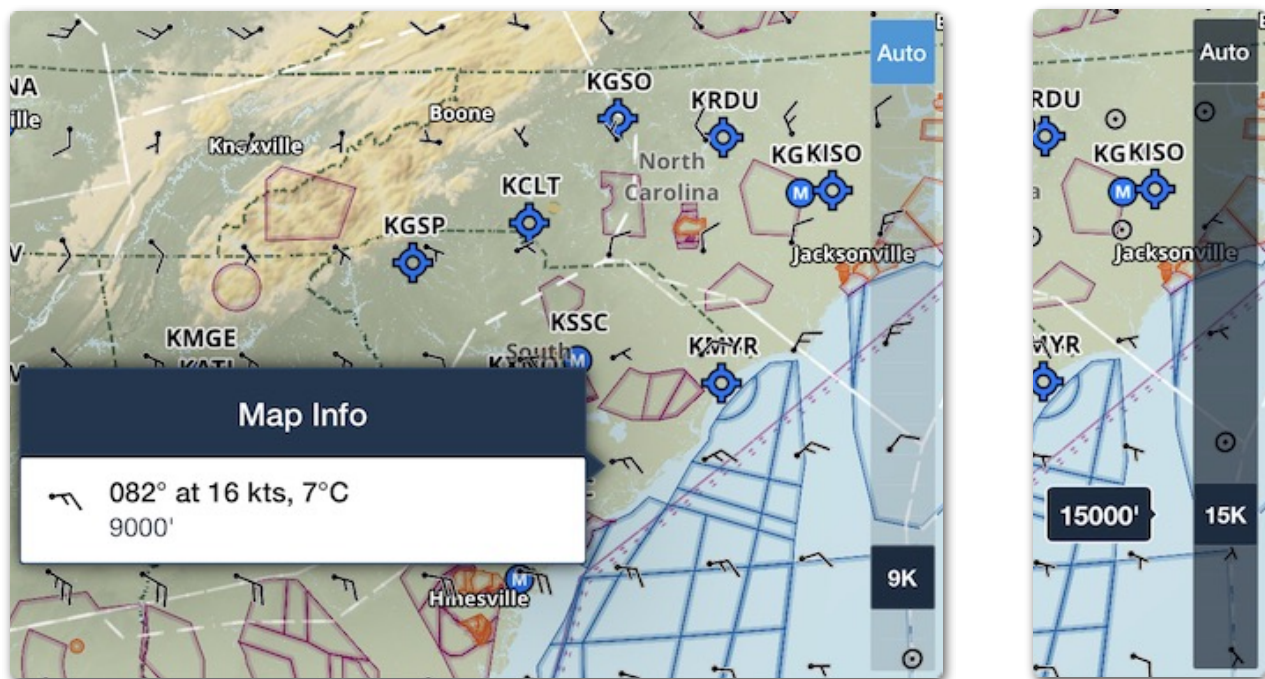
11.5.19 Weather Layers

Weather Layers - various METAR-derived weather measurements can be displayed on the map. For example, Flight Category, Winds Aloft, Dewpoint Spread, Temperature, Visibility, Surface Wind, Ceiling, Sky Coverage, PIREPs, and Lightning. The weather layers are updated every five minutes when connected to the Internet.

11.5.20 Winds

Winds Aloft from 3000' to FL540 in 3000' increments are depicted on the map. To adjust the altitude of forecasted winds, tap and hold on the altitude slider and move it up or down until the desired altitude is shown. In-flight, tap the **Auto** button to adjust the altitude automatically to your current cruising altitude.

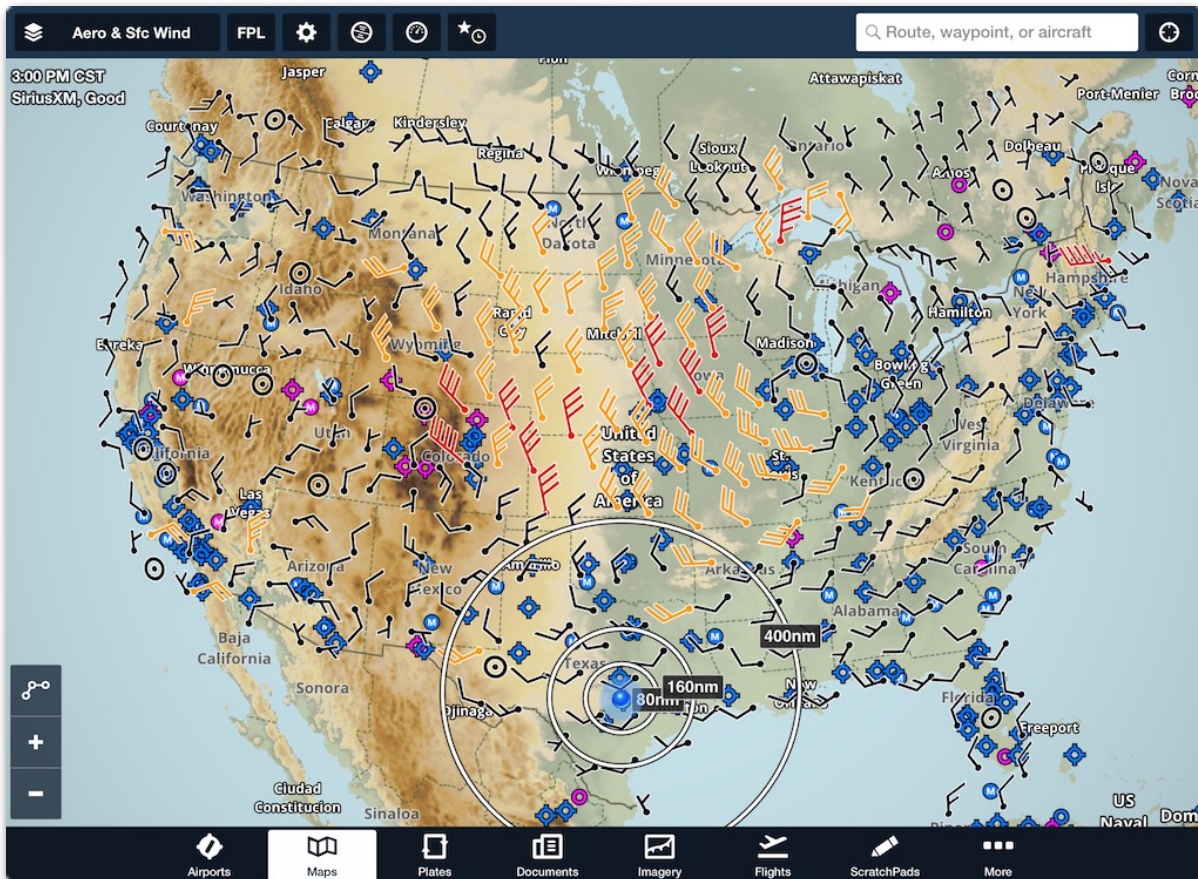
Winds Aloft must be Packed to view while flying. Graphical Winds Aloft are not available over ADS-B. Tap a wind barb to see the forecasted wind speed, direction, and temperature at that altitude for the current three-hour forecast period.



Winds Aloft

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Surface Winds - derived from METARs at airports show surface wind speed and direction only at those locations.



Surface Winds (SiriusXM)

Surface Wind Analysis (requires GDL 51 or GDL 52) - generated from an automated forecast model, shows forecast wind speed and direction at tens of thousands of evenly spaced points across the country. Good for viewing low-level circulations across a wide area.

11.5.21 Obstacles

Obstacles show obstacle markers based on Jeppesen obstacle data.

11.5.22 User Waypoints

All User Waypoints associated with the account are shown on the Map. See [User Waypoints](#) for more information.

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11.5.23 Fuel

Fuel prices - prices for 100LL and Jet-A fuel. Fuel prices are color-coded by price in the region where the airport is located - less expensive prices are in green, average in orange, and most expensive in red. UL94, UL91/96, and Mogas fuel are not depicted as a map layer.

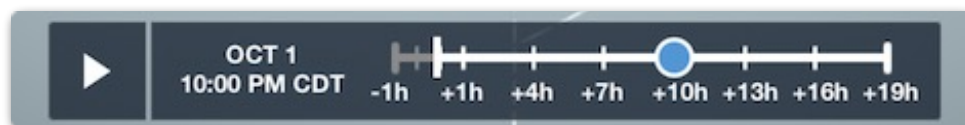
11.5.24 Custom Map Layers

Custom Map Layers - display a custom KML or KMZ file on the Map. Multiple KML and KMZ files can be displayed at a time. See the [Custom Map Layers](#) section for additional details.

11.6 Weather Layer Time Slider

When you select an observed or forecast-based weather layer, a time slider appears at the bottom of the screen. Observed weather, such as radar and satellite, will display weather imagery from the past. Forecast weather, such as AIRMETs, SIGMETs, and Center Weather Advisories will display what the weather is expected to do in the future.

Tap the play button on the left to animate the layers. The play button advances the time slider frame-by-frame, while the timestamp on the left shows the date and time when each frame is valid.



Forecast Weather Time Slider

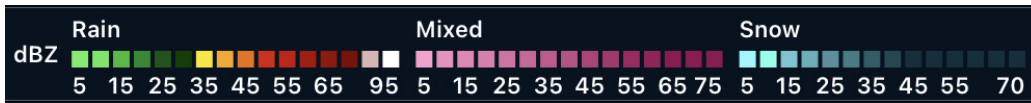
Forecast-based weather layers use a vertical white bar on the time slider to indicate the present time. You can manually control the animation by tap-holding on the time slider and dragging it left or right to view different frames or by tapping on the line to the left or right of the slider to advance it one frame at a time in either direction.

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11.7 Weather Legends

When one of the following weather layers are selected, a legend can be displayed near the bottom of the Maps view. The legend is toggled on and off using the **Map Settings** menu and will update based on the selected layer.

- Radar
- Color IR Satellite
- Clouds
- Enhanced Satellite
- Icing and Turbulence
- Winds (Temps/Speeds)



Map Legend (Radar)

11.7.1 Weather Layer Legend

The following shapes and colors are used to depict weather status.

Icon Color	Flight Category
	LIFR: Ceiling less than 500 feet or visibility less than 1 mile.
	IFR: Ceiling 500 to less than 1,000 feet or visibility 1 to less than 3 miles.
	MVFR: Ceiling 1,000 to 3,000 feet or visibility 3 to 5 miles inclusive.
	VFR: Ceiling greater than 3,000 feet and visibility greater than 5 miles; includes sky clear.
	Unknown: Weather conditions are unknown.

Flight Category Icons

NOTE: Once flight category data exceeds three hours, it is removed from the map.

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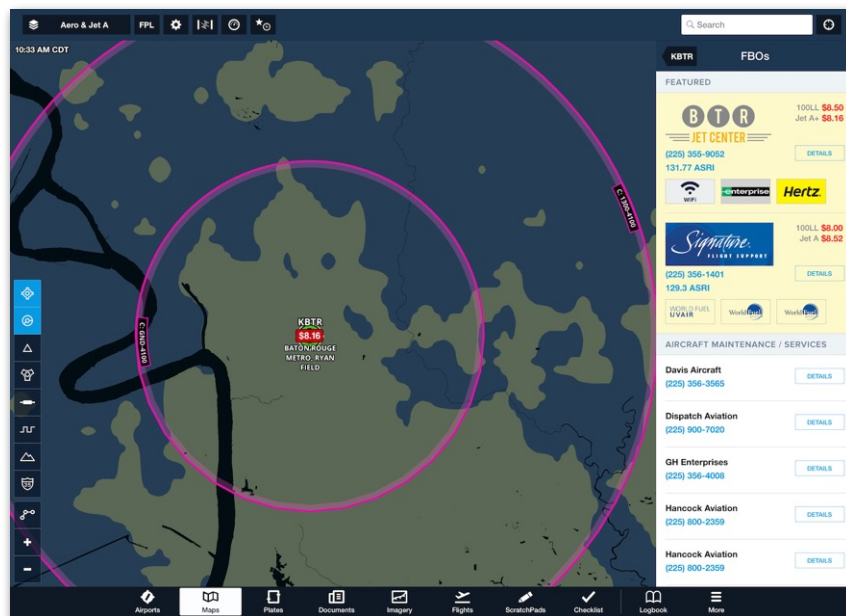
11.8 Maps Sidebar

The sidebar is displayed when map layers are enabled and a map element is tapped. The sidebar is also shown when the map is pressed and held (no active map layer required). When the map is pressed and held, the sidebar reveals the **Add to Route** menu.

The sidebar responds to tapped elements to display relevant information. For example, if the **Fuel: Jet A** map layer is enabled and a fuel price is tapped, the sidebar automatically displays FBO information. Similarly, tapping a METAR-based weather layer (flight category, visibility, etc.) opens the airport details view with the METAR tab selected. If a VFR Waypoint is tapped on the Aeronautical Map layer, the sidebar displays information such as its **ForeFlight Identifier**, waypoint type, and whether or not it is a compulsory reporting point.

The sidebar's airport details view displays all the same information as the full-screen **Airports** view. When an Aeronautical map airport icon is tapped, the airport details view opens to the Info tab. If the **Show Weather First** setting is enabled, the sidebar opens to the METAR tab.

Dynamic map layers such as Radar, Satellite, Icing (US & Global), Turbulence (US & Global), Clouds, and Winds (Temps & Speeds) do *not* reveal the sidebar with a single tap.



Maps Sidebar - FBO View

11. MAPS

11.8.1 Add to Route Menu

The Add to Route menu is displayed in the sidebar when the map is pressed and held. The menu can be used to create **user waypoints**, plan flights, and view aeronautical details.

There are two buttons at the top of the menu. The **Wx** button displays the Daily Weather menu. The **3D** button offers an aerial three-dimensional view centered around the coordinates (Performance Plus, Business Performance, or MFB Performance plan required).

Add to Route Design

The Add to Route menu is divided into three sections.

Location

The location section displays the coordinates and highest elevation within 0.25 nautical miles. Coordinate format is determined by the **Unit/Time** setting.

Airspace

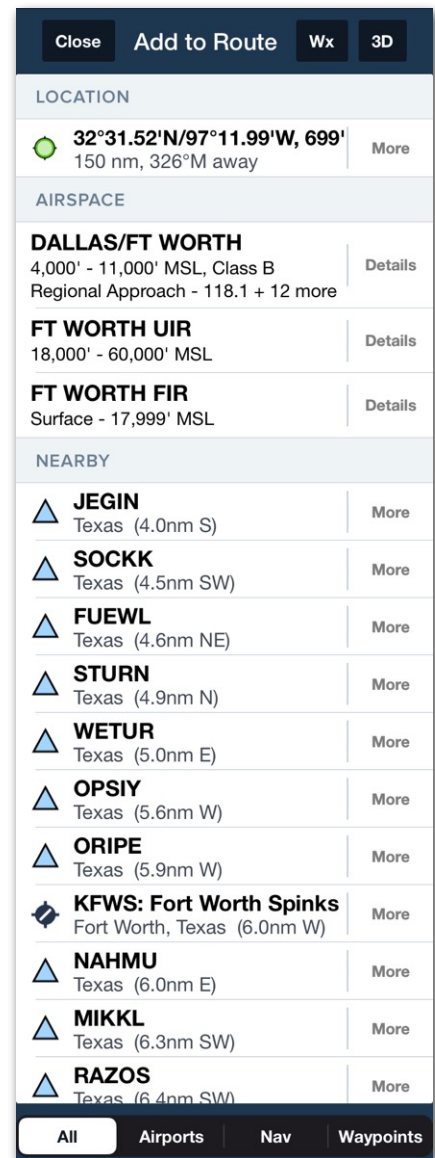
The airspace section lists all airspace from the surface to 60,000 feet. Tap **Details** to highlight the airspace on the map. The airspace details view displays frequencies, RVSM cruise tables, operational notes, speed restrictions, prior notification procedures, and communication details for CPDLC and satellite services.

Nearby

The nearby section lists nearby airports, navigational aids, and waypoints, sorted by distance. Icons are provided to assist with determining type. The **All**, **Airports**, **Nav**, and **Waypoint** buttons at the bottom of the menu filter the nearby list.

Heliports, Private Airports, and Seaplane bases are only included in the nearby list if the **All** or **Airports** filter is selected *and* the airport types are enabled in the Aeronautical Map > **Airport settings**.

Tap an element in the waypoint list to append it to the end of the existing route. Tap **More** to view **Details** or to plan a direct route.

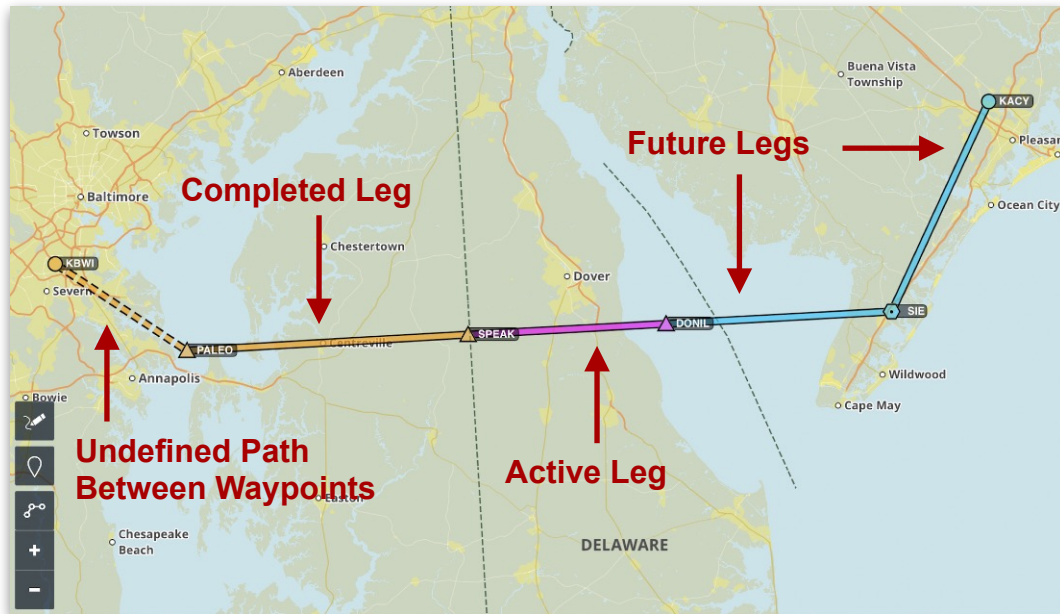


Add to Route Menu

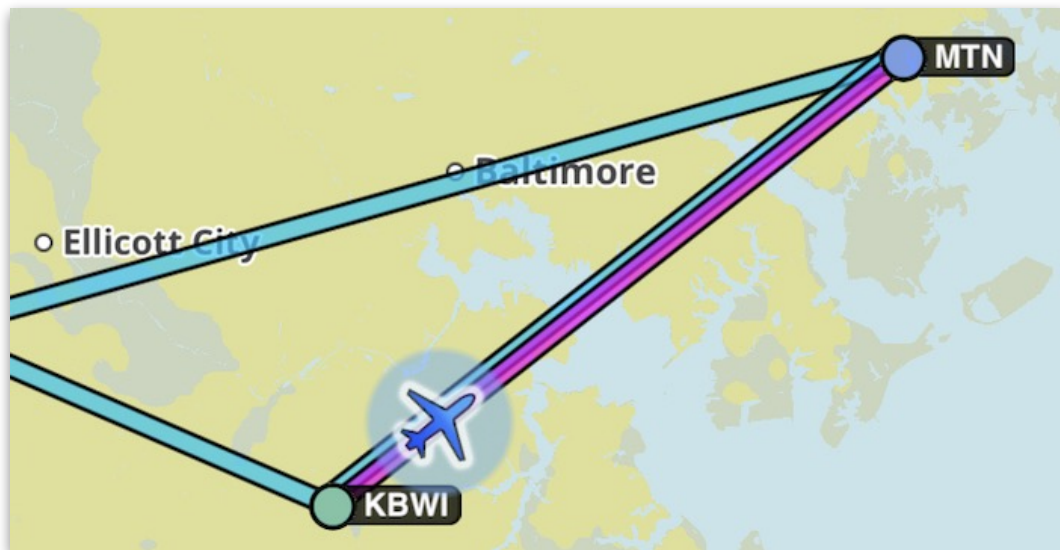
11. MAPS

11.9 Route Line

The route line is generated dynamically on the map. Each leg snaps between waypoints and is color-coded to communicate information to the pilot. This behavior is described below.



Route Line Color and Style

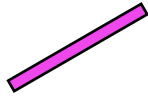
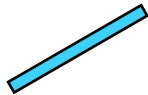

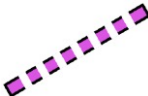



Overlapping Route Lines

11. MAPS

11.9.1 Route Line Colors

The appearance of each leg conveys meaning as described in the following table. Color represents the flight's progress. Style conveys actual or approximate routing and shows when the route overlaps itself.

Color	Meaning	Style	Meaning
	Magenta lines represent the active leg of the flight plan. The first leg of a new route is always magenta.		Overlapping lines indicate two or more legs on the route overlap one another. As a flight progresses, the legs are displayed to maximize their visibility. Specifically: <ul style="list-style-type: none"> The active (magenta) leg is always displayed on top of the completed (orange) or future (blue) legs it overlaps. When a flight starts, the outbound legs are centered and on top of inbound legs. When all overlapped outbound legs are complete, those legs are offset and moved under the inbound legs.
	Blue lines represent future legs.		
	Orange lines represent completed legs.		
	Dashed lines indicate an approximate path to the next waypoint. Like solid lines, they can be magenta , blue , or orange . This is common when you expect radar vectors from ATC during an instrument procedure.		

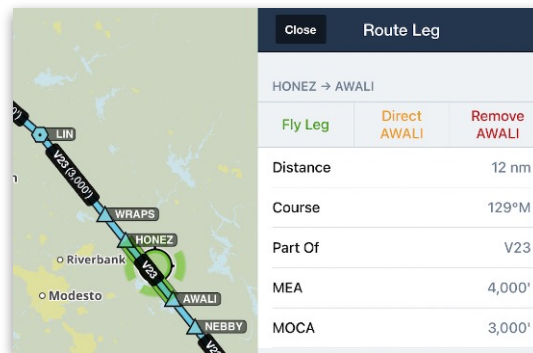
11. MAPS

11.9.2 Route Waypoints

Waypoints in the route are drawn with an icon to represent their type, such as a VOR. For more information, see the discussion of [Aeronautical Map Symbols](#).

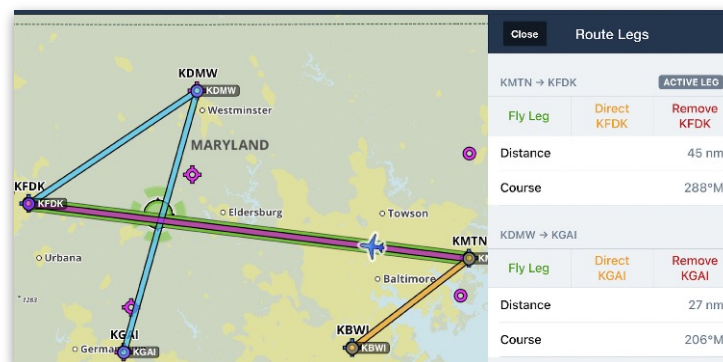
11.9.3 Route Details

Tap on any leg in your route to access certain information and actions. The Route Leg popup includes the length and magnetic course, and if the leg is part of a named airway, the popup also includes the name of the airway, the leg's MEA, and the leg's MOCA, if it has one. If [Corridor Activation](#) is set to Show, or when it is set to Automatic and the Profile View or Hazard Advisor is displayed, the popup also shows the leg's [highest-point markers](#). The buttons along the top of the popup allow you to activate the leg (**Fly Leg**), fly **Direct** to the waypoint at the end of the leg, or **Remove** the waypoint at the end of the leg.



Tap a leg to show its details

If the leg tapped overlaps another leg, the sidebar opens showing each leg overlapping the region tapped. If one of the overlapping legs is currently being flown, it will have an **ACTIVE LEG** badge.



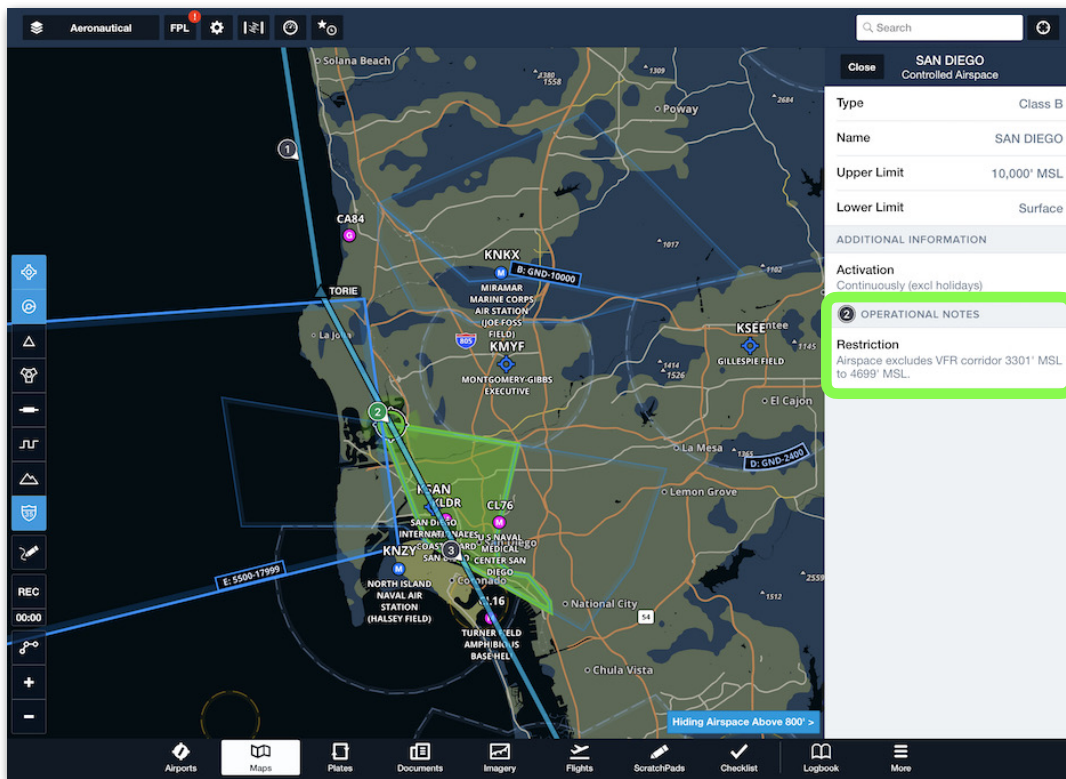
Tap an overlapped region to show all its legs

11. MAPS

11.9.4 Operational Note Flags

The Airport and Nav Database includes Jeppesen-sourced Operational Notes. Notes can be issued for airspace, airways, waypoints, nav aids, and more. Operational Notes can be displayed in the Sidebar regardless of subscription type or settings.

With a *Performance-tier* subscription, numbered flags can be displayed on the map for each Operational Note that exists along the planned route. Flags are numbered sequentially for each Operational Note encountered. Tapping a flag highlights it and opens the Sidebar with the details of the Operational Note displayed.



Planned Route with Operational Notes in Sidebar

To enable Operational Note Flags:

1. Open the Map Settings menu (gear button in upper toolbar).
2. Scroll down and enable the **Operational Note** setting.

NOTE: Operational Notes can be viewed in the Sidebar with the Operational Note setting disabled. The Operational Note setting only enables the flags.

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Flags

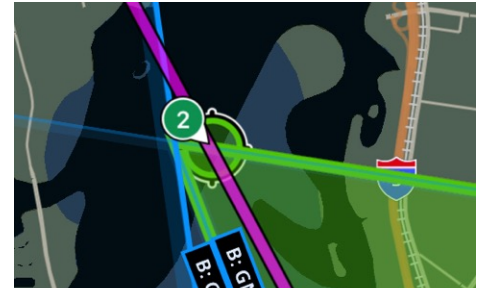
Operational Note Flags are displayed at the waypoint where the note exists.

If an Operational Note relates to airspace, a flag is displayed at the point where the route intersects the airspace. The planned altitude (including climb and descent) must be within 1000 ft (vertically) of the airspace for the flag to appear.

Multiple Operational Notes

When an Operational Note is co-located with a waypoint, tapping the flag results in the Sidebar displaying the Operational Note and the waypoint. Tap the numbered flag to display the details of the Operational Note.

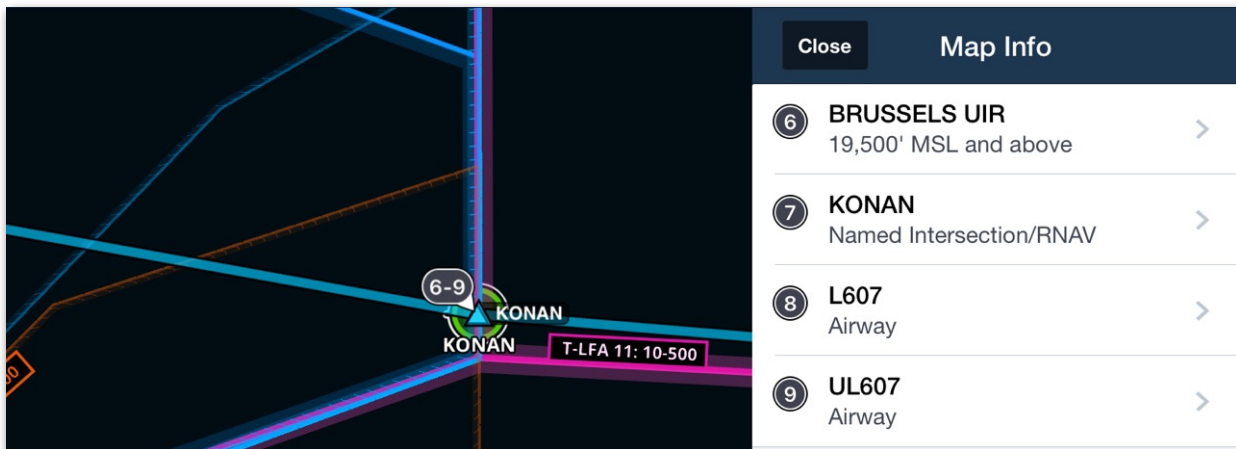
When more than one Operational Notes exist where a flag is located, the flag will show the range of notes, separated by a dash (e.g., 6 - 9). Tap the flag to display the notes in the Sidebar.



Airspace Flag



Numbered Operational Note and Waypoint



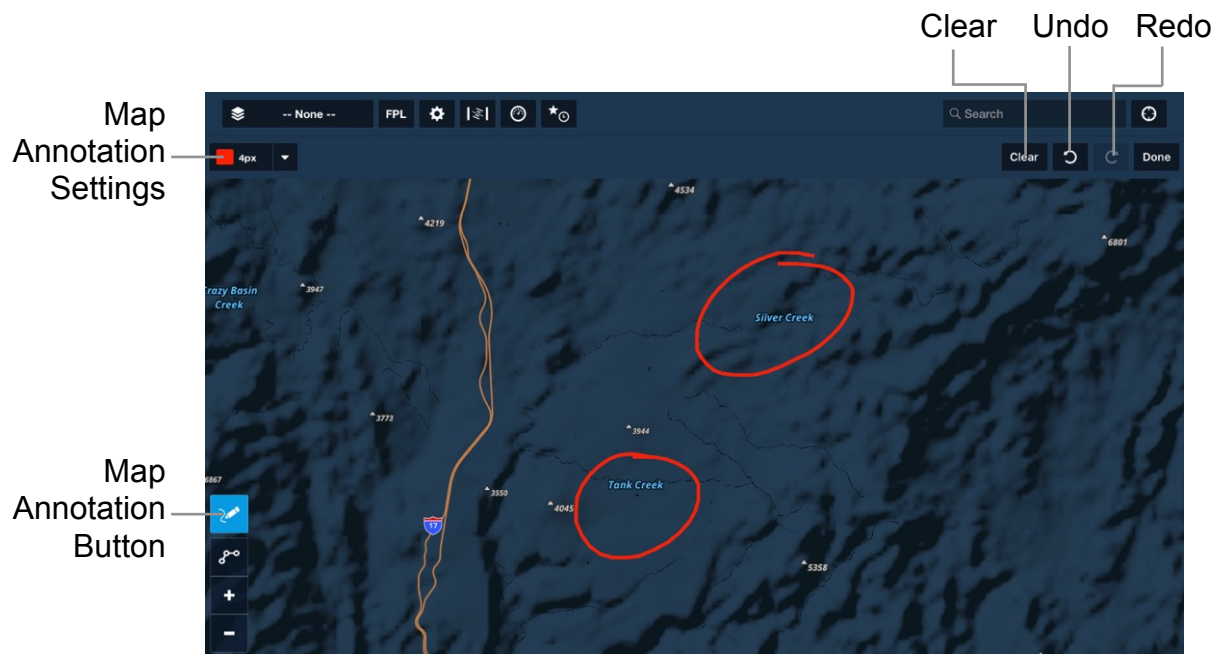
Operational Notes (6 - 9)

11. MAPS

11.10 Map Annotations

Map Annotations allow you to draw on the map. Enable map annotations with the map settings (gear) button. Tap the annotation button on the left sidebar to enter drawing mode. Use one finger to draw and two fingers to move the map.

Map annotations remain on the map until cleared and automatically scale as you zoom out and in. To clear map annotations, tap the annotation button then tap **Clear** near the top of the screen. Tap the Undo or Redo buttons near the top of the screen to remove or add the latest annotations.



Map Annotations

To adjust map annotation opacity, line thickness, or color, tap the drop-down at the left of the top annotations menu.

When using an Apple Pencil, the **Auto Apple Pencil Drawing** setting allows you to annotate the map without first tapping the map annotation button. If your iPad supports the Apple Pencil, add map annotations by touching your Apple Pencil to your iPad's screen, while normal touch gestures still allow you to pan, zoom, or tap on map objects.

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11.11 Marked Positions

Marked Positions (available in Performance Plus and Business Performance plans) let you drop a position marker (green pin shape) at any point along your flight. To enable Marked Positions, tap the Maps Settings (gear) button and turn the Marked Positions switch ON. For a video demonstration, see [Marked Positions](#).

To add a Marked Position, tap the Pin button on the left side of the map. Each position marker (green pin shape) includes the current time, GPS coordinates, altitude, and speed, and you can name the point and add additional notes if needed. If you do not enter a name the marker name shown on the Maps page is the time when the marker was dropped.



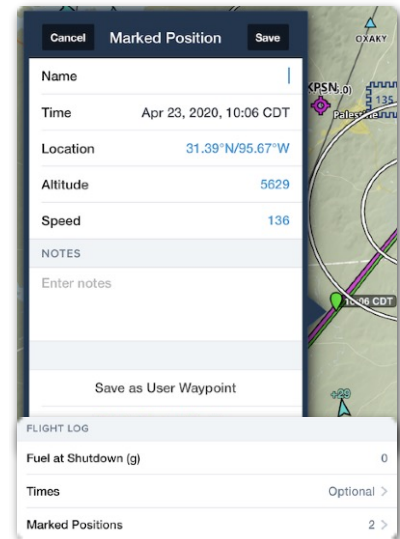
Markers are included in a [track log](#) recorded during the flight, and can be shared as part of the Track log, viewed in a flight whose ETD and duration span the time when the marker was dropped, and exported from the flight as a KML or CSV file.

The pins for positions marked during a particular flight are automatically hidden from the map 15 minutes after the end of the flight.

11.11.1 Editing Marked Positions

While a Marked Position is displayed on the map you can edit its information by tapping the green pin, then tapping the “Edit” button. Make any desired changes, then tap Save. While Editing a Marked Position it can be saved as a User Waypoint, so it can then be added to the Route or used as part of a Search & Rescue (SAR) pattern.

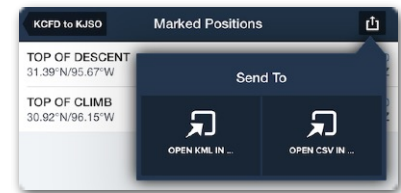
After the flight you can edit a Marked Position by viewing the Track Log containing the position and tapping the Marked Position or tapping the Track Log “Info” button and scrolling down to the Marked Position, or by opening a Flight whose ETD and duration span the time when the marker was dropped and scrolling down to the “Flight Log” section.



11. MAPS

11.11.2 Exporting Marked Positions

After a flight, positions marked during a flight can be directly exported as a KML or CSV file by tapping “Marked Positions” in the Flight Log section of the flight. Tap an individual Marked Position to edit its information, or tap the “Send to” button in the upper-right and choose the export file type.

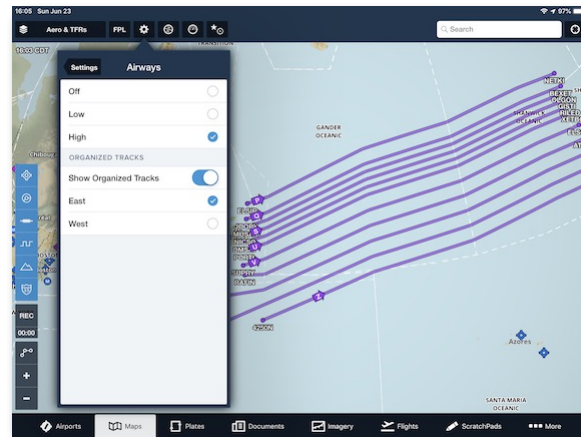
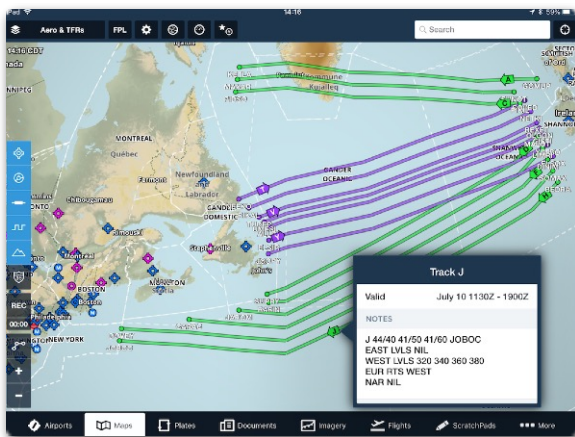


Exporting Marked Positions

Marked Positions are saved in a Track Log and are included when the Track Log is exported as a KML for use in another app.

11.12 Organized Track Systems

ForeFlight Mobile includes the option of displaying Organized Track Systems (OTS) for North Atlantic, North Pacific, and Australasia (Performance Plus or Business Performance plan required).



Tracks are updated automatically, and tapping on a track shows additional details such as valid times and controller notes.

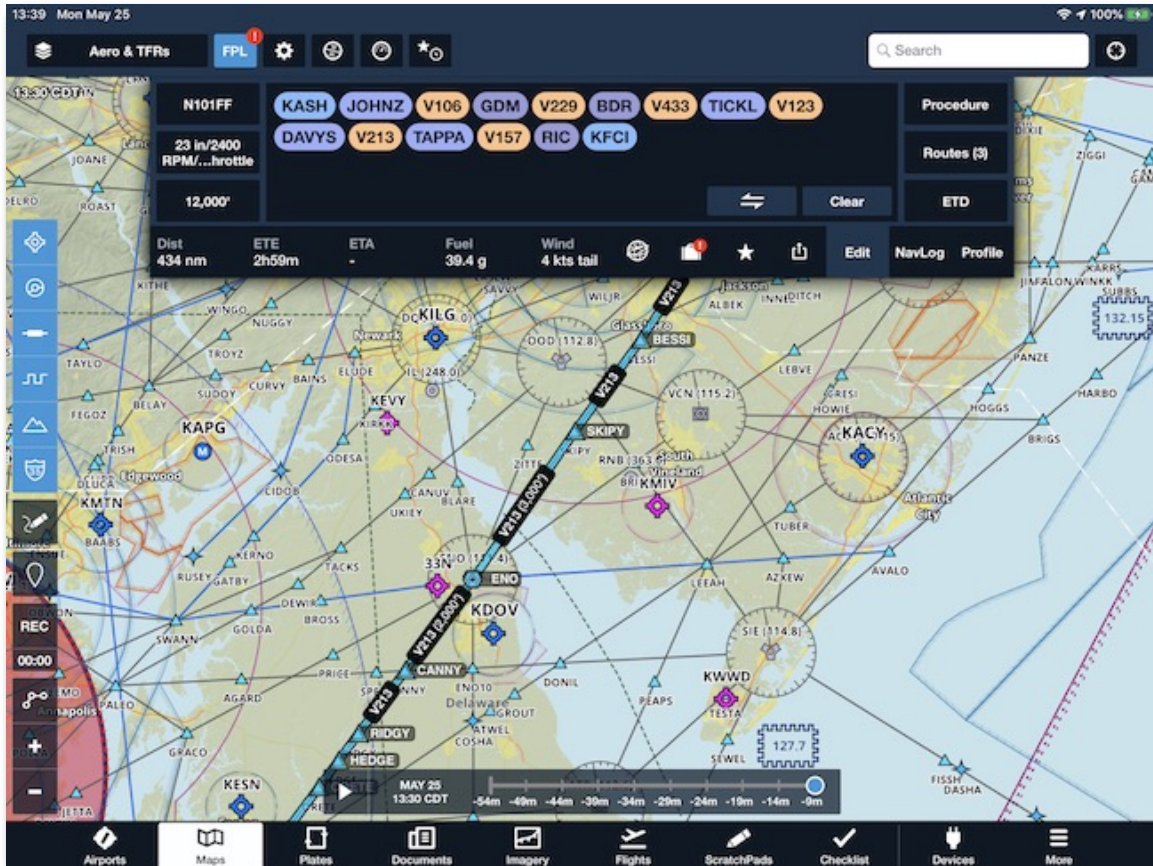
Display the tracks by selecting the Aeronautical Data layer, then tapping the Maps Settings (gear) button, selecting Airways, and turning the Organized Tracks switch ON. You can display only the tracks relevant to your direction of flight by de-selecting **East** or **West** as needed.

Organized Tracks cannot currently be automatically added to a route, but the points on a track can be added manually using touch planning.

11. MAPS

11.13 Smart Airway Labels

When the route entered in the Route Editor includes one or more airways, dynamic labels appear along each airway segment with information about the segment, including the name of the airway, the segment's MEA, and the segment's MOCA, if it has one. These labels expand to fill available space between waypoints, adding more information as you zoom in.




Smart airway labels only appear when an airway is explicitly named in the Route Editor, meaning that one of the route “bubbles” is the airway’s name. To ensure all airway labels are shown, turn the Airway Decoding Setting to “All Waypoints Shown.” Building a route with the individual waypoints in an airway but without naming the airway itself will result in the airway labels not appearing.

Smart airway labels are tied to other route labels and can be disabled by turning off Route Labels in [Maps Settings](#).

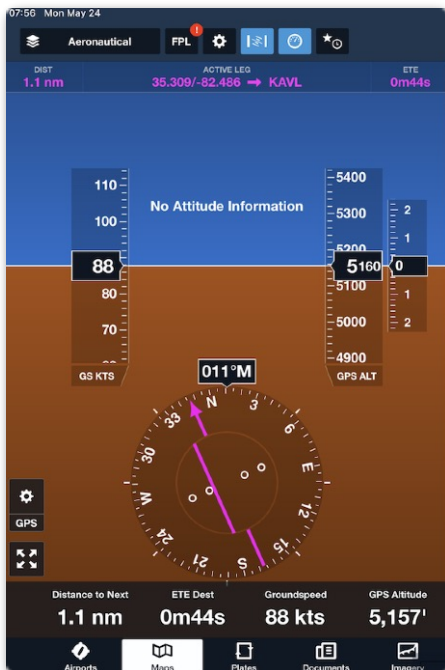
11. MAPS

11.14 Attitude Indicator

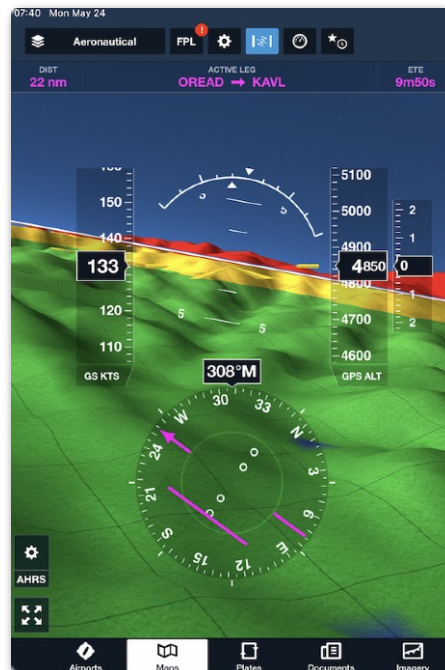
Tap the Attitude Indicator/Synthetic Vision (SV) button  at the top of the Maps page to view the Attitude Indicator. On the iPad the display also includes GPS altitude (MSL), GPS ground track, GPS ground speed and GPS calculated rate of climb (ft/min).

If connected to a Sentry or other supported AHRS-equipped external device, the display will also include AHRS-derived horizon (pitch & roll). If using a GPS source that does not include an AHRS sensor, then attitude information (pitch, roll) is not displayed and the horizon will appear level regardless of your aircraft's attitude.

If you have a Pro Plus or Performance Plus subscription, the display will also include a 3D depiction of the terrain ahead of you (Synthetic Vision). Obstacles and Terrain are colored based on the relative altitude (tied to the Profile view altitude selection). By default, Obstacles or Terrain more than 1000' below you are colored green; within 1000' below your altitude are Yellow; and within 100' below to above your altitude are Red. The gridlines on the Synthetic Vision (SV) view are aligned North-South and East-West for easy orientation.



No Attitude Information
Basic Plus Account

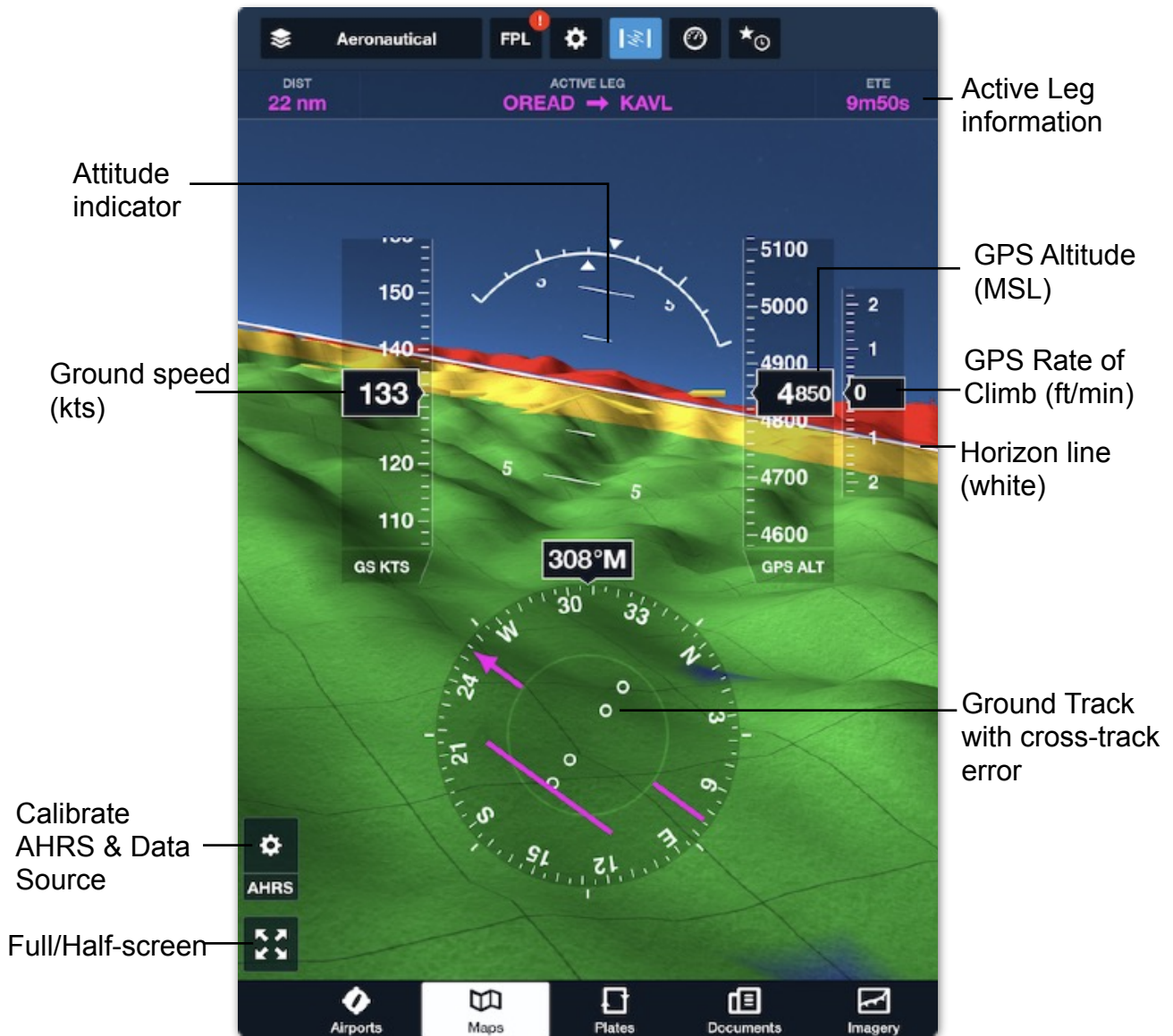


Attitude Information
Synthetic Vision

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When the iPad is in landscape orientation the AI/SV display is shown on the left side of the screen. When the iPad is in Portrait orientation the AI/SV display is shown at the top of the screen on the Maps page.

Tap the button in the lower-left corner of the screen to switch between split-screen and full-screen AI display in either landscape or portrait orientation.



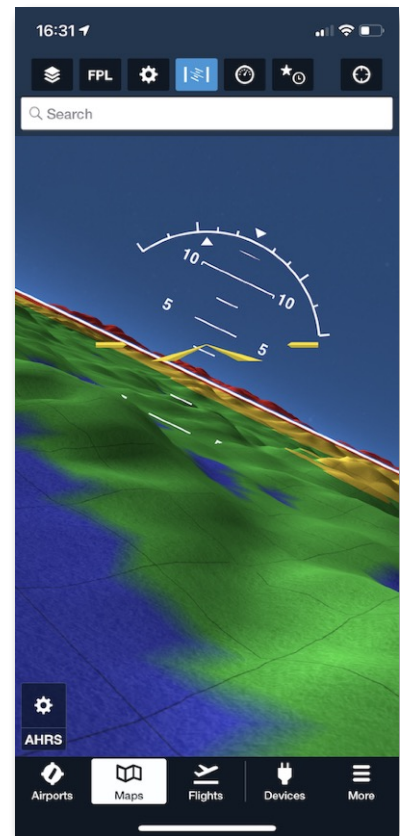
11. MAPS

11.14.1 iPhone Attitude Indicator

The iPhone AI/SV display is always full-screen, and does not include the “tapes” for Ground speed, GPS rate of climb, GPS altitude, or the Ground Track compass circle. However you can display the Instrument panel at the bottom of the iPhone screen and choose instruments such as GPS altitude, Ground Speed, etc...

The iPhone AI/SV display works in portrait and landscape orientation on any iPhone currently supported by ForeFlight Mobile *except* the iPhone 5, 5C, 5S, and SE.

NOTE: the iPhone Display Zoom View setting must be set to “Standard” to use SV.



IMPORTANT NOTICE: ATTITUDE INDICATOR DISPLAY

THE FOREFLIGHT ATTITUDE INDICATOR / SYNTHETIC VISION (AI/SV) DISPLAY IS FOR INFORMATIONAL PURPOSES ONLY. DO NOT USE THE FOREFLIGHT AI/SV DISPLAY AS A PRIMARY INSTRUMENT IN ANY PHASE OF FLIGHT.

The AI display will automatically begin dimming to a darker “night” mode beginning 20 minutes before local sunset and will be fully dimmed 20 minutes after sunset. 20 minutes before local sunrise the AI display will automatically begin brightening to “day” mode.

Red chevrons are shown on the AI/SV display if the nose-up or nose-down attitude approaches 30 degrees. The chevrons point in the direction of pitch recovery.

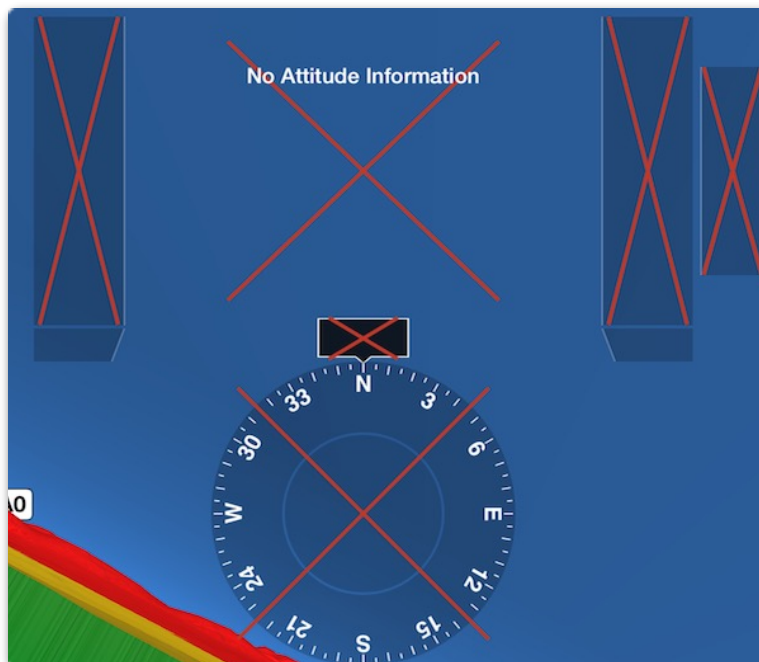
11. MAPS



Red Chevrons beyond 30 degrees

Unreliable GPS

In the event that AHRS or GPS data becomes unreliable, the affected instrument(s) will be X'd out until reliable data is received.

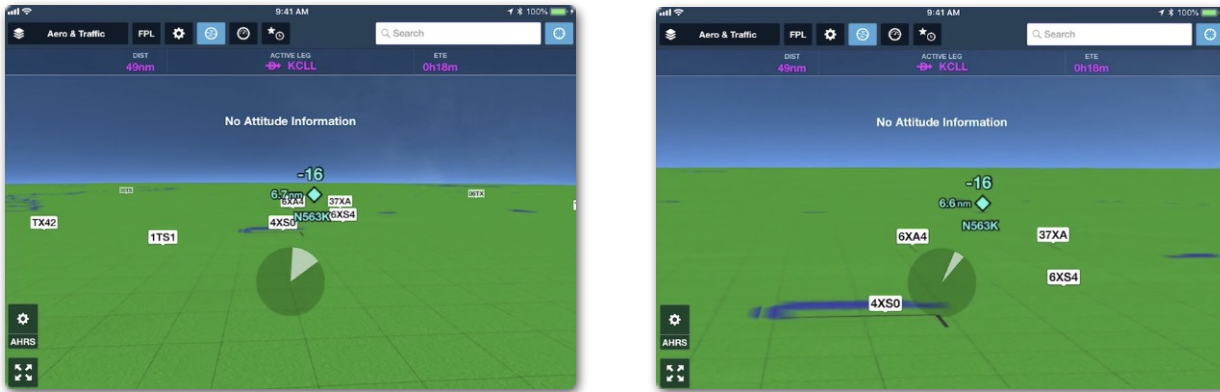


Unreliable GPS data

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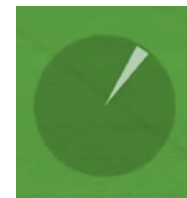
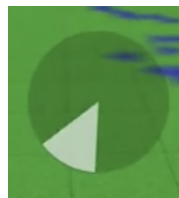
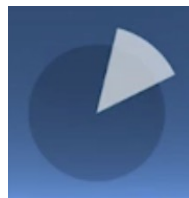
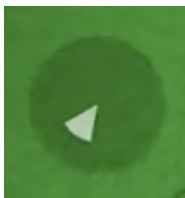
11.14.2 Glance Mode

Swipe within the Synthetic Vision window to enter Glance Mode, an interactive experience with zoomable 360-degree view of the terrain, obstacles, airports, and traffic (requires a compatible ADS-B receiver) around your aircraft.



Once Glance Mode is enabled, the heading, altitude, and groundspeed indicators disappear to provide a more open view, and a circular field of view indicator including a “slice” appears to show the camera orientation relative to your ground track and the horizon.

Use single-finger touch to pan the view both horizontally and vertically, and use two fingers pinch to zoom in (up to 10x) and out. The view indicator “slice” narrows as the view zooms in, widens as the view returns to normal, gets shorter as the view tilts down, and gets longer the view tilts up:



View tilted down

View tilted up

View zoomed out

View zoomed in

A radial timer begins moving clockwise around the view indicator after your last touch, and Glance Mode automatically exits if no touches are received within six seconds. In this example, approximately two seconds have passed since the last touch.

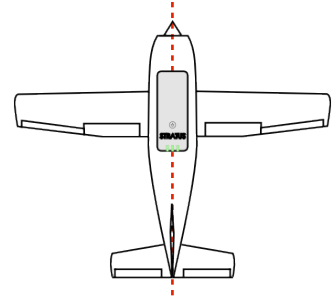


You can also tap on the view indicator to manually exit Glance Mode and return the view to its default forward direction.

11. MAPS

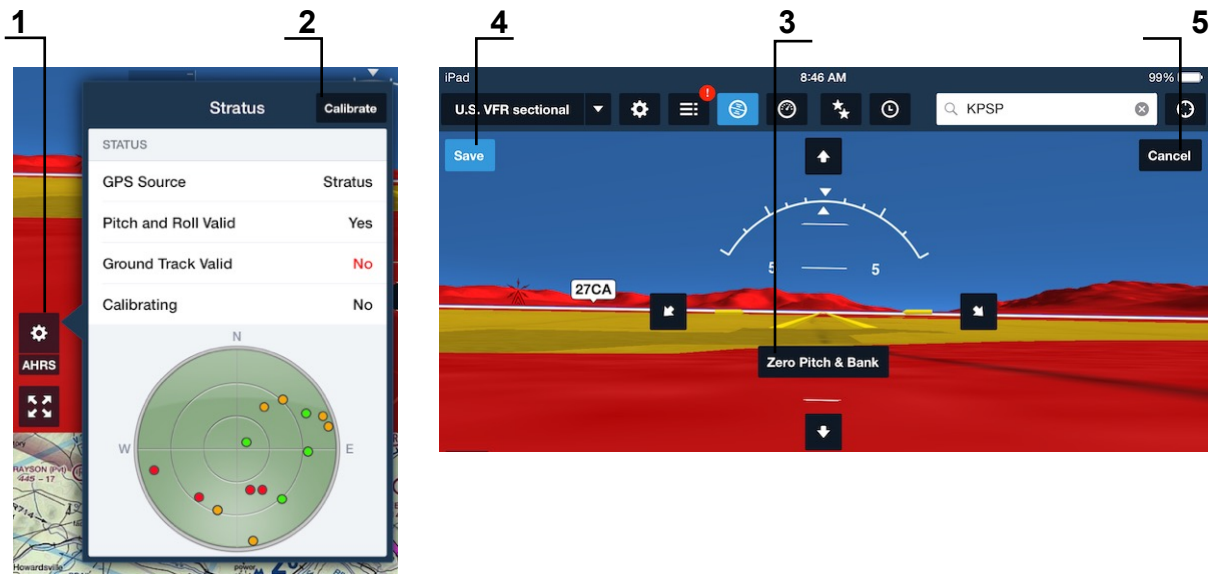
11.14.3 Portable AHRS Positioning

For accurate pitch & roll indications, a portable AHRS device should be positioned in the aircraft in a stable location that will not shift or move during the flight. If the portable AHRS shifts or moves, the AI/SV display may need to be recalibrated.



Calibrate the AI/SV display

When using an AHRS device, the Attitude Indicator can be calibrated to straight and level by tapping the AHRS data source label (1) in the lower-left of the Attitude Indicator display. Tap **Calibrate** (2) on the popup window and then tap on the **Zero Pitch & Bank** (3) to automatically set the current condition as level, or on the iPad only you can tap on any of the four Pitch & Bank arrows to adjust the pitch and roll in small increments. To save the calibration tap **Done** (4) in the upper left corner of the display. Or tap **Cancel** (5) to cancel the calibration.



11. MAPS

11.15 Map Search

To center the map on an airport, navigation aid, or waypoint, tap the *Search* box in the top right of the Airports, Maps, or Plates view. Type the location's name or identifier, and tap the **Search** button on the keyboard.

You can search by name, identifier, latitude/longitude, or bearing and distance from a waypoint. The waypoint will be shown with a marker. Typing in a waypoint will not clear any route showing on the Maps view. To remove the animated waypoint marker, simply tap elsewhere on the map.

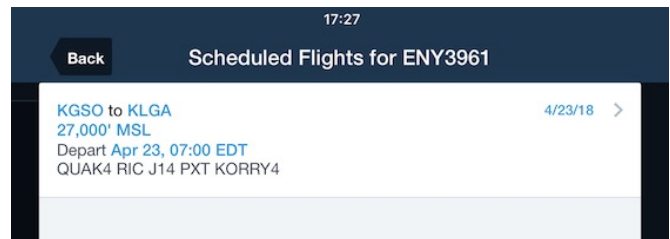
Example Searches:

- KJFK - Centers the map on KJFK airport
- GARBENHEIMER WEISEN - Centers the map on the airport of the same name in Germany
- FLW - Centers the map on the FLW VOR
- 32.3N/99W - Centers the map on the latitude/longitude
- 324455/-0804557 - Centers the map on 32°44'55"N, 80°45'57"W
- N324455/W0804557 - Centers the map on 32°44'55"N, 80°45'57"W
- 3244.92/-08045.95 - Centers the map on 32°44'55"N, 80°45'57"W
- 3244556/-08045576 - Centers the map on 32°44'55.6"N, 80°45'57.6"W
- 4952N - ARINC 424 coordinates, centers the map at 49N 52W
- HIGAL/320/15 - Centers the map on 15nm bearing 320°M from HIGAL. If a VOR is given as the reference waypoint, then the directional information is assumed to indicate a radial, not a bearing
- LAX/246R/20 - Centers map on the 246 radial, 20nm from LAX
- LAX/246M/20 - Centers map on the 246 Magnetic bearing, 20nm from LAX
- LAX/246T/20 - Centers map on the 246 True bearing, 20nm from LAX
- MZB293/SLI148 - Centers map on intersection of MZB's 293 radial and SLI's 148 radial

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For more information about the following SAR grid waypoint options, see the *Search and Rescue Supplement in Documents > Drive > ForeFlight*.

- CAP@ORD451C - Centers the map on the middle of CAP Grid ORD451, quadrant C.
- CAP@40092CD - Centers the map on the middle of CAP Cell Grid 40092CD.
- GARS@176LW3 - Centers the map on the middle of GARS Grid 176LW, quadrant 3.
- 15RTN50008000 or MGRS@15RTN50008000 - Centers the map on the middle of MGRS grid UTM zone 15, latitude band R, 100,000m grid square TN, easting 5000, northing 8000. MGRS coordinates no longer require entering MGRS@... before the coordinate values.
- N#### or a flight eg: ENY3961 - shows any flight that is either currently enroute, or scheduled to depart in the next 24 hours (based on currently filed flight plans) for that aircraft. Tap the entry to add that route to the NavLog.

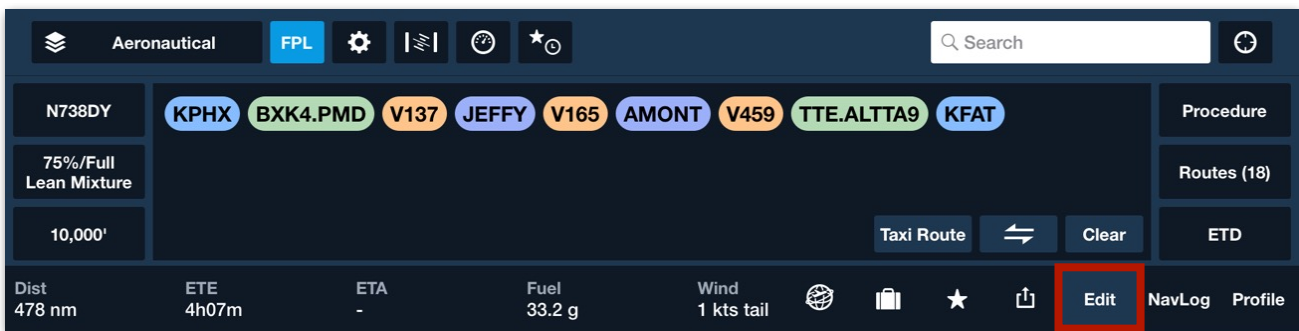


11. MAPS

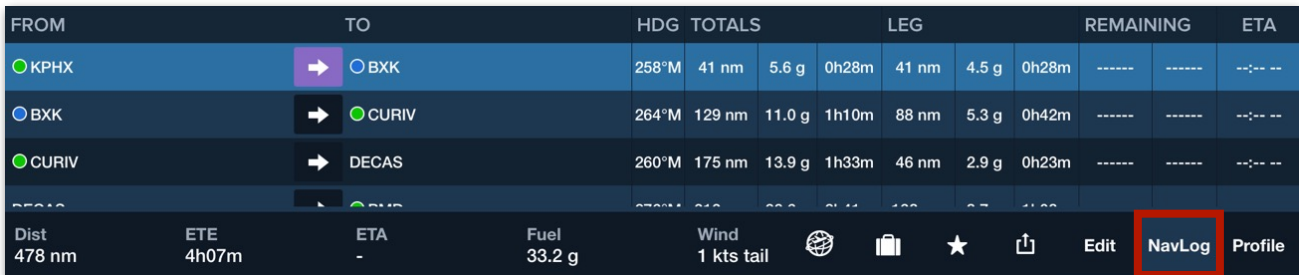
11.16 Flight Plan Menu

The Flight Plan (FPL) Menu contains three unique views. The views are accessed with buttons located near the bottom right corner of the FPL menu. To access the views, tap the **FPL** button in the upper toolbar to display the menu.

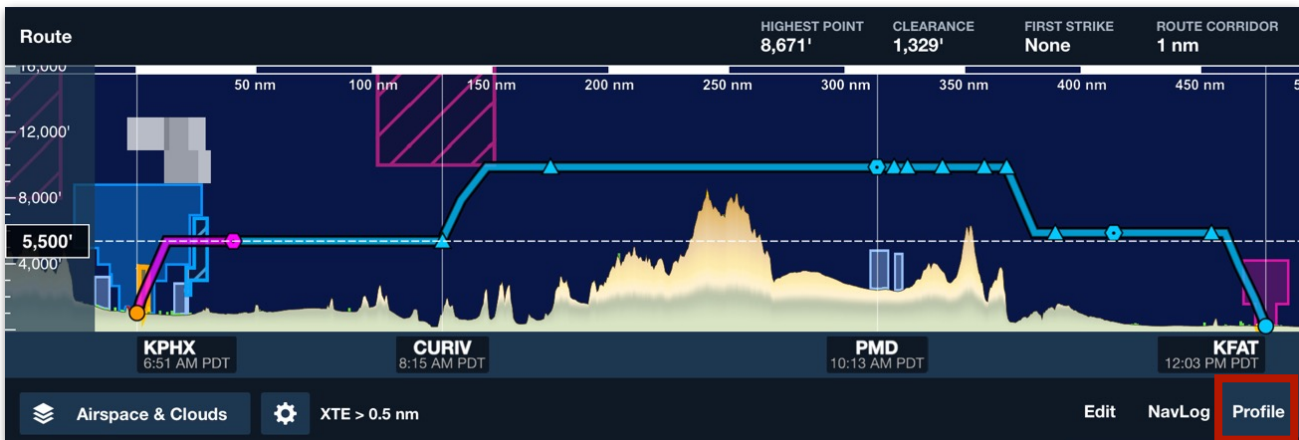
- **Edit** - Displays the Flight Plan Editor.
- **NavLog** - Displays the navlog for the planned route.
- **Profile** - Displays the Profile View (Pro Plus subscription or higher required).



Flight Plan Editor



NavLog

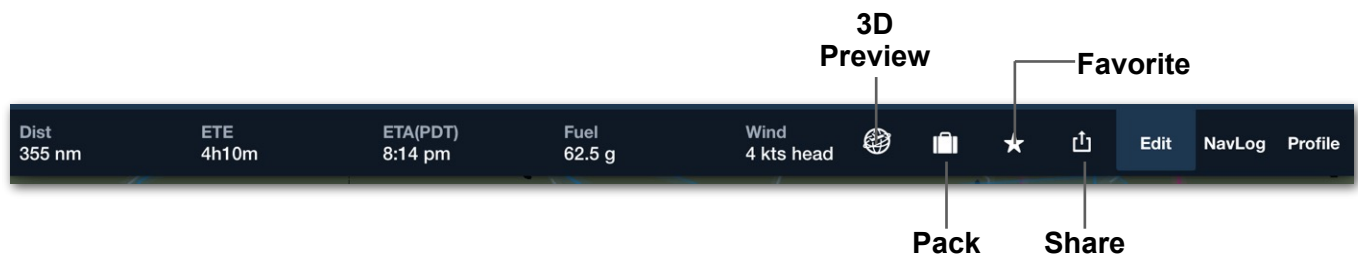


Profile View

11. MAPS

11.16.1 Route Summary

The bottom of the FPL Menu Edit and Navlog views contains a summary of the planned route. To the right of the summary are buttons for previewing the route in 3D, packing for the route, saving the route (Favorite), and sharing the route.



Total route distance, estimated time en route (ETE), estimated time of arrival (ETA), required fuel, and average wind component are displayed in the summary.

ETE is determined by evaluating the route, including the planned cruise altitude, forecast winds, and the selected aircraft's performance profile. If an estimated time of departure (ETD) is specified, the ETA is populated. If an ETD is not selected, the ETA field is blank.

The fuel field depicts the fuel required for the route using the selected performance profile (not including alternate fuel requirements). The average wind component for the route is displayed for flights within seven days. Beyond seven days, wind forecasts can be unreliable and the summary will calculate the route using a zero wind condition.

11.16.2 3D Preview

The **3D Preview** button provides a preview of the route in a three-dimensional view. This feature is similar to [Track Log 3D Review](#) and requires a Performance-tier account.

11.16.3 Pack

Pack provides a method for downloading all charts, weather, NOTAMs, and fuel-price data needed for the planned route. Pack can be accomplished from the Maps or Flights pages. For more information, see the [Pack](#) section.

11. MAPS

11.16.4 Favorite Routes

The star button toggles the favorite status of the current route. When the star icon is orange, the current route has been saved as a favorite. When marking a route as a favorite, you have the opportunity to name the route as something other than the default Origin to Destination name. Having a custom name can be helpful when searching for a route in the Favorite Routes list.

Route Sharing

Routes can be shared via various methods. Tap the share (Send To) button and select one of the sharing options.

- **Mail** creates a new email message with your navigation log and a screenshot of your trip. The message also includes a link that other ForeFlight Mobile users can tap to load your route onto their iPad or iPhone. **NOTE:** This option only appears if an email account is set up in your device's Mail app.
- **Flights** copies the current route and performance data to an empty flight plan on the Flights view. **NOTE:** Tapping this button does not directly file the flight plan or submit a request for a briefing.
- **Logbook** creates a new logbook entry and auto-fills it with the current route, aircraft, and estimated time enroute.
- **Print** allows printing of the navigation log to a connected AirPrint printer.
- **Clipboard** will copy the flight plan to the iPad internal clipboard to allow pasting in another application.
- **Cockpit Sharing** allows routes to be shared to other iOS devices on the same Wi-Fi network that are running ForeFlight (listed by device name). Wi-Fi ADS-B receivers such as Sentry accommodate Cockpit Sharing. This feature is enabled in **More > Settings**.

11. MAPS

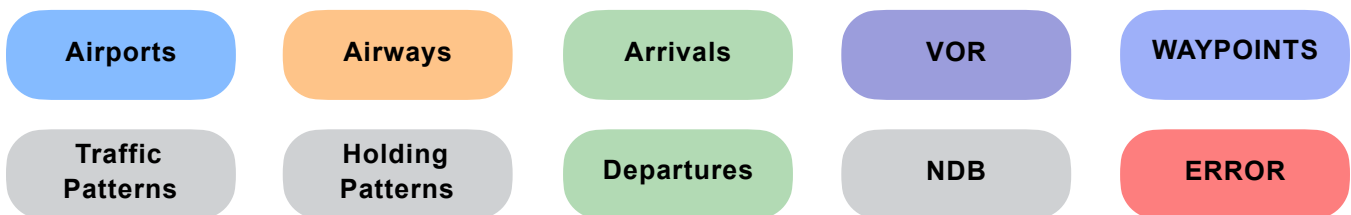
11.16.5 Route Editor

The Route Editor (FPL menu Edit view) is used to plan routes. To create a route, tap within the dark blue space of the route editor and use the keyboard to enter route elements. See the [flight planning chapter](#) for additional information.



Route Editor (FPL - Edit Mode)

Route elements are any airport, navigational aid, waypoint, airway, or procedure. Route elements are color-coded based on type.



Route Editor - Element Icon Colors

11.16.6 Profile

The **Profile** button on the Flight Plan Menu opens up an interactive cross-section of the planned route including the flight's climb, en route, and descent phases. This feature requires a Pro Plus or higher subscription and is described in the [Profile View](#) section.

11. MAPS

11.16.7 NavLog

The navigation log (NavLog) on the Maps view displays each leg of the route, with course (or heading, if winds aloft are included for your route), distance, fuel burn, and time statistics. The table listing shows the start and end points of each leg, the Totals for the route and Leg, and ETA.


On smaller screens, it's not possible to display all of the columns. Only the destination, departure, heading, and distance/fuel/time totals are depicted. This NavLog is independent of the **Navlog** generated with the Flights view.

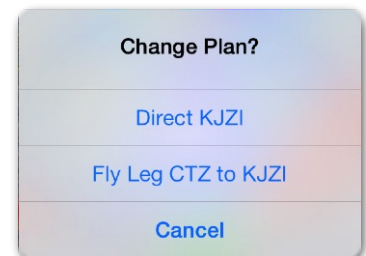
FROM	TO	HDG	TOTALS	LEG	REMAINING	ETA
KATW	→ OSH	188°M	16 nm 16.0 g 7m15s	16 nm 6.0 g 7m15s	-----	-----
OSH	→ DUTYS	216°M	78 nm 26.2 g 0h25m	62 nm 10.2 g 0h18m	-----	-----
DUTYS	→ BHAWK	210°M	119 nm 31.7 g 0h36m	42 nm 5.4 g 0h11m	-----	-----

Dist	ETE	ETA(CDT)	Fuel	Wind
616 nm	2h42m	15:57	96.2 g	10 kts head

- **Planned Data:** Information in the *From*, *To*, *Heading (or Course)*, *Totals*, and *Leg* columns represent the *planned* route and is based on the information provided in the *Search* box, or based on your selected aircraft's performance profile. This information is *not* updated once displayed.
- **Real-Time Distance, ETE/ETA:** The *Remaining* and *ETA* columns are updated in real-time based on current GPS position and groundspeed. The distance remaining on the leg, estimated time enroute for the leg, and estimated time of arrival at the next waypoint are displayed.
NOTE: during pre-flight planning on the ground, the *Remaining* and *ETA* columns will not show accurate information, because they require actual (real-time) GPS speed and position to update.
- **DIST, ETA, ETA, Fuel, and Wind:** The information in the lower-left of the table are planned values calculated when the route is entered, so are not updated in-flight.

Tap on a waypoint ID in the table to jump to that waypoint on the map.

Tap the arrow button  to adjust your route to any leg, or direct to a waypoint on a leg.

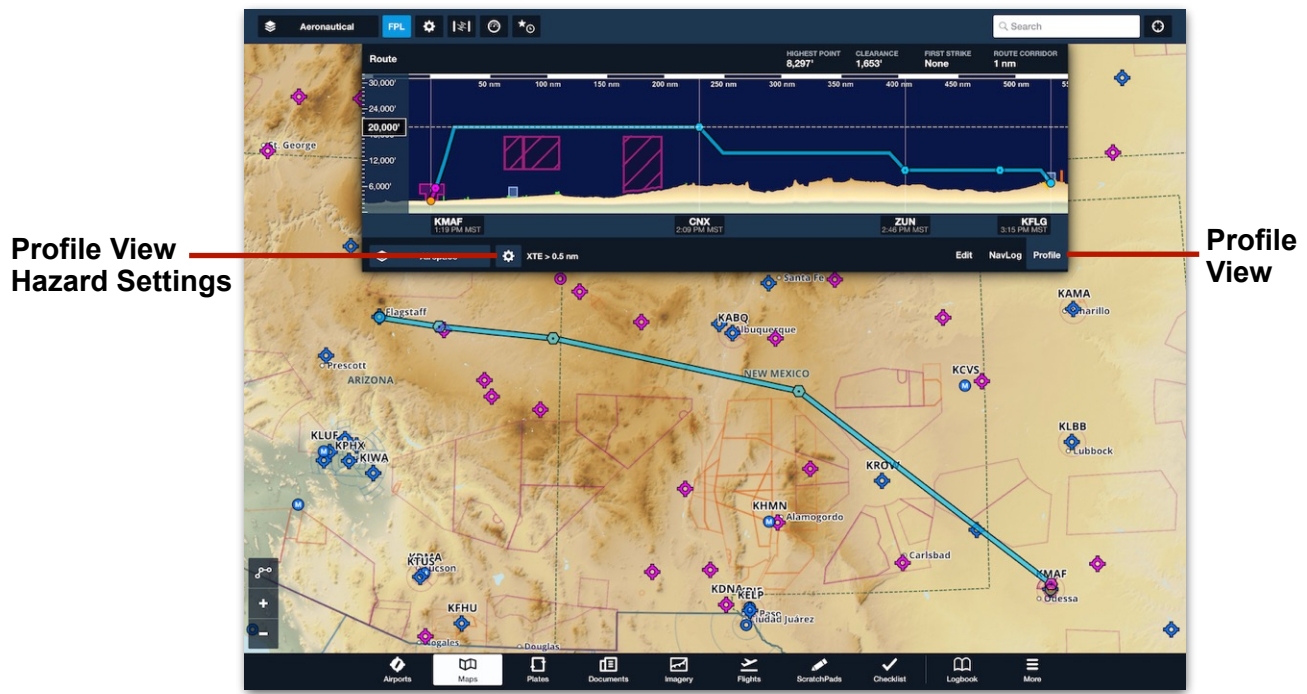


11. MAPS

11.17 Profile View

Profile View displays a cross-section of the planned route including the flight's climb, en route, and descent phases. Climb and descent rates are based on the selected aircraft's performance profile and forecast weather.

Profile View is available on iPad and iPhone by selecting **Profile** from the bottom right corner of the FPL window. Profile View requires a Pro Plus or higher subscription.



Profile View

11.17.1 Profile View Hazards (Terrain & Obstacles)

Profile View displays terrain and obstacle hazards along your route. The hazards displayed in Profile View are determined by the **Corridor Width** setting in the Profile View Hazard Settings.

Corridor Width specifies the *total* distance (perpendicular to the route) for which hazards are analyzed. For example, an 8 nm corridor width setting displays all hazards within 4 nm on either side of the route.

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11.17.2 Cross Track Error (XTE)

When your GPS position (on the ground or in the air) is more than half the corridor width distance from the route, an XTE (cross track error) notation is displayed right of the Preview View Hazard settings button. The XTE notation indicates that you are outside the lateral range of displayed hazards.

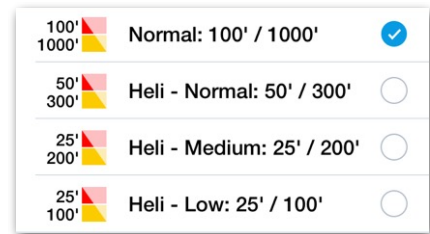
11.17.3 Hazard Colors

Obstacles in Profile View are green and terrain is tan when the planned height above hazards exceeds the selected **Hazard Altitude** setting. Hazards in Profile View become yellow or red when the planned height above hazards is less than the Hazard Altitudes selection.

Hazard Altitude settings are available at the bottom of the Profile View hazard settings menu (gear button) and in **More > Settings**. Hazard Altitudes Setting

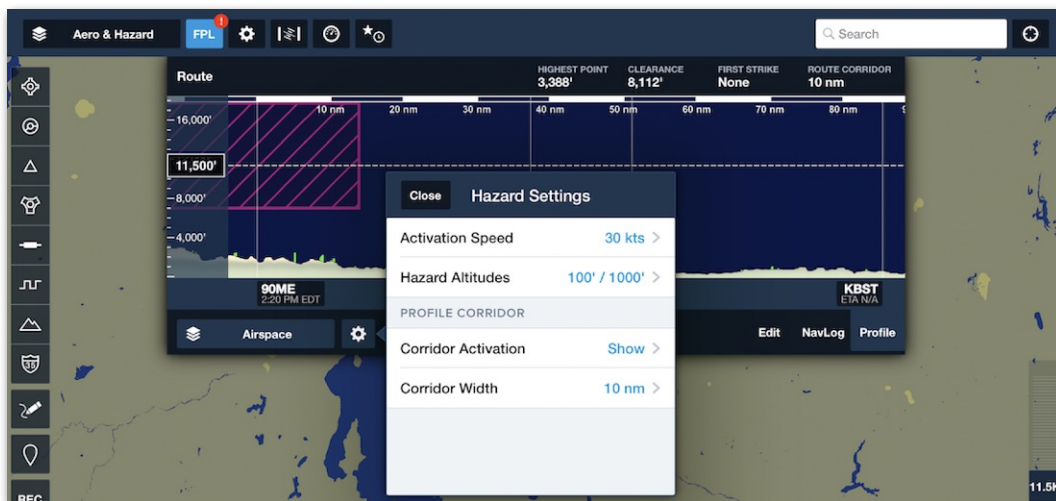
There are four hazard altitude settings. The **Normal 100' / 1000'** setting is selected by default.

When the **Normal** hazard altitude setting is selected, hazards change to **yellow** when clearance is less than 1,000 feet. Hazards change to **red** when clearance is less than 100 feet.



Hazard Altitudes

When one of the other settings is selected (e.g., Heli 50' / 300'), hazards are **yellow** when clearance is less than 300' and **red** when clearance is less than 50'.

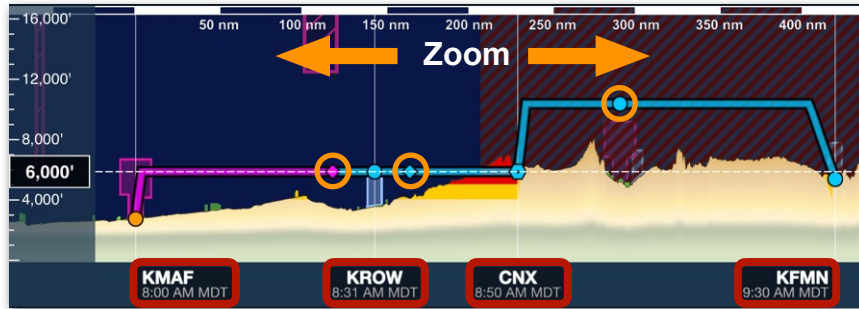


Profile View Hazard Settings

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11.17.4 Profile View Waypoints

Waypoints and their estimated crossing time are displayed near the bottom of Profile View. Crossing time is based on the estimated time of departure and is not updated in flight to reflect actual groundspeed. If a route contains multiple waypoints, Profile View may hide waypoints to avoid overlapping labels (see image below). Use two fingers to zoom in on Profile View to display hidden waypoints.

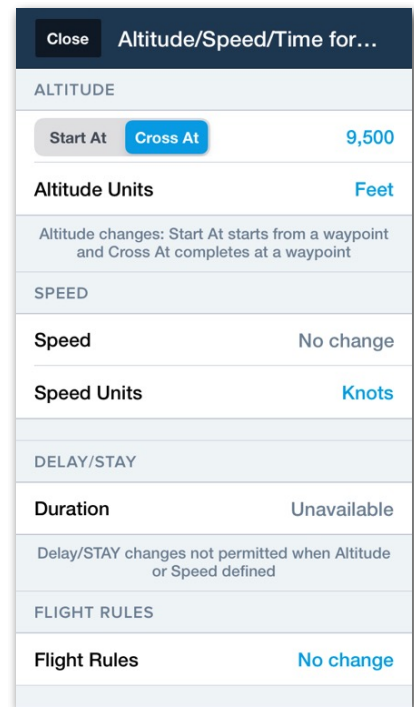


Route Waypoints (red) - Hidden Waypoints (orange)

11.17.5 Waypoint Menu

Route changes can be made from the FPL editor, Maps View, or from within Profile View. See **Route Editor** for more information. To edit a route using *Profile View*

1. Use two fingers to zoom in on a waypoint in Profile View (if necessary).
2. Tap the waypoint near the bottom of Profile View.
3. Use the waypoint menu to specify a delay, altitude, speed, or flight rule change.
4. Tap **Close** in the upper-left corner of the waypoint menu (or anywhere outside the waypoint menu) to save the changes.



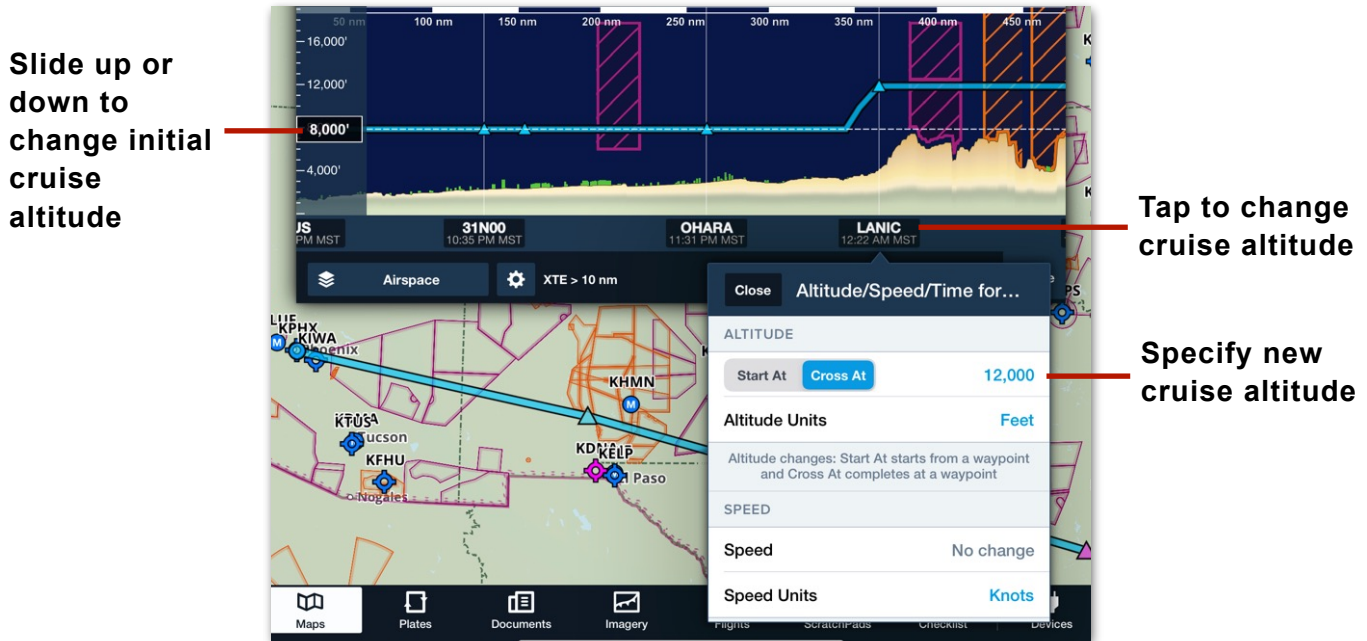
Waypoint Menu

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11.17.6 Altitude Changes in Profile View

The initial cruise altitude for the route is displayed in a black box on the left side of Profile View. Slide the altitude box up or down to adjust the *initial* cruise altitude.

Cruise altitude for subsequent legs can be adjusted by tapping a waypoint where the altitude change is to occur and manually entering a new cruise altitude in the waypoint menu.





Profile View Altitude Changes

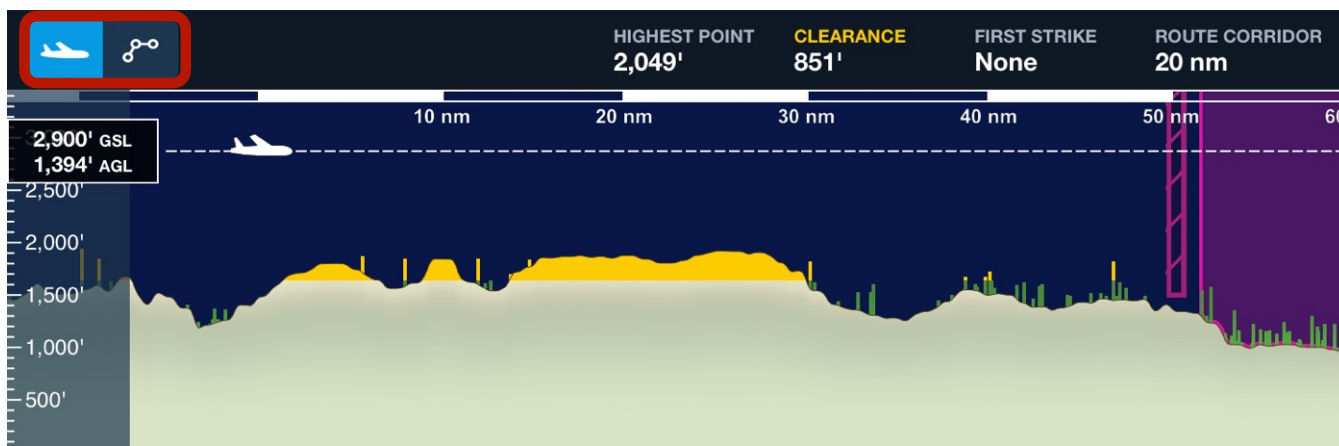
11. MAPS

11.17.7 Profile View in Flight

In flight, Profile View automatically switches to flight mode. Flight mode displays airspace, obstacles, and terrain 60 nm ahead of your location based on the current GPS track. To switch between flight and planning mode, tap the button in the top left corner of Profile View. Flight and planning buttons are only available when ForeFlight detects the aircraft is in flight.

When flying, the route button  displays the aircraft's current position along the planned route. Tap the aircraft button  to return to flight mode. In flight mode, the Profile View automatically displays an aircraft symbol and horizontal dashed line at your geometric altitude relative to sea level (GSL). Height above ground (AGL) is shown below the aircraft's GSL altitude.

Tap to switch between flight and planning mode



Profile View in Flight (based on current GPS ground track)

11.17.8 First Strike and Clearance Calculations

First strike and clearance calculations are conducted for planning and in-flight purposes. When in planning mode, the clearance calculation is the difference between hazards within the route corridor and the aircraft's planned cruise altitude. In planning mode, the clearance calculation includes aircraft climb and descent performance. In flight mode, clearance is the difference between the highest point within 60 nm of the aircraft's current track and the current GSL.

If clearance is less than zero, the *First Strike* field displays the time and distance to the hazard.

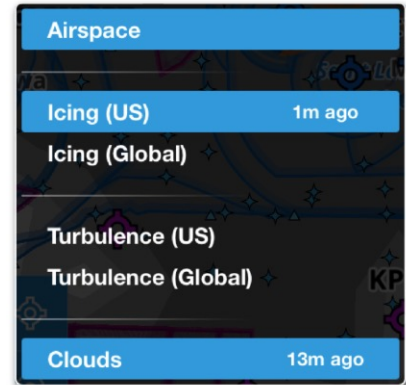
11. MAPS

Hazards within 1 nm of the departure and destination airports are not factored in the first strike calculation. Hazards within 5 nm of the departure and destination airports are not factored in the clearance calculation.

11.17.9 Profile View Layer Selector

Tap the drop-down menu in the lower-left corner of Profile View to display the layer selector. The layer selector can be used to toggle airspace on and off.

Performance Plus and Business Performance customers can also display Turbulence, Icing, and Cloud layers in Profile view.



**Layer Selector
(Performance Plan)**

11.17.10 Airspace in Profile View

When the **Airspace** layer is selected, controlled airspace, special use airspace, and TFRs within 1 nm of your planned route are depicted in Profile View.

Tap **Airspace** in the Profile View to reveal airspace details and to highlight airspace on the map.



Layer Selector

Profile View Airspace

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11.17.11 Weather in Profile View

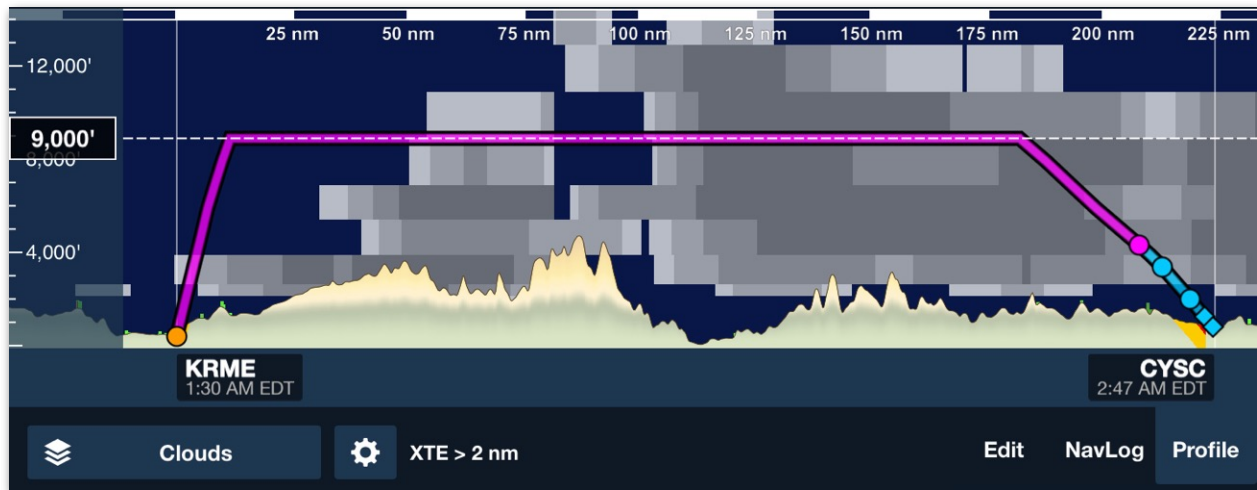
Performance Plus and Business Performance plans offer a cross-sectional view of icing, turbulence, and cloud forecasts along the planned route. Tap the layer selector to enable the Icing, Turbulence, or Cloud forecast.

Weather in Profile View uses the same color scales as the overhead map to depict varying intensities for each layer at multiple altitudes in relation to the route line.

Profile View automatically considers the planned departure and en route times to display the appropriate weather forecast. For longer flights, multiple forecast periods are blended together.

ForeFlight will display Icing, Turbulence, and Cloud forecasts in Profile View during a flight if Pack was used to download the data while connected to the Internet. Profile View does not support ADS-B Icing, Turbulence, or Cloud weather layers.

If no forecast data is available for all or part of the route, either because the duration of the flight exceeds the forecast period, or because Pack was not used prior to the flight, Profile shows hatch lines at the position along the route that corresponds to when the data is not available.

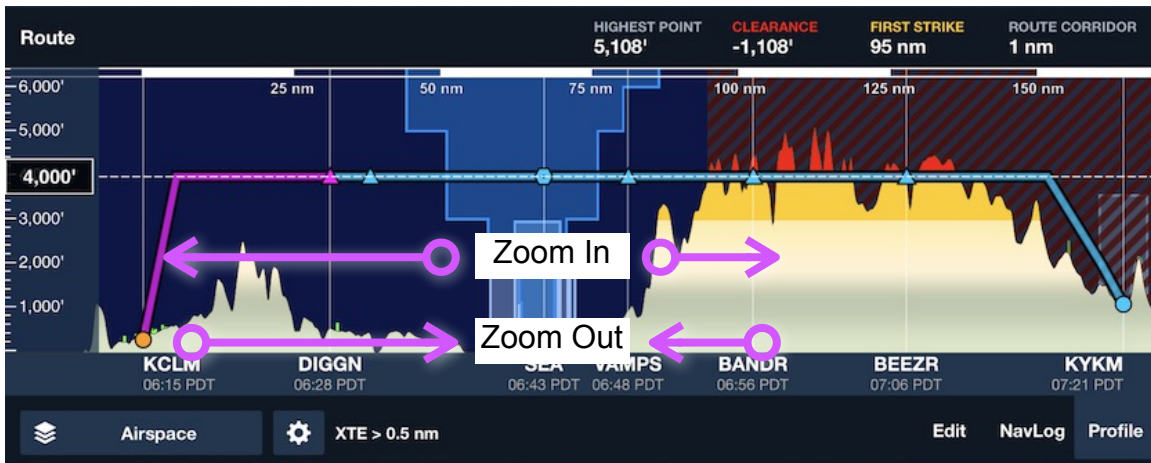


Clouds in Profile View

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11.17.12 Profile View Zoom

Profile view automatically scales to show the entire route. To zoom in on an area of interest, touch two fingers to the Profile view and slide them apart horizontally. Pinch them together to zoom out.

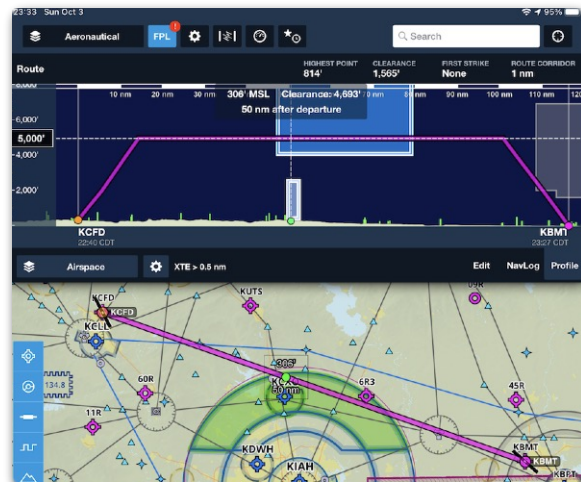
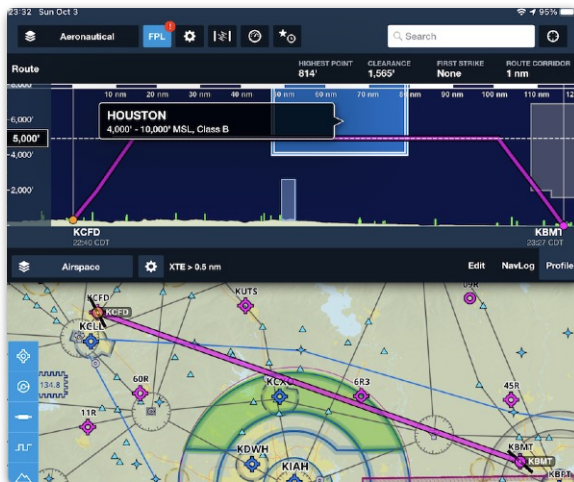


Profile View Zoom

11.17.13 Profile View Airspace Details

Tap on airspace in the Profile view to see details. The map view then zooms in and highlights the selected airspace. Scrub (drag) a finger left or right across Profile View to view airspace at that point.

When scrubbing, a colored dot is displayed along the route line at that location. The color of the dot reflects the amount of terrain clearance based on the profile corridor and altitudes selected. Touch and scrub (drag) a finger left or right across the Profile view to view the altitude and distance from origin at that point.

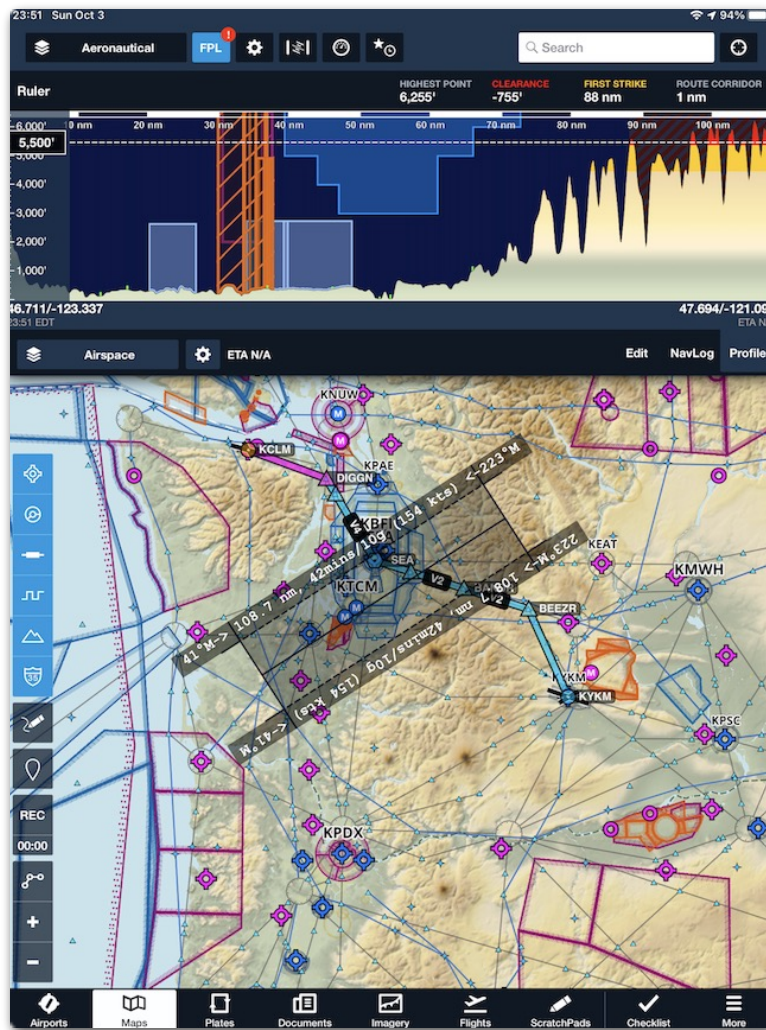


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11.17.14 Profile View Ruler

When touching two fingers to the Maps page to display the ruler, the Profile view changes to display the airspace, obstacles, terrain, and selected weather information under the ruler.

When the ruler is displayed on the map, you can scrub along the Profile view to see the airspace details, altitude, and terrain clearance popup for the area corresponding to points along the ruler's path. Single-tap on the Maps page to remove the ruler and return to the Route/Flight Profile view.



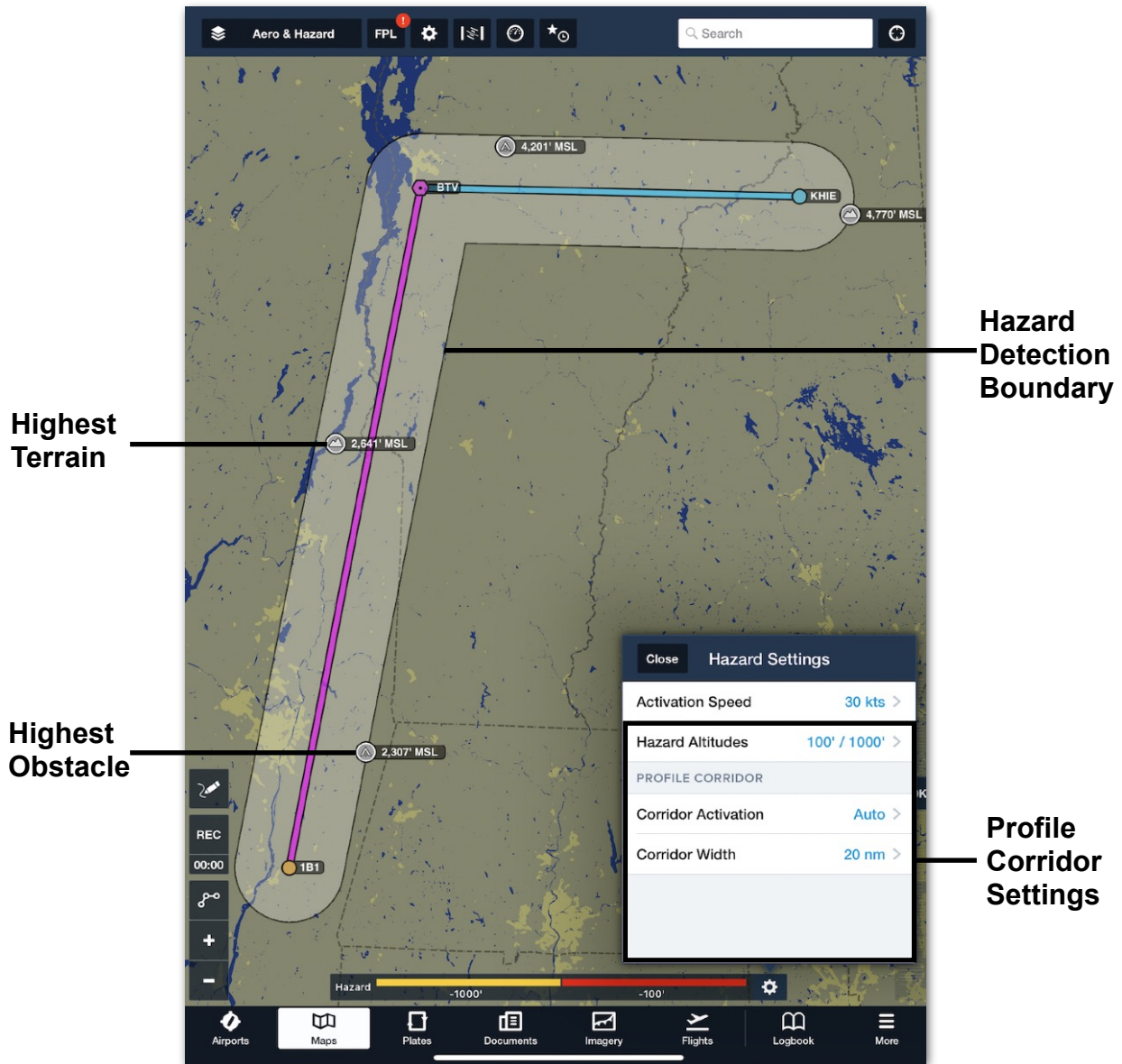
11.17.15 Profile View Profile Corridor

If the **Corridor Activation** setting is set to Automatic, the **Profile Corridor** displays automatically whenever the Profile View is displayed.

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11.18 Profile Corridor

The Profile Corridor is an optional map feature that depicts the hazard detection range on either side of the route line and identifies the highest terrain and obstacle hazards along each leg in the route. The Profile Corridor is related to the [Profile View](#) and [Hazard Advisor](#) and requires a Pro Plus or higher subscription to use.



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11.18.1 Profile Corridor Settings

The following options in the **Hazard Settings** menu affect the Profile Corridor.

Hazard Altitudes

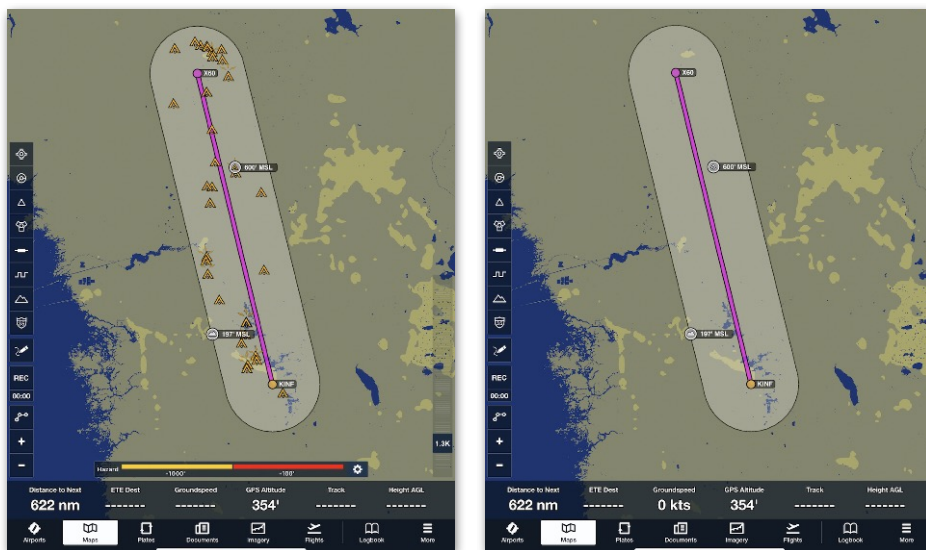
When the **Hazard Advisor** map layer and Profile Corridor are both displayed, the Profile Corridor shows the highest-point markers along each leg, and all obstacles along the route that present a hazard to your aircraft at its current altitude (or the current setting of the Altitude Slider). The minimum height of obstacles displayed, and their color, depends on the **Hazard Altitudes** setting.

When the Hazard Advisor map layer is not displayed, the Profile Corridor only shows the highest terrain and obstacle markers along each leg.

Interaction with Hazard Advisor

Both the Profile Corridor and Hazard Advisor can display obstacles along your route. They interact in the following ways:

- When Profile Corridor is on but the Hazard Advisor map layer is off, the Profile Corridor displays *only* the highest-point markers along each leg of the route.
- When both the Profile Corridor and Hazard Advisor map layer are on, the Profile Corridor displays the highest-point markers *and* may display additional obstacles along your route when the Hazard Advisor is in Active Mode.
- When Profile Corridor is off and the Hazard Advisor map layer is on, obstacles are displayed only when the Hazard Advisor is in Active Mode.



Profile Corridor With and Without Hazard Advisor

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Corridor Activation

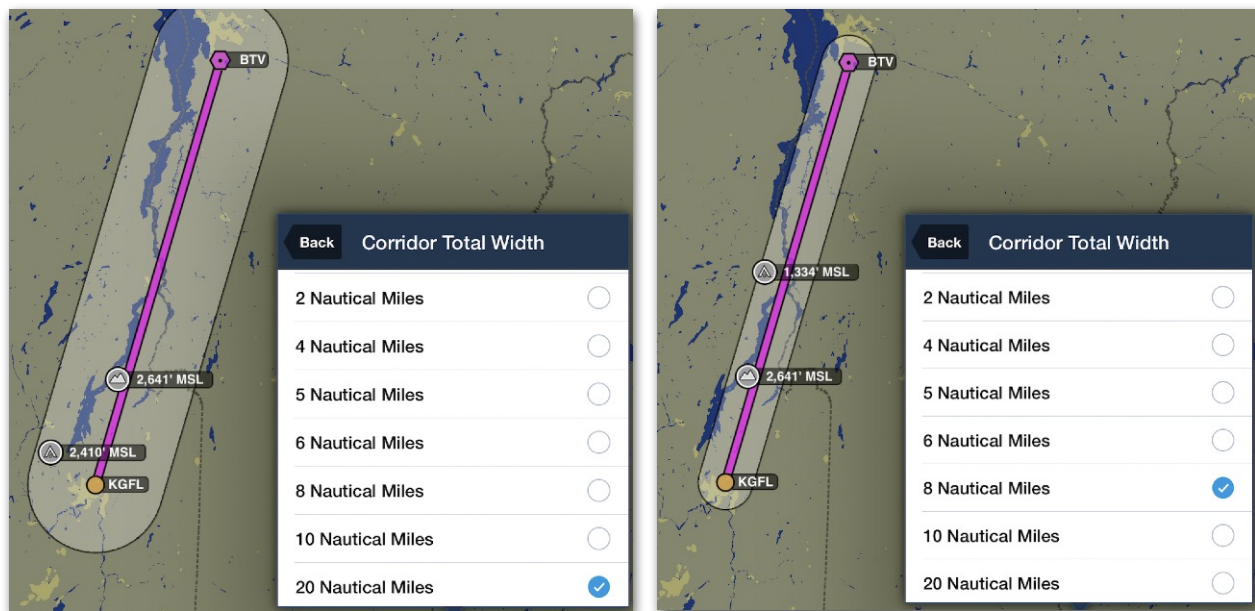
This setting controls when the Profile Corridor appears around the route line. The default setting is Automatic, but there are three options:

- **Automatic** causes the Profile Corridor and highest-point markers to display whenever the Hazard Advisor layer is on or the Profile View is open.
- **Show** causes the Profile Corridor and highest-point markers to display at all times.
- **Hide** disables the Profile Corridor and highest-point markers even when the Hazard Advisor layer is on or the Profile View is open.

Corridor Width

This setting (ranging from 0.5—100 nm), determines the width of the Profile Corridor. When this setting is changed, the Profile Corridor visibly expands or contracts around the route line. This may assign new highest-point markers for each leg.

NOTE: Changing the Corridor Width also affects how terrain and obstacles display in the **Profile View** and **Hazard Advisor**.



Changing Corridor Width (and Highest Points)

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11.18.2 Highest-Point Markers

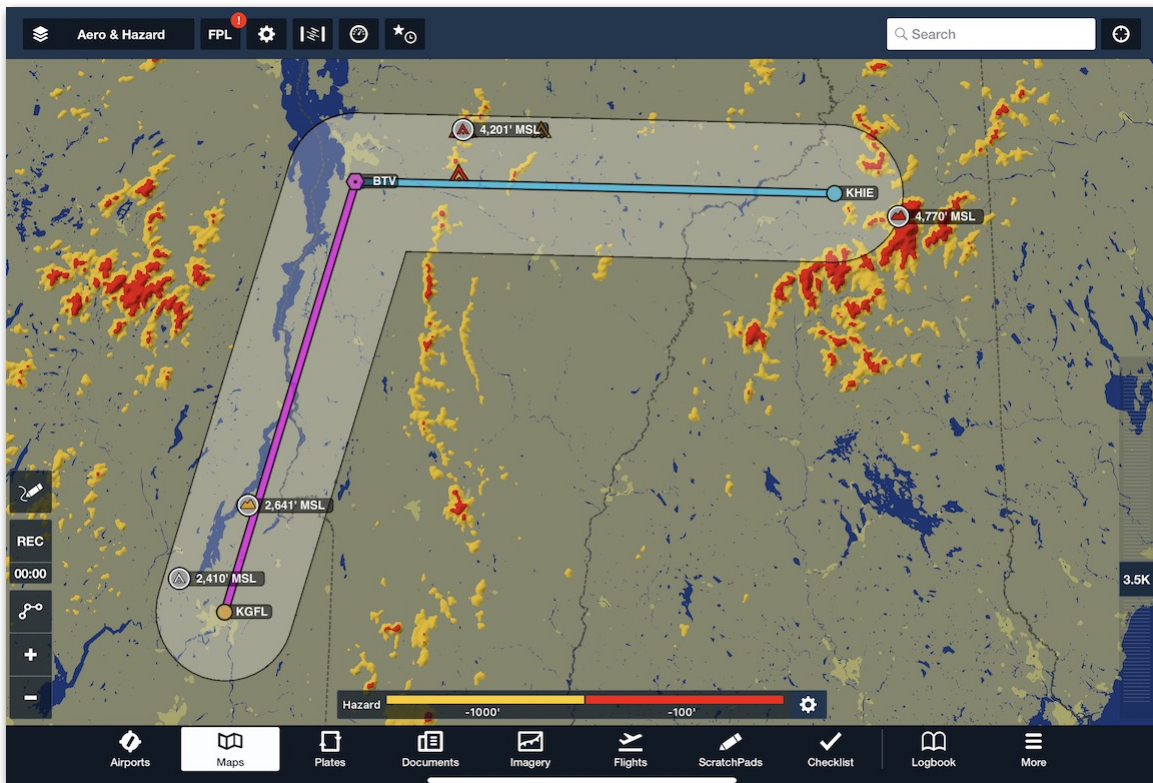
When the Profile Corridor is active, it displays two markers on each leg in the route indicating the locations of the highest terrain and highest obstacle along that leg.

NOTE: If several highest-point markers are close together on the map, the marker with a highest altitude may cover up the others. Zooming in closer should make the other markers easier to see.

Highest-Point Marker Color

The color of the highest-point markers is determined by the **Hazard Altitudes** setting and may be red, yellow, or white depending on their height relative to the aircraft altitude or the altitude set on the Hazard Advisor slider.

- **Red** markers depict terrain or obstacles within the alert altitude buffer.
- **Yellow** markers depict terrain or obstacles within the cautionary altitude buffer.
- **White** markers depict terrain or obstacles below the cautionary altitude buffer.



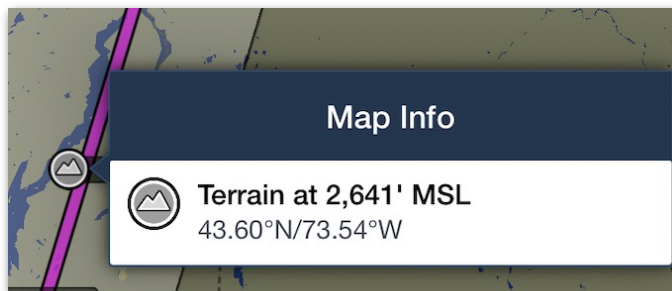
Highest-Point Marker Colors

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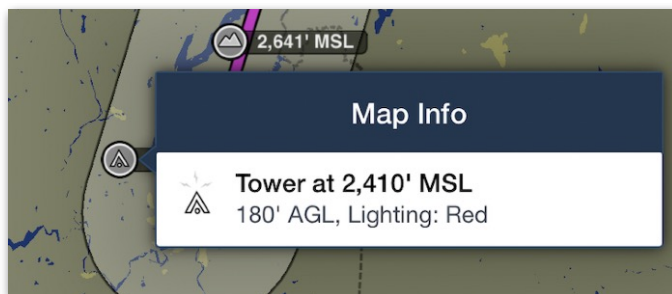
Marker Info

Each marker is labeled in MSL altitude. Tapping a marker provides the following additional information:

- Tapping **Highest Terrain** markers provides the point's MSL altitude and latitude/longitude coordinates.

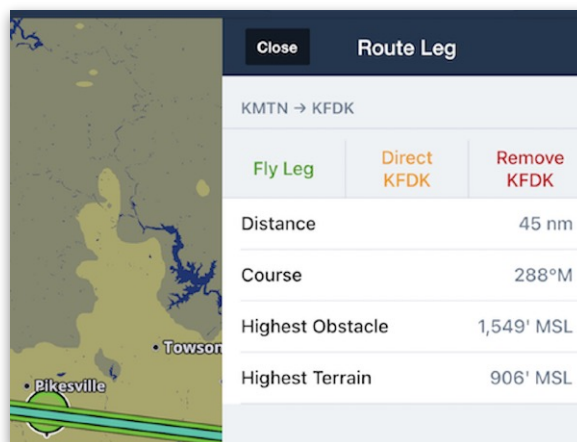


- Tapping **Highest Obstacle** markers provides the point's MSL altitude, type, AGL altitude, and lighting details.



Marker Info in Sidebar

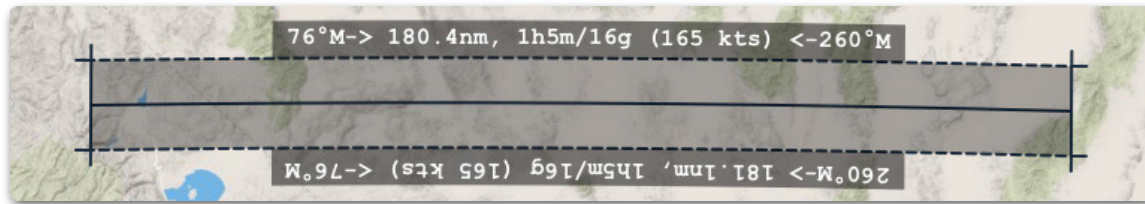
When Corridor Activation is set to Show, or when it is set to Automatic and the Profile View or Hazard Advisor is displayed, tapping a route leg shows its highest-point markers in the **Route Details sidebar**.



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11.19 Ruler

Distances can be measured on the Maps view at any time by holding down two fingers on the map until the ruler appears. Hold both fingers on the Map and slide them across the map to reposition the ruler to take measurements between other locations. The ruler is also handy for quickly visualizing great-circle (direct) routes between two points. When measuring distances less than three nautical miles the distance will also be displayed in feet, helpful for measuring available runway.



When using the ruler in flight, the current groundspeed will be used to show the time of travel for the distance measured. When not in flight, the TAS from your current route or default aircraft will be used instead.

Fuel burn estimates are also shown using the fuel burn provided for the current route or from the default aircraft. All time and fuel estimates are based on no-wind conditions. Initial course bearings are also shown from each side of the ruler.

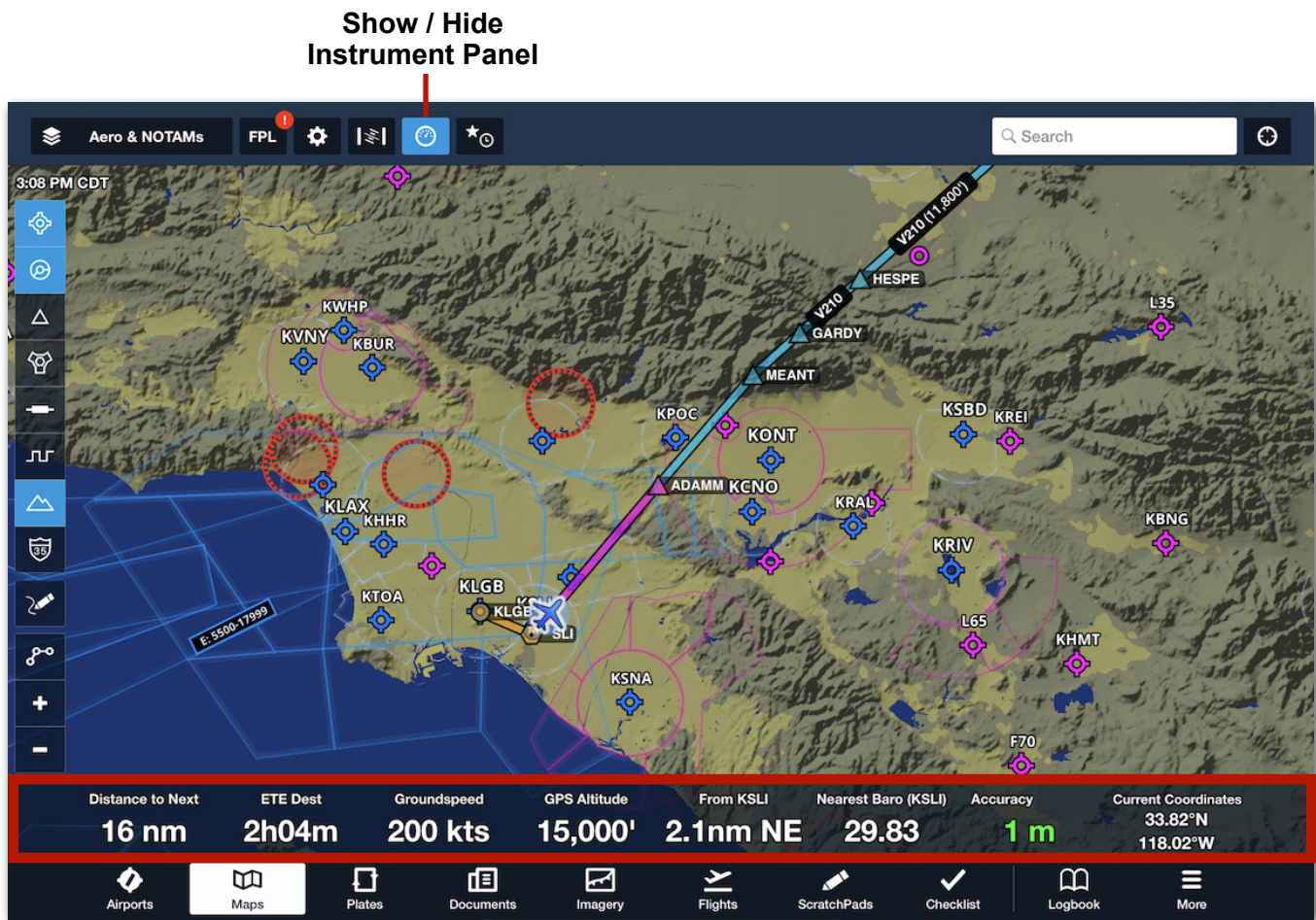
The ruler will remain on the Map after you remove your fingers. To remove the ruler, tap on the Map.

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11.20 Instrument Panel

The Maps view has an optional instrument panel which can display real-time information about your flight. To show or hide the Instrument Panel, tap the instrument button (airspeed indicator) in the upper toolbar.

On the iPad, six instruments are displayed in portrait mode and eight in landscape mode. On iPhones, up to five instruments are displayed in portrait and eight in landscape. Smaller iPhone's display four instruments in portrait and six in landscape. The instruments on the right and left ends of the instrument panel in landscape mode are hidden when the device is rotated to portrait.



Instrument Panel

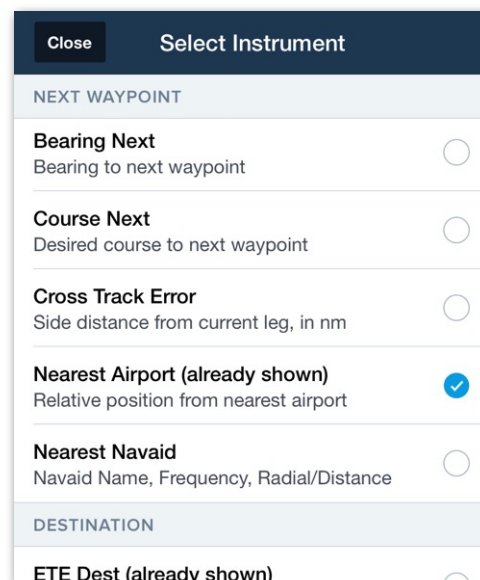
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11.20.1 Instruments

The default instruments displayed in the Instrument Panel can be replaced with an instrument of your choice by tapping an instrument and selecting a new one from the popup list.

The *Select Instrument* menu displays all available instruments. In portrait mode, the additional instruments visible in landscape are shown as being (already shown) even though they are not visible on the screen.

Instruments are grouped into four sections. Each instrument, and the subscription required to see it, is described below.



Select Instrument Menu

NOTE: Many instruments can be configured for different units of measurement. Examples include time (local, Zulu, or station), vertical speed (feet or meters per second), and compass direction (Magnetic or True). This is done by tapping **More > Settings > Units/Time** and selecting the applicable option.

Standard Instruments

- **Groundspeed** displays GPS groundspeed.
- **GPS Altitude** displays geometric altitude as determined by an **external GPS** or the iOS device's internal GPS.
- **Height AGL** displays the GPS altitude above the highest terrain within a 1/4 nm circle around your present location. The Height AGL instrument requires a groundspeed of 40 knots or greater and a Pro Plus or Performance Plus subscription.
- **Height MEF** shows a dynamic Maximum Elevation Figure (MEF) for a half degree latitude by half degree longitude box centered on your aircraft's location when moving at 40 knots or greater. Height MEF is calculated as: the tallest obstacle or terrain in that box, rounded up to the nearest 200 feet. The Height MEF instrument requires a Pro Plus or Performance Plus subscription.
- **Pressure Altitude** and **Cabin Pressure** show pressure altitude as derived by a barometric sensor, if present. If connected to a Sentry or other external device

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with a built-in barometric sensor, both instruments will show the same value and Pressure Altitude will have an “Uncorrected” label, indicating that the value may not correspond to actual indicated altitude. When Pressure Altitude data is being sent from the Satcom Direct Router to ForeFlight, the Pressure Altitude instrument will display Pressure Altitude (A429), and will have an Indicated tag underneath, indicating that the value represents the actual indicated altitude.

If Pressurized Cabin is enabled in the connected device’s settings, only the Cabin Pressure instrument will display a value. If connected to a source that can provide actual indicated altitude, the Pressure Altitude instrument will display a value with a “Corrected” label.

- **G-Meter** displays loads placed on the pitch axis during flight when connected to Sentry Plus. Real-time accelerometer data can be displayed on the Sentry Plus OLED display and on the instrument panel.
- **Track** displays the ground track as determined by GPS. If connected to a device which can provide track (e.g. Satcom Direct), ForeFlight displays the track provided by the external device.
- **Accuracy** displays GPS accuracy as reported by a connected external device or the integrated iOS GPS processor. The Accuracy instrument is color-coded. The lower the accuracy number, the more accurate the position data. See **Ownership** for additional GPS accuracy implications.
Green - 20 meters or less. **Orange** - 20 to 60 meters **Red** - Greater than 60
- **Rate of Turn** shows the rate of turning degrees per second as determined by the GPS.
- **Vertical Speed** displays vertical speed in feet per minute or meters per minute as determined by the GPS. The units used to measure vertical speed can be edited in More > Settings > Units/Time > Altitude Instruments.
- **Climb Gradient** displays the climb gradient in feet per nautical mile (ft/nm) or meters per nautical mile (mpm). The units used to measure the climb gradient can be edited in More > Settings > Units/Time > Altitude Instruments.
- **Nearest Baro** displays the barometric pressure for the nearest reporting weather station.

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Next Waypoint Instruments

- **ETE Next** shows the estimated time en route (ETE) to the next waypoint in hours, minutes, and seconds.
- **ETA Next** shows the estimated time to arrival (ETA) at the next waypoint in the selected time format (local, station, or Zulu).
- **Distance to Next** shows the distance to the next waypoint in the selected format (nautical miles, statute miles, or kilometers).
- **Bearing Next** shows the current magnetic bearing to the next waypoint in the selected format (Magnetic or True). If the aircraft remains on the desired flight track, this will read the same as the Course Next instrument.
- **Course Next** shows the desired magnetic course from the previous waypoint to the next waypoint in the selected format (Magnetic or True).
- **Cross Track Error** shows the lateral distance from the current leg in the selected format (nautical miles, statute miles, or kilometers).
- **Nearest Airport** shows the Cardinal position and distance from the nearest airport to your present location in the selected format (nautical miles, statute miles, or kilometers). If a **Min. RWY Length** is specified, the nearest airport instrument respects the selection.
- **Nearest Navaid** shows the identifier, frequency, radial (magnetic), and distance (nautical miles) from the nearest navaid. Radial and distance measurement units cannot be changed for this instrument.

Destination Instruments

- **ETE Dest** shows the estimated time en route (ETE) to the destination in hours, minutes, and seconds.
- **ETA Dest** shows the estimated time to arrival (ETA) at the destination in the selected time format (local, station, or Zulu).
- **Distance to Dest** shows the distance to the destination in the selected format (nautical miles, statute miles, or kilometers).
- **Bearing to Dest** shows the current bearing in the selected format (Magnetic or True) needed to fly straight to the destination.
- **Descent to Dest** shows the vertical speed in the selected format (feet per minute or meters per minute) needed to reach the destination elevation at arrival.

11. MAPS

Other Instruments

- **Current Coordinates** shows your current GPS coordinates in the selected format. See **Unit/Time** settings for additional information.
- **Zulu Time** shows the current Universal Coordinated Time (UTC) regardless of the selected time format.
- **Horizon Distance** calculates the estimated distance to the horizon (nautical miles) based on your present altitude AGL, assuming a simplified, spherical model of the earth. The distance measurement unit cannot be changed for this instrument.
- **Blank** replaces the current instrument with an empty space. This allows more of the map to be viewable behind the panel.
- **Flight Time** displays the total time since takeoff. Takeoff is automatically detected when groundspeed exceeds 60 knots. This instrument requires an active **track log** recording to activate.

11. MAPS

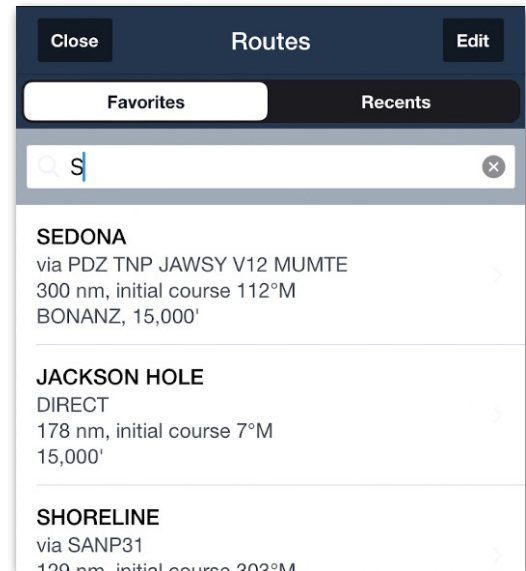
11.21 Favorite and Recent Routes

The **Star/Clock** button in the upper toolbar opens the Favorites / Recents menu. Use the tabs near the top of the menu to switch between Favorite and Recent routes.

Routes are automatically added to the Recent route list as you plan flights. Favorite routes are added when you tap the star button at the bottom of the FPL view.

The Favorites list can be re-ordered. To re-order the list:

1. Tap the **Favorite** tab to display the list of Favorite routes.
2. Tap **Edit** in the menu's upper toolbar.
3. Tap and hold a flight's three bars (right side of the menu).
4. Without lifting your finger, drag the flight up or down to its new position.
5. Release your finger.
6. Repeat steps 3 - 6 as needed.
7. Tap **Done**.



Favorite Route Menu

To delete a Favorite or Recent route, swipe from right to left on the route.

Changes to your Favorite and Recent routes, including adding, removing, and changing the order of the routes, are automatically synced to each device that is signed in to your ForeFlight Mobile account.

When searching for a Recent or Favorite route, the lists can be filtered by searching on the following items.

- Tail Number
- Destination / Departure
- Favorite Route Name
- Route Elements (waypoint)

PLATES

The Plates view serves as an electronic kneeboard, allowing pilots to organize, view, and swipe between plates in flight. It is ForeFlight Mobile's default tool for viewing plates and can be accessed in many ways.

12.1 Design

The following sections describe the two layouts and key features of the Plates view.

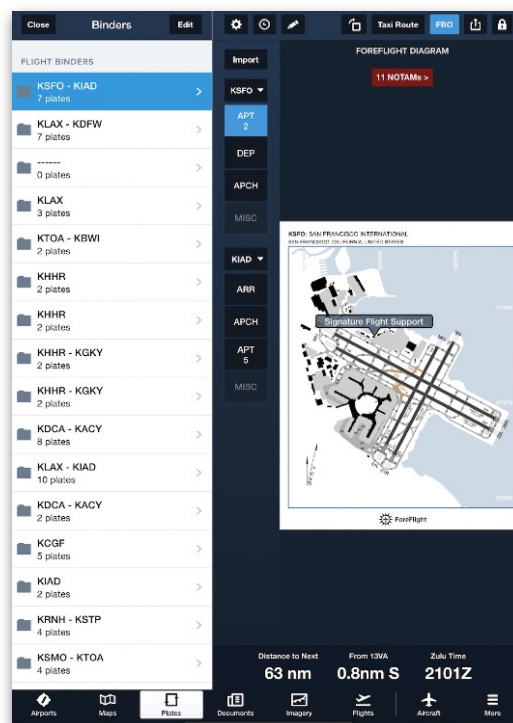
12.1.1 Layout

The Plates view displays one of two layouts depending on how it was accessed:

- **Full-Screen:** When a plate is opened on the Maps, Airports, or Flights view, ForeFlight switches to the Plates view to display the plate in full-screen mode. Users can tap the **Close** button to return to wherever they were in ForeFlight before opening the plate.
- **Split-Screen:** When the Plates view is opened directly by tapping **Plates** in the Navigation Toolbar, the view displays a split-screen layout with the Plates Viewer to the right of a collapsible **Binders Drawer**.



Full-Screen



Split-Screen

12. PLATES

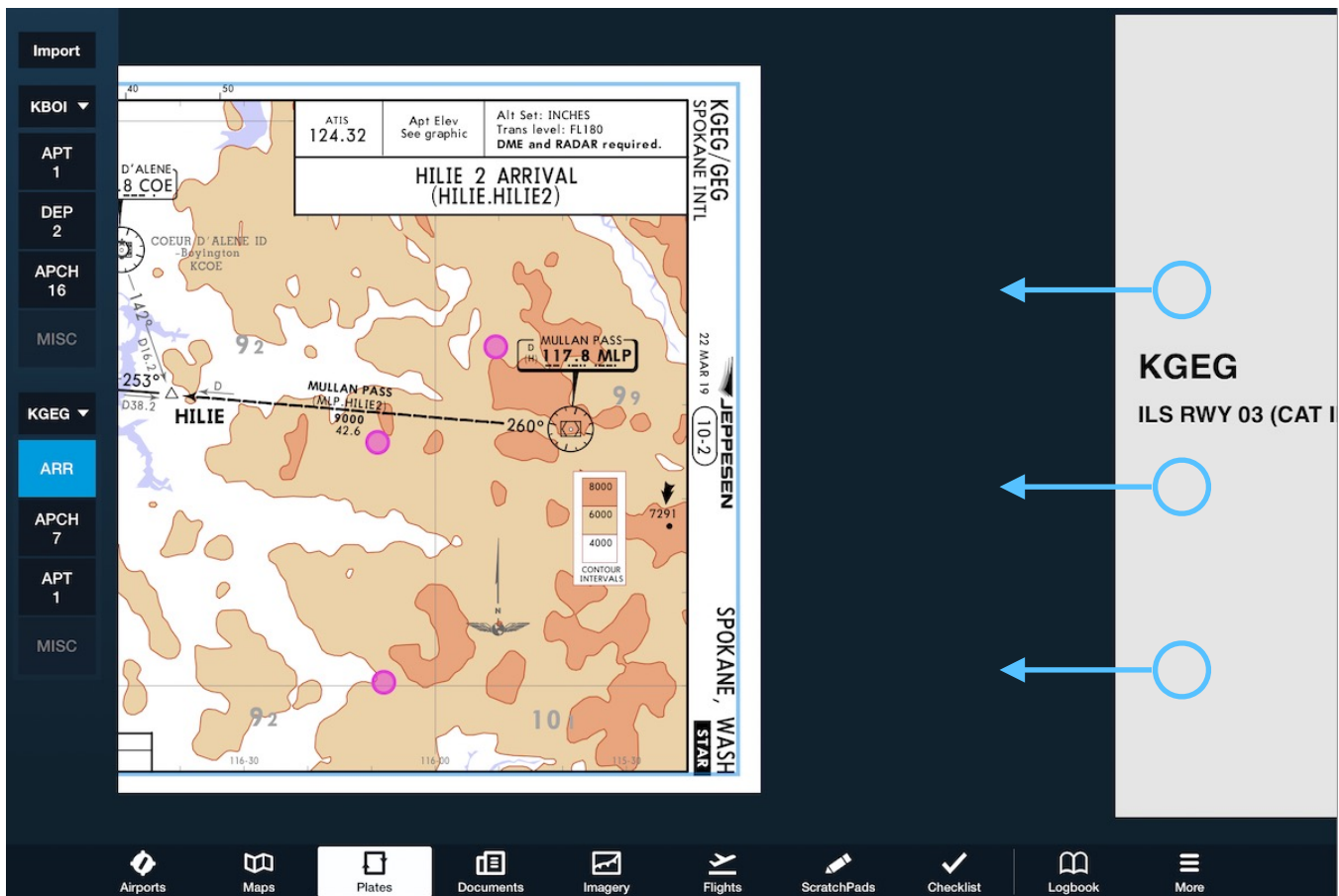
12.1.2 Key Features

The Plates view can be a powerful in-flight tool. The following are its key features.

Intuitive Navigation

The Plates view incorporates **on-screen finger gestures** to pan and zoom, and a three-finger swipe to quickly switch between plates in a binder.

This is meant to replicate the functionality of traditional paper kneeboards and to make using plates easier during busy flights.



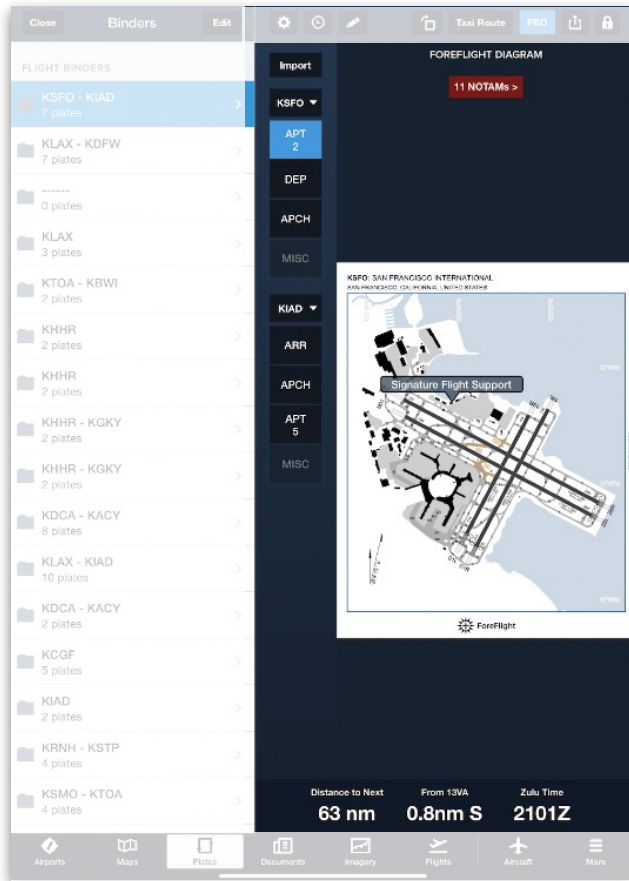
Three finger swipe to switch plates in a binder

12. PLATES

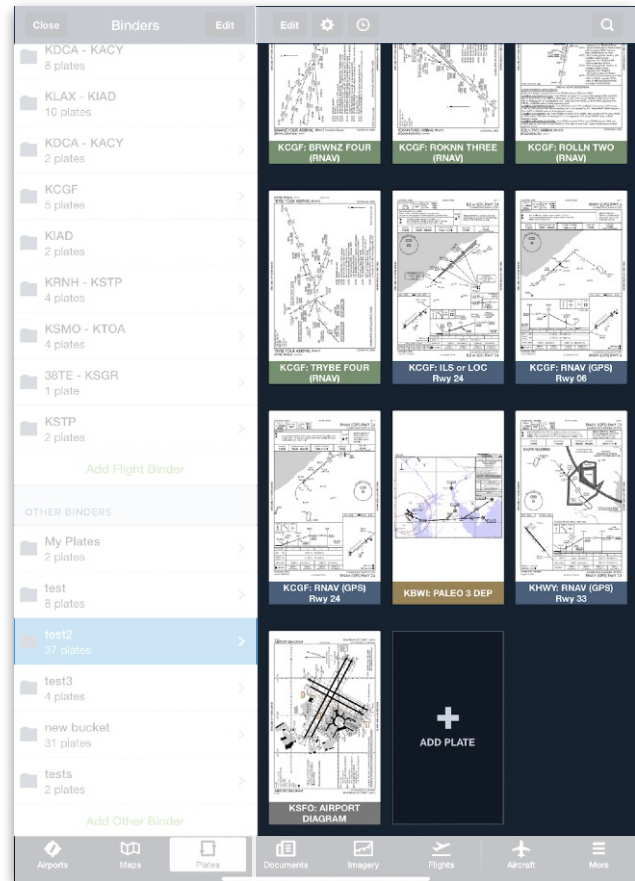
Binders Organize Plates for Flight

Plates can be organized into two types of binders (folders) for pilots to swipe through.

- **Flight Binders** are used to organize plates for a specific flight and can be generated from the Maps and Flights views.
- **Other Binders** are used for unstructured collections of plates.



Flight Binders View



Other Binders View

View Online Without Downloads

US, Canadian, European, and Australian plates can be viewed with an active internet connection. To view plates offline, they must first be downloaded.

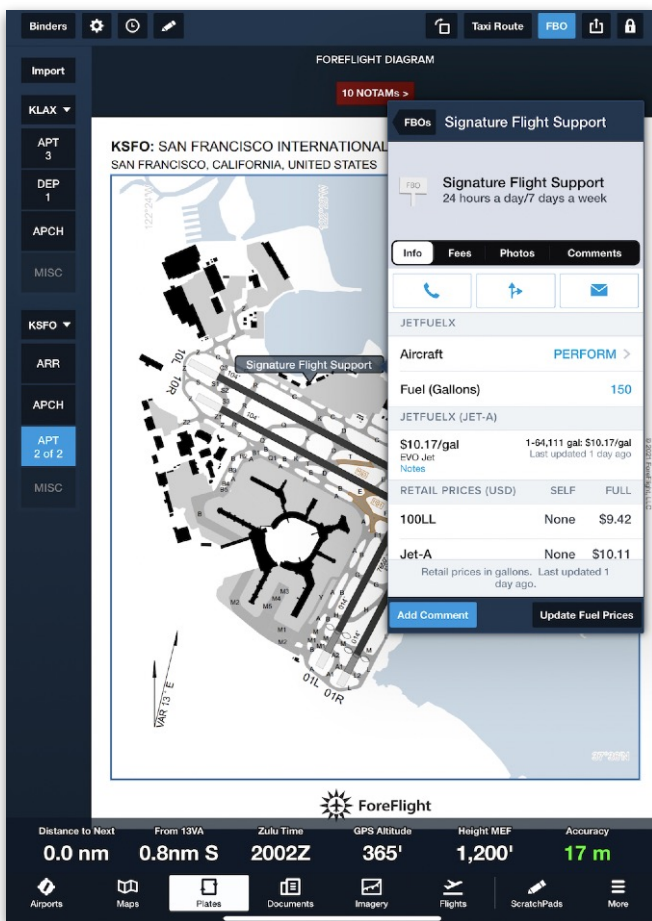
The availability of specific plates is limited only by the regions allowed in a subscription plan. **ForeFlight-generated plates** are available regardless of subscription.

12. PLATES

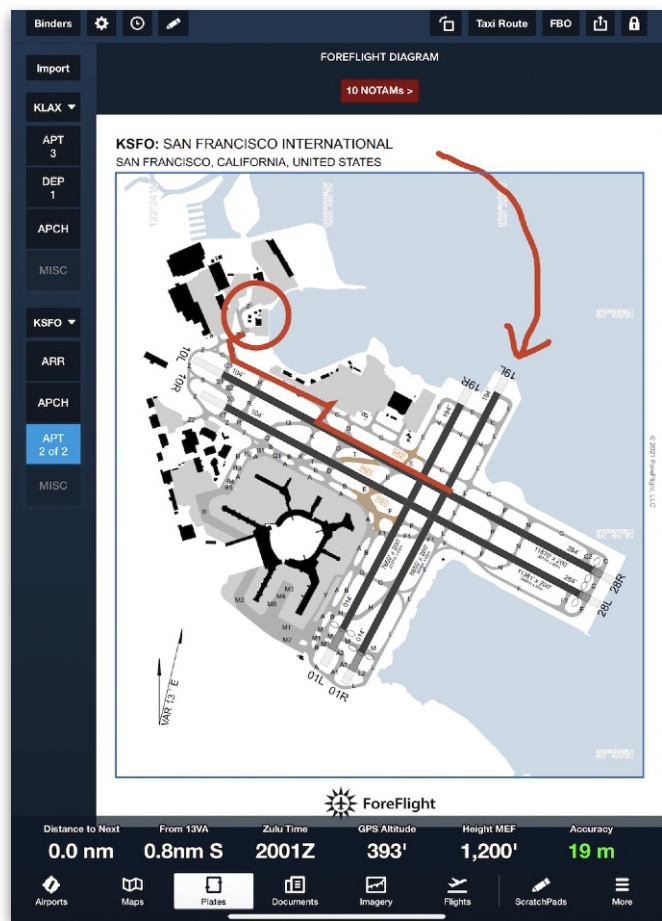
On-Plate Functionality

Plates in ForeFlight can be overlaid with dynamic features such as:

- **Alert NOTAM banners** that expand to display a list of applicable NOTAMs.
- **FBO labels** that show on-airport locations and details for each FBO.
- Custom **annotations**.
- A customizable **instrument panel** for monitoring real-time flight data while reading a plate.



FBO Labels and Information



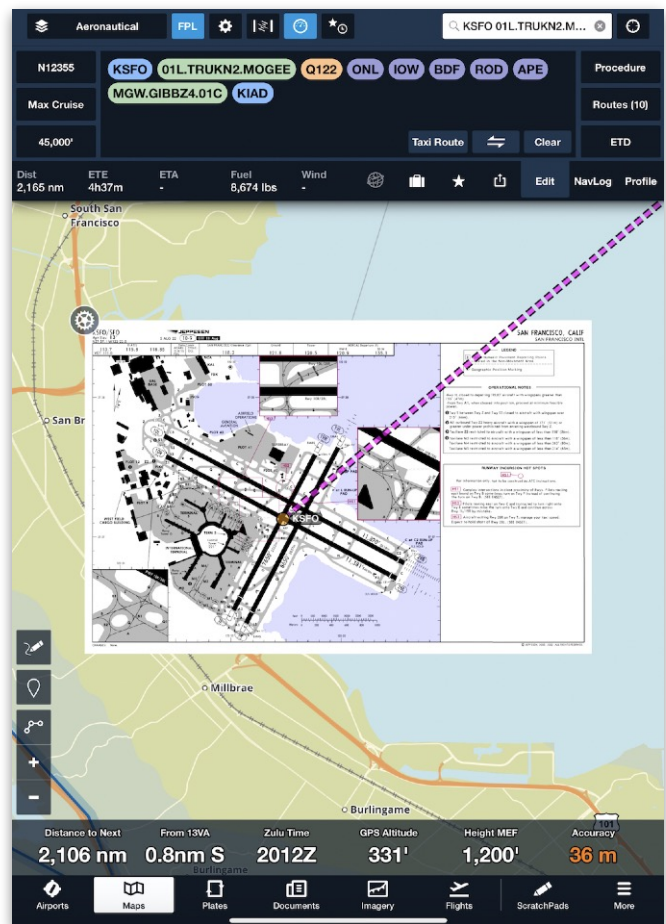
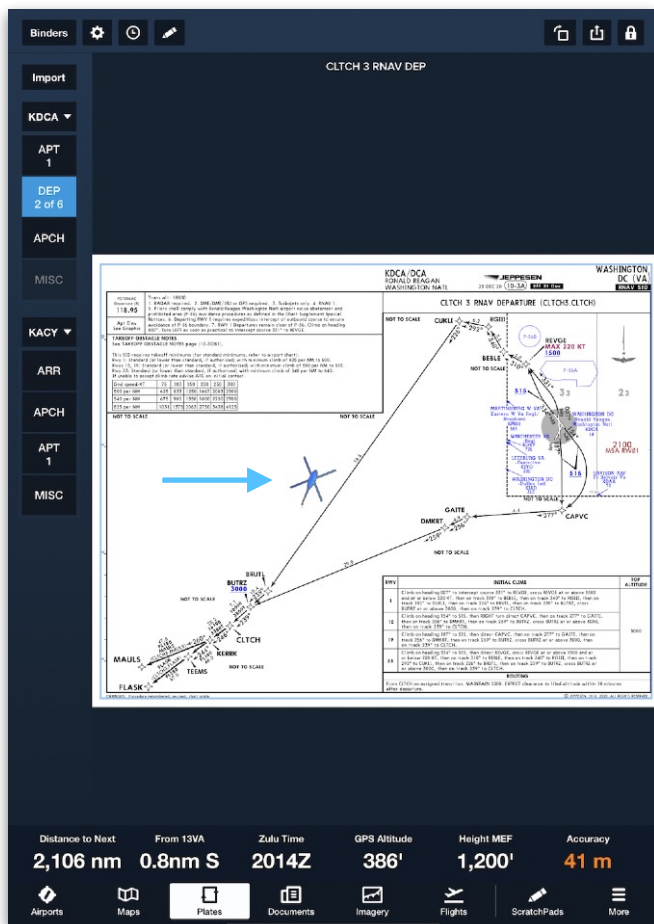
Annotations on Plates

12. PLATES

Optional Features

The above Plates view features are available to all users. Additional optional features are described below:

- **Jeppesen** plates can be displayed in addition to the standard government and ForeFlight plates.
- Pro Plus and higher subscribers can use **georeferenced** plates to show their aircraft position on a plate and overlay plates on the map.
- Performance Plus subscribers can use a **Taxi Routes** tool to create taxi routes based on destination and taxi clearances.



Georeferenced Procedure

12. PLATES

12.1.3 Types of Plates

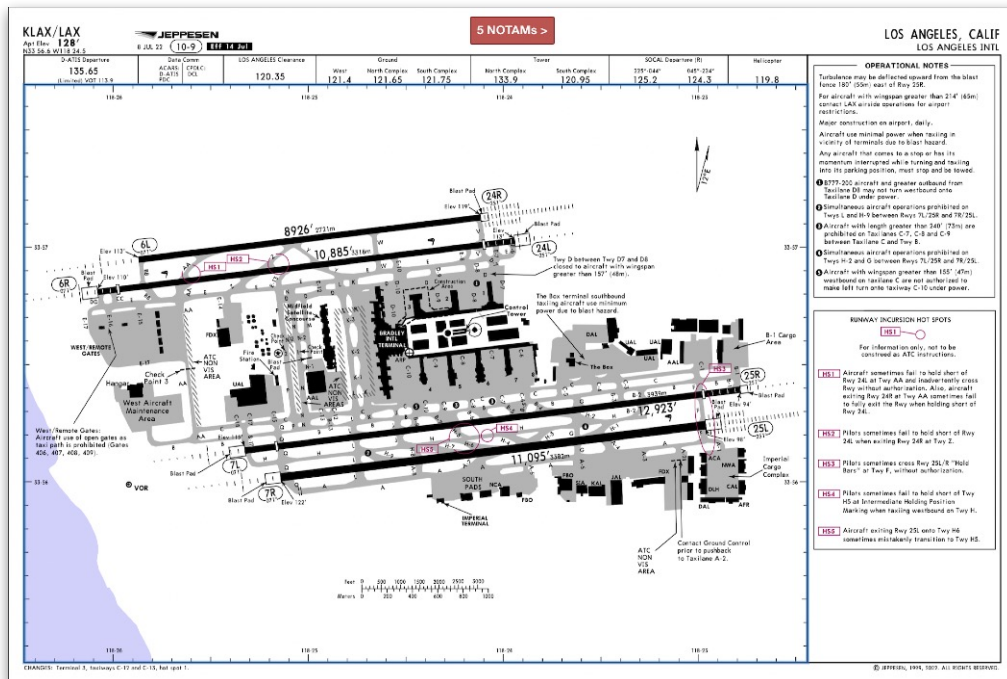
Plates encompass a variety of terminal procedures and documents including, but not limited to, the following: standard instrument departures (SIDs), instrument approach procedures (IAPs), standard terminal arrival procedures (STARs), airport diagrams, taxiway diagrams, obstacle departure procedures (ODPs), IFR takeoff minimums, alternate minimums, and special notes.

Plates can be published by different sources. When a user opens a plate, the version displayed varies based on availability and priority. It is not possible to reorder or assign plate priority. ForeFlight offers the following types of plates.

Jeppesen

Jeppesen plates are available to ForeFlight users who link their existing **Jeppesen subscriptions** or purchase Jeppesen coverage from ForeFlight. If Jeppesen coverage is installed on a device, the plates will appear above all other plates and are the default plates when selecting a procedure using the **Procedure Advisor**.

NOTE: ForeFlight Military Flight Bag accounts with Jeppesen coverage installed default to the government procedures, but this can be changed using the **More > Jeppesen > Prioritize Jeppesen Plates** setting.

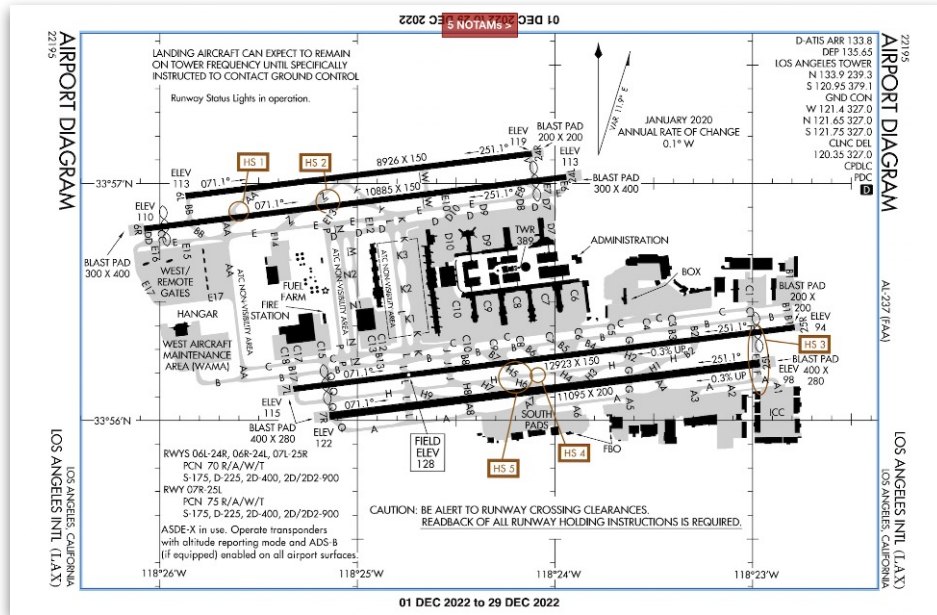


Jeppesen Airport Diagram for KLAX

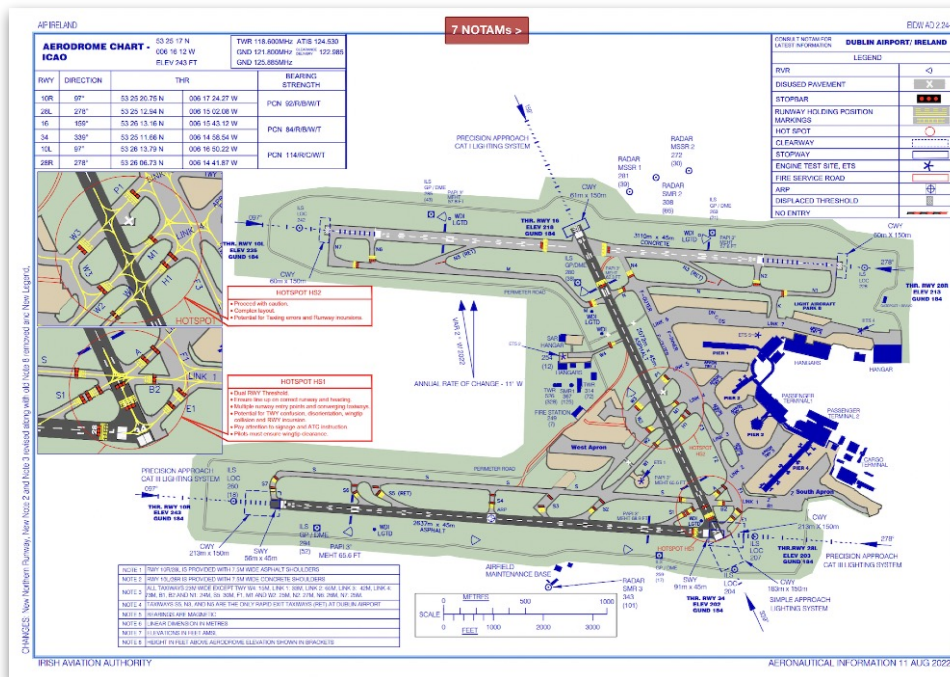
12. PLATES

Government

Terminal Procedures are available from the FAA with a United States subscription, from Nav Canada with a Canadian subscription, from Airservices with an Australian subscription, and from EUROCONTROL with a European subscription.



FAA (Los Angeles International)



EUROCONTROL (Dublin International)

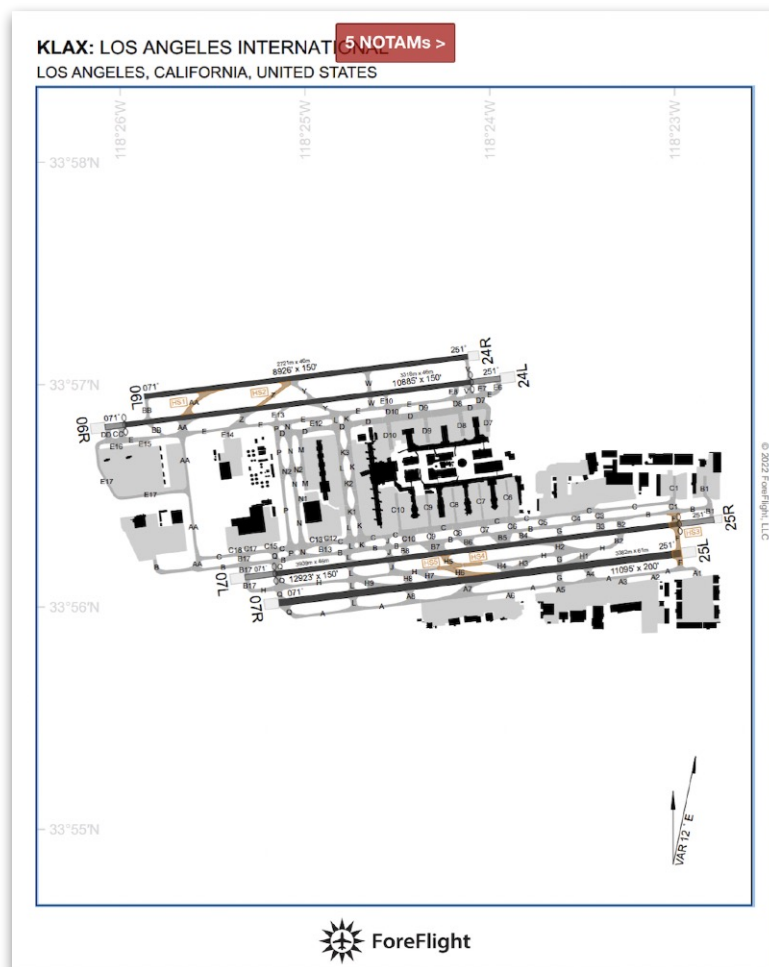
12. PLATES

Optional European Charts

Optional European VFR and IFR plates (including airport diagrams, en route charts, and procedures) can be purchased. These can include optional chart add-ons for specific European countries offered by providers such as Jeppesen, IGN, DFS, SkyGuide, and Cartabassy. The full range of options is listed at foreflight.com/europe/data.

ForeFlight

ForeFlight creates its own versions of many airport diagrams as another option for users. These are displayed by default when neither Jeppesen nor government airport diagrams are available. ForeFlight plates have the ForeFlight logo in the bottom margin. ForeFlight Plates do not exist for all airports. However, unlike other types of plates, ForeFlight plates are available to all users regardless of their regional subscription.



ForeFlight Diagram for KLAX

12. PLATES

BYOP

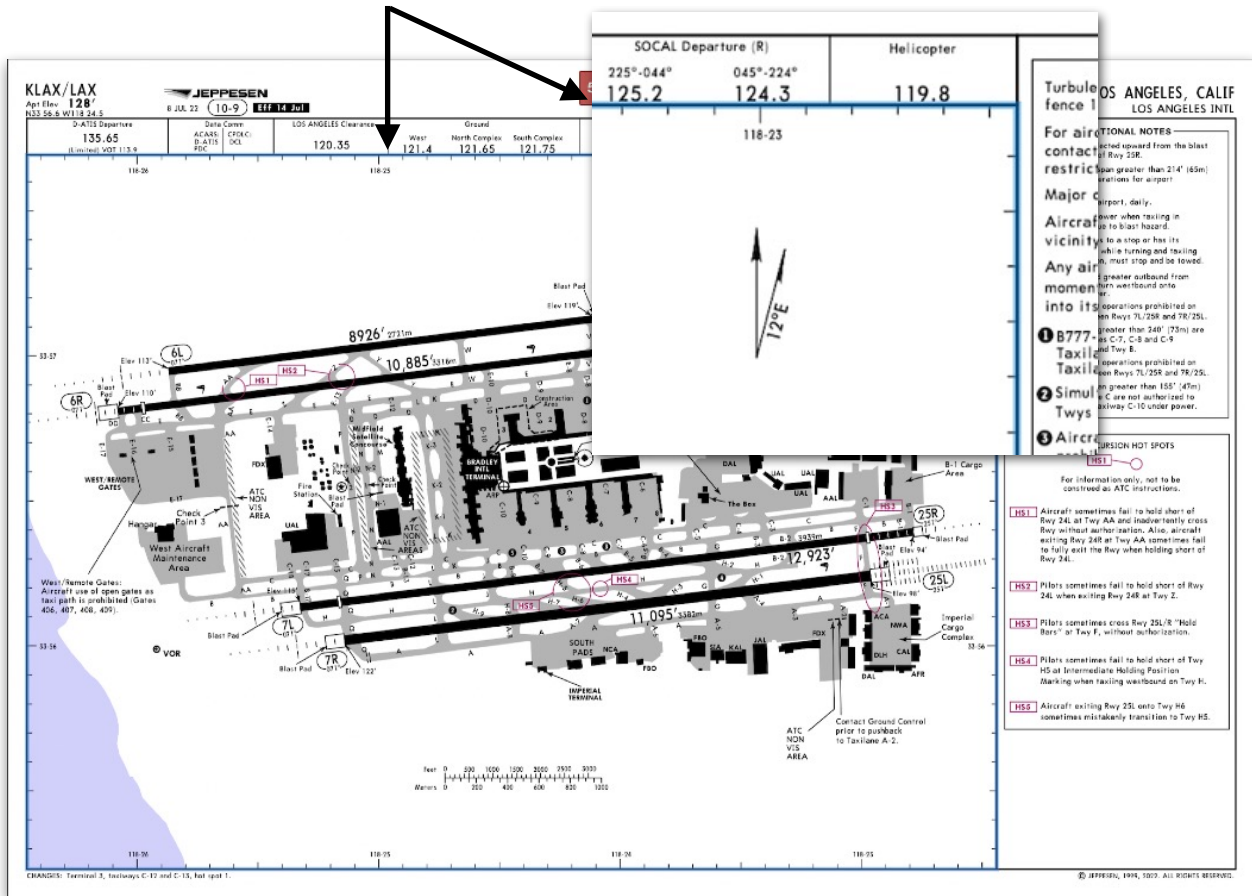
Custom plates can be associated with an airport using the **Bring Your Own Plates (BYOP)** feature.

Georeferenced

Georeferenced plates are Jeppesen, government, ForeFlight, or other plates that have an additional embedded geospatial layer.

A georeferenced plate can be identified by a thin blue border around the plan view area of the plate. Most plates are georeferenced. If a plate is not georeferenced, it is usually because it is not drawn to scale.

Blue border on georeferenced plate



Georeferenced Jeppesen Plate

12. PLATES

Georeferenced plates can be precisely **overlaid on the Map** and used to **show your position**. Georeference features requires a Pro Plus or higher subscription



Georeferenced Plate on the Map

12.1.4 Plates Sync

Plates view functionality does *not* sync between devices on an account. Specifically, this means that **Flight Binders**, **Other Binders**, and **plate annotations** only exist on the device used to create them.

IMPORTANT: If ForeFlight is deleted and reinstalled, binders and plate annotations will be lost.

12. PLATES

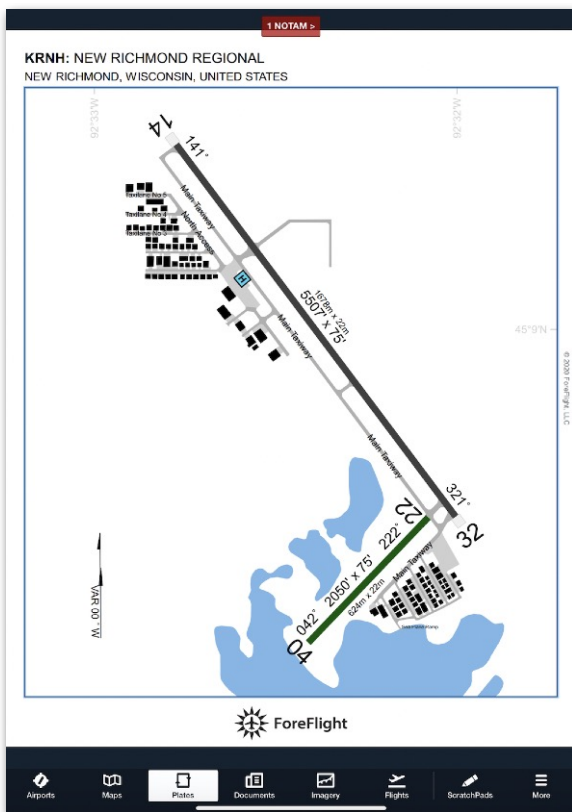
12.2 On-Plate Functionality

The actively displayed plate can be manipulated to resize, pan, and switch between adjacent plates, add annotations, show or hide the toolbar and instrument panel, and see information about NOTAMs, FBOs, and aircraft position.

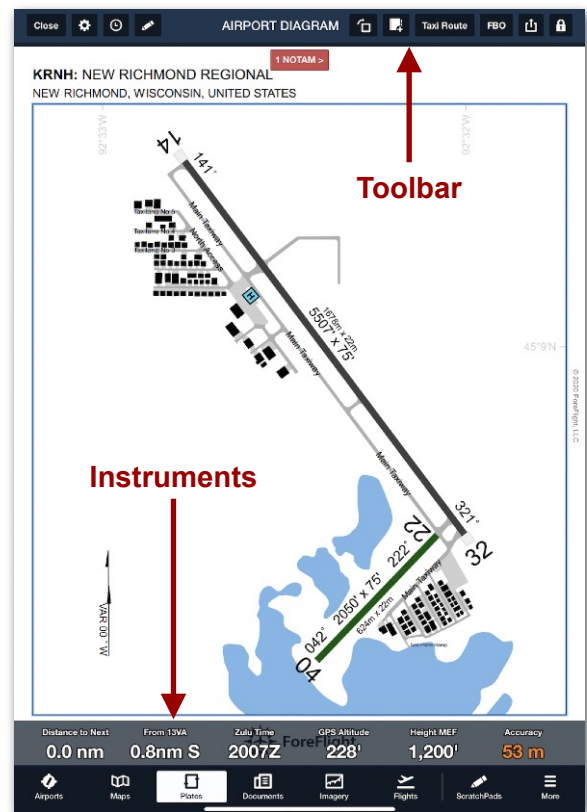
12.2.1 Onscreen Finger Gestures

Plates can be manipulated in the following ways using onscreen finger gestures as described below.

- **Panning and Zooming:** When a plate is zoomed in, drag one finger across the screen to pan in 360 degrees across the plate. To zoom in on a plate, touch the screen with two fingers and draw them apart. Use the opposite gesture to zoom out.
- **Swiping to Previous/Next Plate:** Swipe with three fingers left or right to display the previous or next plate. In a Flight Binder, swiping right on the last plate in a folder opens the next folder.
- **Toggleing Toolbar/Instrument Panel:** Tap a displayed plate to hide the **Toolbar** and **Instrument Panel** (for navigational plates). Tap again to show the Toolbar and Instrument Panel.



Full Screen



Toolbar and Instruments Showing

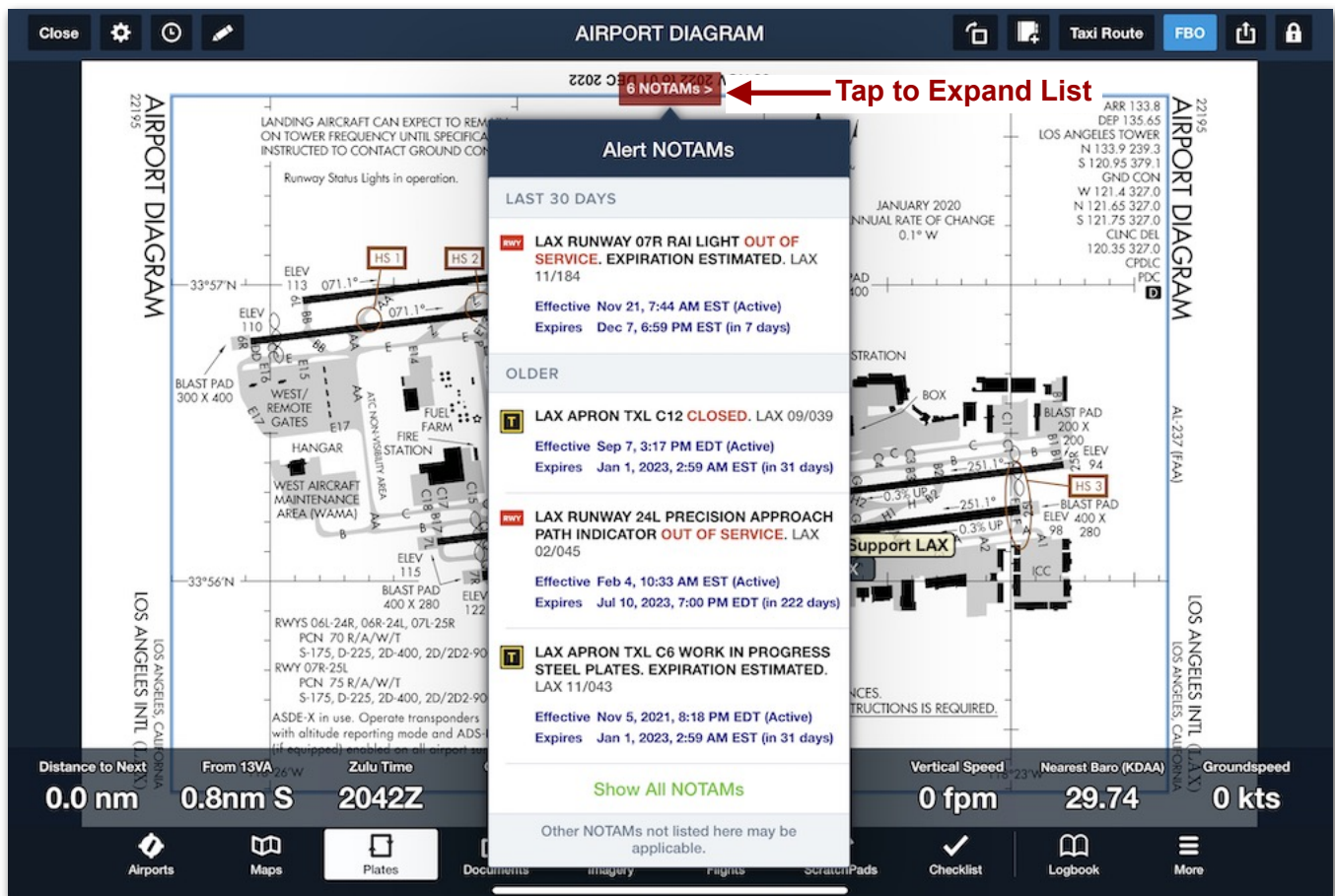
12. PLATES

12.2.2 Alert NOTAMs

When a plate is displayed, ForeFlight cross-checks NOTAMs and displays a warning banner at the top of the plate showing a count of relevant NOTAMs related to that plate.

NOTE: The NOTAM Alert banner is not displayed when the Plate is **sent to Maps**.

Tap the banner to view the NOTAMs associated with the plate, grouped vertically by age. Tap **Show All NOTAMs** to see a breakdown of Airport, Obstacle, TFR/ARTCC, and Jeppesen NOTAMs for the airport. Tap again anywhere off of the popup to close it.



Tap NOTAMs to view the list of Alert NOTAMs

WARNING: Do not use Alert NOTAMs as a substitute for traditional preflight planning. ForeFlight Mobile is not guaranteed to display a complete list of NOTAMs relevant to the plate.

12. PLATES

12.2.3 FBO Locations

When viewing an airport diagram, tap **FBO** in the upper toolbar to show or hide the location of FBOs on the plate. Featured FBOs have yellow labels, while the rest have gray. Tap a label to open its **FBO Details**. FBO labels can also be shown when the airport diagram is **overlaid on the Map**.

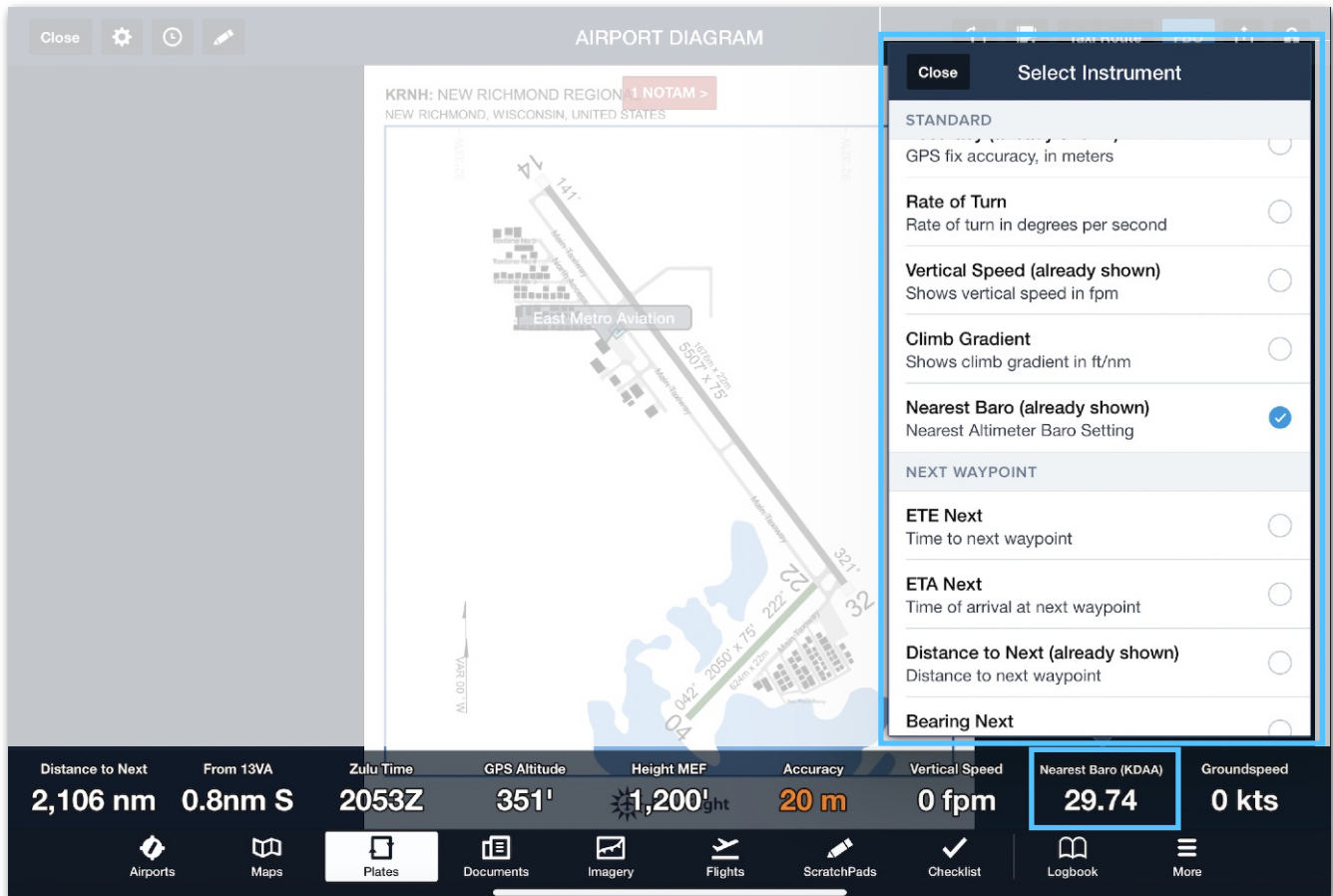


FBO Location Labels

12. PLATES

12.2.4 Instrument Panel

A semi-transparent instrument panel can be displayed underneath navigational plates such as airport diagrams, approach, arrival, and departure procedures. The number of instruments displayed varies based on device orientation, screen size, and binder being viewed. Tap the plate surface to show or hide the panel. Tap an instrument to customize it. This is the same **instrument panel** that can be displayed on the Maps view.

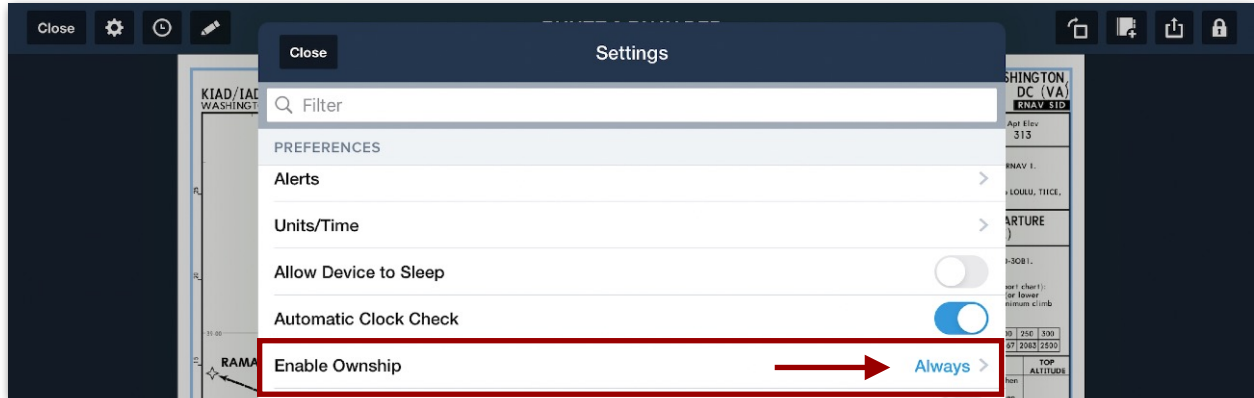


Customizing Instrument Panel

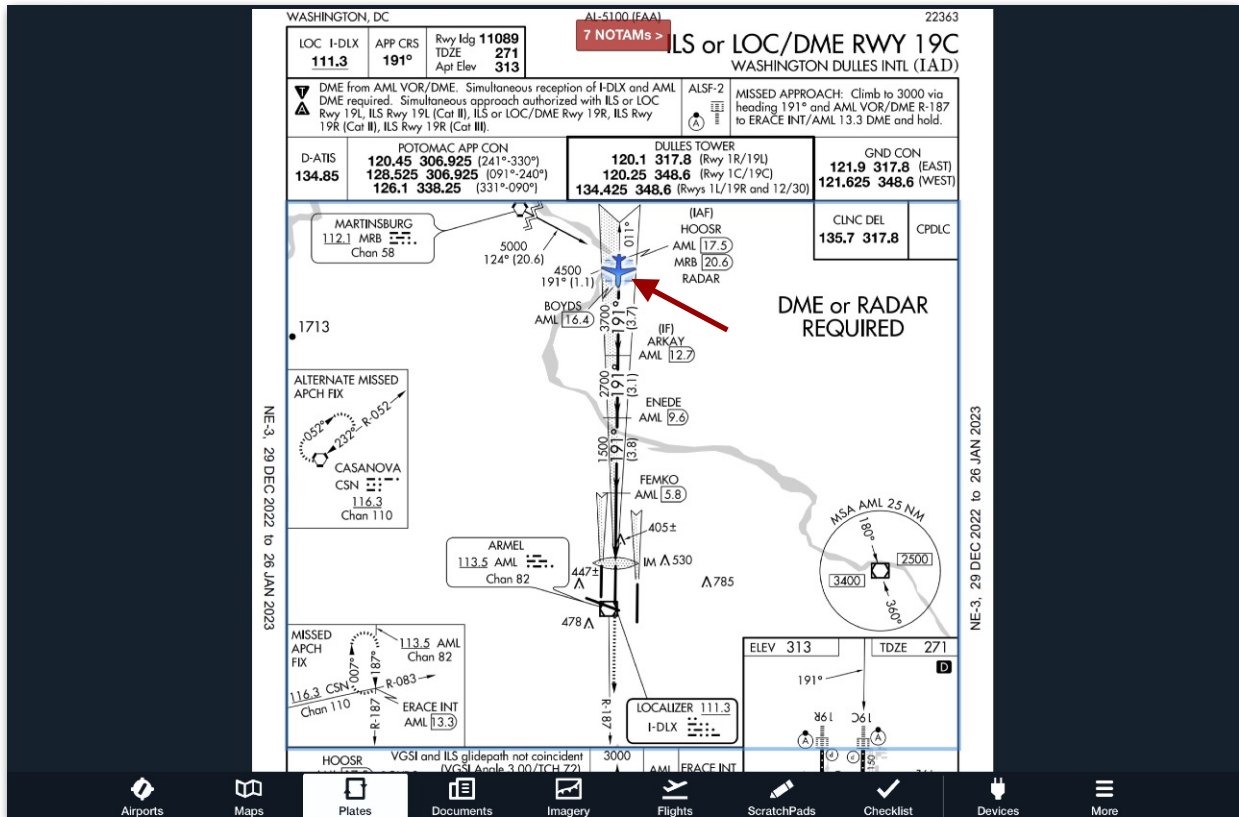
12. PLATES

12.2.5 Position on Plate

Pro Plus or higher subscribers can see their position on a **georeferenced** plate provided that they have toggled the **Enable Ownship** setting to **Always** or **Limited**.



Enabling Position Displayed on Plate



Current Position on Plate

12. PLATES

12.3 Toolbar Controls

The Toolbar displays an array of plate controls that varies depending on the type of plate or binder being viewed. The full list of Toolbar controls and their functionality is described below.



12.3.1 Plate Settings

With any plate displayed, tap the Settings (gear) button to adjust screen brightness with a slider, or to invert plate colors. These settings are applied throughout ForeFlight Mobile, not just the Plates view.

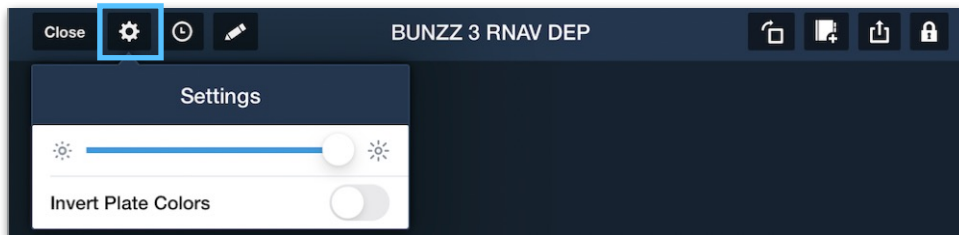
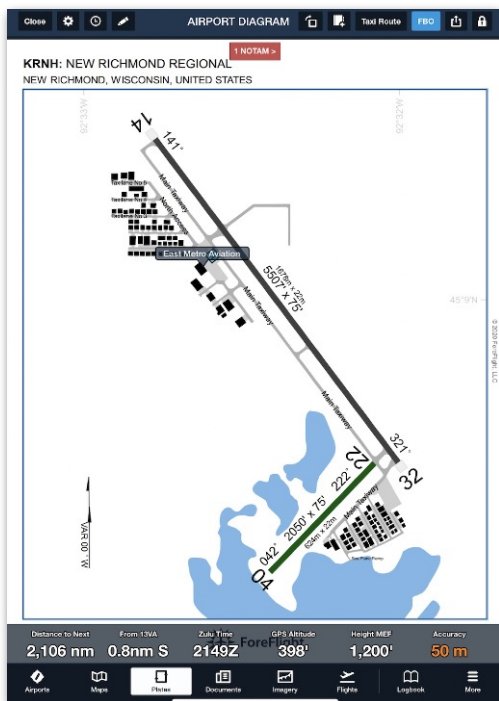


Plate Settings Menu



Standard Colors

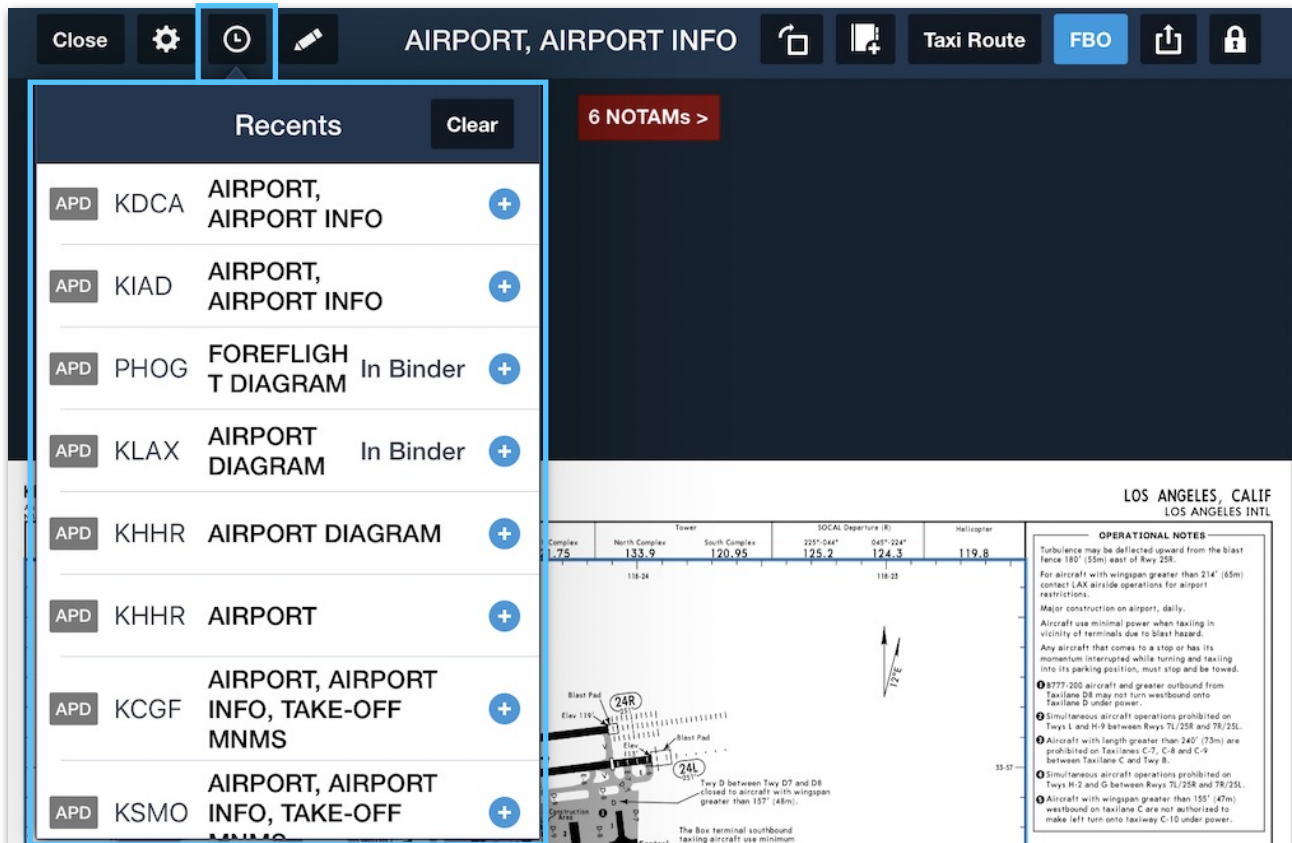


Inverted Colors

12. PLATES

12.3.2 Recent Plates

Tap the Recent Plates (clock) button to open a list of plates that were recently displayed in ForeFlight Mobile.



Recent Plates Searches

A colored box to the left of each plate name indicates its subject:















- **APD** - Airport Diagram, Airport Info, Airspace Diagram, Advisories, Low Vis Taxi Routes, Parking Gates, or ODP Obstacle Takeoff Notes
- **DP** - Departure Procedure
- **STAR** - Arrival Procedure
- **IAP** - Approach Procedure
- **MIN** - Takeoff Minimums (Obstacle) Departure Procedures, and Diverse Vector Area (Radar Vectors), Alternate Minimums.

Tap a plate name to display it, or tap **Clear** to empty the list. If an Other Binder has been left “open”, tap the **Plus (+)** button to add it to the binder. If the Plate is already added, the words “In Binder” are displayed.

12. PLATES

12.3.3 Plate Annotations

To add annotations to a plate, tap the **Edit (pencil)** button to open an annotations toolbar. Plate annotations do not sync between devices. The functionality of each annotation is described in [Annotations](#). The following table describes each type of Plate annotation and what device it is available on:

Button	Device	Purpose
	iPad iPhone	Use one finger to draw freeform annotations.
	iPad iPhone	Drag finger across plate to create rectangular outline.
	iPad	Drag finger across plate to create circular outline.
	iPad	Drag finger across plate to draw straight line.
	iPad	Draw multiple straight lines end to end that form a closed shape when the button is deselected.
	iPad	Draw multiple straight lines end to end.
	iPad iPhone	Type text on the plate using an iOS keyboard with controls for font style, size, alignment, and color.
	iPad	Write a note on the plate visible as a small icon. Tap the paintbrush button to edit icon shape and color. The note icon can be tapped to open its contents.
	iPad iPhone	Drag finger across plate to select multiple annotations and group, copy, or delete them, as well as invert plate color.
	iPad iPhone	Edit annotation size, font, alignment, color, fill color, opacity, thickness, style, layer order, and color presets.
	iPad iPhone	Clear all annotations from the plate.
	iPad iPhone	Undo the previous annotation.
	iPad iPhone	Redo the previously undone annotation.
	iPad iPhone	Tap to finish adding annotations and return to the Plates Viewer.

12. PLATES

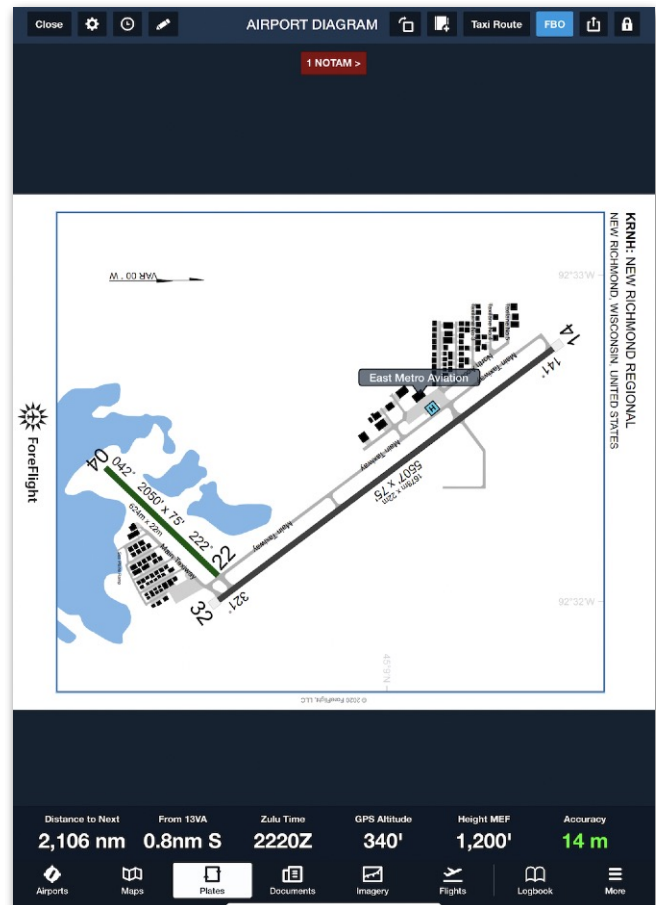
12.3.4 Rotate

To rotate the plate clockwise, tap the **Rotate** button. Note that a plate shrinks to fit the device screen if its current orientation does not match the device orientation.

Tap to Rotate



Portrait Orientation



Landscape Orientation

12.3.5 Add to Binder

When an Other Binder has been left “open” in the Plates view as described [later](#), and a plate is accessed from the Maps, Flights, or Airports view, the **Add To Binder (folder)** button is visible in the Toolbar. Tap this button to add the current plate to that binder.

12. PLATES

12.3.6 Taxi Route

Performance Plus subscribers viewing an airport diagram can tap the **Taxi Route** button to open a **tool used to create taxi routes** based on their desired destination and taxi clearances.

NOTE: If this button is not visible, it can be enabled by tapping **More > Account > ForeFlight Labs** and toggling on **Taxi Routes**.

12.3.7 FBO

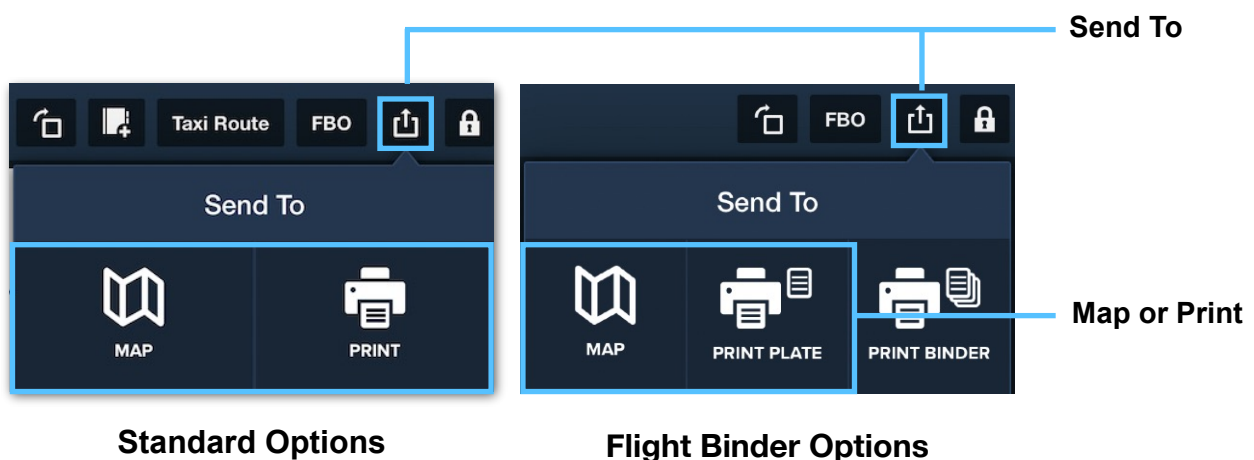
When viewing an airport diagram, the **FBO** button is visible in the toolbar. Tap it to show or hide **FBO location labels** on the diagram.

12.3.8 Send To Map/Print

To send the currently displayed plate to be **overlaid on the Maps view**, tap the **Send To** button and select **MAP**. This requires a Pro Plus subscription and can only be done for **georeferenced plates**.

To send the currently displayed plate to a printer, tap the **Send To** button, select **PRINT**, and then select the iOS Printer Options.

The Send To button can also be used to **print an entire Flight Binder**.



NOTE: ForeFlight does not control printer settings or page sizes. This must be done in the printer interface.

12. PLATES

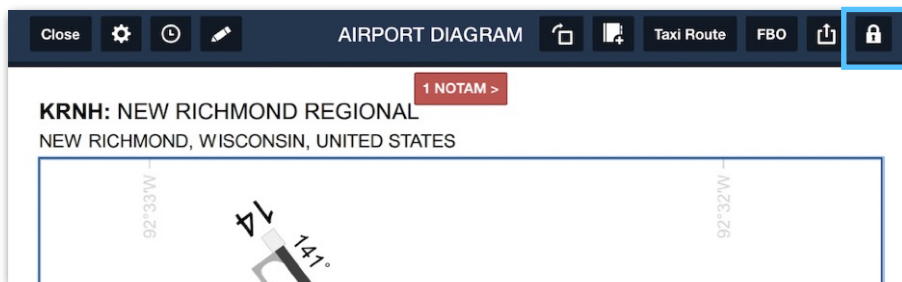
12.3.9 Lock

To disable **onscreen finger gestures** to prevent any accidental changes (such as while flying), tap the **Lock** button.

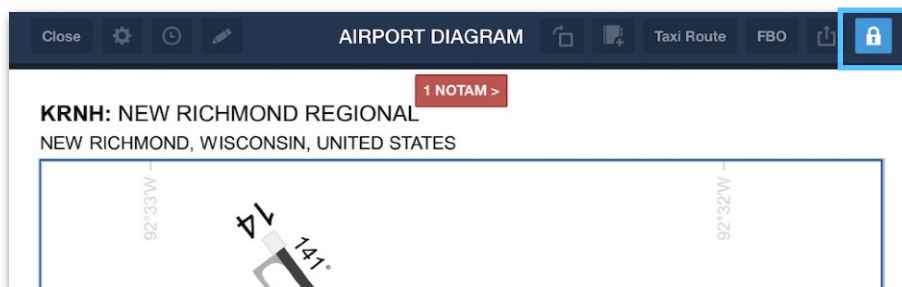
IMPORTANT: The Lock button does not lock plate orientation (portrait or landscape). To lock orientation, use the orientation lock setting on the iOS device.

To configure this control so it also disables every other button on the device screen, tap **More > Settings**, swipe down the Plates and Documents Views section, and toggle on **Lock Disables Buttons**. Then, when the Lock button is pressed, all functionality on the device screen will be disabled including:

- **Plates view Toolbar:** All buttons except Lock are disabled.
- **Plate:** All on-plate functionality such as Alert NOTAMs and FBO Labels are frozen. (Plates can still be tapped to **toggle the Toolbar and Instrument Panel**.)
- **Instrument Panel:** Instruments are visible but cannot be customized.
- **ForeFlight Navigation Toolbar:** The Plates view cannot be navigated away from.



Unlocked Buttons (Default)



Locked Buttons Cannot Be Tapped Until Lock Is Disabled

12. PLATES

12.4 Plates on the Map

This feature is used to overlay geo-referenced plates on the Maps view. It requires a ForeFlight Pro Plus, Performance Plus, Business Pro, or Business Performance subscription.



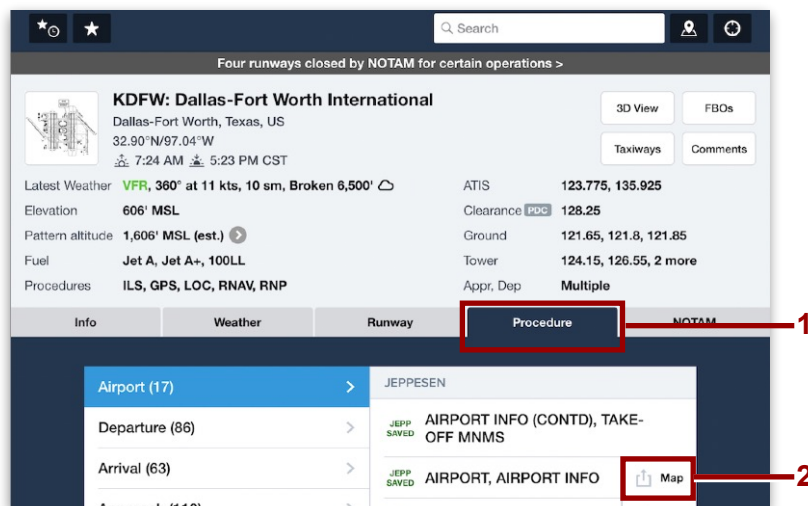
Plate Overlaid on the Map

12.4.1 Displaying Plates on the Map

The following five methods can be used to display a plate on the map.

Method #1 - From the Airports View

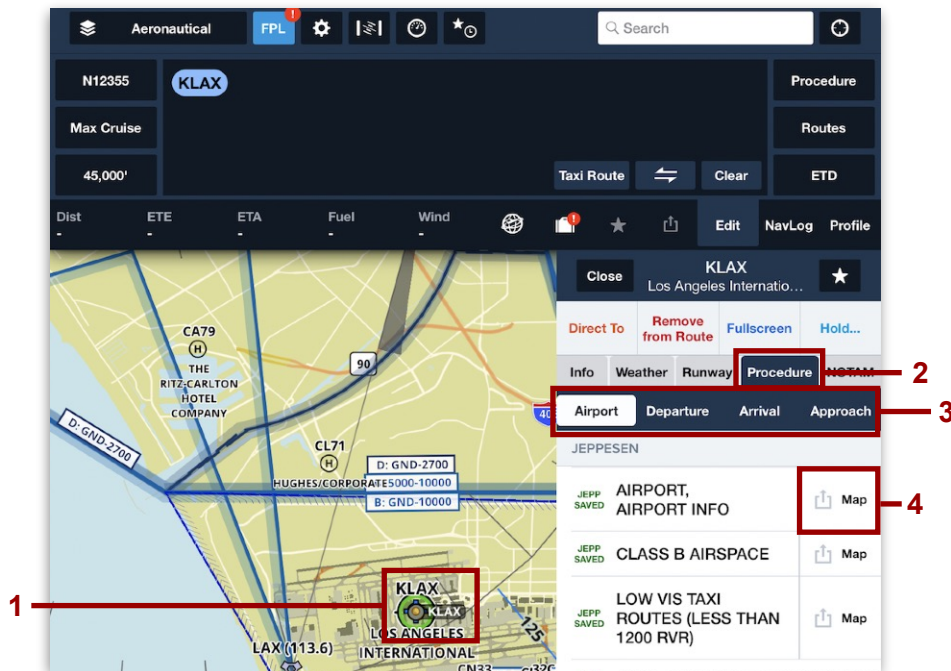
Display a plate on the Airports view, open the **Procedures** tab, and tap **Map** next to the desired plate.



12. PLATES

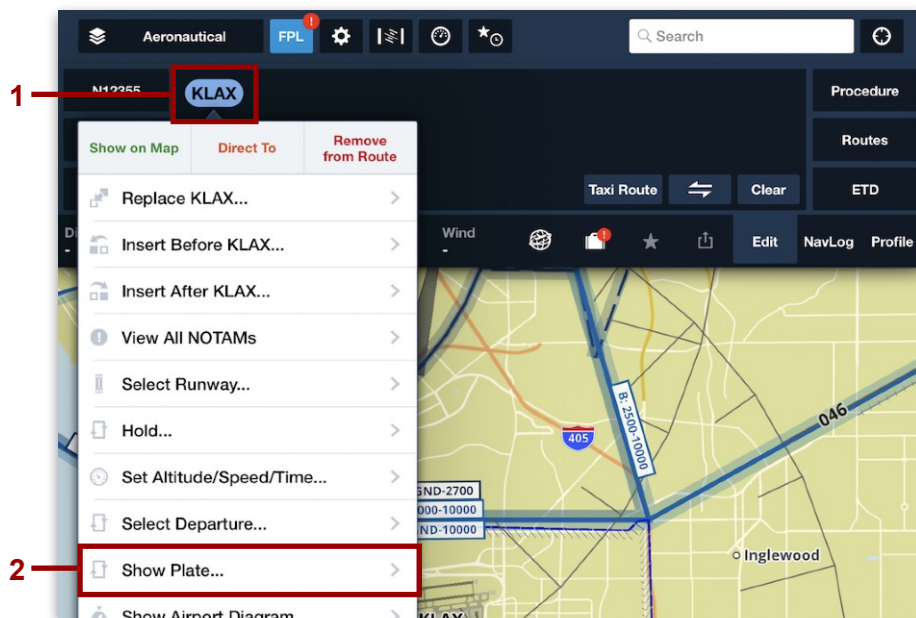
Method #2 - From the Maps View

Tap an airport on the map to display its details. Select the **Procedure** tab and the appropriate sub-tab (**Airport**, **Departure**, **Arrival**, or **Approach**). Tap **Map** next to the desired plate.



Method #3 - From the FPL Editor

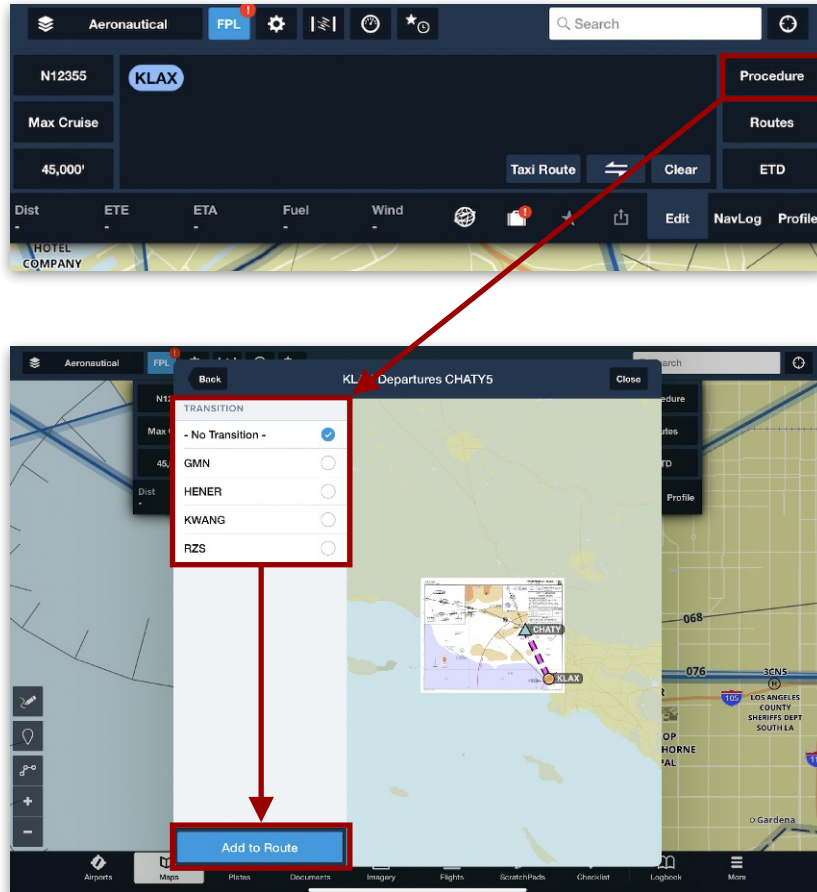
On the Maps view FPL Editor, tap the colored bubble of an airport or procedure and select **Show Plate...** Then, select the appropriate plate.



12. PLATES

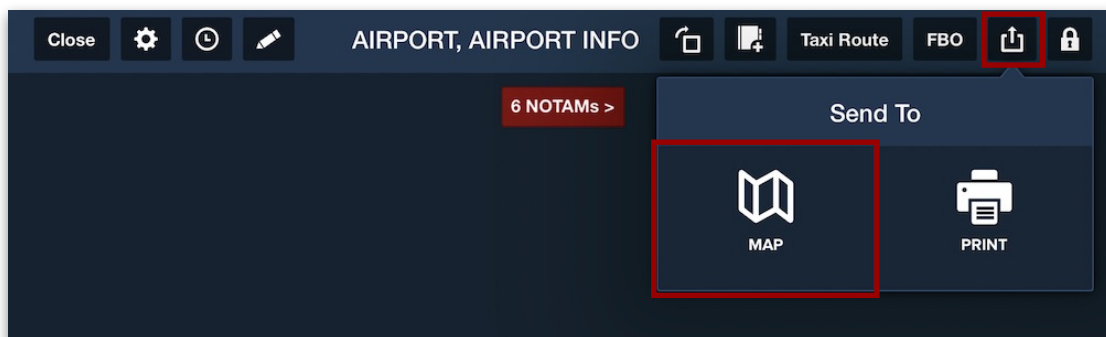
Method #4 - From the Procedure Advisor

On the Maps view FPL Editor, tap **Procedure** to open the **Procedure Advisor**, select the appropriate plate and transition, then tap **Add to Route**.



Method #5 - From the Plates View

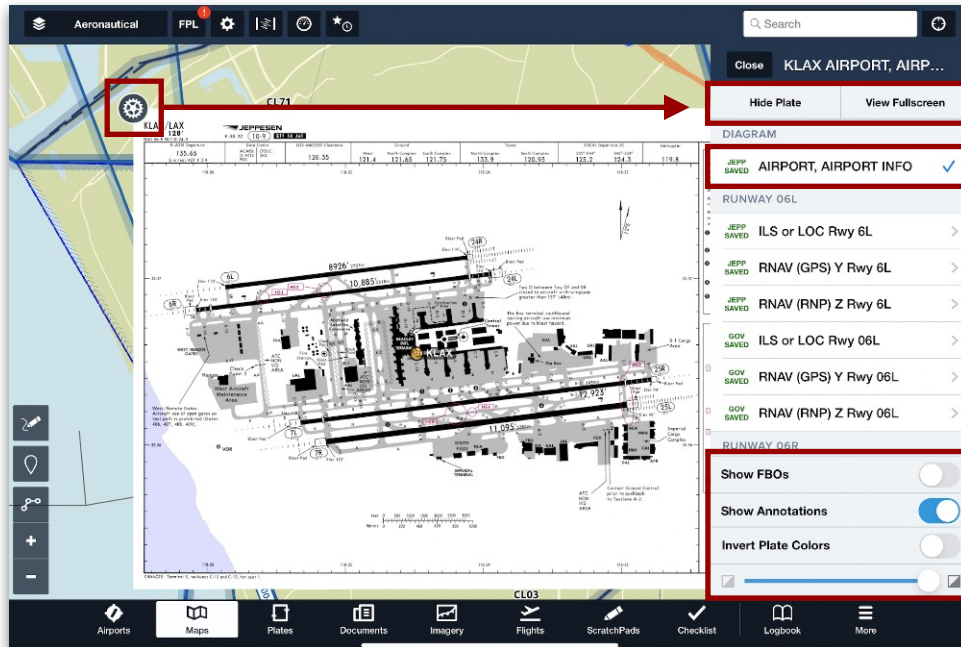
Display a plate on the Plates view, then tap the **Send To** button and select **MAP**.



12. PLATES

12.4.2 Display Settings for Plates on the Map

When a plate is overlaid on the map, its display settings can be adjusted to hide the plate, view it in full-screen mode, swap one plate for another, show annotations and FBO labels, invert plate colors, and adjust the transparency of the plate. These are described below.



Display Settings for Plates on the Map

Removing Plates From the Map

To remove a plate overlay from the map, follow these steps:

1. On the map, tap the plate or the gear icon in its top-left corner.
2. In the popup, tap **Hide Plate** to remove it from the map.

Displaying a Plate in Full-Screen Mode

To cause a plate overlaid on the map to display in full-screen mode, follow these steps:

1. On the map, tap the plate or the gear icon in its top-left corner.
2. Tap **View Fullscreen** to open the plate in the Plates view.
3. Tap **Close** to return to the previous location on the Maps view.

12. PLATES

Swapping Plates on the Map

To change the plate currently overlaid on the map at a given airport, follow these steps:

1. On the map, tap the plate or the gear icon in its top-left corner.
2. In the popup, the displayed plate will have a blue checkmark next to it. Tap any other plate listed to display it instead.

NOTE: If a non-graphical procedure (such as takeoff minimums or advisory) is selected, it does not replace the current plate on the map. Instead, it opens in the Plates view.

Showing Annotations/FBO Labels

To show annotations and FBO labels on the plate overlaid on the map, follow these steps:

1. On the map, tap the plate or the gear icon in its top-left corner.
2. Toggle the **Show FBOs** button on to display or hide interactive FBO labels.
3. Toggle the **Show Annotations** button to show or hide annotations previously added to the plate.

Inverting Plate Colors

To invert the colors of any plate displayed on the map, follow these steps:

1. On the map, tap the plate or the gear icon in its top-left corner.
2. Toggle the **Invert Plate Colors** button on or off as necessary.

NOTE: This change affects all place where plates can be viewed in ForeFlight, not just on the map.

Adjusting Transparency

To adjust the transparency of a plate on the map (in order to view or hide map features behind the plate), follow these steps:

1. On the map, tap the plate or the gear icon in its top-left corner.
2. At the bottom of the plate details, move the transparency slider left (transparent) or right (opaque) as necessary.

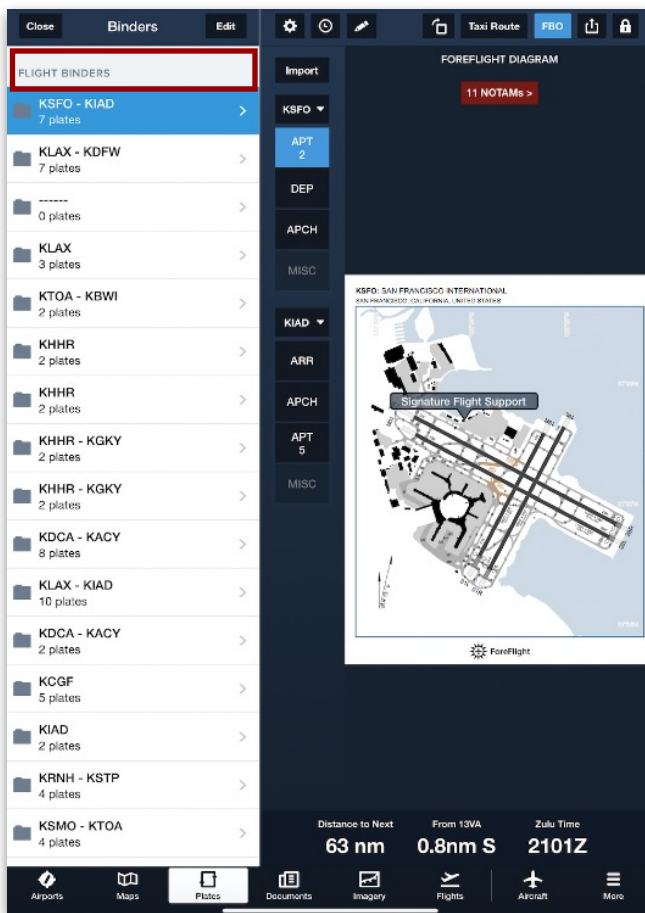
12. PLATES

12.5 Binders Drawer

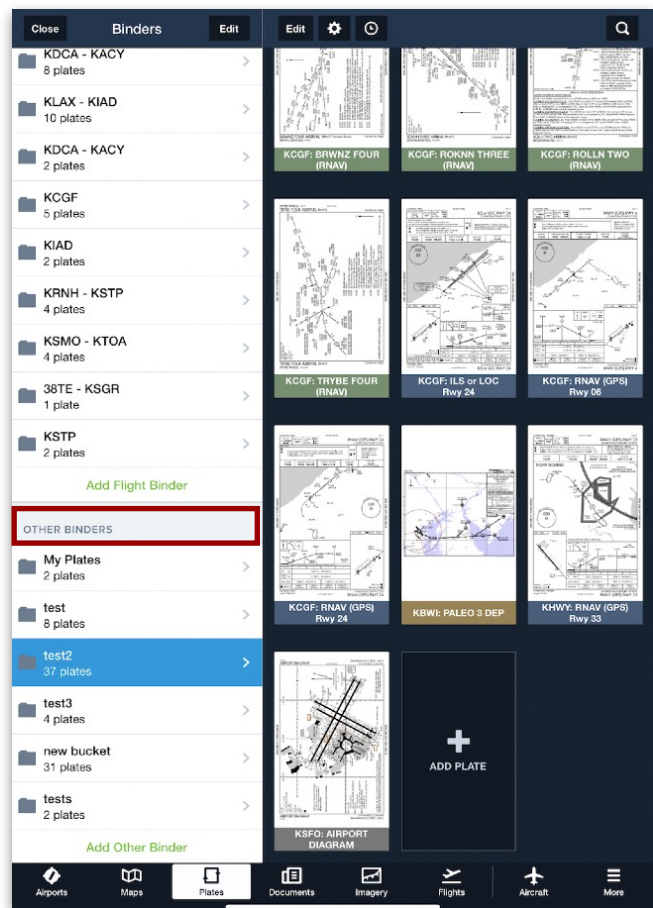
The Binders Drawer is used to manage the two types of binders supported in the Plates view:

- **Flight Binders** are used to organize plates for a specific flight.
- **Other Binders** are used for unstructured collections of plates.

Operations in the Binders Drawer include showing/hiding the drawer from the Plates view, and creating, opening, renaming, reordering, and deleting binders. These operations are described below.



Flights Binder

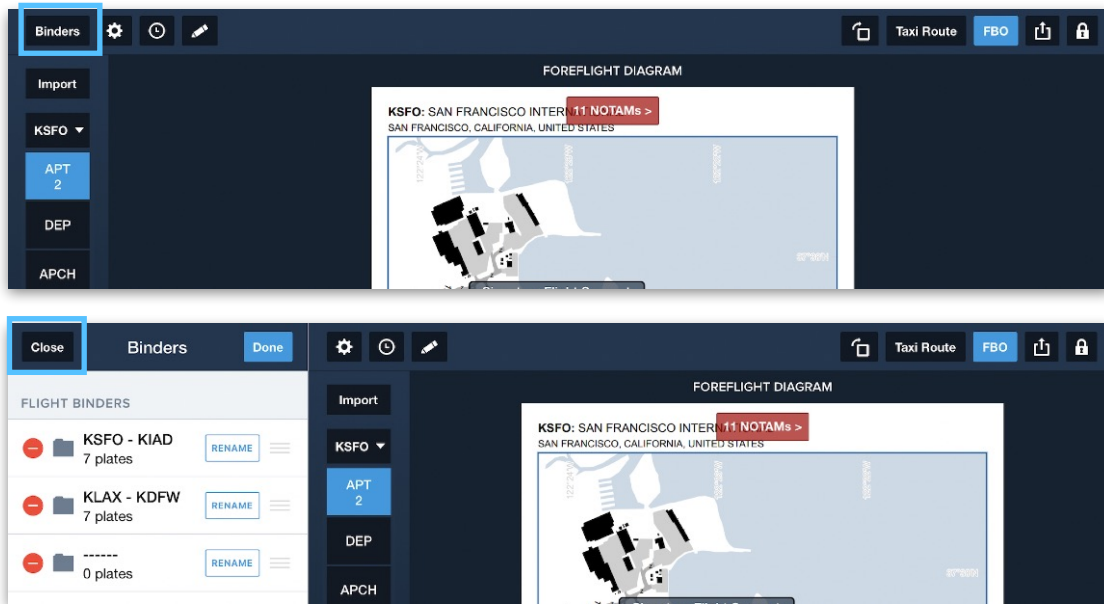


Other Binder

12. PLATES

12.5.1 Show/Hide Binders

The Binders Drawer can be opened or closed while working directly in the Plates view. To display the Binders drawer if it is not visible, tap **Binders**. The drawer will open as a sidebar on the left. To hide it, tap **Close**.

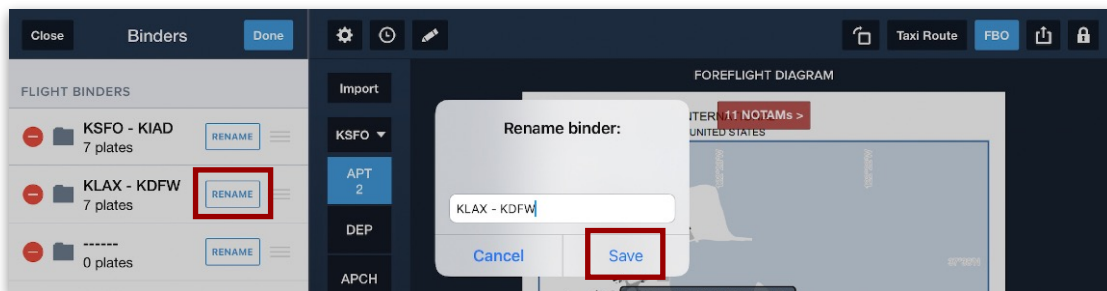


Opening and Closing the Binders Drawer

12.5.2 Renaming Binders

Flight Binders are named automatically based on their departure and destination airports. Empty Flight Binders have no name. Other Binders are named manually at creation. All binders can be renamed.

To rename a Flight Binder or Other Binder, tap the **Edit** button at the top of the Binders Drawer, then tap **RENAME** next to a binder to enter a new name. Tap **Save** to finish naming that binder, and tap **Done** to finish editing binders.



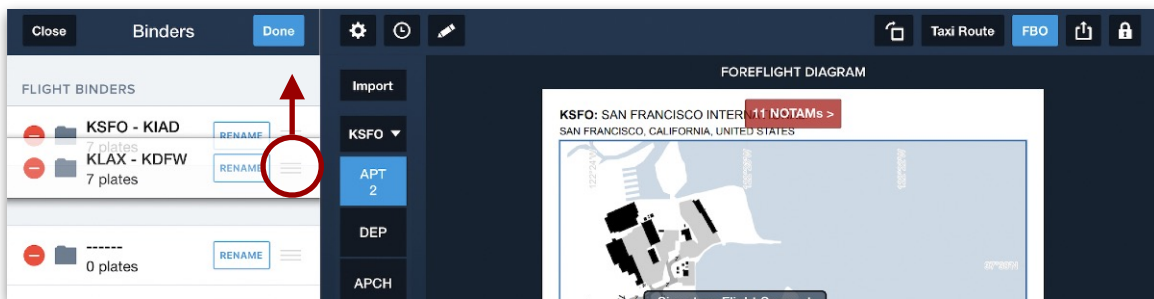
Renaming Binders

12. PLATES

12.5.3 Reordering Binders

Flight Binders are listed from newest to oldest, while Other Binders are listed from oldest to newest. Either list can be reordered by manually dragging each individual binder up and down within its own list.

To reorder a Flight Binder or Other Binder, tap the **Edit** button at the top of the Binders Drawer, then tap and hold the (≡) icon next to a binder to drag it to a different position in its list. Tap **Done** when finished.

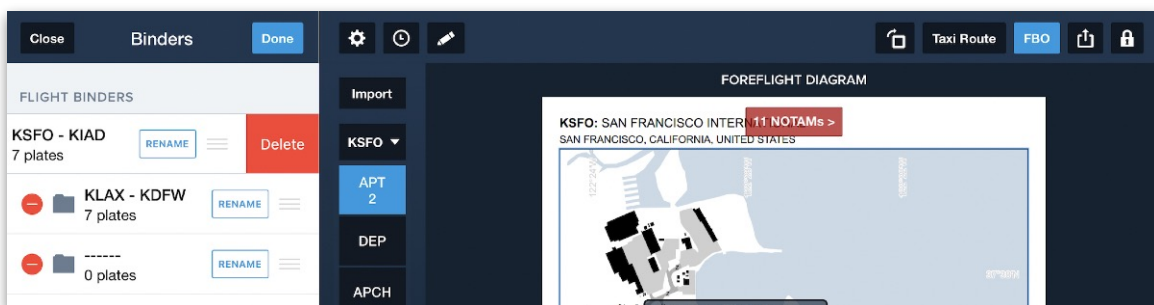


Reordering Binders

12.5.4 Removing Binders

Flight Binders and Other Binders do not actually contain plates. Instead, they contain references to plates stored on the ForeFlight device. Any binder can be removed without deleting the plates it references.

To remove a binder, tap the **Edit** button at the top of the Binders Drawer, tap the (-) icon next to a binder, and tap **Delete** to remove the binder (but not its plates) from the device. Tap **Done** when finished.



Deleting Binders

12. PLATES

12.6 Flight Binders

Flight Binders organize plates according to a specific flight for easy reference by pilots. They can be generated automatically from existing flights on the Maps or Flights views, or created using a blank template.

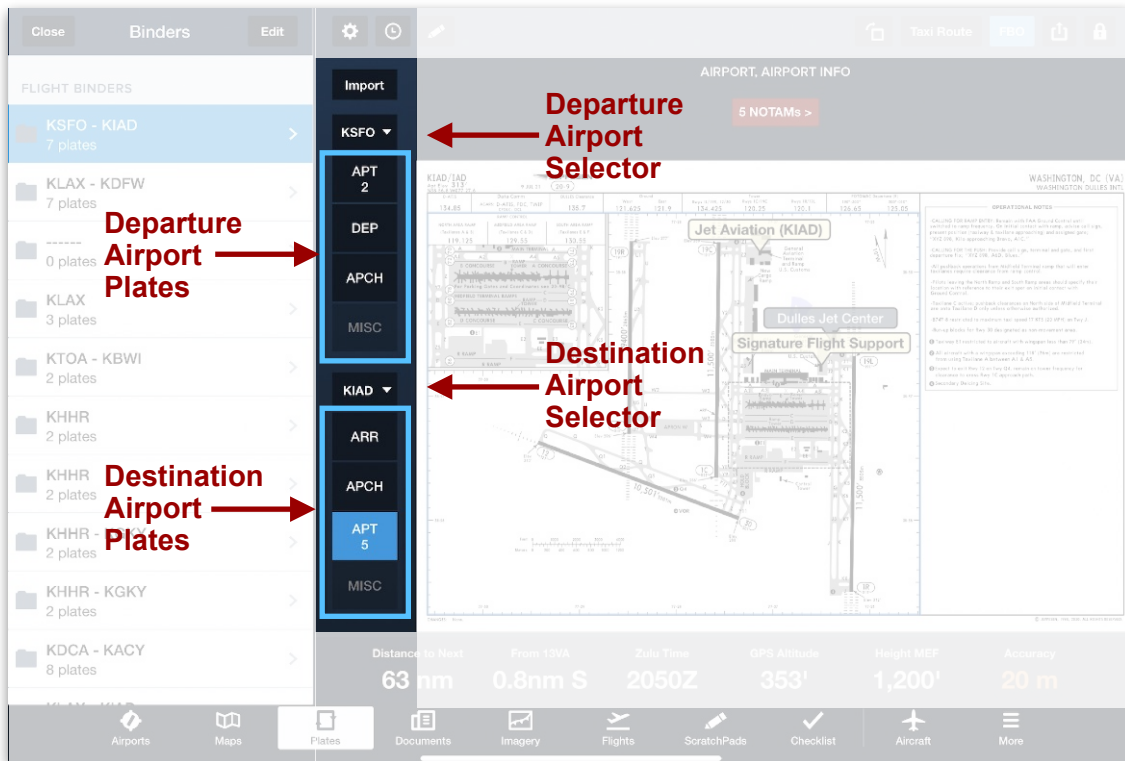
NOTE: Flight Binders do not sync between devices on an account.

12.6.1 Flight Binder Structure

Flight Binders group plates into departure airport and destination airport sections. Each section contains four folders where plates can be added.

- The **departure airport section** has folders for airport diagrams, departure procedures, return-to-base approaches, and miscellaneous procedures.
- The **destination airport section** has folders for arrival procedures, approach procedures, airport diagrams, and miscellaneous procedures.

An **airport selector** at the top of each group determines which plates that group can hold. A number under each folder indicates how many plates it contains. Folders without any plates have no number.



12. PLATES

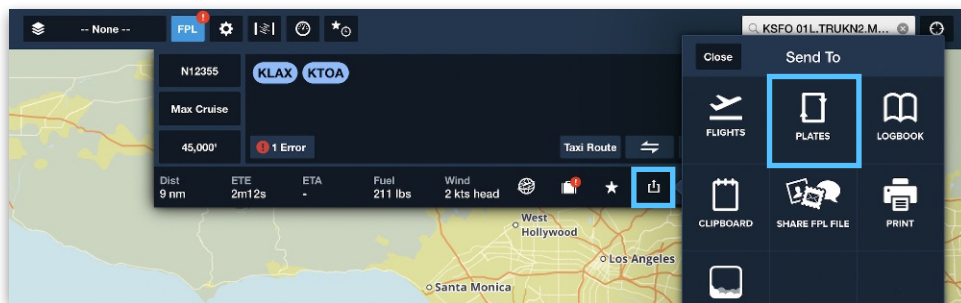
12.6.2 Creating Flight Binders

Flight Binders can be created in three ways. Click one of the following options to learn more:

- **Generate using the Maps view.**
- **Generate using an existing Flight.**
- **Use a blank template.**

Generating a Flight Binder From the Maps View

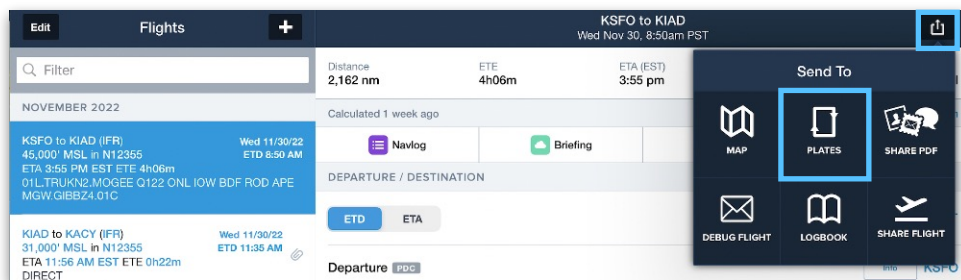
To generate a Flight Binder from the Maps view, use the FPL Editor to build a route with departure and destination airports. Use the **Procedure Advisor** to add departure, arrival, approach, or other procedures to the route. At the bottom of the FPL Editor, tap the **Send To** button and choose **PLATES** to send the route to the Plates view as a new Flight Binder.



Create Flight Binder from the Maps View

Generating a Flight Binder From the Flights View

To generate a Flight Binder from an existing Flight, navigate to the Flights view and tap any Flight to display its **Flight Planning Form**. At the top right corner, tap the **Send To** button and choose **PLATES**.

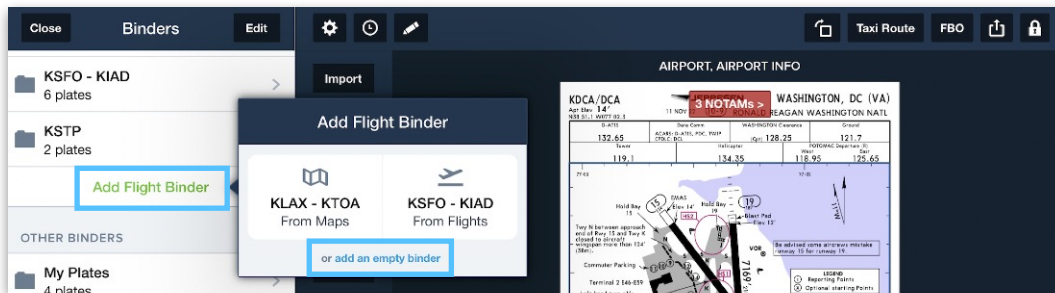


Create Flight Binder from the Flights View

12. PLATES

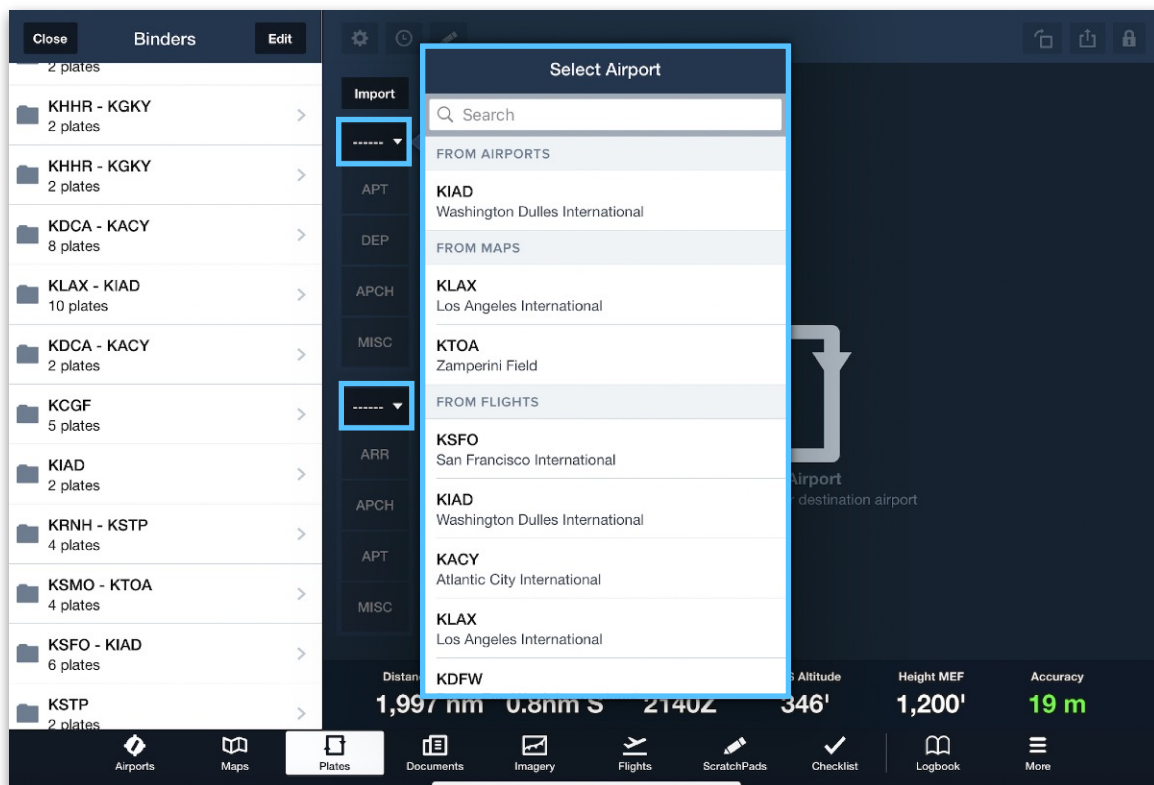
Creating a Flight Binder from a Blank Template

If no suitable map route or flight exists, an empty Flight Binder can be created. In the Plates view, expand the Binders Drawer and tap **Add Flight Binder**. In the Add Flight Binder window, tap a suggestion (from Maps and Flights) to create a full Flight Binder, or tap **add an empty binder** to generate a blank binder.



Creating an Empty Flight Binder

The new blank Flight Binder template can be used to manually **add airports and plates**.



Adding to an Empty Flight Binder

12. PLATES

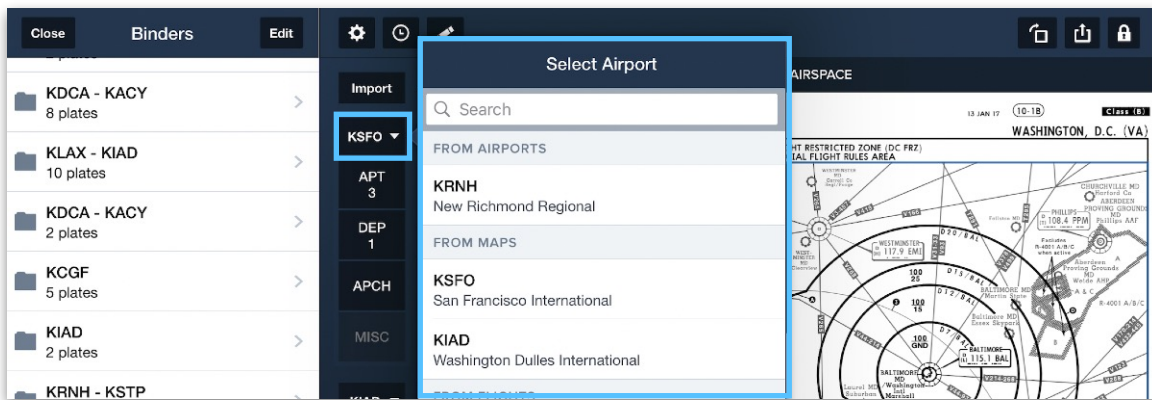
12.6.3 Adding, Removing, Viewing Plates

Whether a new Flight Binder is empty or populated with data from the Maps or Flights views, its contents can be managed in the following ways.

Selecting Airports

The Flight Binder includes two airport selection buttons. Each one is labeled with the currently selected airport's identifier (e.g. KSFO) or blank (-----) if no airport is selected.

While these two buttons are intended for the departure and destination airports, any pair can be selected. To add or replace the current airport, tap its button and use the Select Airport menu to choose a different airport. This configures the folders beneath it to display or download plates for that airport.



Selecting Airport

Opening a Plates Folder

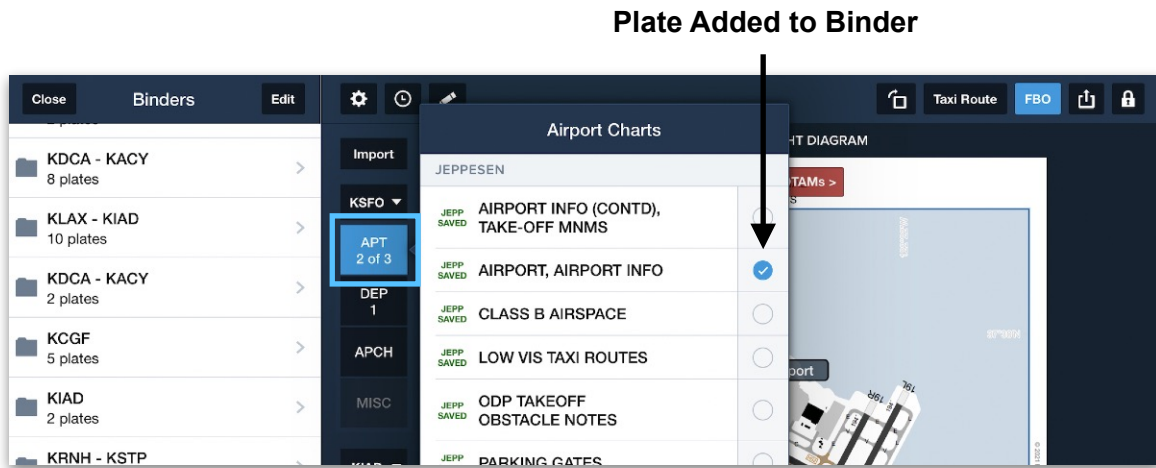
If an airport has been selected as described above, the four plates folders beneath each airport selection button can display or download that airport's plates. Folders display a number if they currently contain plates.

To see a list of added and optional plates for a given folder, tap an empty folder or long-tap (tap, hold, and release) a non-empty folder. In the list, Plates already added to the binder display blue checkmarks by their names.

12. PLATES

Adding, Removing, and Viewing Plates

To add a plate to the folder, tap the circle next to its name. Tap the blue checkmark next to a plate to remove it from the folder. To view a plate without adding it to a folder, tap the plate name.



Viewing/Adding Plates

12.6.4 Adding Alternate Airports

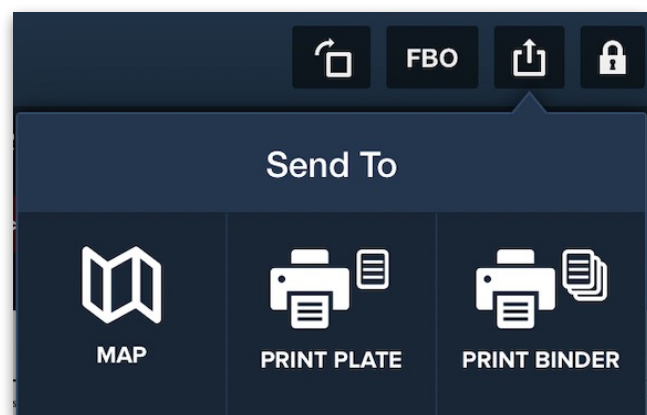
Due to the two-airport structure of a Flight Binder, there is no place to display plates for a third or additional airport (such as an alternate airport specified in a flight). However, additional airport plates can be added to the Flight Binder by reassigning one of the airport selection buttons to a new airport and then adding plates to the appropriate folders. Those plates will remain in the Flight Binder and can be displayed by toggling the airport selection buttons.

12.6.5 Printing Flight Binders

It is possible to print one or more plates from a Flight Binder, or the entire Flight Binder, in one operation.

Printing a Single Plate

To print the currently displayed plate, tap the **Send To** button in the Toolbar, select **PRINT PLATE**, and follow the prompts to choose print settings. Available settings vary based on the connected printer.

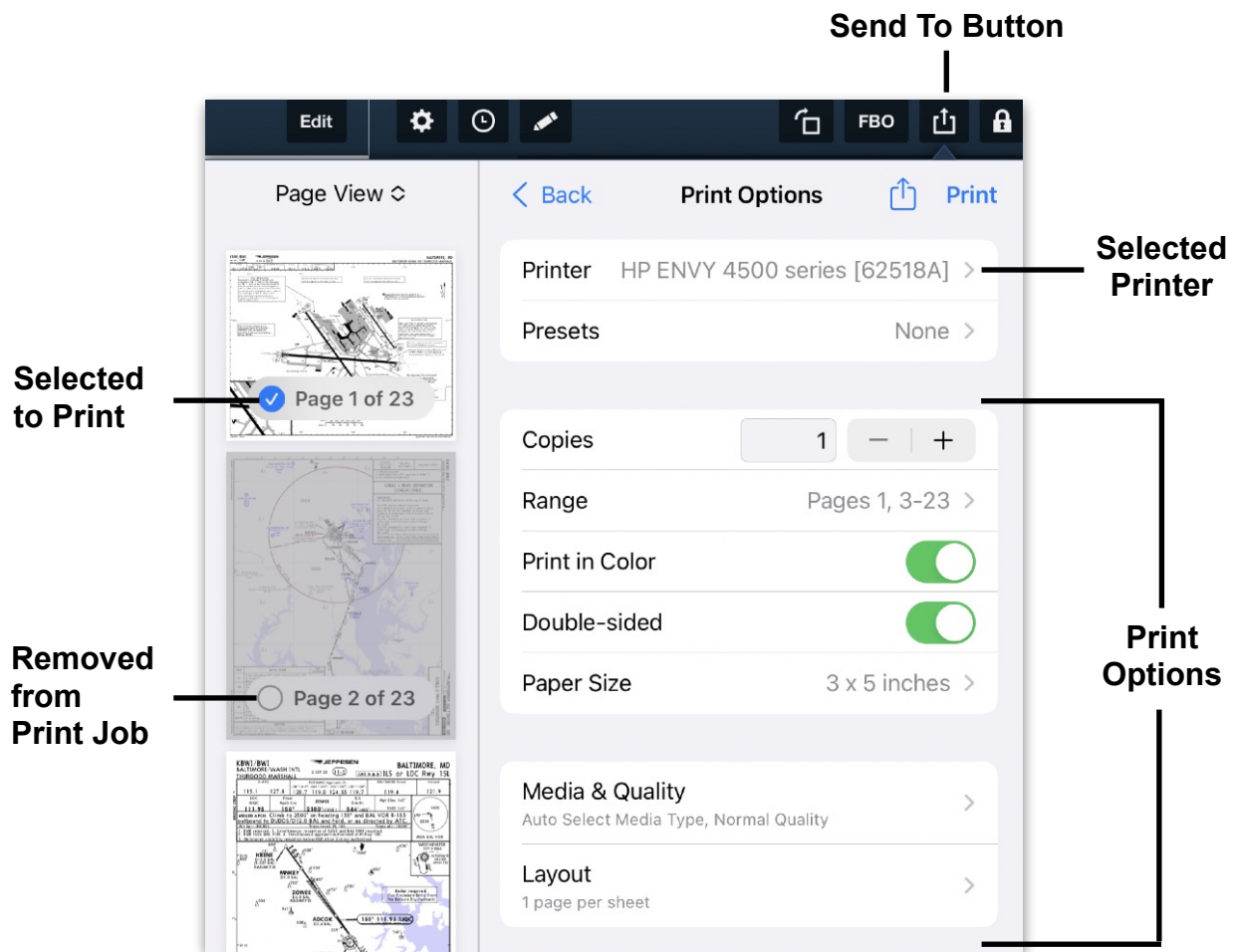


12. PLATES

Printing Several Plates or an Entire Flight Binder

To print an entire Flight Binder or several of its plates at once, follow these steps:

1. Open a Flight Binder, tap the **Send To** icon and select **PRINT BINDER**.
2. In the Print Options window, swipe through the print preview and remove any unwanted plates from the print job by tapping their blue checkmark.
3. Depending on the capabilities of the connected printer, change the layout as needed (e.g. print multiple plates on one page, or print on both sides of the page).
4. When print options are selected, tap **Print**.



Printing a Flight Binder

12. PLATES

12.7 Other Binders

While **Flight Binders** are restricted to a particular airport pair and structured according to the phase of flight, Other Binders are unstructured and can contain plates from a variety of unrelated airports.

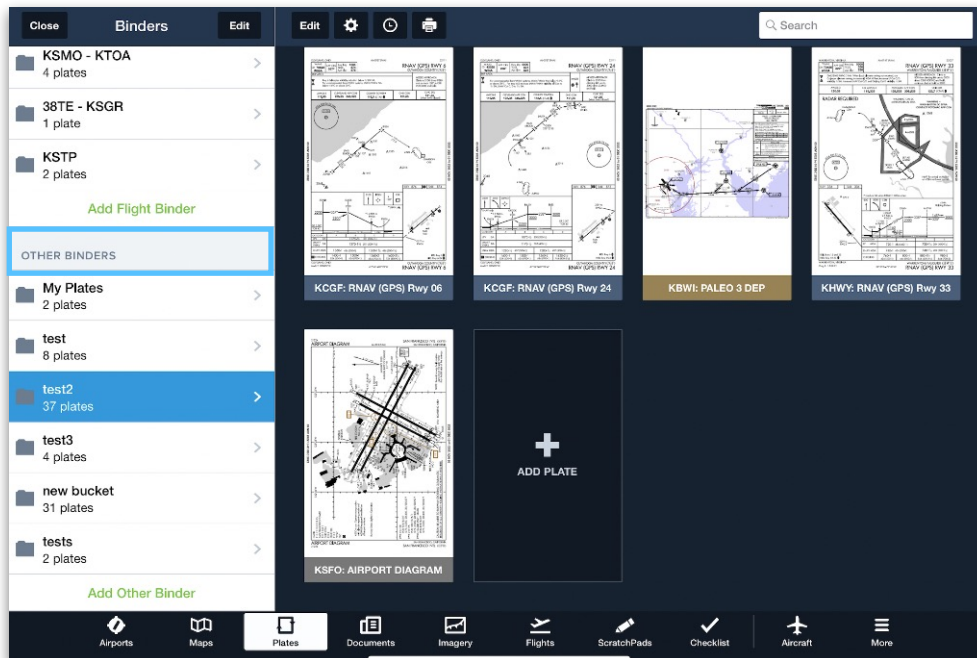
NOTE: Other Binders do not sync between devices on an account.

12.7.1 Other Binder Structure

The Other Binders structure displays a toolbar with a **Print** button, Search bar, a list of existing plates, and a button to **add plates**. When a plate is opened, **swipe with three fingers** left and right to switch between plates.

NOTE: The Search bar above the Other Binder is not specific to the Plates view. It displays airports, places, procedures, documents, and recent search results in the applicable ForeFlight view.

Plates inside Other Binders appear as large icons with filenames displayed in labels along their bottom edges. These labels are color-coded according to type: **Airport**, **Departure**, **Arrival**, **Approach**, and **Minimums**.

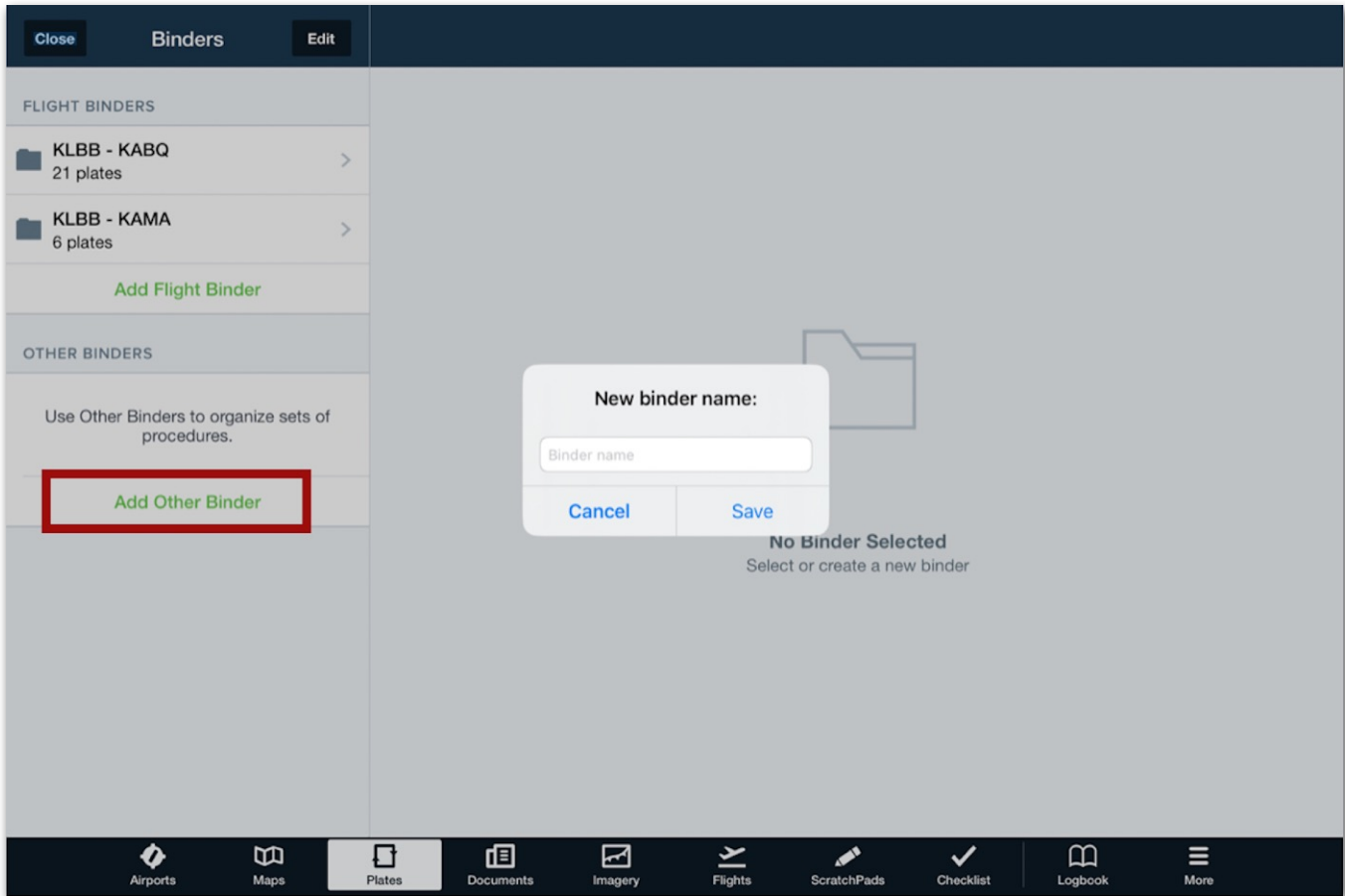


Other Binder Elements

12. PLATES

12.7.2 Creating Other Binders

To create an Other Binder in the Plates view, expand the **Binders Drawer**, tap **Add Other Binder**, and enter a name for the binder. The new Other Binder opens with a button to add plates.



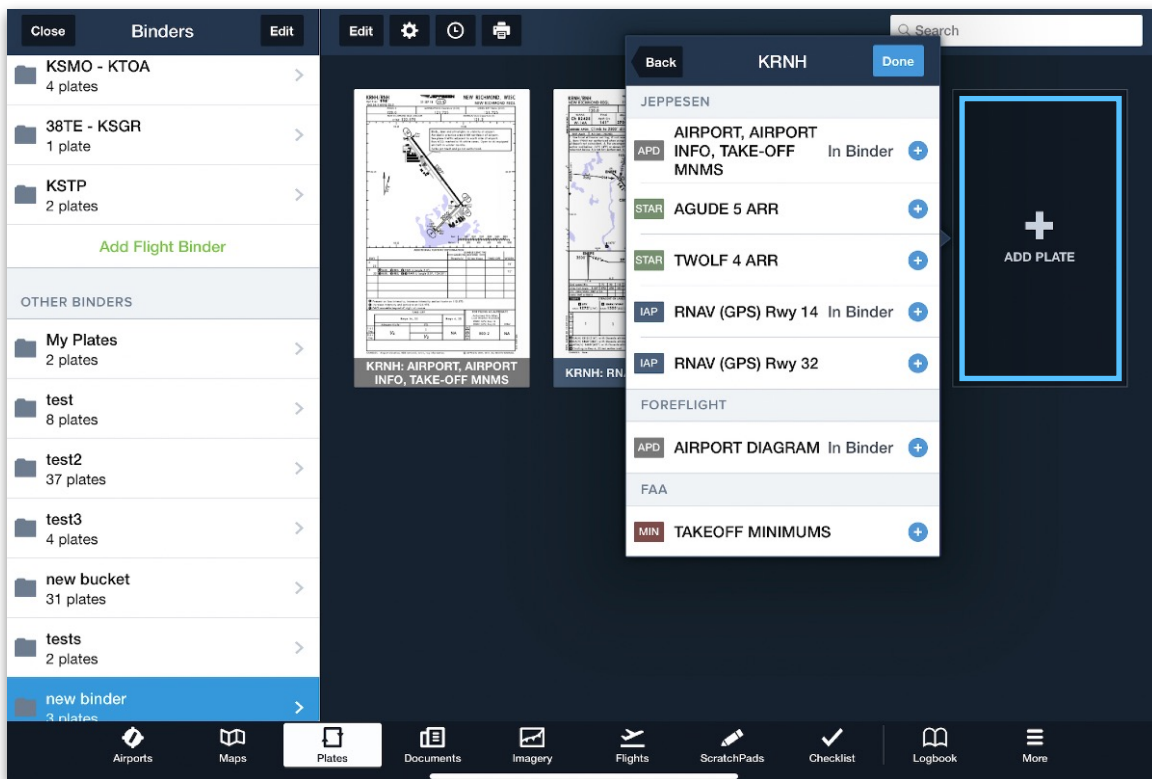
Creating a new Other Binder

12. PLATES

12.7.3 Adding Plates

To add plates to an Other Binder, follow these steps:

1. In the Plates view, expand the Binders Drawer and tap an Other Binder to display its contents.
2. In the Plates Viewer, tap **ADD PLATE**.
3. In the Select Airport window, use the search bar or ForeFlight-generated suggestions to select the airport, and then scroll through the list of that airport's plates.
4. Tap a plate name to display it without adding, or tap the plus (+) button next to its name to add it to the binder.
5. If a plate is already in the binder, the words "In Binder" are displayed next to the name. Adding it again creates a duplicate.



Adding Plates to Other Binder

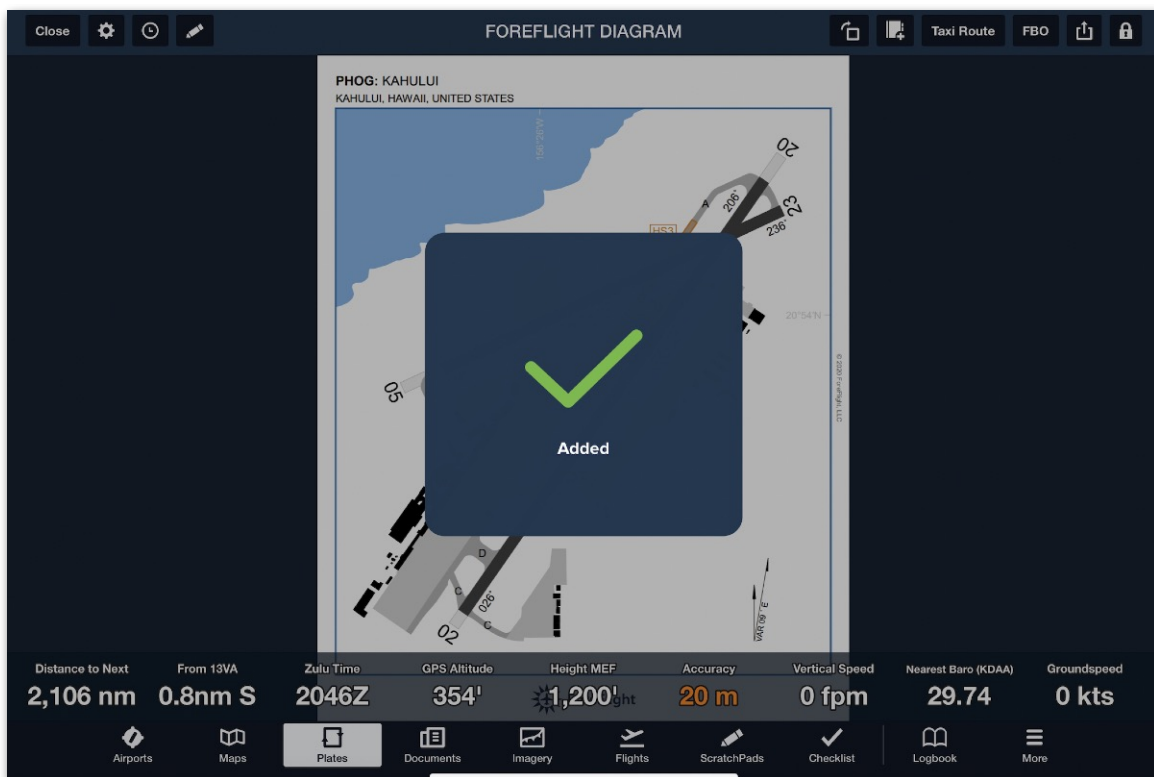
NOTE: Plates can also be added to a binder while working on unrelated tasks in ForeFlight. The next section describes how to do so by leaving an Other Binder "open" while working.

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12.7.4 Leaving a Binder Open

Plates can also be added to a binder while working outside the Plates view. To leave an Other Binder “open” and add plates to it while working in other parts of ForeFlight, follow these steps:

1. In the Plates view, expand the Binders Drawer and tap an Other Binder to display its contents.
2. With the binder *still open*, navigate away from the Plates view to complete other tasks in ForeFlight.
3. If a plate is opened while working in the Maps view, Airports view, or Flights view, tap the **Add to Binder** button (shaped like a folder). This button only appears if the Other Binder is still selected on the Plates view.
4. If the plate has already been added to the binder, confirm the prompt to add a duplicate. Since a binder only contains references to a plate stored on the device, each duplicate opens the same plate, and annotations applied to one plate affects its duplicate.



Adding Plates to an “Open” Binder

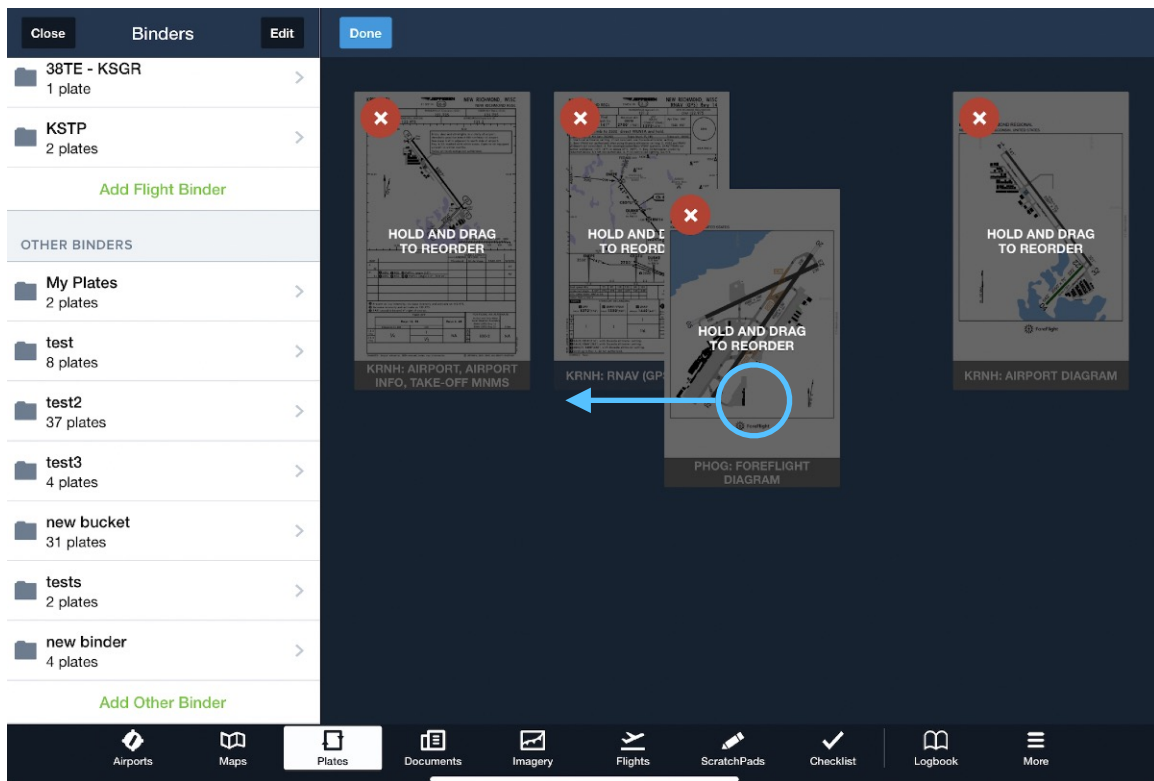
12. PLATES

12.7.5 Reorder Plates

To reorder the plates in an Other Binder, tap the **Edit** button in the Toolbar, and then hold and drag individual plates to their new positions. Tap **Done** when finished reordering.

12.7.6 Remove Plates

To remove plates from an Other Binder, tap the **Edit** button in the Toolbar, and then tap the red **X** on a plate to remove it from the binder. (There is no chance to confirm or cancel.) Tap **Done** when finished removing plates.

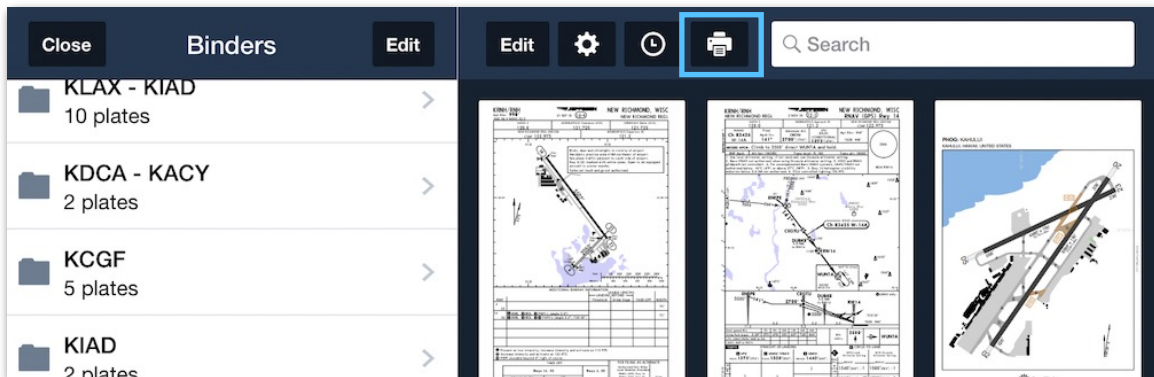


Reordering and Removing Plates

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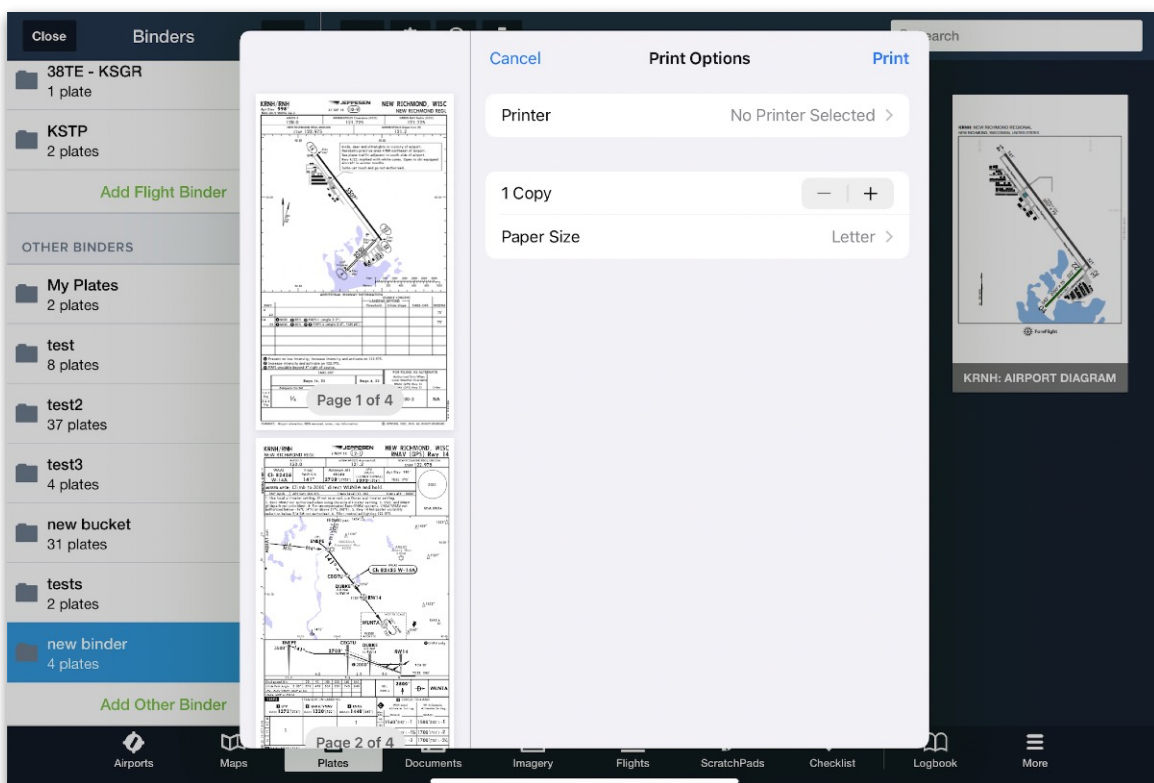
12.7.7 Printing Other Binders

Instead of **printing individual plates**, it is possible to print all of the plates in an Other Binder together. To do so, tap the **Printer** button in the Toolbar and follow the prompts to choose print settings.



Printing an Other Binder

Note that ForeFlight does not control printer settings or page sizes. This must be done using the iOS Printer Options.



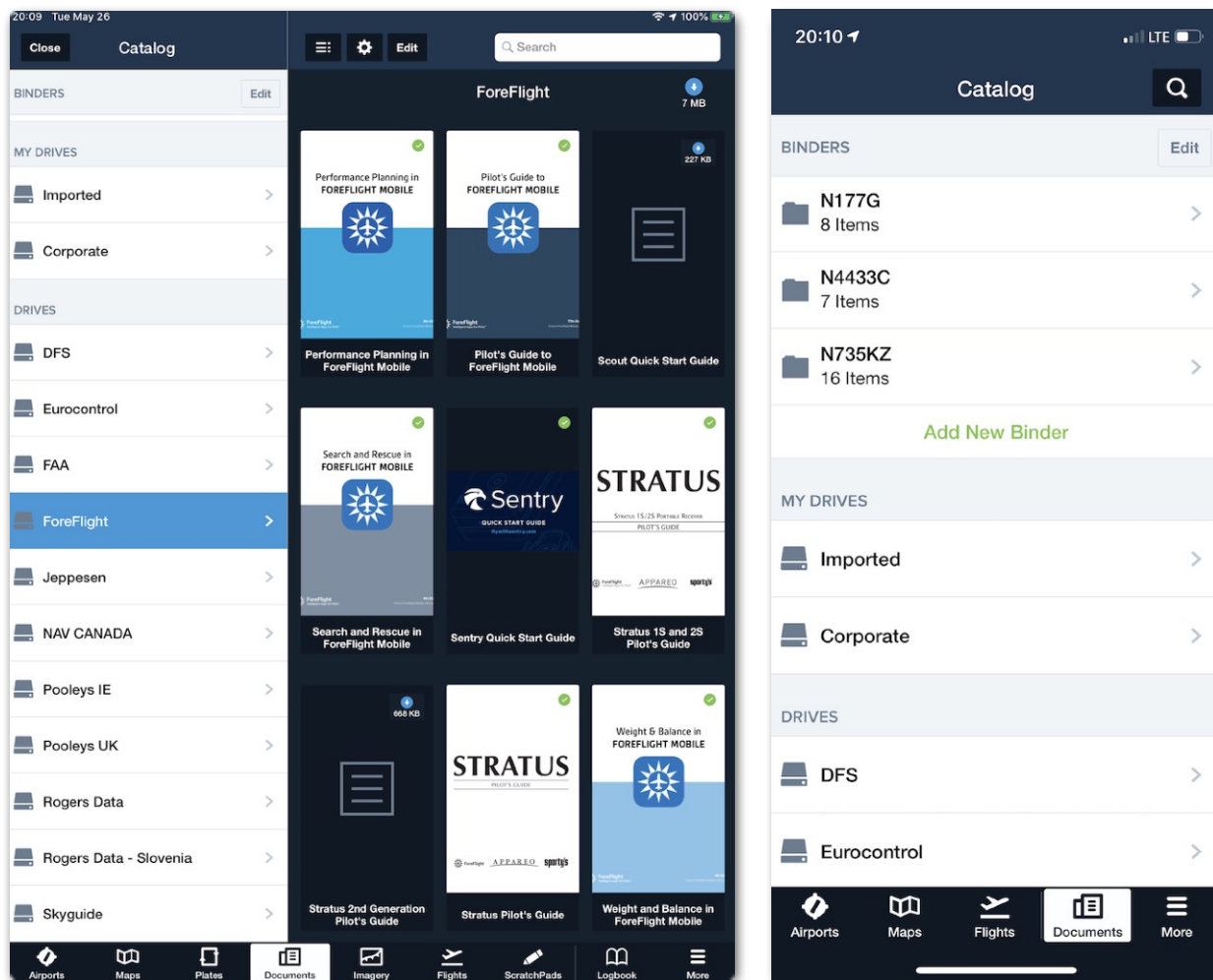
Selecting Printer Options

DOCUMENTS

The Documents view is used to download, import, view, and annotate PDF, image, Office (Word, Excel), Pages, Keynote, Numbers, and text documents. Documents, annotations, bookmarks, binders, and a document's position in a binder are synced across all of your devices.

13.1 Design

You can organize your documents into Binders, bookmark areas of interest inside of a document, and quickly switch between reading a document and other app views. Document titles are included in ForeFlight's unified App Search, so you can easily find and view documents from other app views.



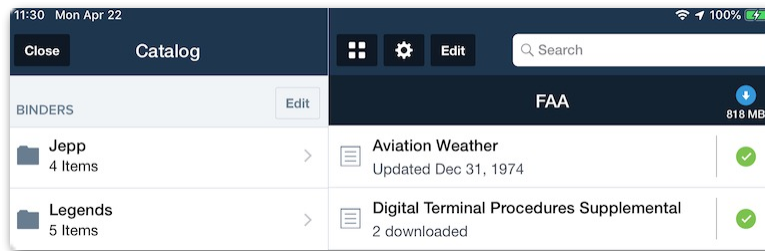
13. DOCUMENTS

13.2 Drives and Binders



Drives in Documents serve a dual purpose: as a place where you can both select which documents to download from published Drives such as ForeFlight, Australia, FAA, NAV CANADA, Eurocontrol, etc., and also where you can view and open those documents after you download them.

Binders are a folder that you create to compile and group documents you want to keep together. Binders can contain documents from any drive, and you can adjust the order of documents within the binder.

In the iPad the Catalog (Binder/Drive) view is automatically shown the first time you open the Documents view. Tap **Close** to hide the catalog and **Catalog** button to re-open it.



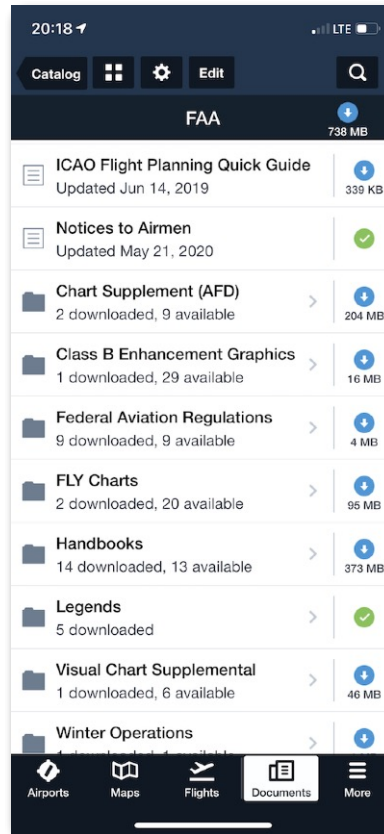
In the iPhone the Catalog view is always shown, and you can navigate into a Drive or Binder, then back to the Catalog view using the **Catalog** button in the upper-left.

Tap the “List/Binder” button   at the top of the Documents view to switch between a condensed list view that shows each document’s name (plus any relevant date ranges), and a tiled view showing a thumbnail of each document.

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13.2.1 Folder Structure

Drives also support nested folders, allowing you to download documents individually, or to select the entire folder for download by tapping the blue download button to the right of the folder name or the corner of its thumbnail.




ForeFlight supports a wide range of file types for importing and viewing in Documents: pdf, tiff, tif, jpg, jpeg, gif, png, bmp, bmpf, txt, doc, docx, xlsx, xls, pptx, ppt, csv, pages, key, and numbers.


Cloud Document Drives (eg: from a connected Dropbox, Box, or Amazon S3 cloud storage account) continue to support nested subfolders. Cloud Document Drives are available with Pro Plus plans and above.



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13.3 Downloading and Opening a Document

Tapping a document title or thumbnail will cause it to be downloaded (if it's not already on your device) and then open. The  icon next to a document title or thumbnail indicates that the document has been downloaded and is already in the current Drive or Binder.

If you download an individual document in a Drive on one device, it will not automatically show on the other device. However if you add that document to a Binder it will show up as ready to be download on the other device. Tap the document on the 2nd device to download it.

Tap on a folder to view its contents, and tap on the **Download All**  button to the right of a folder name (or in the upper-right of the thumbnail) to download all documents in the folder.

To delete all documents from a drive (which shows the green check  indicating that Drive-level automatic downloads are active or all current documents are downloaded), tap "Edit" then tap the large X button: . Then tap "Done" when finished.

13.4 Automatic Document Updates

When you download an entire Drive or folder using the blue "Download All" button, ForeFlight will automatically download updated versions of existing documents and new documents that are added to the drive or folder. If you only download individual documents from a Drive or folder, or if you first "Download All" but then remove a document, ForeFlight will keep the downloaded documents up to date when new versions become available, and new documents added to the Drive or folder will show in the list but will not be automatically downloaded.

13. DOCUMENTS

13.5 Creating and Managing Binders

Because of the introduction of Drives you no longer have to create a Binder to store your downloaded documents. However you still can add Binders to easily group documents from different Drives.

To create a new Binder, tap the green “**Add New Binder**” text at the bottom of the Binder list. Or when viewing a document, tap the “Binders” button, then tap the “+” and enter the new binder name.

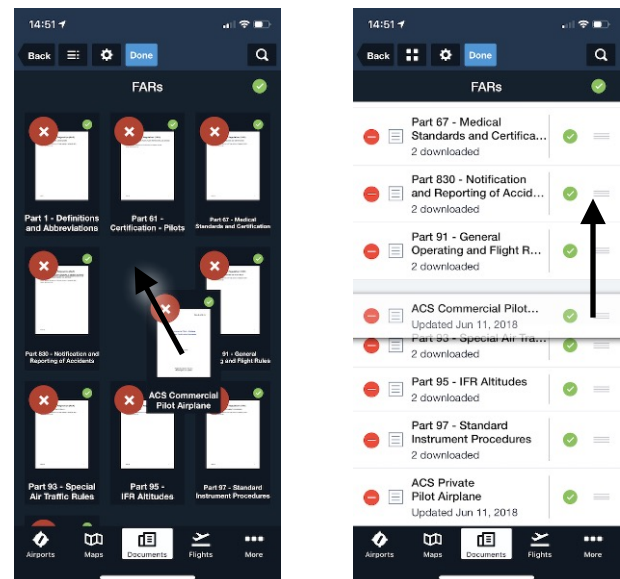


A Binder created on one device is automatically synced to your other devices, and if you change that Binder’s name **or delete it from one device**, that change is also automatically synced to your other devices. But because documents are stored in Drives, deleting a Binder does not delete the documents it contained.

13.5.1 Organizing Binders

Binders appear in the list in alphabetical order, and documents initially appear in a Binder in the order they were added. You can organize individual documents within a Binder by tapping the “Edit” button, then touch-dragging the thumbnail or the stacked-line “handle” to position the document.

Tap “Done” when you have finished moving documents.



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13.6 Deleting a Document

You can delete a document in several ways, depending on the view.

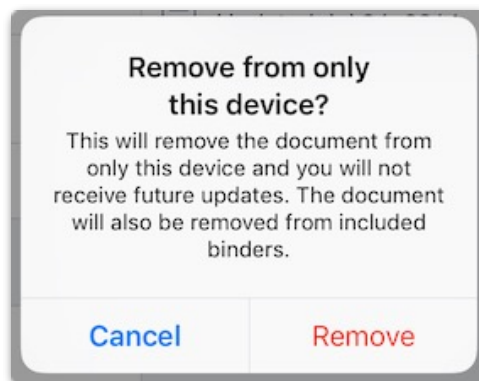
In List view swipe-delete (swipe your finger from right to left, then tap the red “Delete” button) or tap Edit, then tap the red circular button followed by the red “Delete” button.

In Thumbnail view, tap “Edit” then tap the red “X”.

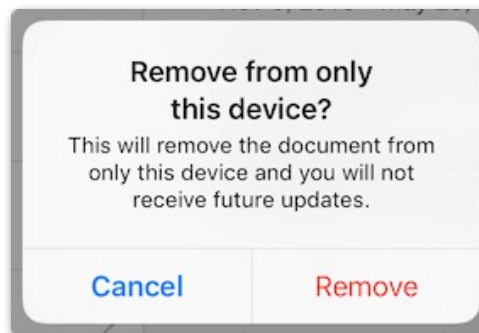
If you delete a document from a Binder it will be immediately removed from the Binder on all devices. **However the document will still be on the device, accessible in the source Drive.**

However if you delete a document from a Drive a pop-up will appear, depending on whether or not the document is already stored in a Binder. Once you tap “Remove” the document will be removed from the Drive and any Binders.

If the document is in a Binder, you will see this pop-up:



If the document IS NOT in a Binder, you will see this pop-up:

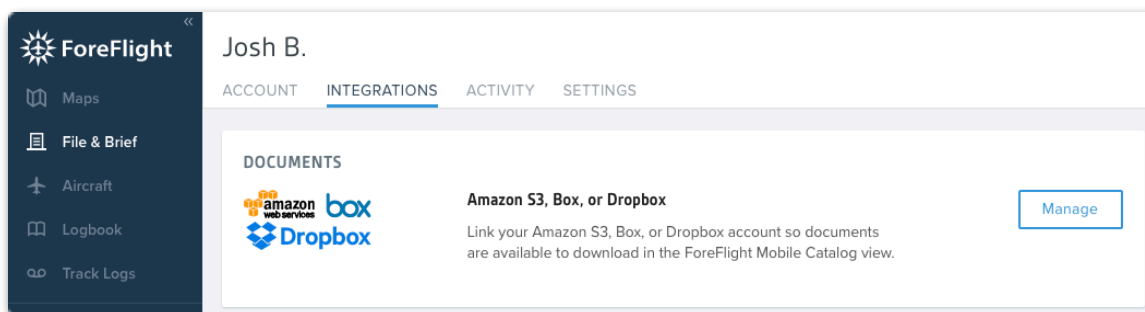


13. DOCUMENTS

13.7 Cloud Document Syncing

If you have a ForeFlight Pro Plus, Performance Plus, Business Pro, or Business Performance subscription, you can link your ForeFlight account to a Cloud storage provider such as Dropbox, Amazon S3, or Box account (free or paid) to synchronize PDF, image, Office (Word, Excel), Pages, Numbers, Keynote, and Text documents.

To link an account, sign-in to <https://plan.foreflight.com/account> and click on the Integrations tab, then click “Manage.”

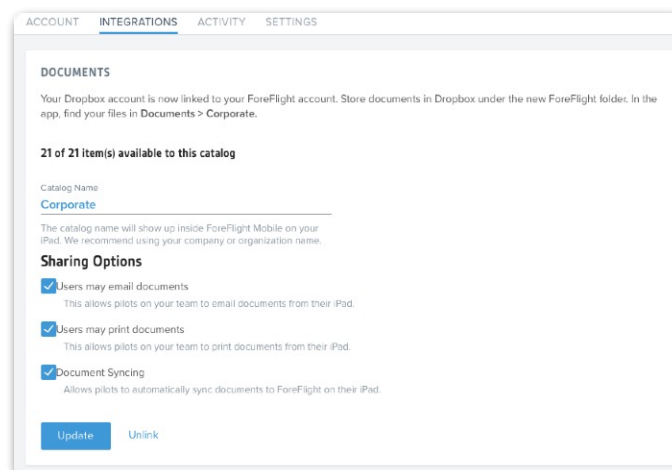


Click the “Connect” button (which shows if there is not yet a connected account) to link your document storage account to your ForeFlight account.

IMPORTANT: When linking your cloud drive, DO NOT USE any of the following as your Catalog name, or as a sub-folder name inside the main folder: “ForeFlight”, “FAA”, “NAV CANADA”, “Eurocontrol”, “Australia”, “Imported”, or “Jeppesen”.

If your ForeFlight account has already been linked, click the “Manage” button to manage the Catalog name (which is the name of the Drive shown in the app), manage default Syncing behavior, or to un-link the account.

Once you link your Cloud Drive account to your ForeFlight account, any compatible documents you place in the appropriate folder on your computer are automatically shown in the ForeFlight Documents tab under the corresponding Drive (which is named whatever you entered in the “Catalog Name” field). If Document Syncing is checked, when a new device signs-in it will be “subscribed” to the Cloud Drive and all of the Cloud Drive documents will be automatically



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downloaded to that device. If “Document Syncing” is not checked, when a new device signs-in it will see the list of available documents, but none will be downloaded automatically.

13.7.1 Cloud Document Folder Structure



NOTE: These folder locations are created automatically when you link your account to your ForeFlight account.

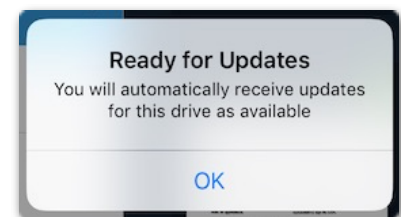
- Dropbox: /Dropbox/Apps/ForeFlight
- Box: /Box Sync/ForeFlight




Amazon S3: folder is selected at the time of account linkage

Any changes or updates you make to a document in the Cloud Drive folder on your computer will be automatically appear in the available document list in the Cloud Drive in ForeFlight Mobile, and by default any new documents you add to the Cloud Drive folder will download automatically in ForeFlight Mobile.


13.7.2 Automatic Downloads

To download ALL listed documents into the Cloud Drive in the app, tap the blue “Download All”  button in the upper-right corner. The button will change to a green check  indicating that Cloud Drive-level automatic downloads are active, so new documents added to the Cloud Drive will show in the available document list and will be automatically downloaded.



NOTE: It is possible to have downloaded all documents in a Cloud Drive (so the green check  shows in the upper-right) but to not have the Cloud Drive-level automatic downloads active. This means any documents added to the Cloud Drive in the future would be shown in the list but would not be automatically downloaded. If that happened, the “Download All” would again turn blue after the document(s) were added . Tap the green check  to confirm the Cloud Drive-level automatic downloads are active.

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On an individual device, swipe-delete a document or folder in the Cloud Drive to remove it from the device. **Removing a document or folder will disable the Cloud Drive-level automatic downloads for that device**, so new documents added to the Cloud Drive will show in the available document list (along with the blue “Download All”  button in the upper-right corner) but will not be automatically downloaded on that device.

Whenever new documents are added to your Cloud Drive folder, ForeFlight Mobile will briefly display a red dot with a number in it on the corner of the More tab, and on the Downloads view. Once the document downloads automatically, the red dot will disappear.

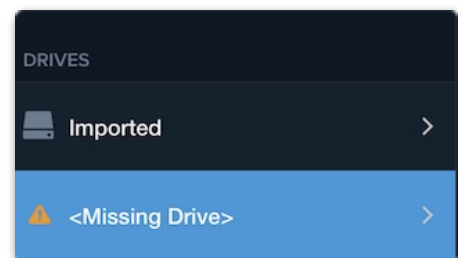
13.7.3 Downloading Individual Documents



To download individual documents into the Cloud Drive, tap on the Documents tab, then tap the Cloud Drive. Then tap on the thumbnail or title of the document that you wish to download.

After a document is removed from the Cloud Drive folder your computer, it will also be automatically deleted from any devices that have downloaded it the next time the devices connect to ForeFlight’s servers via the Internet. The removed document will be deleted from both the Cloud Drive and from any other Binders where the document(s) had previously been saved.

13.7.4 Missing Drive

If the Cloud Drive account is un-linked from your ForeFlight account, all Cloud Drive documents are retained on the devices that had downloaded them in a Drive called **<Missing Drive>**. The documents will remain on the iPad until they are either deleted by the pilot, or the pilot signs-out of their ForeFlight account on the iPad. Signing-out removes all synced documents.



To delete all documents from a Cloud Drive on the device, first tap the blue “Download All”  button or the green check  in the upper right. Then tap “Edit”, and finally tap the large red “X” button. If a Cloud Drive account is un-linked but then re-linked with a different Catalog Name than before, a new Cloud Drive name will be created on all signed-in iPads.

13. DOCUMENTS

13.8 Importing Documents

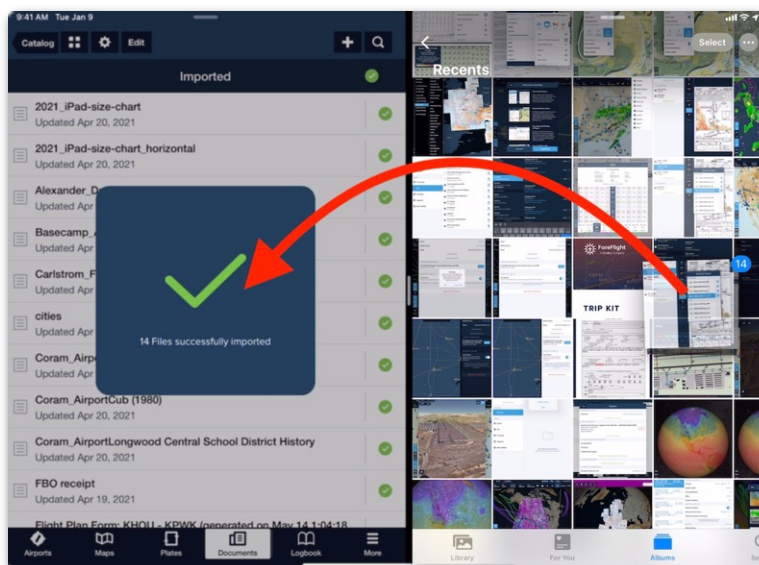
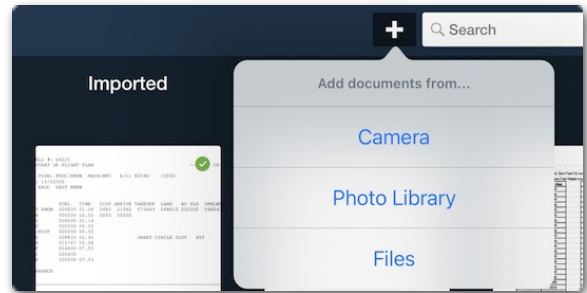
To import documents from Files, tap the **[+]** button in the upper toolbar. When the pop-up is open, tap the circular Options button in the upper-right of the pop-up and choose “Select”. Then select the documents and tap “Done” to import. ForeFlight supports pdf, tiff, tif, jpg, jpeg, gif, png, bmp, bmpf, txt, doc, docx, xlsx, xls, pptx, ppt, csv, pages, key, and numbers.

Very large image files or PDF files containing scanned images may open slowly, especially on earlier iPad models. The maximum individual imported file size is 500MB.

On iPad you can also drag-and-drop files from other apps that support the gesture into the Imported Drive by opening both apps in split screen and dragging files over to the Imported Drive in Documents in ForeFlight Mobile.

Select multiple documents for simultaneous import by “stacking”: in the other app, touch-hold on the first document, then while holding the finger that document, tap other documents with a different finger.

The drag-and-drop workflow (including the “stacking” gesture for multiple files) also works within any Document Drive to add documents or entire folders to a custom binder. Drag the documents and/or folders over any binder in the Catalog on the left and release to add them to the binder, or drop them on the green “Add New Binder” button to create and name a new binder containing the selected items.

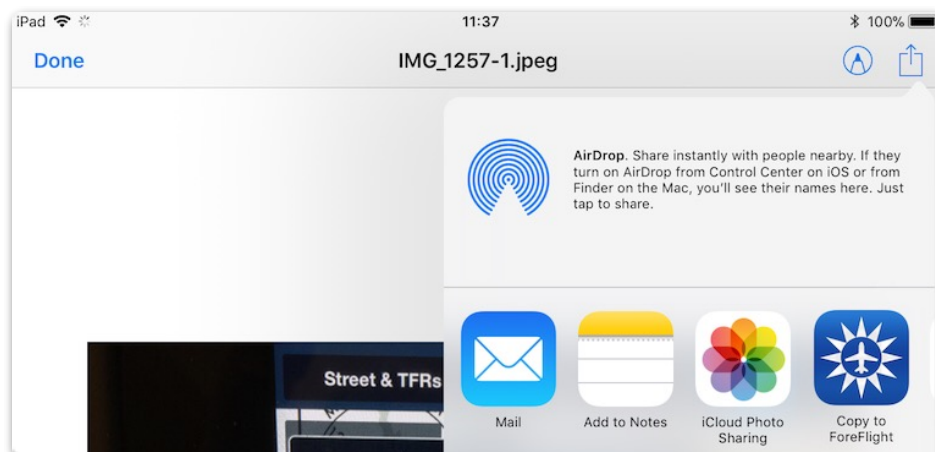


13. DOCUMENTS

13.8.1 Importing Documents from iTunes or other Apps

You can import documents using iTunes, or from other apps including but not limited to Safari, Mail, Dropbox, and Gmail. Imported documents are all saved in the “Imported” Drive.

- Importing from iTunes - Plug your iPad into your computer using the Apple USB cord and start iTunes on the computer. Inside iTunes, click on the name of your iPad under the Devices listing on the left. On the right pane, click the Apps tab at the top. Scroll to the File Sharing section at the bottom of the page and click on ForeFlight. On the right, you will see a table titled ForeFlight Documents. Drag and drop your files onto this table. While the files are copying over, you will see a brief Sync in Progress message on your iPad. After the copying has completed, launch ForeFlight Mobile and tap on the Documents tab. The imported Documents appear in the “Imported” Drive. After a file is imported, it will disappear from the iTunes listing.
- Importing from Mail (email) - tap the attachment to open or view it, then tap the “Send-to” button, then scroll right in the row of apps and tap “Copy to ForeFlight”. Or touch-hold on the attachment (such as a PDF) then scroll right in the row of apps and tap “Copy to ForeFlight.”



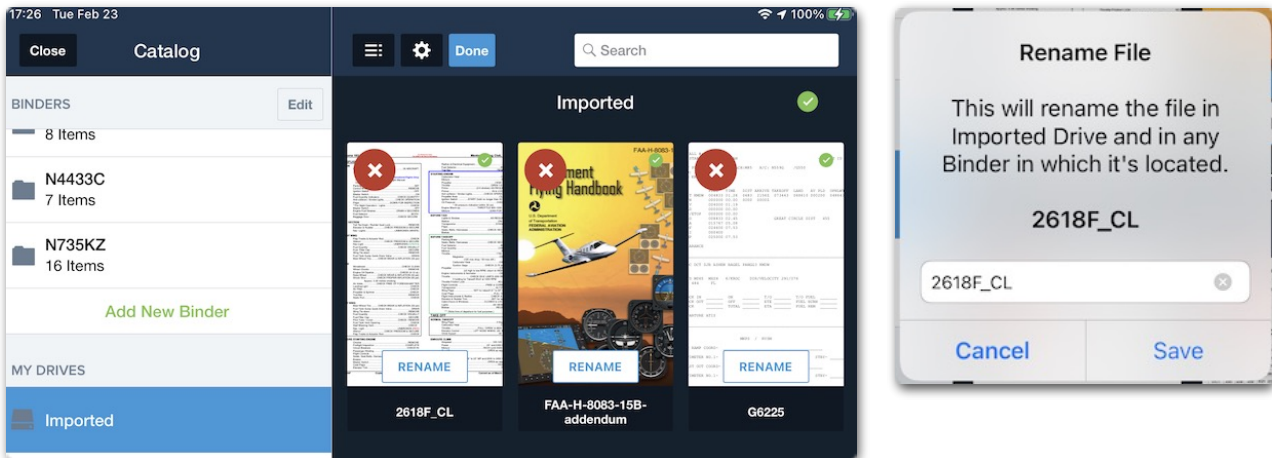
- Importing from Dropbox app - open the Dropbox app, tap the file, tap the 3-dot “menu” button in the upper-right, then choose Export. In the bottom row of options, choose “Open In...”. Scroll right in the row of apps then tap “Copy to ForeFlight”

13. DOCUMENTS

If a document does not import, make sure it is a supported file format. After a document is imported, it is always added to the Imported Drive. To also add an imported document to a Binder, open the Document, tap the **Binder** button at the top right, and select one or more Binders from the list.

13.8.2 Renaming an Imported Document

Documents directly imported to ForeFlight Mobile can be renamed from the Drive view by tapping the “Edit” button at the top of the page, then tapping the “RENAME” button on the document. Enter the new name then tap “Save”.












Renaming an imported document will update its name in both the Imported drive, as well as any other Binders to which it has been added.

13. DOCUMENTS

13.9 Viewing a Document

Tap any document thumbnail to open it. The document viewer supports standard pinch and expand zooming, and panning touch gestures. Swipe left and right with a single finger to change pages. You can close the document by pinching (zoom out gesture) from the view on any page and you can open a document by expanding (zoom in gesture) from the Drive or Binder view.

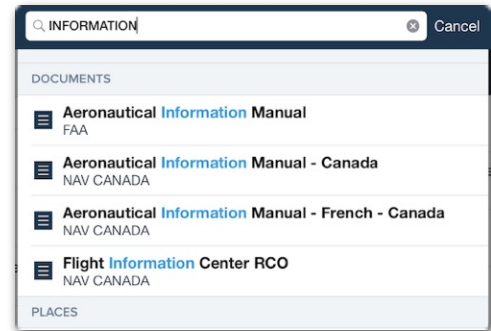
Tap once on a document page to bring up the toolbar at the top and page scrubber at the bottom. Tap again on the document to hide these overlays.

	Settings: shows the screen brightness slider, and the Invert Document Colors switch for better low-light viewing of documents.
 	Toggles between full page view and thumbnail view, which shows a thumbnail for each page in the document. This button is only shown for PDF documents.
	Display the Annotation menu. This button is only shown for PDF documents
	Add the current document to an existing or new Binder
	Search/Contents/Bookmarks. Search for text in the document, Show the Table of Contents, and show Bookmarks
	Bookmarks a page in the document. This button is only shown for PDF documents.
	Shows a menu for Printing or Emailing a document. Emailing is not available for certain copyrighted document catalogs.
	Disables touch interaction (zooming and scrolling), which minimizes the risk of accidental closure when in turbulence. The lock button can also, optionally, disable all buttons on the screen, including those that change views. That feature is configured in Settings (“Lock Disables Buttons”).


13. DOCUMENTS

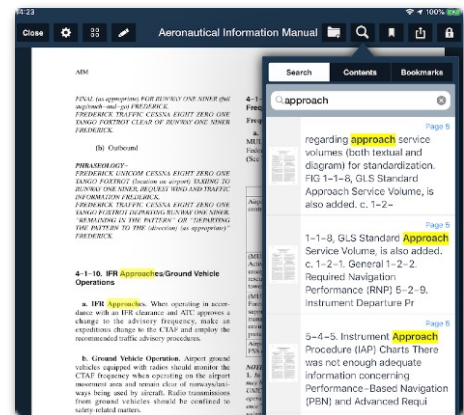
13.10 Searching for a Document

ForeFlight Mobile’s unified App Search allows you to search for document titles across the Documents as well as Airports, Maps, and Plates tabs. When searching on the Documents tab, Document title matches show up as the first category in the results. When searching on other tabs, scroll down to find Document results. To search text inside a PDF document, open the document and tap the search button (see below).




13.10.1 Searching in a Document

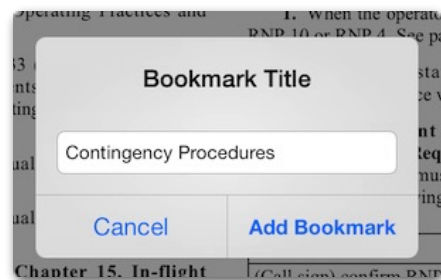
Tap the Search button  to display the search box, then enter your search term(s). All matches will be shown in the scrollable expanding list. Tap the entry to jump to the desired page, where the search term(s) will be highlighted in yellow.



13.10.2 Bookmarks

While viewing the page you would like to bookmark, tap the Bookmark button  then enter the name you would like to give the bookmark and tap the “Add Bookmark” button. View all bookmarks for the current document by tapping the “Search” button and choosing the Bookmarks filter.

To remove a bookmark, tap the “Search” button, choose the Bookmarks filter, then swipe-delete the bookmark you want to remove: swipe your finger across the title, then tap the red “Delete” button. Or you can tap on the bookmark you want to remove to change to that page of the document. When that page is displayed, tap the bright-blue Bookmark button to remove the bookmark.



13. DOCUMENTS

13.11 Ensuring Your Documents Don't Expire

When a new version of a document is available, a red badge will appear on the app icon and there will be a new item in the Downloads view. Tap the blue **Download** button at the bottom of the Downloads view to download the latest documents, along with any other data updates that are available.

Documents from providers such as the FAA, NAV CANADA, Eurocontrol, and Airservices Australia that are updated on a regular 28-day or 56-day cycle will be available for download a few days before the document expires. Once the new version of a downloaded document becomes effective, any old, expired versions will be deleted from your device.

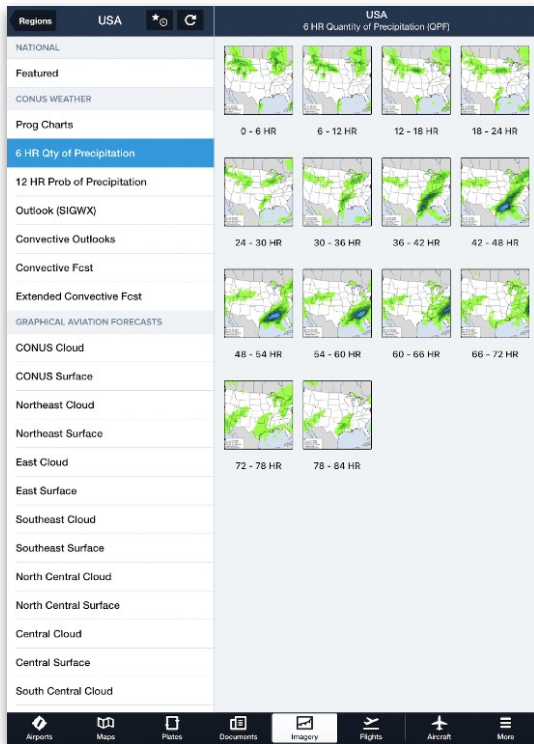
IMAGERY

The Imagery view displays regularly updated graphical weather reports and forecasts that pilots can use to supplement their flight planning. It is available to all ForeFlight plan holders and requires an active internet connection. Imagery cannot be packed, nor can it be received over ADS-B.

14.1 Design

The Imagery view can display in one of two modes: Navigation (with a sidebar and a thumbnail image pane) or Full-Screen Image. Each mode is summarized below and described later in this chapter:

- **Navigation** mode is for choosing a global region and sorting through its list of image sets, managing favorite and recent images, and refreshing image data.
- **Full-Screen Image** mode displays when a thumbnail is tapped. Images respond to swiping and other standard touch-screen gestures, allow printing and sharing, and can be marked as favorites.



Navigation

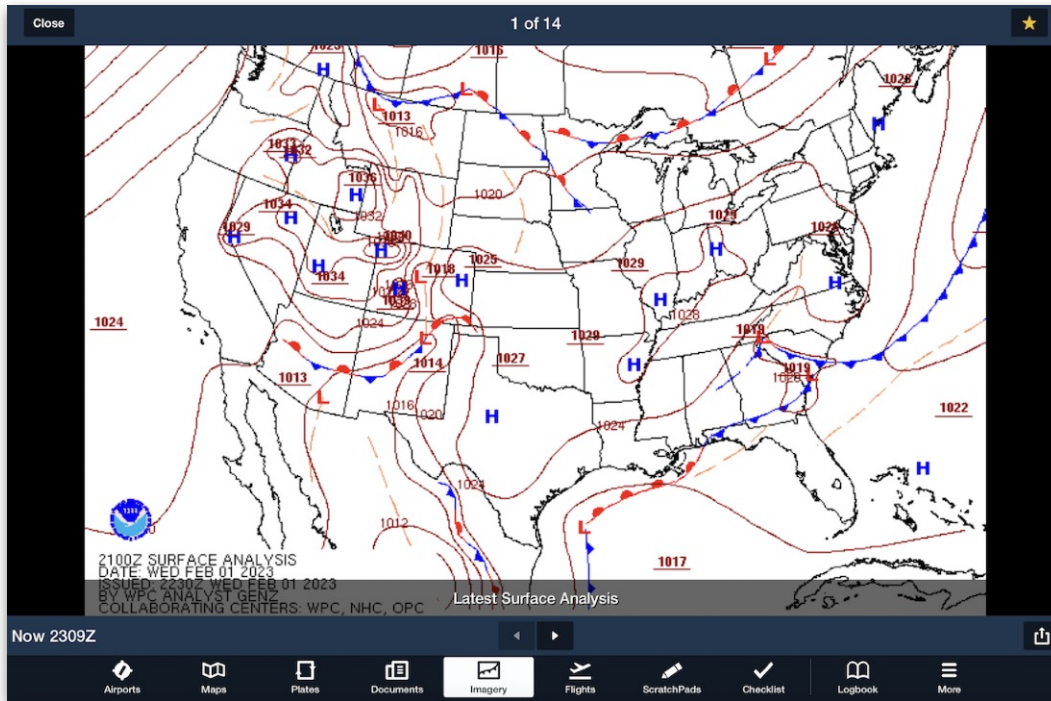


Full-Screen Image

14. IMAGERY

14.1.1 Images

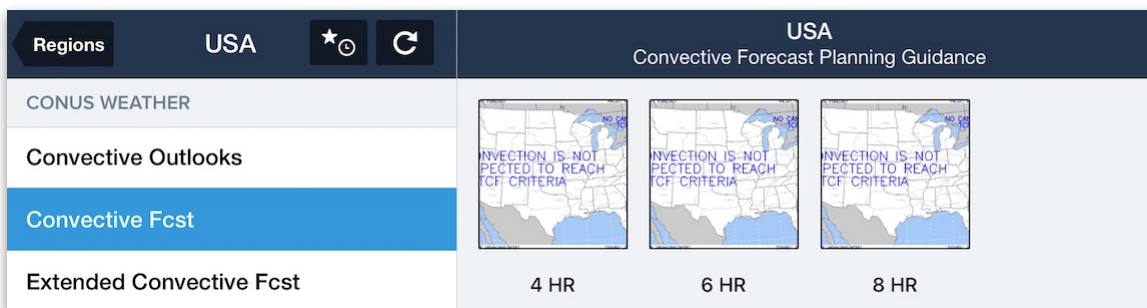
Each image is retrieved from an official weather provider (e.g., NOAA) and displayed without modification to its annotations or symbology.



Surface Analysis Chart

14.1.2 Image Sets

Weather data with more than one valid time, forecast period, or coverage area is represented as a set of images. For example, the Convective Forecast image set below contains three images, with one for the 4 HR, 6 HR, and 8 HR forecast periods, respectively.

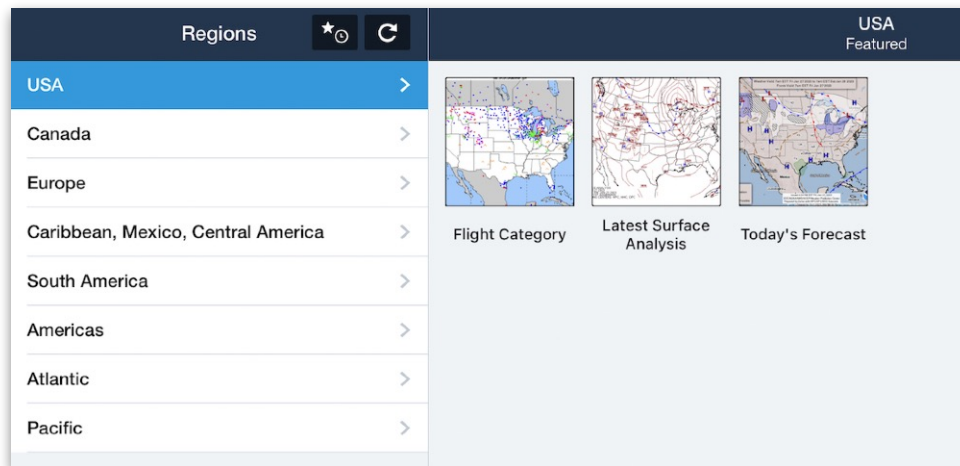


Convective Forecast Image Set

14. IMAGERY

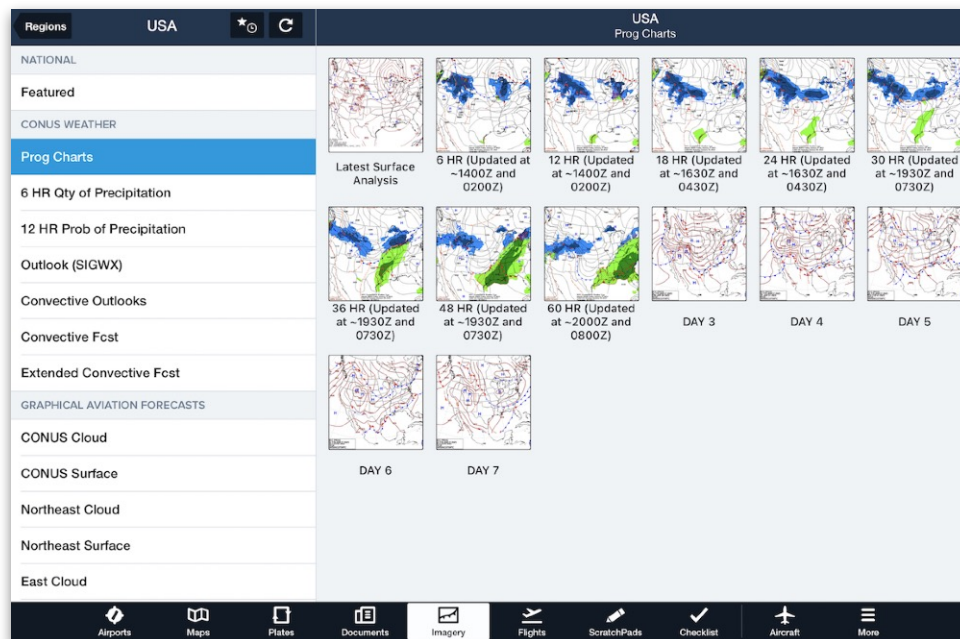
14.2 Navigation

The Navigation view sidebar lists the following geographic regions: **USA**; **Canada**; **Europe**; **Caribbean, Mexico, Central America**; **South America**; **Americas**; **Atlantic (ocean)**; **Pacific (ocean)**, and **Australia**.



Available Imagery Regions

Each region is divided into categories (e.g., CONUS Weather) containing one or more image sets (e.g., Prog Charts). When an image set is selected, thumbnails of each image are displayed in sequential order, such as chronologically by the forecast period.



Prog Chart Image Set with Thumbnails

14. IMAGERY

14.2.1 Displaying Images

To display a weather image, tap a region in the sidebar, scroll through its categories to find an image set, tap the image set, and tap one of the thumbnails to open its **Full-Screen Image**. To display an image from a different region, **tap** Close to exit the Full-Screen Image, tap the **Regions** back button at the top of the sidebar, and then select a new region and image set as before.

NOTE: Full-Screen Images might not display without an internet connection. When an image thumbnail is tapped, the most current weather data from the internet or from the temporary device cache is retrieved. If unavailable, an error message is returned. This applies to images in all regions, and in the **Favorites/Recents** list.

14.2.2 Favorite/Recent Images

At the top of the Navigation view, tap the **Favorites/Recents** button (depicting a star and clock) to see a menu with two tabs:

- Tap the **Favorites** tab to see a list of thumbnails for images that were marked as **Favorites**.
- Tap the **Recents** tab to see a list of thumbnails for images that were recently opened as Full-Screen Images (starting with the most-recently viewed image).

NOTE: Both the Favorites and Recents lists are synced between devices on an account. Adding, deleting, reordering, or clearing out images on one device is reflected on other devices.

Adding Favorites

Images can be added as Favorites when **viewing a Full-Screen Image**.

To add a Favorite, display that image in full-screen mode and tap the star-shaped button at the top right corner of the screen. When an image is set as a favorite, the star-shaped button is yellow. To remove the image from the favorites list, tap the (yellow) star button again.



Favorite



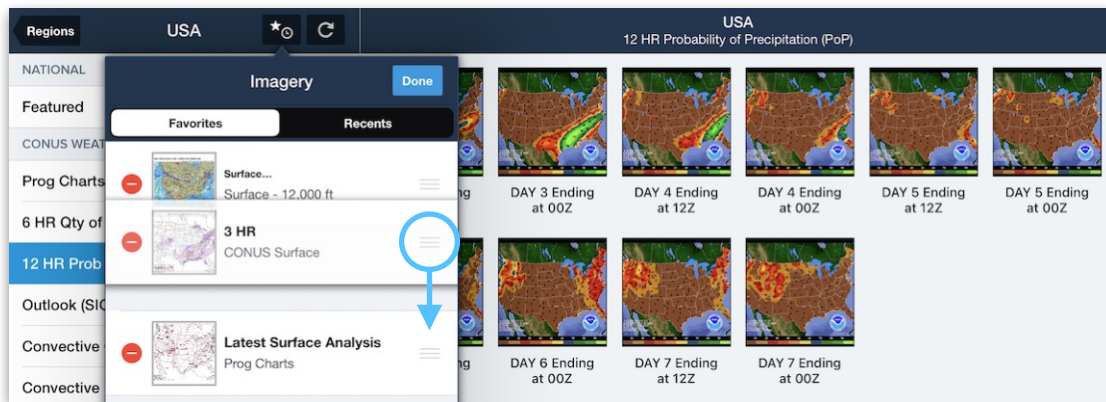
Non-Favorite

14. IMAGERY

NOTE: Favorite images may not display without an internet connection. To save an image file to the device for offline viewing, use the **iOS sharing** feature.

Reordering Favorites

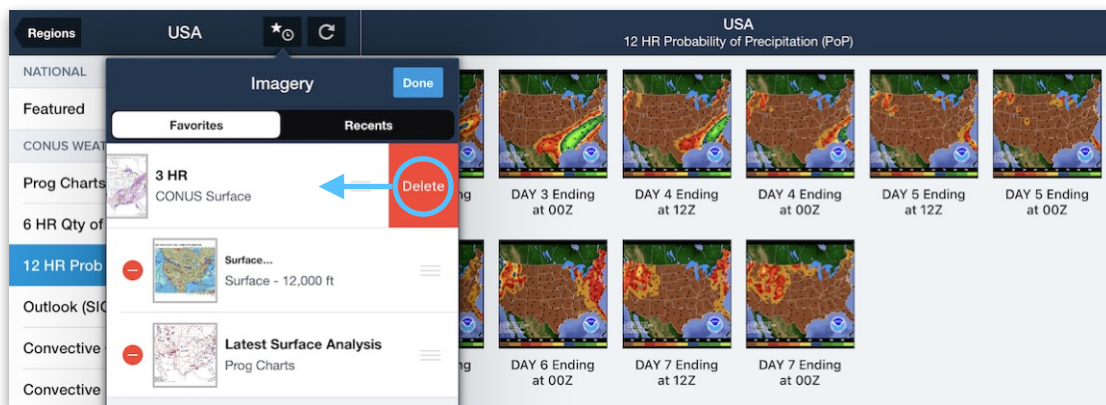
Favorite images are listed by default according to when they were added (with the newest addition at the bottom). To change this order, tap the **Edit** button at the top right corner, then tap and hold the (\equiv) icon next to an image to drag it to a different position in its list. Tap **Done** when finished.



Reordering Favorites

Deleting Favorites

To delete an image from the Favorites list, swipe left on the image in the list and tap **Delete**. Alternatively, tap the **Edit** button, tap the (-) icon followed by **Delete** for one or more images being deleted, and tap **Done** when finished.



Removing Favorites

14. IMAGERY

Deleting Recent Images

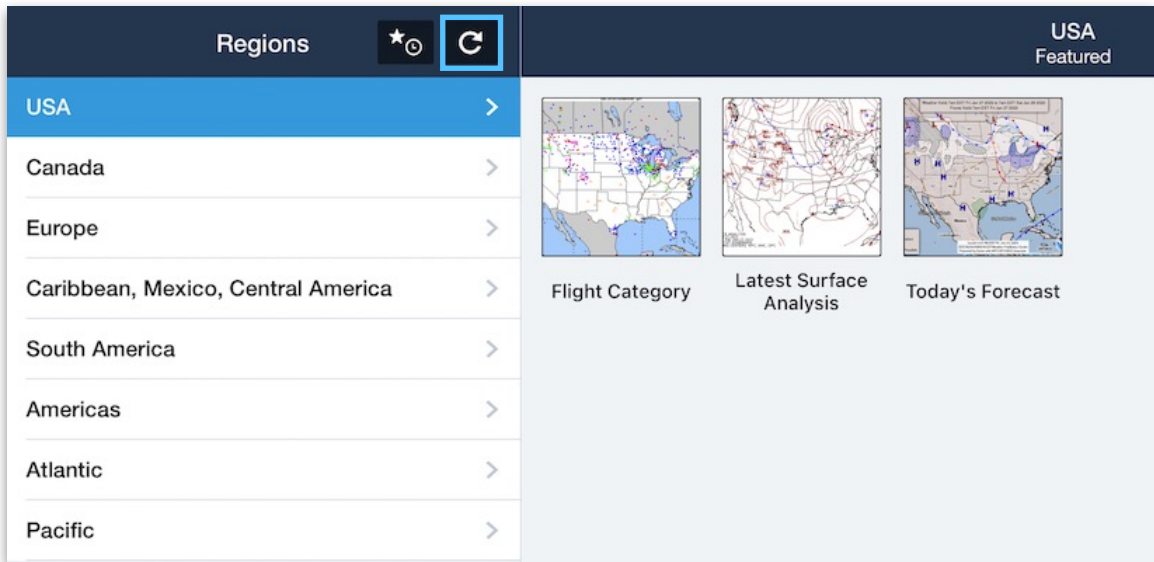
Images cannot be removed individually from the Recents list. However, the entire list can be cleared out at once. To do so, tap the **Clear** button in the top right corner and then tap **Clear Recent Imagery on All Devices**.



Clearing Recent Images

14.2.3 Refreshing Image Sets

Tapping the **Refresh** button updates the list of imagery available for each image set.



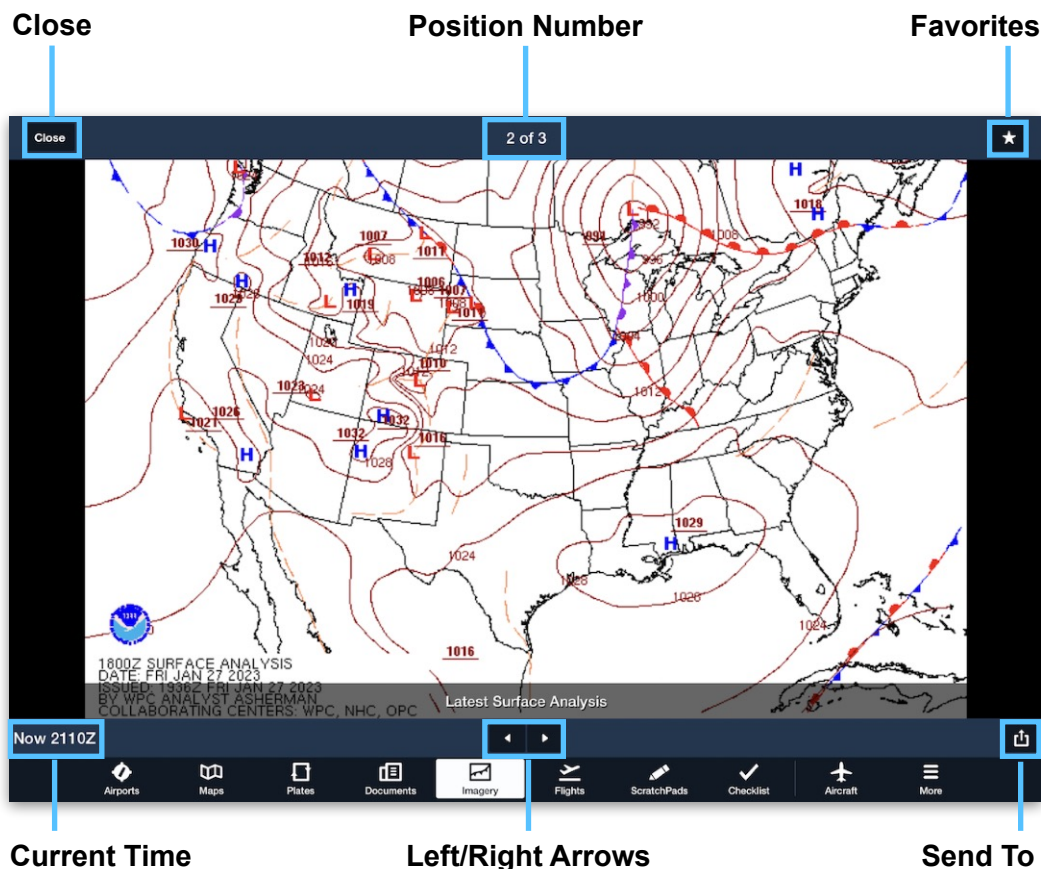
Refreshing Image Data

14. IMAGERY

14.3 Full-Screen Image

When a thumbnail is tapped, the most recent weather image is retrieved from the internet or the temporary device cache and displayed over the full screen. Each Full-Screen Image displays with the following features:

- The **Close** button exits the Full-Screen Image and returns to the Navigation view.
- The **Position Number** above each image indicates its position in the currently selected image set.
- The **Favorites** button on the top right can be tapped to add an image to the Favorites list or to remove it if it is already a favorite.
- The **Current Time** in UTC is displayed on the lower left.
- The **Left/Right** arrows beneath the image can be used to switch to the previous or next image in the set. (This can also be done with **finger swiping**.)
- The **Send To** button on the lower right can be tapped to copy, print, or share the image using iOS device options.



14. IMAGERY

14.3.1 Onscreen Finger Gestures

The following gestures can be used to zoom in and out of an image, pan across sections of the image, or swipe between images.

- **Panning and Zooming:** When an image is zoomed in, drag one finger across the screen to pan in all directions across the image. To zoom in on an image, touch the screen with two fingers and draw them apart. Use the opposite gesture to zoom out.
- **Swiping to Previous/Next Image:** Swipe with one finger left or right to display the previous or next image in the image set.

14.3.2 Adding to Favorites

Images can be added to the **Favorites** list for future reference. To add a Favorite, display that image in full-screen mode and tap the star-shaped button at the top right corner of the screen. When an image is set as a favorite, the star-shaped button is yellow. To remove the image from the favorites list, tap the (yellow) star button again.



Favorite



Non-Favorite

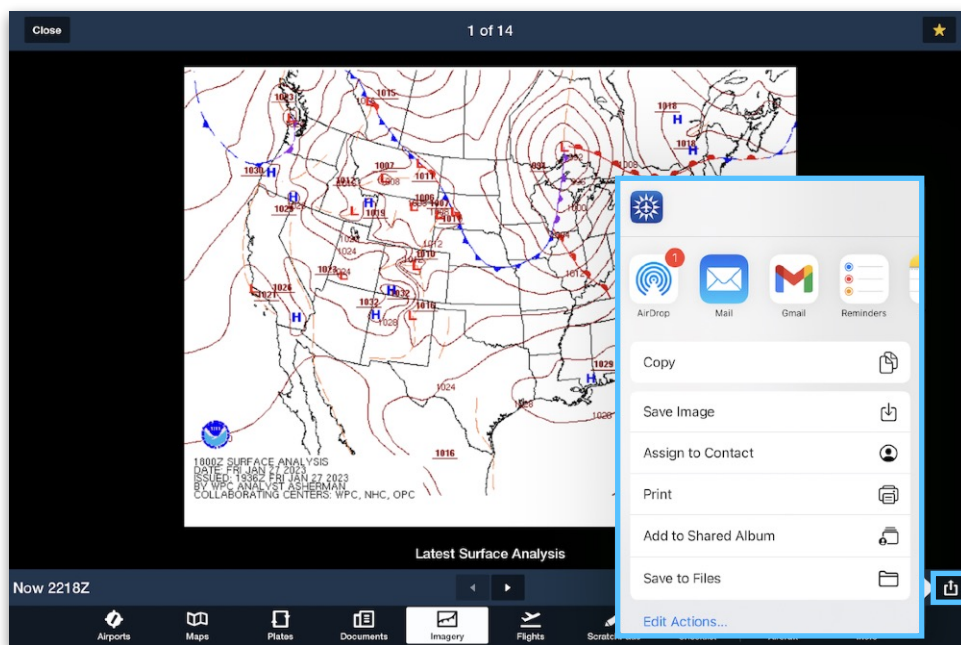
NOTE: Favorite images may not display without an internet connection. To save an image file to the device for offline viewing, use the **iOS sharing** feature.

14. IMAGERY

14.3.3 iOS Sharing

Images can be copied, saved, printed, or shared with external apps on the iOS device (such as Gmail, AirDrop, or DropBox). To do so, display the image in full-screen mode and tap the Send To button at the bottom right corner of the screen. Select from the iOS options available on the device.

IMPORTANT: Do not rely on images shared outside ForeFlight (by copying, printing, emailing, or saving offline) for flight planning. iOS sharing creates a static snapshot that cannot be updated with current weather data.

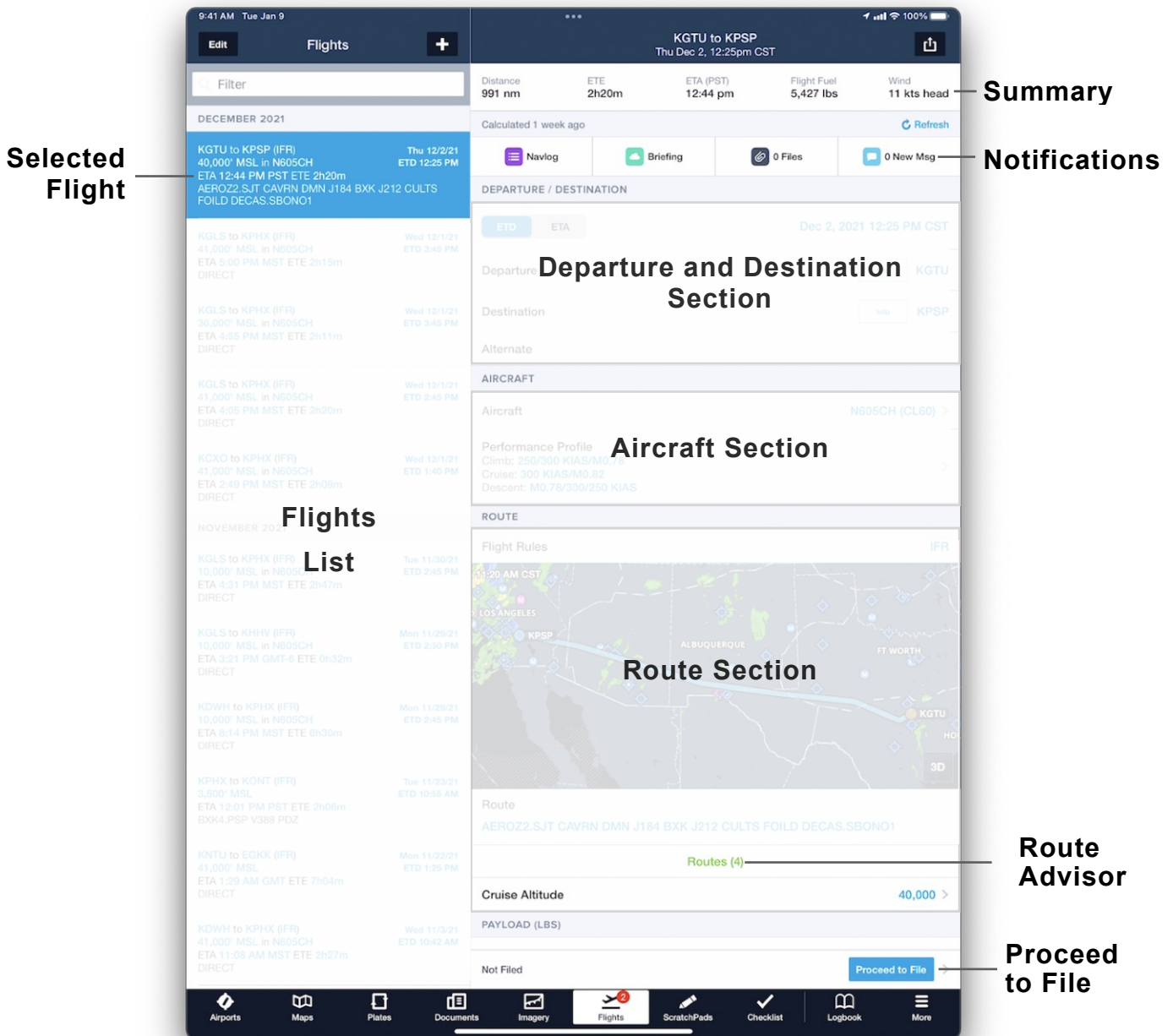


iOS Device Sharing

FLIGHTS

The Flights view is a form-based flight planning and flight plan filing tool. The Flights view can also be used to obtain weather briefings and generate Navlogs.

Flights are synced to your account and can be created and edited with an iPad, iPhone, or ForeFlight Web. Some features available on the Flights view may require a Performance Plus subscription.



Flights View

15. FLIGHTS

15.1 Design

The Flights view is divided into two columns. The left column displays the **Flights List** which provides a summary of all flights associated with the account. The flight summary highlighted in blue is the selected flight and its details are presented in the right column. Tap a flight in the list to select it.

The right column contains the flight planning form. The form is organized with a top-to-bottom workflow from inputting airports, calculating **Takeoff & Landing Performance**, performing a **Runway Analysis**, selecting an aircraft, defining a route, entering payload and fuel details, and filing a flight plan.

The top of the view summarizes the flight and provides buttons for generating a Navlog, obtaining a Briefing, attaching files, and viewing flight notifications.

Only ForeFlight customers with a Performance tier plan can access the Files, Takeoff & Landing Performance, Payload, Fuel, Weights, and Fuel Order features.

15.2 Creating New Flights

There are seven methods for creating a new flight. These are described in detail later in this section. Those seven methods are:

- Tap the new flight **[+]** button in the upper toolbar.
- A route is sent to Flights from the Maps page.
- Tap **Add Next Flight** at the bottom of the Flights form.
- Tap **Copy Flight** at the bottom of the Flights form.
- A flight is created with ForeFlight Web.
- A shared flight is accepted.
- A flight is assigned to you by a flight planner using ForeFlight Dispatch.

When a new flight is created, it is added to the flight list and synced to your account, even if no planning details have been entered. A flight planned on one device is available on all other devices signed into the same account (internet connection required).

NOTE: Some methods result in portions of the flight planning form being automatically completed.

15. FLIGHTS

15.2.1 Creating a New Flight

The new flight **[+]** button in the upper toolbar creates a blank flight, with some exceptions. If your account has a default aircraft, performance profile, and cruise altitude, those items are automatically populated. If defaults are not specified, the fields are left blank.

15.2.2 Sending a Route to Flights

You can send a route to the Flights page from Maps using the Send To button in the lower-right corner of the Maps Flight Plan Editor. Sending a route to Flights auto-fills all fields with the information you entered on the Maps view.

15.2.3 Adding the Next Flight

Add Next Flight creates a new flight using the previous flight's destination, aircraft, and performance profile. For more information, see [Add Next Flight](#).

15.2.4 Copying a Flight

Copy Flight is a button at the bottom of the flight planning form. Tapping this button copies all flight details except for the ETD. This button is useful for copying a shared flight since shared flights cannot be edited. For more information, see [Copy Flight](#).

15.2.5 Shared Flights

Flights can be shared between accounts. When a flight is shared, either from another individual ForeFlight account or ForeFlight Dispatch, a tag is displayed at the bottom of the summary in the flight list. The tag depicts the name of the account that shared the flight. Flights shared from individual accounts are read-only and cannot be edited.

The image shows a flight summary card with the following text: "KMLU to KCKV (IFR)" in blue, "35,000' MSL in N12345" in blue, "ETA 11:40 PM CDT ETE 2h05m" in blue, "GALIO FLAMM CECAR TUNNG SULLY CHSNE" in black, and "Filed" in green. On the right side, it says "Tue 8/9/22" and "ETD 9:35 PM" in blue. At the bottom, there is a grey button with a person icon and the text "Your Name Here". A label "Shared Flight Tag" with a line pointing to the button is on the left.

For flights shared from Dispatch, refer to the ForeFlight Dispatch Guide at www.foreflight.com/dispatch-guide.

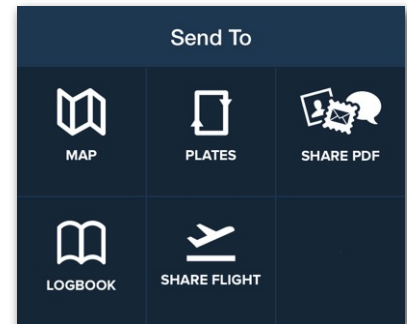
15. FLIGHTS

As updates are made to shared flights by the flight's owner, the changes are reflected on the recipient's device. Shared flights can be copied and edited however, edits to copied flights are not reflected on the original flight.

15.3 Flight Sharing

Once a flight has been created, it can be shared to the Maps, Plates, and Logbook views. Flights can also be shared with other pilots.

To share a flight, tap the Send To button in the upper-right corner of the Flights view. Tapping the button opens the Send To menu, where you can choose how to share the flight.



Flight Sharing Options

15.3.1 Sending a Flight to Maps

When the **Map** button is tapped, the Maps view opens with aircraft, performance profile, cruise altitude, ETD, and route details copied from Flights.

15.3.2 Sending a Flight to Plates

When **Plates** is tapped, a new Plates Flight Binder with the airport diagrams for the departure and destination airports is automatically selected.

15.3.3 Sharing a PDF

When **Share PDF** is tapped, a PDF copy of the flight's Navlog and filing form is generated. Flight PDFs can be shared via email, text message, AirDrop, and third-party apps.

15.3.4 Sending a Flight to Logbook

When **Logbook** is tapped, a new logbook entry with the aircraft, departure and destination, route, and flight times is created.

15. FLIGHTS

15.3.5 Sharing a Flight

The **Share Flight** option allows you to send a flight to another ForeFlight account. Flights can be shared via email, text message, AirDrop, and third-party app.

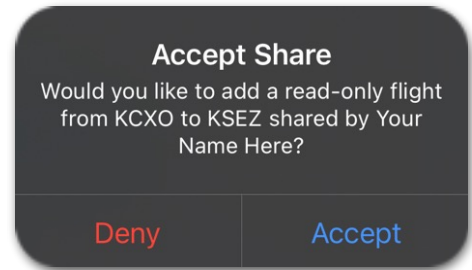
When the flight's recipient receives the shared flight, they must tap the share link to accept or deny the flight.

When a shared flight is accepted, it is displayed in the recipient's flight list as a read-only flight. Any changes made to the flight by the flight's owner are updated on the recipient's device.

The recipient of a shared flight cannot make changes to the shared flight or share that flight with someone else. However, the recipient can copy the flight. The copied flight preserves all of the shared flight's details except for the original aircraft and performance profile, which will instead use the recipient's default aircraft and performance profile.

The recipient of a shared flight can delete a shared flight by swiping from right to left on the flight in the Flights list or by tapping **Delete Flight** at the bottom of the flight planning form. Once deleted by the recipient, the shared flight cannot be restored. However, the flight can be shared by the owner to the recipient again.

If the pilot who shared a flight tries to delete it, a warning advises that deleting the shared flight will also delete it from all recipients of that shared flight.



Accept Share Menu

NOTE: If a flight is shared from a Performance tiered subscription to a recipient without a Performance plan, they will not be able to view the Navlog since the Navlog is dependent upon the plan type.

15. FLIGHTS

15.4 Deleting Flights

There are two methods for deleting flights.

- Swipe right to left on a flight in the Flights List and select **Delete**.
- Tap **Delete Flight** > **Delete** from the bottom of the flight planning form.

Deleted flights are removed from all devices signed into the account. If a flight is shared with another user, the flight is deleted from the recipient's device when the person sharing the flight deletes it.

Deleted flights cannot be restored. There isn't a requirement to delete a flight, however some users may elect to delete flights to reduce the amount of flights in the Flights list.

CAUTION: Do not delete a VFR flight plan that has been activated without first closing it. Deleting a *Filed* or *Activated* flight plan does *not* cancel or close the flight plan.

15. FLIGHTS

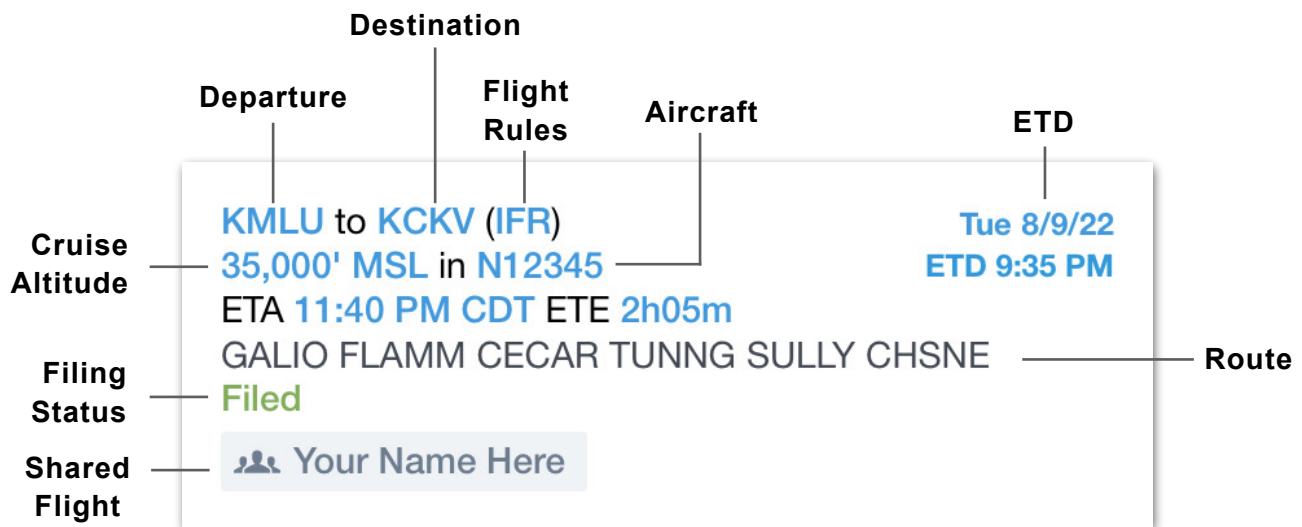
15.5 Flight List

The Flights list contains summaries for each flight. Flight summaries are sorted by departure time and grouped by month. It is not possible to change how flight summaries are ordered. Tapping a flight in the list makes it the active flight and displays its details in the flight planning form.

15.5.1 Flight Summary

Each flight summary has a minimum of three rows. The summary is dynamic and updates as the flight is planned. If a summary item does not apply to the flight, it is omitted from the summary.

For example, a flight that is not shared does not include a shared flight tag. Similarly, a flight that has not been filed does not include filing status. For more information on filing status, refer to the ForeFlight Filing Guide available in **Documents > ForeFlight**.



Flight Summary Layout

15. FLIGHTS

15.6 Flight Planning Form

Flight details are displayed in the flight planning form. Details are automatically saved as edits are made. Some details, like the default aircraft, are automatically populated when a new flight is created. However, all flight details are editable at any time.

The following sections describe each component of the flight planning form, starting from the top down.

Unknown to Unknown
Mon Aug 22, 9:20am CDT

Distance - ETE - ETA - Flight Fuel - Wind -

Refresh

Navlog Briefing 0 Files 0 New Msg

DEPARTURE / DESTINATION

ETD ETA Aug 22, 2022 9:20 AM CDT

Departure Required

Destination Required

Alternate

AIRCRAFT

Aircraft N1234 >

Performance Profile >

ROUTE

Flight Rules VFR

9:00 AM CDT

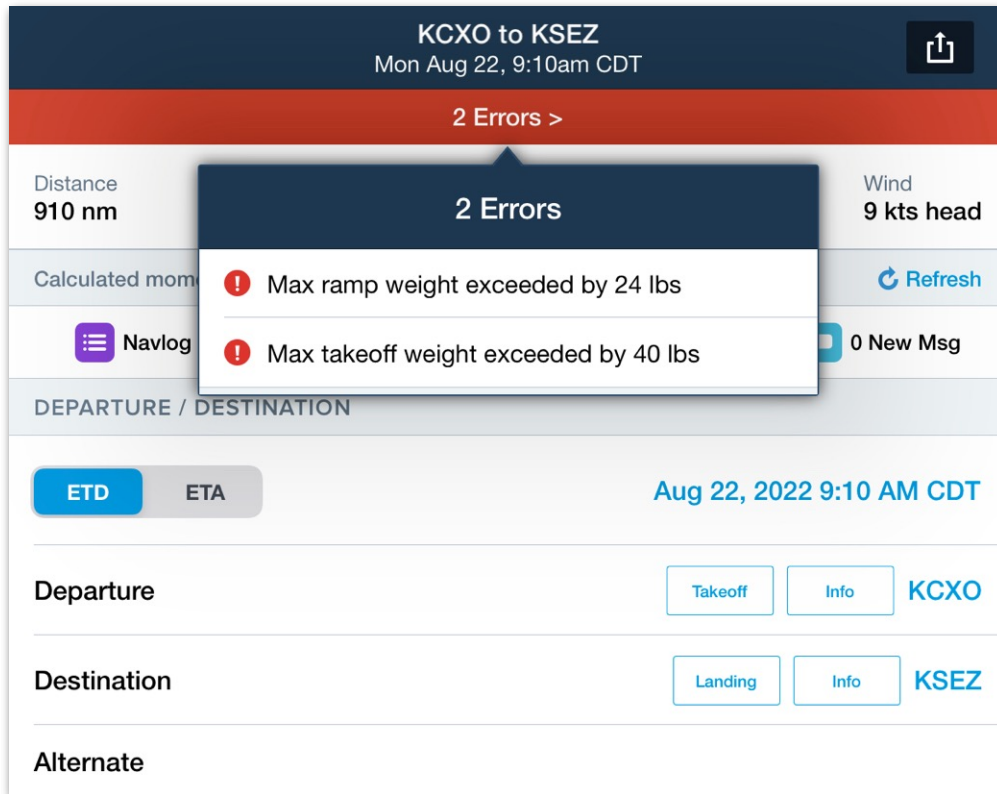
Not Filed Proceed to File >

Blank Flight Planning Form

15. FLIGHTS

15.6.1 Error Messages

When ForeFlight detects an issue with your flight plan, a persistent banner displays at the top of the view. The banner is either red (warning) or yellow (caution). If multiple errors exist, tap the banner to display error details. To clear error messages, edit the flight plan according to the error message.



Error Messages

Caution Messages

Caution messages are displayed for problems that prevent ForeFlight from calculating flight planning results (e.g., selecting a cruise altitude that's too high for a short route given the aircraft's performance capabilities).

Warning Messages

Warnings are displayed when weight or capacity limits are exceeded.

CAUTION: Errors do not prevent flight plans from being filed. However, reviewing all errors messages prior to filing is recommended.

15. FLIGHTS

15.6.2 Flight Performance Summary

At the top of the flight planning form is a summary of key planning results that allows you to quickly evaluate a flight. The summary is always visible and is blank until enough details are entered to calculate results.

The Flight Performance Summary is calculated by evaluating the route between the departure and destination airports using the selected aircraft's performance profile and forecast wind. Flight time and fuel required to the alternate airport is *not* included in the summary.

KSNA to KSGR				
Wed Aug 10, 7:30am PDT				
Distance	ETE	ETA (CDT)	Flight Fuel	Wind
1,161 nm	2h41m	12:10 pm	6,147 lbs	8 kts head
Calculated 1 minute ago				Refresh

Flight Performance Summary

Flight Fuel

The Flight Fuel Summary includes the fuel required to start, taxi, take off, and fly to the destination. Start, taxi, and takeoff fuel is specified in the aircraft profile and can be manually edited on the Flights page with a Performance Plus account. Flight Fuel does not include fuel required for an alternate, or any reserve, extra, or contingency fuel.

Wind

The wind component in the flight summary is an average of the wind across the duration of the flight.

Refreshing the Summary

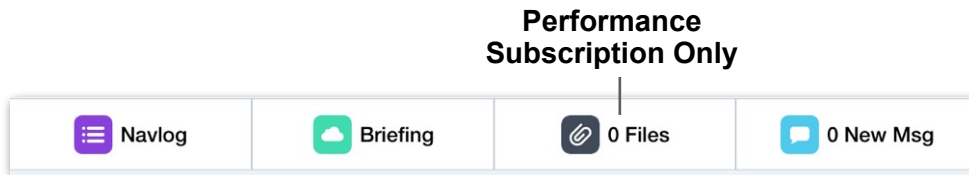
The Flight Performance Summary is automatically updated each time the flight is edited. The summary does *not* automatically update as new weather forecasts are issued.

To manually update the performance results with the latest forecast conditions, tap the [Refresh](#) button near the bottom right corner. The time the calculations were completed is displayed at the bottom of the summary.

15. FLIGHTS

15.7 Navlog, Briefing, Files, and Notifications

Navlog, Briefing, Files, and Notification buttons are available at the top of the flight planning form. Files is a Performance-tier feature and will be hidden from view unless signed into a Performance Plus, Business Performance, or MFB Performance account.



Navlog - Briefing - Files - Notification Buttons

15.7.1 Navlog

The Navlog button opens a full-screen detailed Navlog view. Internet connectivity is required to generate a Navlog.

The exact type of Navlog generated depends on ForeFlight account type and user preference. However, all Navlogs include a summary, flight planning results by leg, winds aloft, and departure/destination airport information.

The Navlog can be shared and printed by tapping the share button in the upper-right corner of the Navlog view. Navlogs are also available on ForeFlight Web. Navlogs generated on the web will automatically become available on ForeFlight Mobile and vice versa. See the [Navlog](#) chapter for additional information.

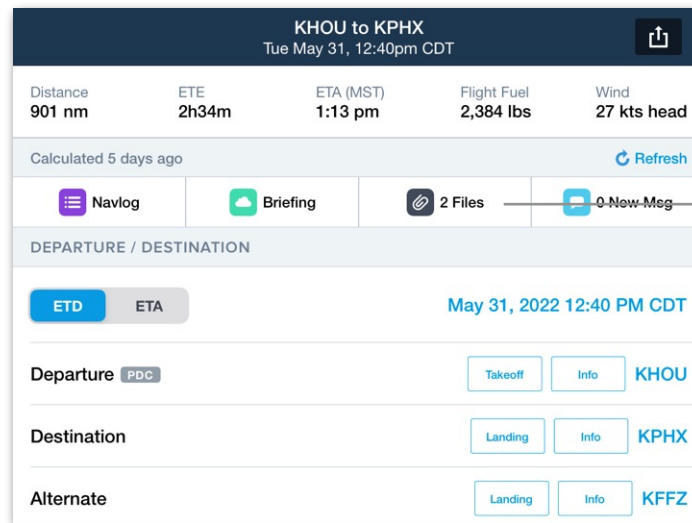
15.7.2 Briefing

Briefings can only be obtained from the Flights page. There are two briefing formats, HTML and PDF. The classic text briefing is no longer supported. See the [Briefings](#) chapter for additional information.

15. FLIGHTS

15.7.3 Files

ForeFlight Performance-tier subscribers can add files to flights. Files sync between the devices signed into the same account. Files added to a flight are sorted alphabetically and are available offline. Files are associated with flights indefinitely provided the flight is not deleted.



Tap to add Files

Flights View

Supported File Types and Size Limits

Flight files support the formats listed below. Individual file attachments are limited to 25 MB or less.

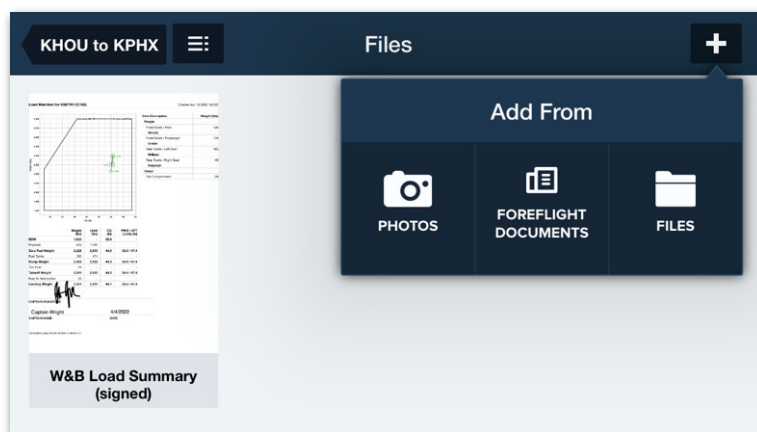
- PDF
- TIFF
- TIF
- JPG
- JPEG
- GIF
- PNG
- BMP
- BMPF
- TXT
- DOC
- DOCX
- XLSX
- XLS
- PPTX
- PPT
- CSV
- Pages
- Key
- Numbers

15. FLIGHTS

Adding Files to a Flight

To add a file to a flight, tap the **Files** button at the top of the flight planning form. Then, tap the **[+]** button in the upper toolbar to add files. Files can be added from Photos, ForeFlight Documents, or the device's iOS Files app. Select where the file will be imported from and then choose the file to attach to the flight.

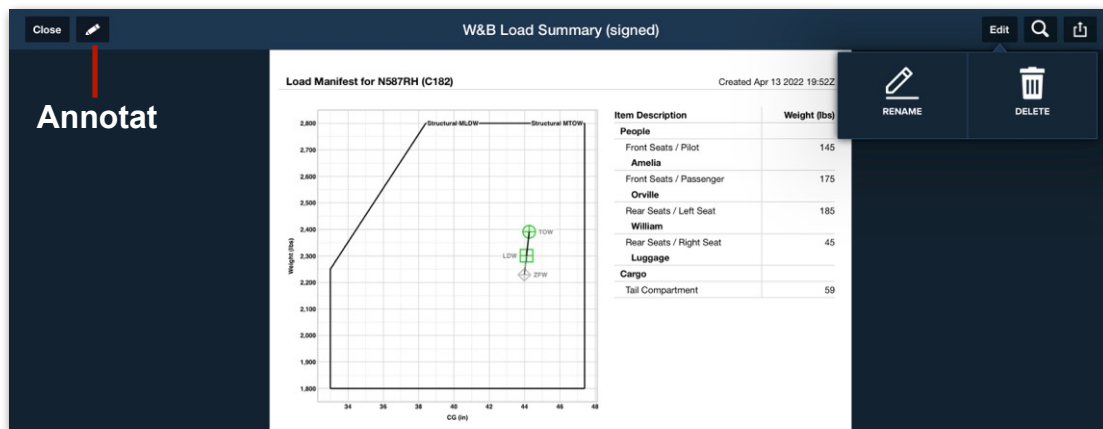
Files can also be imported with AirDrop. To import via AirDrop, select **ForeFlight > Flights** from the AirDrop "Open with..." menu. Once a file has been added, the **Files** button depicts the number of files currently attached to the flight.



Adding a file to a flight

Editing Files

To edit a file, tap the file thumbnail to open the file viewer. Tap **Edit** to annotate, rename, or delete the file. Not all file types are able to be annotated.

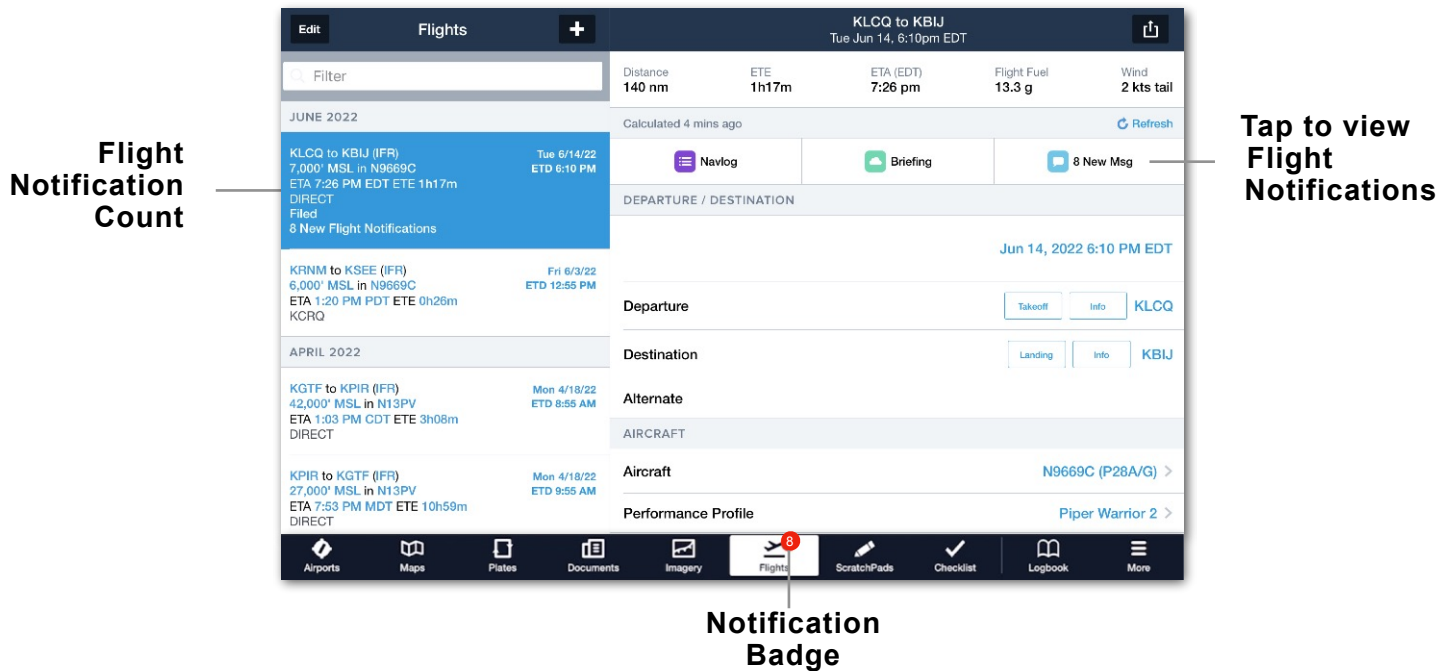


File Viewer

15. FLIGHTS

15.7.4 Flight Notifications

Flight notifications provide hazardous condition details for your route of flight. Flight notifications are only available after filing a flight plan. When unread flight notifications are available, the number of notifications are depicted as a badge on the Flights button, in the flights list, and at the top of the planning form.



Flight Notification Types

Flight notifications are issued for the following hazardous conditions:

- Temporary Flight Restriction (TFR)
- Runway or Airport Closure
- Unsafe NOTAMs
- Urgent PIREP
- SIGMETs
- Convective SIGMETs
- AIRMETs
- Center Weather Advisories
- Severe Weather Watches/Warnings

Flight notifications are obtained from multiple sources, including Lockheed Martin's Adverse Conditions Alerting Service (ACAS). Flight notifications do not include flight plan messages (e.g., expected routes, expected departure clearance times). The flight notification count decreases as notifications are viewed. When viewing notifications, tap the checkmark in the upper toolbar to mark all notifications as read.

15. FLIGHTS

15.8 Departure and Destination

The Departure / Destination section specifies the flight's departure time, departure location, destination, and alternate airport.

Pilots planning with a Performance-tier account and a supported piston-engine aircraft can also calculate **Takeoff & Landing Performance** from this section. Customers with a Runway Analysis license for a supported turbo-prop or jet aircraft can access **Runway Analysis** performance data from this section.

DEPARTURE / DESTINATION

ETD ETA Aug 10, 2022 3:55 PM CDT

Departure PDC Takeoff Info KSAT

Destination Landing Info KAUS

Alternate Landing Info KGTU

Departure / Destination Section - Performance Plus Account

15.8.1 Departure Time

The Departure Time field specifies the flight's estimated departure time for planning and filing purposes. When creating a new flight, the ETD is set to approximately ten minutes from the current time (rounded to the nearest five-minute interval).

The date field uses the format (e.g., month/day/year) based on the iPad or iPhone's region setting. Region settings can be located in the iPad or iPhone **Settings** app > **General** > **Language & Region**.

ETD/ETA

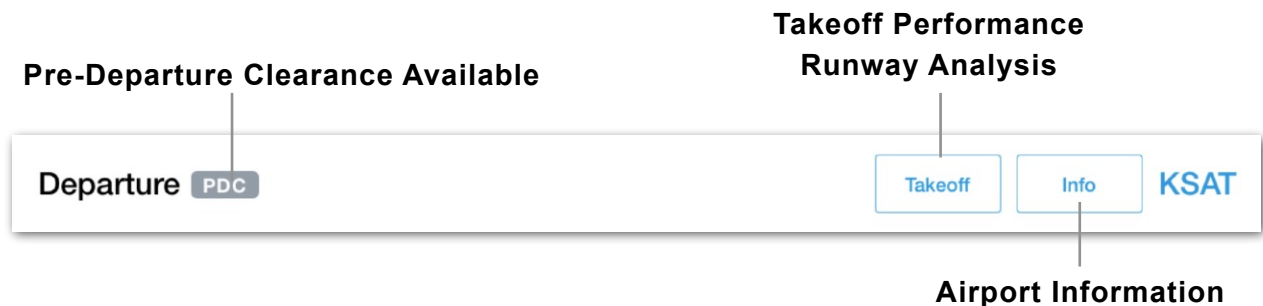
The ETD/ETA buttons are a Performance-tier features that determine whether the selected date/time represents the beginning or end of the flight. Select ETD to set the date/time as the departure time, and ForeFlight will calculate the flight's arrival time. Select ETA to set the date/time as the arrival time, and ForeFlight will calculate the departure time required to arrive at the selected time.

15. FLIGHTS

15.8.2 Departure

The Departure field specifies the departure location for the flight. The departure field supports ICAO identifiers, airport names (if the airport lacks an identifier), user waypoints, coordinates, and place/bearing/distance entries. If the departure location is something other than a published ICAO identifier or airport name, ForeFlight will convert the location to coordinates when filing.

NOTE: While the Departure field can include the name of an airport without an identifier (if the flight was sent from the Maps view), airports without identifiers cannot be manually entered in this field.



PDC

When planning to depart from an airport that supports pre-departure clearances (PDC), a PDC tag is displayed to the right of the Departure label. PDC is a Performance-tier feature and is not displayed on Basic Plus or Pro Plus accounts.

Takeoff Performance and Runway Analysis

When planning a flight with a Performance-tier account and a supported piston engine aircraft (or a jet or turbo-prop with a Runway Analysis license), a **Takeoff** button appears if runway data is available. The Takeoff button opens a split-screen **Takeoff Performance** or **Runway Analysis** view.

Airport Info

Once an airport is selected, an **Info** button appears to the left of the airport identifier. Click **Info** to display the airport pop-up menu to find detailed information about the airport.

15. FLIGHTS

15.8.3 Destination

The Destination field specifies the flight's destination. The field supports ICAO identifiers, airport names (if the airport lacks an identifier), user waypoints, coordinates, and place/bearing/distance entries. If the location is something other than a published ICAO identifier, ForeFlight will convert the location to coordinates when filing.

NOTE: While the Destination field can include the name of an airport without an identifier (if the flight was sent from the Maps view), airports without identifiers cannot be manually entered in this field.



Landing Performance and Runway Analysis

When planning a flight with a Performance-tier account and a supported piston engine aircraft (or a jet or turbo-prop with a Runway Analysis license), a **Landing** button appears if runway data is available. The Landing button opens a split-screen **Takeoff Performance** or **Runway Analysis** view.

Airport Info

Once a destination airport is selected, an **Info** button appears to the left of the airport identifier. Click **Info** to display the airport pop-up menu to find detailed information about the airport.

15. FLIGHTS

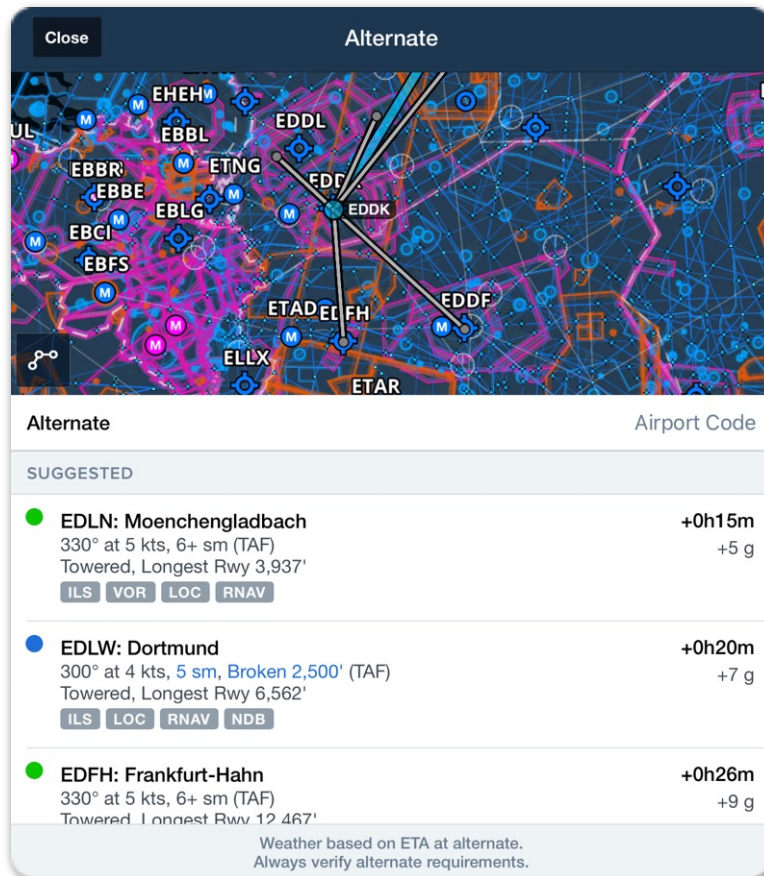
15.8.4 Alternate

The Alternate field specifies the alternate airport for flight planning and filing purposes. Tapping the **Alternate** field opens the Alternate Advisor in a pop-up window.

Alternate Advisor

The Alternate Advisor suggests alternate airports based on several variables such as time and fuel requirements, forecast weather conditions, available approach procedures, and whether you have previously selected that airport as an alternate on flights with the same destination. To enter an alternate airport not in the suggested list, tap **Airport Code** and type your desired alternate airport. Airports without identifiers cannot be entered as an alternate.

The Alternate Advisor map shows each alternate with a grey line between it and the destination airport. Tap an alternate airport to highlight the route from your destination to the alternate. Tap the **Add Airport** button at the bottom of the Alternate Advisor to select it as the alternate.



Alternate Advisor

15. FLIGHTS

Alternate Advisor Performance Calculations

Time and fuel calculations to the alternate airport are based on a direct route from your destination airport to the alternate using the same performance profile as the rest of the flight and a cruise altitude appropriate to the distance to the alternate. To account for missed approach, holding, and another instrument approach, a fuel buffer is added. See the **Fuel** section of this chapter for additional information.

Alternate Airports with a Dispatch license

When planning with an aircraft that has a ForeFlight Dispatch license, you can specify multiple alternate airports and a distinct performance profile, route, and cruise altitude for each alternate.

Alternate DREWZ BELLR TSHRT1	Info KTME
2nd Alternate	
Takeoff Alternate CSTP13	Info KAJO

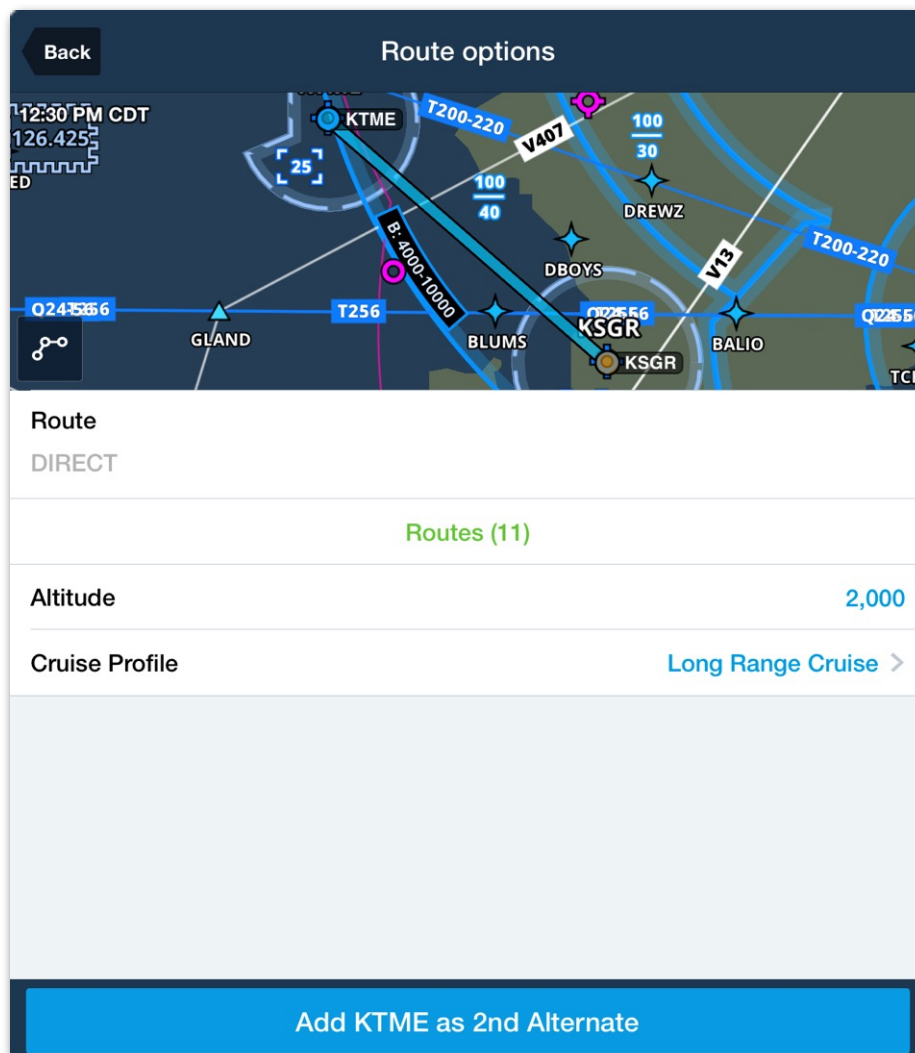
ForeFlight Mobile Alternate Airports (Dispatch)

15. FLIGHTS

Specifying Alternate Routes and Performance Profiles

To specify a unique route or cruise profile to the alternate airport with a Dispatch license:

1. Tap one of the alternate fields.
2. Select an alternate airport and tap **Select Options**.
3. Specify a route manually or use the Route Advisor.
4. Specify an altitude to the alternate airport.
5. Select a cruise profile.
6. Tap **Add as Alternate**.

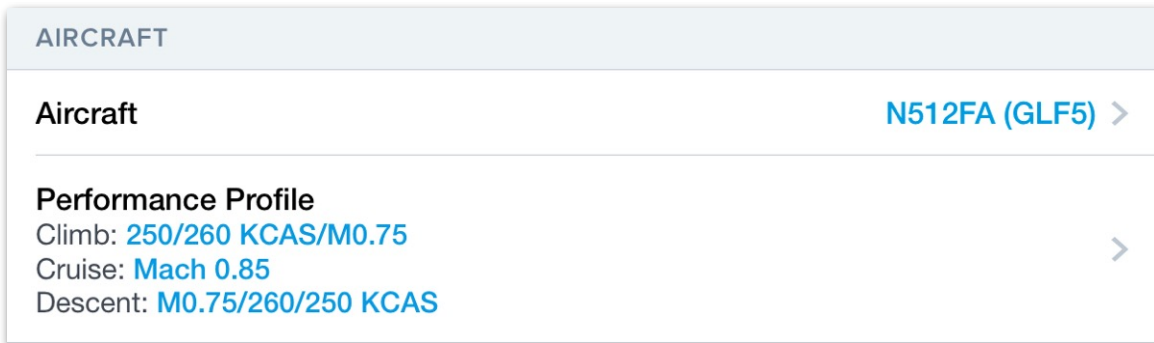


Alternate Route options with ForeFlight Dispatch

15. FLIGHTS

15.9 Aircraft

The Aircraft section specifies the aircraft and performance profile for the flight.



Selected Aircraft and Performance Profiles

15.9.1 Aircraft Profile

When creating a new flight, the aircraft field is automatically populated with the default aircraft. If no default aircraft is specified, the aircraft from the last flight is automatically populated. If no prior flights exist, the aircraft field is blank.

To select an aircraft profile, tap the aircraft field and choose an aircraft from the list. Aircraft profiles can be edited from the Flights page by tapping **Edit** when viewing the list of aircraft profiles. For more information on aircraft profiles, see the **Aircraft** chapter.

15.9.2 Performance Profile

When creating a new flight, the performance profile is automatically populated with the default profile for the selected aircraft. To select a different performance profile, tap the selected profile and choose a different one from the list (if applicable).

Performance profiles can be edited from the Flights page by tapping **Details** when viewing the list of performance profiles. For more information on performance profiles, see the Performance section of the **Aircraft** chapter.

15. FLIGHTS


15.10 Route

The Route section displays flight rules, an interactive map, the elements of your route, and your cruise altitude.

ROUTE

Flight Rules IFR

12:40 PM CDT



Route

IDU1 CWK DIESEL OWENN VUCUL ELOYE FRAIZ JUPTR ONM V264 SJN V528 DEHOG

Routes (9)

Cruise Altitude 16,000 >

Flight Rules, Route, and Cruise Altitude

15.10.1 Flight Rules

The Flight Rules field is automatically populated when a flight is created by evaluating your route and cruise altitude. When creating a new flight, the default aircraft's default cruise altitude (specified in the aircraft profile) determines the flight rules. For example, if the default aircraft's default cruise altitude is 5,500 ft, new flights will automatically populate with VFR flight rules.

Cruise altitudes that are divisible by 1000 result in the IFR flight rule automatically being selected. Planning with a VFR altitude (altitude which is divisible by 500) results in the VFR flight rule automatically being selected.

15. FLIGHTS

Routes that contain a flight rule change will automatically result in the appropriate composite flight rule (Y or Z).

Once a flight rule has been assigned, it will only update automatically if selecting a new route from the Route Advisor. Manually editing the route or changing the cruise altitude does not update the flight rule.

Flight rules can be manually changed at any time regardless of the planned route or cruise altitude. To change the flight rule, tap the current one and select a new one from the pop-up menu.

NOTE: DVFR and VFR (DC SFRA) flight rule types are not automatically selected.

15.10.2 Interactive Map

The Route section contains an interactive map. Tap the map to expand it. Once expanded, the map can be panned and zoomed. Tap the button in the lower-left corner of the map to recenter the map on the route.

The map's color is determined by the **Aeronautical Map Theme** setting (Classic, Light, or Dark).

The map displays the route, aeronautical map, and composite radar layer. The aeronautical map elements cannot be filtered and additional map layers cannot be added.

3D Preview

The planned route can be previewed in 3D with a Performance tiered account. To preview the route, tap the 3D button on the map before expanding it.

15. FLIGHTS

15.10.3 Route

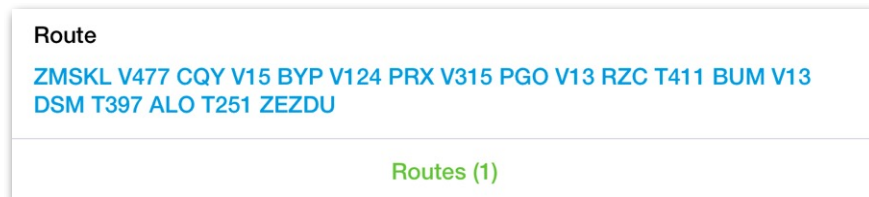
The Route field displays the planned route. There are two methods for planning a route. Using the Route Advisor or manually editing a route.

Route Advisor (Recommended)

To plan a route using **Route Advisor**, tap **Routes (x)** whereas “x” represents the number of available routes for the airport pair. Route Advisor opens in a pop-up window with a list of potential routes that you can select for the pair of departure and destination airports.

Manual Editing

To manually edit a route, tap the Route field and use the keyboard to customize the route. Route elements are separated by a space.



Route Section

Certain route legs will be labeled with non-standard conventions as described below.

Lat/Long Coordinates

Airports without ICAO, IATA, FAA, or other short-code identifiers will be labeled on the route as decimal degrees (DD.dd°) coordinates. For example, a leg leading to Garbenheimer Wiesen is listed as “50.575/8.532”.

ForeFlight Identifiers

VFR waypoints without ICAO-standard identifiers will use the ForeFlight Identifier (FF Identifier). The FF Identifier is an ICAO formatted code, generated by ForeFlight, that consists of portions of the waypoint name and its associated airport.

For example, the VFR waypoint “November 2” that is associated with Cologne-Bonne (EDDK) airport would be labeled on the route as “DKNOV2”. This convention is also followed in the Navlog, Briefing, and Logbook. However, when filing, ForeFlight automatically converts these waypoints to coordinates in the Degree Minute format.

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15.10.4 Cruise Altitude

The cruise altitude field opens the Altitude Advisor which displays the forecast winds aloft at various altitudes. To select a cruise altitude, tap the current altitude then select a new one from the **Altitude Advisor** pop-up menu.

15.10.5 Contingency Planning

When a flight is planned with Dispatch and contingency airport pairs are specified, a Contingency Planning section is added to the Flights view. This section indicates whether ETOPS or PSR were enabled for the flight and can be tapped to view the airport pairs. Contingency airports cannot be specified using ForeFlight Mobile. See www.foreflight.com/dispatch-guide for additional information.



Contingency Planning Section

15. FLIGHTS

15.11 Payload

Payload is a Performance-tier feature that is used for planning weight and balance. This section permits two planning methods. The first method allows you to calculate weight and balance quickly using average weights. The second method integrates the aircraft's weight and balance profile for more detailed planning.

When a new flight is created, the payload section only contains three editable fields (cargo, people count, and average weight). These fields provide basic weight planning functionality. Detailed weight and balance planning can be done from the Flights view by tapping **Weight and Balance** at the bottom of the Payload section. The weight and balance button opens the weight and balance view and integrates the information into the flight.

PAYLOAD (LBS)			
	COUNT	AVG WT.	TOTAL
People	3	175	525
Cargo			125
Total Payload			650
Weight and Balance			

Payload Section - Basic Planning

15.11.1 People

When a new flight is created, the People field initially contains two editable values (count and average weight). The default value for the number of people is either 1 or 2, based on the minimum crew requirement for your aircraft.

The starting default value for the average weight is 200 pounds. The average weight is editable. If the average weight is adjusted, the adjusted amount is carried forward to subsequent flights. Total people weight is calculated by multiplying the people count by the average weight.

15. FLIGHTS

15.11.2 Cargo

When a new flight is created, a single editable field exists for entering cargo weight. The default cargo weight is zero. Tap the total cargo weight to edit it manually.

15.11.3 Weight and Balance

The **Weight and Balance** button is displayed at the bottom of the Payload section with a Performance-tier account. When the button is tapped, the Weight & Balance view is opened. This view is used to enter detailed payload and fuel information. After entering payload information, tap **Back** in the upper toolbar to return to the Flights view.

After returning to the Flights view, the weight and balance is integrated into the flight (e.g., fuel entered in Weight & Balance is copied to the Fuel section of Flights). For more information, refer to the ForeFlight Weight & Balance guide in **Documents > ForeFlight**.

PAYLOAD (LBS)			
	COUNT	AVG WT.	TOTAL
▼ People	3	175	525
Pilot Front Seats			175
Passenger Front Seats			175
Left Seat Center Seats			175
Right Seat Center Seats			0
Left Seat Rear Seats			0
Right Seat Rear Seats			0
▼ Cargo			125
Nose Compartment			125 / 300
Tail Compartment			0 / 120
Aircraft Items			0

Integrated Weight and Balance

15. FLIGHTS

15.12 Fuel

The Fuel section is only available with a Performance-tier account and contains a **Fuel Policy** selector and a **Fuel Table**. The Fuel Policy determines how much fuel is required for the flight at start.

When planning with a **Dispatch**, European Business, or Australian Business account, a **Reserve Fuel Policy** selector is available. The Reserve Rule Policy determines how much reserve fuel is required based on a selected regulatory requirement.

The Fuel Table is dynamic and adjusts based on the aircraft type, ForeFlight subscription, and fuel policy.

The screenshot shows the 'Flights Fuel Section' interface. It features a table with columns for 'FUEL', 'GAL', and 'LBS'. The table is organized into sections: 'Fuel Policy' (with a 'Minimum Fuel Required' link), 'Start' (with a 'MAX' button and fuel availability '37,423 lbs available'), 'Flight Fuel' (including 'Taxi Fuel' and 'Fuel to Destination'), 'Fuel at Landing', 'Alternate Fuel', 'Reserve Fuel' (with a 'Policy' button and 'Manual' text), 'Extra Fuel', and 'Additional Fuel (ETP)'. Callouts on the left side identify 'Fuel Policy Selector', 'Flight Fuel', and 'Landing Fuel'. Callouts on the right side identify 'Fuel At Start' and 'Reserve Policy'.

FUEL	GAL	LBS
Fuel Policy		Minimum Fuel Required >
Start 37,423 lbs available	<input type="button" value="MAX"/>	1,130 / 6,674 7,627 / 45,050
▼ Flight Fuel	429	2,895
Taxi Fuel	37	250
Fuel to Destination	392	2,645
▼ Fuel at Landing	701	4,731
Alternate Fuel	272	1,836
Reserve Fuel Manual	<input type="button" value="Policy"/>	429 2,895
Extra Fuel	0	0
Additional Fuel (ETP)	0	0

15. FLIGHTS

15.12.1 Fuel Policy

The Fuel Policy lists different options for calculating fuel at start. When planning a new flight, the Minimum Fuel Required policy is selected by default. There are five fuel policies to choose from:

- **Minimum Fuel Required** is a calculated value that determines the minimum amount of fuel required for taxi, flight, flight to an alternate airport (if specified), reserve, extra, and additional fuel. The default amount of reserve fuel is determined by the aircraft profile.
- **Extra Fuel** is a user-defined amount of fuel over the minimum fuel. Extra fuel is listed at the bottom of the Fuel section and can be added anytime. If extra fuel is manually added by tapping the **Extra Fuel** field, the Extra Fuel policy is automatically selected.
- **Maximum Fuel** is a calculated value based on the maximum amount of fuel the aircraft can hold without exceeding airframe weight or fuel tank capacity limits. When maximum fuel is selected, fuel over what is minimally required for the flight is added to the extra fuel field.
- **Landing Fuel** is a user-defined amount of fuel that calculates how much fuel is needed at the start to land with the user-defined amount. If the Fuel at Landing field is manually edited, the Landing Fuel policy is automatically selected. Entering a landing fuel that is less than the aircraft's default reserve fuel plus the amount needed to fly to the alternate results in error.
- **Manual Fuel** is a user-defined amount of fuel at start. Editing Start Fuel results in the manual fuel policy being automatically selected.

Manually Editing Fuel

Manually editing the fuel at start, fuel at landing, or extra fuel will change the fuel policy automatically. For example, when manually editing Fuel at Landing, the Landing Fuel policy is automatically selected.

NOTE: When selecting a fuel policy, ForeFlight does not check to ensure the aircraft will remain within forward and aft CG limits.

15. FLIGHTS

15.12.2 Fuel Table

The Fuel Table provides a dynamic breakdown of the flight's fuel. Some fields are only displayed for certain aircraft types, accounts, or selected fuel policies. Editable fields are highlighted blue. Fuel weight and volume are given in separate columns. See the numbered list below for a description of each field.

The screenshot shows a 'FUEL' table with columns for 'FUEL', 'GAL', and 'LBS'. The table lists various fuel categories and their corresponding values. Numbered callouts (1-15) point to specific elements: 1 points to the 'Landing Fuel' header; 2 and 3 point to 'MIN' and 'MAX' buttons; 4 points to the 'Total Start' row; 5 points to the 'Fuselage Tank' row; 6 points to the 'Flight Fuel' row; 7 points to the 'Taxi Fuel' row; 8 points to the 'Fuel to Destination' row; 9 points to the 'Fuel at Landing' row; 10 points to the 'Alternate Fuel' row; 11 points to the 'Contingency Fuel' row; 12 points to the 'Reserve Fuel' row; 13 points to the 'Extra Fuel' row; 14 points to the 'Additional Fuel (ETP)' row; and 15 points to the 'Ballast Fuel' row. Annotations include 'Tap to collapse' pointing to expand/collapse arrows and 'Requires Dispatch' pointing to the 'Additional Fuel (ETP)' row.

FUEL		GAL	LBS
Fuel Policy	2 3	Landing Fuel >	1
▼ Total Start 3,334 lbs available	MIN MAX	615 / 1,109	4,151 / 7,485 4
Fuselage Tank		148	1,000 5
Wing Tanks		467	3,151
▼ Flight Fuel		343	2,316 6
Taxi Fuel		30	200 7
Fuel to Destination		314	2,116 8
▼ Fuel at Landing		272	1,834 9
Alternate Fuel		103	696 10
Contingency Fuel		16	106 11
Reserve Fuel EASA	Policy	78	526 12
Extra Fuel		75	506 13
Requires Dispatch — Additional Fuel (ETP)		0	0 14
Ballast Fuel Wing Tanks	Use 1883	0	0 15

1. Tap to select a **Fuel Policy**.
2. Quick access button for selecting the **Minimum Fuel** policy.
3. Quick access button for selecting the **Maximum Fuel** policy.
4. **Total Start Fuel**: This value is equivalent to the sum of the Flight Fuel and Fuel at Landing. This value can be automatically calculated by the selected fuel policy (recommended) or manually specified by the user.

15. FLIGHTS

5. If the aircraft has multiple **Fuel Tanks**, fuel allocation per tank is displayed.
6. **Flight Fuel** is the sum of the taxi fuel and fuel to the destination.
7. **Taxi Fuel** is the fuel required for start, taxi, and takeoff. The default amount is specified in **aircraft profile** and can be overwritten on a per-flight basis for unique circumstances, such as operating out of an airport that will require an extensive ground taxi.
8. **Fuel to Destination** is the fuel required for flight from departure to destination airport. This amount is calculated using the aircraft's selected performance profile, planned cruise altitude, and forecast weather.
9. **Fuel at Landing** is the sum of alternate, contingency, reserve, extra, additional, and ballast fuel. It is also equal to the starting fuel minus the flight fuel (taxi + fuel to destination).
10. **Alternate Fuel** refers to the fuel required to fly to the alternate airport. There are two methods for calculating alternate fuel requirements. The second method discussed below automatically adds a fuel buffer.
 - (i) **Alternate routing** (Dispatch license required): This method applies the user-specified route, altitude, and performance profile to determine the fuel required to reach the alternate airport. No buffer fuel is added with this method.
 - (ii) If no user-specified alternate routing is provided, fuel to the alternate is calculated using a direct route and the same performance profile as the route to the destination airport. To account for a missed approach procedure, instrument approach procedure, and holding, a fuel buffer is added (in addition) to the fuel required to fly direct to the alternate airport.
 - Jet and Turboprop aircraft add 5 minutes of buffer fuel for holding and enough fuel to fly an additional 30 nm.
 - Piston aircraft add 5 minutes of buffer fuel for holding and enough fuel to fly an additional 15 nm.
 - There is no fuel buffer added when planning with a helicopter.

NOTE: Holding fuel is calculated at the aircraft's standard holding speed, 1,500 feet above destination airport elevation, in standard atmospheric conditions.

NOTE: The altitude to the alternate airport is automatically determined by evaluating the flight's cruise altitude, aircraft performance, and distance to the alternate.

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11. **Contingency Fuel** is carried by an aircraft to account for unforeseen circumstances that may require the aircraft to fly longer than anticipated and may be required by regulation. When a **Reserve Fuel** policy requiring contingency fuel is selected, this amount of fuel is automatically calculated.

NOTE: Contingency fuel is calculated at the aircraft's standard holding speed, 1,500 feet above destination airport elevation, in standard atmospheric conditions.

12. **Reserve Fuel** is assigned in the **aircraft profile** and can be edited on a per-flight basis. Business Performance accounts with European, Australian, or Dispatch licenses also have access to a **Reserve Fuel Policy** selector for specifying an amount of reserve fuel based on regulatory requirements.

13. **Extra Fuel** is a user-defined amount of fuel in excess of what is minimally required. Extra fuel is automatically calculated when a **Fuel Policy** is selected that required more than the minimum amount of fuel.

14. **Additional Fuel (ETP)** is only displayed when planning with a Dispatch account. Additional ETP (Equal Time Point) fuel is automatically added to ensure the aircraft can reach each alternate ETP airport with the necessary fuel at landing. If the aircraft does not require additional fuel to reach the alternate ETP airports with the necessary minimums, additional ETP fuel is zero.

15. **Ballast Fuel** is *unusable*, extra fuel that is added to the aircraft's zero fuel weight to move the aircraft's center of gravity within limits. This feature requires a performance-tier account and can only be displayed when planning with one of the following aircraft

- Cessna 650 Citation III
- Cessna 650 Citation VI
- Cessna 650 Citation VII
- Cessna 750 Citation X
- Cessna 750 Citation X+

Adding Ballast Fuel

Ballast Fuel is added with Weight and Balance. If an aircraft's center of gravity exceeds the limits and Ballast Fuel can correct the error, a **USE** button is displayed next to the Ballast Fuel row with an amount of fuel to resolve the error. Ballast fuel can be manually edited as necessary.

When Integrated Weight & Balance is complete, Ballast Fuel is included at the bottom of the Flight's Fuel section, the Navlog, and the Weight and Balance Summary Document.

15. FLIGHTS

15.12.3 Reserve Fuel

Default reserve fuel is defined in the **Fuel section** of the Aircraft Profile and can be edited on a per-flight basis.

Reserve Fuel Policy Tool

Business Performance accounts with a European, Australian, or Dispatch license have access to a Reserve Fuel Policy tool for calculating an amount of reserve fuel based on regulatory requirements. The default *reserve* fuel policy is specified in the **Fuel section** of the aircraft profile and can be edited on a per-flight basis. To select an amount of reserve fuel based on regulatory requirements:

1. Tap the Reserve Fuel **Policy** button.
2. Select the reserve fuel policy applicable to the flight.

FUEL	GAL	LBS
Fuel Policy		Landing Fuel >
▼ Total Start 3,334 lbs available	615 / 1,109	4,151 / 7,485
Fuselage Tank	148	1,000
Wing Tanks	467	3,151
▼ Flight Fuel	343	2,316
Taxi Fuel	30	200
Fuel to Destination	314	2,116
▼ Fuel at Landing	272	1,834
Alternate Fuel	103	696
Contingency Fuel	16	106
Reserve Fuel EASA	78	526
Extra Fuel	75	506
Additional Fuel (ETP)	0	0
Ballast Fuel Wing Tanks	0	0

Fuel Table - Reserve Policy Button

15. FLIGHTS

Reserve Fuel Policies

When using the Reserve Fuel Policy tool, the flight's reserve fuel, including any additional or contingency fuel, is automatically calculated based on the selected reserve fuel policy.

LFRS to LPPT		Reserve Fuel Policy	
Manual	Manually specify an amount of reserve fuel.	<input type="radio"/>	
Manual (Minutes)	Manually specify an amount of reserve fuel expressed as minutes of flight using top of descent fuel flow.	<input type="radio"/>	
FAA Part 91/135	45 minutes of reserve fuel at top of descent fuel flow.	<input type="radio"/>	
FAA Part 121	45 minutes of reserve fuel at top of descent fuel flow.	<input type="radio"/>	
FAA Part 121 International	30 minutes at 1,500 ft above the destination or alternate airport, default of 10% contingency fuel.	<input type="radio"/>	
EASA Part NCC	30 minutes of reserve fuel at 1,500 ft above destination or alternate airport, 45 minutes for piston.	<input type="radio"/>	
EASA Commercial	30 minutes of reserve fuel at 1,500 ft above the alternate airport, 45 minutes above destination if no alternate.	<input checked="" type="radio"/>	
Contingency Fuel (%)		5	
CASA RPT	30 minutes of reserve fuel at 1,500 ft above the alternate airport, 45 minutes above destination if no alternate.	<input type="radio"/>	
CASA Non-RPT	30 minutes of reserve fuel at 1,500 ft for heavy jets and turboprops, 30 minutes for lighter aircraft.	<input type="radio"/>	

Reserve Fuel Policies

Available reserve fuel policies are discussed below.

- **Manual** is a user-specified amount of reserve fuel. Manual reserve fuel is not explicitly based on a regulatory environment or calculated value. When this option is selected, two additional fields are displayed for specifying the fixed amount of reserve fuel and an amount of fuel that is contingent on the length of the flight (see note below).
- **Manual (minutes)** is a user-specified reserve fuel amount expressed in flight time. When this option is selected, two additional fields are displayed for specifying a fixed amount of reserve fuel in minutes and an additional amount of fuel that is contingent on the length of the flight (see note below). Manual (minute) fuel is calculated at the top-of-descent (TOD) fuel consumption rate.

NOTE: Contingency fuel is calculated as a percentage of flight time using the aircraft's fuel consumption rate at the flight's TOD waypoint.

15. FLIGHTS

- **FAA Part 91/135** adds a quantity of reserve fuel equivalent to 45 minutes of flight time using the TOD fuel consumption rate.
- **FAA Part 121** adds a quantity of reserve fuel equivalent to 45 minutes of flight time using the TOD fuel consumption rate.
- **FAA Part 121 International** adds 10% contingency fuel (10% of the time to destination converted to a fuel quantity using the TOD fuel consumption rate) *plus* an amount of fuel equivalent to 30 minutes of flight time using the holding pattern fuel consumption rate (see note below).
- **EASA Part NCC** adds a quantity of fuel equivalent to 30 minutes of flight time (45 minutes for pistons) using the holding pattern fuel consumption rate (see note below). An additional user-specified contingency fuel is also possible with this reserve policy.
- **EASA Commercial** adds 5% contingency fuel or 5 minutes (whichever is higher) at the holding pattern fuel consumption rate (see note below); discretionary fuel (see note below); *plus* one of the following:
 - If an alternate airport is selected: the required fuel to the alternate airport plus a quantity of reserve fuel equivalent to 30 minutes of flight time at the holding pattern fuel consumption rate.
 - If no alternate airport is selected: a quantity of alternate fuel equivalent to 15 minutes of flight time at the holding pattern fuel consumption rate plus an additional 30 minutes of reserve fuel.

NOTE: The holding pattern fuel consumption rate is determined using standard holding speed, 1,500' above the destination airport in standard conditions.

NOTE: *Discretionary fuel* is an optional user-specified amount of fuel that complies with EASA's [amendment to Fuel Schema](#) and can be entered on the Fuel Table.

NOTE: Contingency fuel is calculated as a percentage of flight time using the aircraft's fuel consumption rate at the flight's TOD waypoint.

15. FLIGHTS

- **CASA RPT** fuel varies by aircraft type:

Aircraft Type	Alternate Airport	Contingency Percentage	Reserve Fuel Time (min)
Piston	N/A	10%	45
Jet/TurboProp	Yes	5%	30
Jet/TurboProp	No	5%	45

NOTE: CASA RPT contingency fuel is either a percentage of flight time (as indicated above) or 5 minutes (whichever is higher).

- **CASA Non-RPT** varies by aircraft type and weight:

Aircraft Type	Contingency Percentage	Reserve Fuel Time (min)
Piston/TurboProp (MTOW 5,700 kg or less)	0%	45
Piston (MTOW greater than 5,700 kg)	5%	45
Jet/TurboProp (MTOW greater than 5,700 kg)	5%	30

NOTE: CASA RPT and Non-RPT reserve fuel is calculated using the holding pattern fuel consumption rate at the aircraft's standard holding speed, 1,500' above the destination airport in standard conditions. Contingency fuel is calculated using the aircraft's fuel consumption rate at the flight's top of descent waypoint, 1,500' above the destination airport in standard conditions.

15. FLIGHTS

15.13 Weights

The weights section provides a detailed breakdown of weights during four phases of flight.

- **Zero Fuel Weight** equals the aircraft’s basic empty weight plus its payload.
- **Ramp Weight** equals the zero fuel weight plus total fuel at start.
- **Takeoff Weight** equals ramp weight minus taxi/takeoff fuel.
- **Landing Weight** equals takeoff weight minus the fuel to destination.

Each phase of flight includes three weights: the planned weight, maximum weight, and the available weight for the phase of flight. Planned and maximum weights are displayed on the right side of the table (e.g., 4,481 / 5,500). Available weight is displayed on the left side of the table and calculated by subtracting the maximum weight by the planned weight.

If a weight limit is exceeded, the text is changed to red and an error message is displayed at the top of the flight planning form.

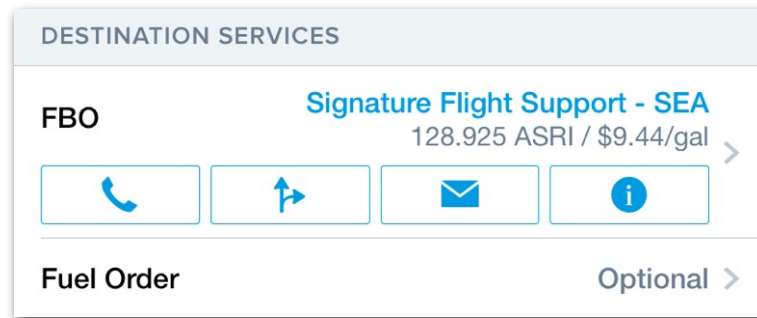
Collapse the zero fuel, ramp, or takeoff weight section by tapping the arrow on the left side of the table.

WEIGHTS (LBS)	
▼ Zero Fuel Weight 1,019 lbs available	4,481 / 5,500
Total Fuel at Start	1,043
▼ Ramp Weight 0 lbs available	5,524 / 5,524
Taxi/Takeoff Fuel	24
▼ Takeoff Weight 0 lbs available	5,500 / 5,500
Fuel to Destination	759
Landing Weight 659 lbs available	4,741 / 5,400

15. FLIGHTS

15.14 Destination Services

The Destination Services section is an optional section and can be used to display FBO information. As described below, customers with a Performance tiered account can order fuel from this section when Fuel Orders are enabled in **More > Settings**.



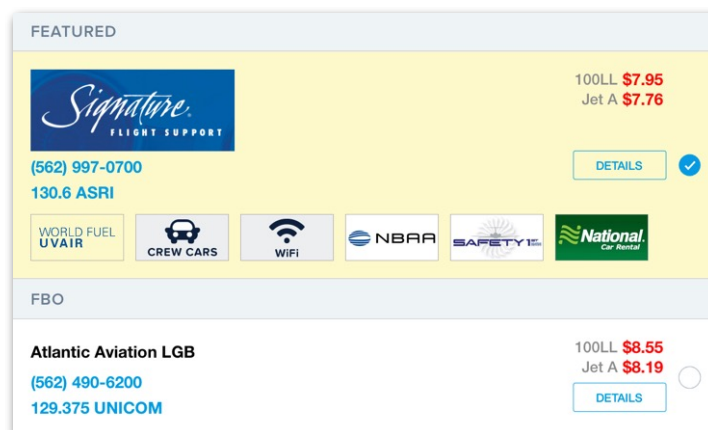
Destination Services

15.14.1 FBO Information

When planning with Flights, you can optionally select an FBO. Selecting an FBO adds quick-reference information to the flight planning form and Navlog.

To select an FBO:

1. Tap the top row of the Destination Services section
2. Review the available businesses.
3. Tap an FBO to select it.



List of available FBOs

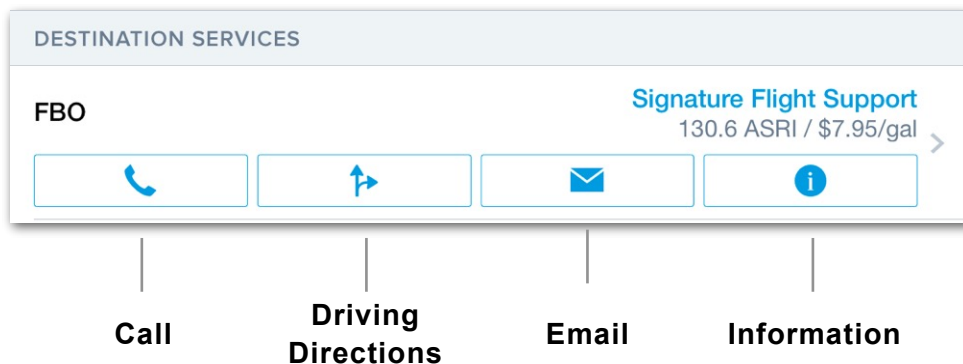
15. FLIGHTS

The FBO list displays frequencies, phone numbers, services, and the latest fuel prices. To see additional FBO information, including photos, user-submitted comments, and contract JetFuelX prices, tap **Details**. To select that FBO for the flight, tap **Select FBO** at the bottom of the screen. You can also select and deselect FBOs by tapping them in the list.

Selecting an FBO adds its details to the Flights form and Navlog. When you select an FBO, ForeFlight will automatically select the same FBO for subsequent flights to the same airport.

FBO Quick Action Buttons

Once an FBO has been selected, its frequency and lowest available fuel prices are displayed on the Flights form along with four buttons. The phone button initiates a phone call to the FBOs primary phone number (requires iPhone). The mail button opens a new email to the FBOs primary email address. To view additional FBO information, tap the information button to the right of the email button.



15. FLIGHTS

15.14.2 Fuel Orders

The Fuel Order option allows Performance Plus customers to order Full-Service fuel via email (internet connection required) from within the app. To enable this feature, tap **More > Settings** and toggle **Enable Fuel Orders**.

To create a fuel order, from the Flights page under **Destination Services > Fuel Order**, tap **Fuel Provider** and select an FBO at the destination airport. If you have added fuel cards in JetFuelX, you can tap **Fuel Card** to select an available fuel card and receive discounted prices at that FBO. Each fuel card includes the discounted price, the fuel card provider, a link to view any notes for the fuel card, and price tiers if they are available with that card. The retail price of fuel at that FBO is shown at the top of the page for reference.

If the fuel card you selected supports fuel releases at that FBO, a new option appears to send a fuel release as part of the fuel order. Doing so will notify the fuel card provider in addition to the FBO, allowing them to release the fuel so it's ready and paid for when you arrive. If you choose to not use a fuel release, or the fuel card doesn't support them, you can still send the fuel order to the FBO without it.

KCLM to KYKM		Fuel Order	
Fuel Provider		McCormick Air Center	
Fuel Type		Jet-A	
Fuel Card		Optional >	
Quantity	LBS	1,046	GAL 155
Price		\$4.76/gal	
Total		\$737.80	
Fuel On		Arrival	
Arrival		Apr 24, 2018 09:13 PDT	
Departure		Optional	
Comments/Requests			

Fuel Order Form

ForeFlight automatically populates the Quantity field with the amount of fuel that needs to be added after the flight to reach max capacity, based on the Fuel at Landing value in the Fuel section of the Flights Planning form.

Tap on the numbers for LBS or GAL to change this value as desired. Changing one number automatically updates the other. Alternatively, enter **zero** in the GAL field for "captain's discretion", and you can decide on the fuel quantity after you've landed at your destination.

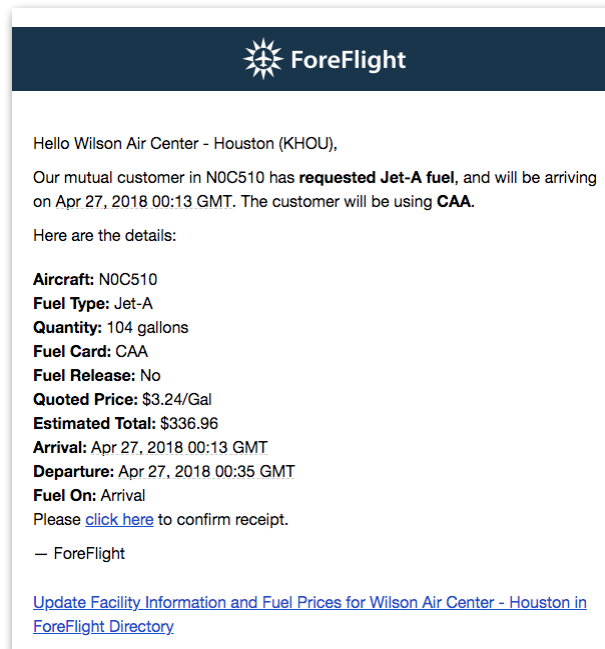
The Price field indicates the price per gallon of fuel, using either the retail price or your contract fuel price if you selected a fuel card. Below that, you can set your FBO Arrival and Departure times and select whether you want to load the fuel on Arrival or

15. FLIGHTS

Departure. If you want to add any special comments or requests to your fuel order, you can do so at the bottom.

Fuel Order Email

The emailed fuel order sent to the FBO includes information about the order and a button for them to confirm receipt of the fuel order. If the FBO accepts the fuel order, the Order status in ForeFlight changes from **Sent** to **Confirmed**.



Emailed Fuel Order

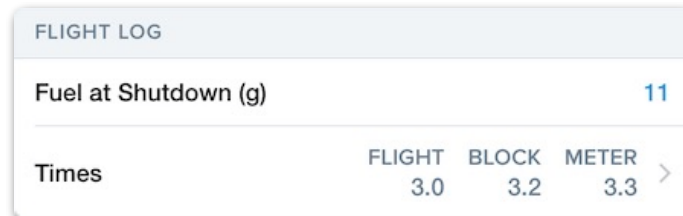
After sending a fuel order, the **Send** button changes to **Cancel**. Clicking this will send another email to the FBO informing them that you canceled the order. If the fuel order email is not successfully delivered to the FBO, such as if the FBO's firewall rejects it or the FBO's email account no longer exists, the fuel order status will show **Not Delivered**.

The email may not reach the FBO and instead trigger the Not Delivered message in some circumstances, such as if the email is automatically placed in the FBO's spam folder.

15. FLIGHTS

15.15 Flight Log

The Flight Log section allows pilots to record fuel remaining at shutdown and flight-related times. Information in this section can be shared with the ForeFlight Logbook.



The screenshot shows a mobile application interface for the Flight Log. At the top, there is a header 'FLIGHT LOG'. Below it, a row displays 'Fuel at Shutdown (g)' with a value of '11' on the right. Underneath, there is a table with the following structure:

Times	FLIGHT	BLOCK	METER	>
	3.0	3.2	3.3	

Flight Log

15.15.1 Fuel at Shutdown

The remaining fuel at shutdown can be logged in the Flight Log section. Fuel at shutdown is not copied to the next flight or any other ForeFlight features. Fuel at shutdown allows pilots to compare flight planning results with actual results. The fuel at shutdown unit (e.g., gallons, kilograms, etc) is set with the aircraft profile > fuel unit setting.

15.15.2 Times

The Times section allows pilots to record flight meter time (e.g., hobbs and tach meters), flight time, and block time. If the start and end times required to calculate a value have not been entered, the time field will display “Logged”.

Flight Meter Time

The Flight Meter section contains three rows, **Start**, **End**, and **Total**. These rows are intended to log starting and ending hobbs or tach time. Once a start and end time are entered, the total time is automatically calculated. Flight Meter time is *not* currently copied to Logbook.

15. FLIGHTS

Flight Time

Flight time is the difference between **Time Off** and **Time On** and is automatically calculated. You can log this time by sharing the flight with Logbook.

Remember to share your flight with Logbook if you want to log the flight time. The Flights view and Logbook do not automatically sync. Adding flight time after a flight has been shared to the Logbook or editing flight time in the Logbook does not update the time in both Flights and Logbook. Flight time is only copied to Logbook when the flight time is entered and then the flight is shared.

Block Time

Block time is the difference between **Time Out** and **Time In** and is automatically calculated. Remember to share your flight with Logbook if you want to log the block time. The Flights view and Logbook do not automatically sync. Manually updating one does not automatically update the other. Adding block time after a flight has been shared to logbook or editing block time in the logbook does not update the time in both Flights and Logbook. Block time is only copied to Logbook when the time is entered and then the flight is shared.

15.15.3 Marked Positions

If created between the flight's estimated departure and arrival time, **Marked Positions** retroactively display on the Interactive Map and at the bottom of the Flight Log section.

For instance, if a flight is planned from 0800 to 0900, any Marked Positions created during that period will be associated with the flight. This allows you to have Marked Positions automatically linked to the appropriate flight as you plan and fly.

The number of Marked Positions associated with a flight is displayed on the right and can be tapped to view or edit each Marked Position.



FLIGHT LOG		
Fuel at Shutdown (lbs)		550
Times	BLOCK 2.0	METER 1.2 >
Marked Positions		2 >

Flight Log with Marked Positions

15. FLIGHTS

15.16 Pack

Pack provides a method for downloading all charts, weather, NOTAMs, and fuel-price data needed for the planned route. Pack can be accomplished from the Maps or Flights pages. For more information, see the **Pack** section.

15.17 Add Next Flight

The **Add Next Flight** button creates a new flight and copies pertinent details. Add Next Flight sets the destination airport of the previous flight as the departure airport of the new flight, and sets the new flight's ETD to 30 minutes after the ETA of the previous flight, if that time has not already passed. Add Next Flight preserves the first flight's aircraft and performance profile, payload details, and fuel policy, though if the selected fuel policy requires user input (such as Extra Fuel, Landing Fuel, and Manual Fuel) then the previous value will not be preserved when adding a next flight.

15.18 Copy Flight

The **Copy flight** button can be used to duplicate a flight you need to plan again. Copying a flight is also useful when a flight is shared with you. Shared flights can not be edited, however they can be copied and then edited.

Copying a flight is the preferred method for planning a flight with the same route and aircraft instead of editing an old flight. Editing a flight that has been previously published or filed can cause unintended consequences.

Note: When needing to plan the same flight multiple times, use the **Copy flight** function.

15.19 Delete Flight

The **Delete Flight** button is used to delete the selected flight. When tapped, a confirmation pop-up is displayed. Tap the confirmation pop-up **Delete** button to permanently delete the flight. Deleted flights cannot be recovered.

15. FLIGHTS

15.20 Proceed to File

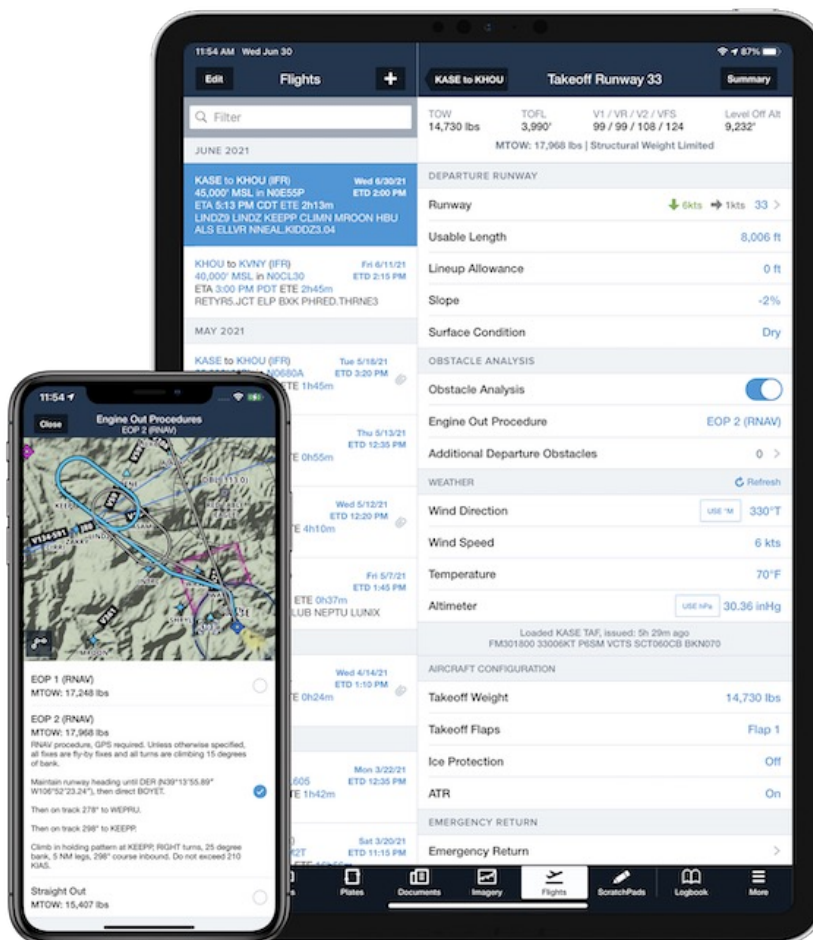
The **Proceed to File** button opens the filing form. The filing form is automatically populated with the fields from the flight planning form and is used to file a flight plan. For information on filing flight plans with ForeFlight, see the ForeFlight Filing Guide in **Documents > ForeFlight** or online at www.foreflight.com/filing-guide.

RUNWAY ANALYSIS

Runway Analysis (RWA) is an *optional* Takeoff and Landing Analysis tool for select single and multi-engine jet and turboprop aircraft. RWA utilizes performance data and procedures sourced directly from OEMs to provide maximum takeoff and landing solutions for multiple conditions. When planning with multi-engine aircraft, RWA results (including 1st and 2nd segment climb gradients) are predicated on losing an engine at V1, ensuring that you can safely operate in the event of an engine failure.

Runway Analysis is designed to meet the guidelines and requirements of Advisory Circular 120-91A and CFR14 part 135.379. Runway Analysis is also EASA and CASA compliant when the slightly larger ICAO **Obstacle Corridor** is selected.

Runway Analysis is available to ForeFlight Performance Plus and Business Performance customers.



ForeFlight Mobile - Runway Analysis

16. RUNWAY ANALYSIS

16.1 Purchasing Runway Analysis

Runway Analysis requires a Performance tier subscription and paid add-on Runway Analysis license. When purchased, Runway Analysis is integrated into the ForeFlight Mobile Flights view. Runway Analysis is also available on the web when a ForeFlight Dispatch license is purchased.

Runway Analysis can be purchased by signing into www.plan.foreflight.com/account/subscription/aircraft. To add Runway Analysis, select the Runway Analysis **Buy** button for the appropriate aircraft from the bottom of the screen.

Customers with Basic Plus, Pro Plus, Business Pro, or MFB Pro plans must first upgrade to a Performance tier plan before adding Runway Analysis.

16.1.1 Purchasing Runway Analysis for Individuals

Runway Analysis is available to individual customers as a *per-type* add-on. Visit www.foreflight.com/products/runway-analysis-individual for aircraft availability.

16.1.2 Purchasing Runway Analysis for Business

Runway Analysis is available for business customers as a *per-tail* add-on. Visit www.foreflight.com/products/runway-analysis-business for aircraft availability.

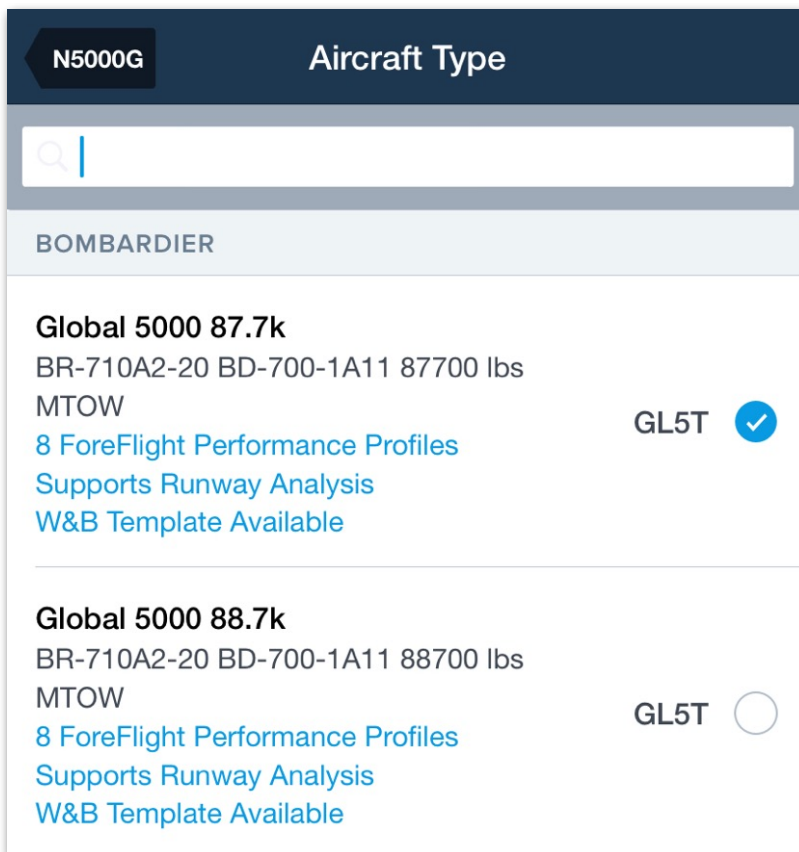
16. RUNWAY ANALYSIS

16.2 Configuring Runway Analysis

When a Runway Analysis license is purchased for an aircraft type with an individual Performance Plus plan, a **Supports Runway Analysis** label is added to each type variant that supports Runway Analysis.

To verify support, select **More > Aircraft** and choose an aircraft profile. Tap the aircraft type field and look for the **Supports Runway Analysis** label. If the label is missing, either the variant is not yet supported or a Runway Analysis license has not been purchased for the aircraft type.

Runway Analysis is licensed to Business and Military Flight Bag (MFB) customers on a per aircraft profile basis. As a result, the **Supports Runway Analysis** label is not displayed when using one of these accounts.

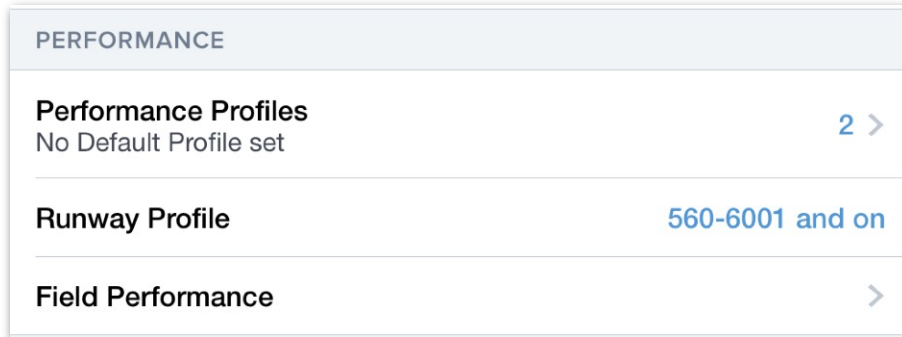


Supports Runway Analysis Label

16. RUNWAY ANALYSIS

16.2.1 Runway Analysis Settings

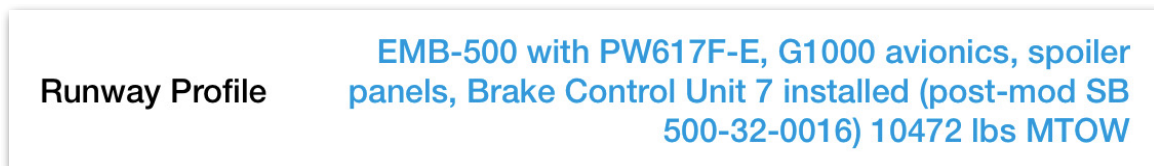
When a Runway Analysis license is purchased, two configurable fields are to the aircraft profile's Performance section.



Aircraft Profile - Runway Analysis Settings

Runway Profile

The Runway Profile field specifies the serial number, weight limit, or special equipment for which the Runway Analysis data is applicable. If more than one profile exists for the aircraft type, tap the **Runway Profile** setting and choose the correct version for your aircraft.



Runway Profile - EMB 500

16. RUNWAY ANALYSIS

Field Performance

The Field Performance settings specify the aircraft's default takeoff and landing configuration. These settings are unique to the aircraft type and are populated with information from the manufacturer.

The default settings can be adjusted from the aircraft profile. Edits to the aircraft profile's default configuration affect *subsequent* flights. Takeoff and landing configuration can also be adjusted on a *per-flight* basis using the Aircraft Configuration section of the Takeoff or Landing Analysis view.

Field Performance settings are broken into two sections (Takeoff and Landing). Settings can be edited by tapping a field and selecting another option from the menu.

The settings (and menus) only contain options that are specified in the aircraft flight manual (e.g., Takeoff Flaps may only have options for 10° and 20°). It is impossible to set a value if it is not included in the menu. The flight manual revision used to populate field performance settings is listed at the bottom of the menu (e.g., AFM Revision Level: Rev 11).

N650GL Field Performance Reset	
TAKEOFF	
Takeoff Flaps	20°
V1 Type	V1 BFL
Anti-Ice	Off
Spoilers	Automatic
Thrust Reversers	One or Both
Prolonged Flight in Icing Expected	No
Obstacle Corridor	FAA
LANDING	
Landing Flaps	39°
Anti-Ice	Off
Autobrakes	Off
Spoilers	Automatic
Thrust Reversers	One or Both
HUD Guidance	No
Engine Operation	Without Alternate Control/LP
Prolonged Flight in Icing	No
Brake Degrade/Failure	None
Landing Factor	1.0
AFM Revision Level: Rev 11	

Field Performance Default Settings

16. RUNWAY ANALYSIS

Obstacle Corridor and Landing Factor

Each aircraft's Field Performance settings are unique except for two settings:

- **Obstacle Corridor** - The Obstacle Corridor setting is present in every multi-engine aircraft's Field Performance settings. This setting specifies the flight path's obstacle accountability corridor to either the FAA specification from AC 120-91A or the slightly wider corridor defined by ICAO requirements. This setting cannot be adjusted per-flight.
- **Landing Factor** - The Landing Factor setting allows flight planners to specify an amount (e.g. 1.25) by which the Calculated Landing Distance is multiplied to produce a Factored Distance. The Landing Factor is similar to a safety buffer that is generally used to account for wet or dry runway conditions. This setting can also be adjusted on a per-flight basis.

N650GL		Field Performance		Reset
TAKEOFF				
Takeoff Flaps				20°
V1 Type				V1 BFL
Anti-Ice				Off
Spoilers				Automatic
Thrust Reversers				One or Both
Prolonged Flight in Icing Expected				No
Obstacle Corridor				FAA
LANDING				
Landing Flaps				39°
Anti-Ice				Off
Autobrakes				Off
Spoilers				Automatic
Thrust Reversers				One or Both
HUD Guidance				No
Engine Operation				Without Alternate Control/LP
Prolonged Flight in Icing				No
Brake Degrade/Failure				None
Landing Factor				1.0

AFM Revision Level: Rev 11

Obstacle Corridor and Landing Factor

16. RUNWAY ANALYSIS

16.3 Conducting Takeoff Analysis

Takeoff Analysis is accessed from the Departure / Destination section of the Flights view. Takeoff Analysis determines the maximum weight an aircraft can depart in the event of an engine failure (multi-engine aircraft) or the total distance required to perform the takeoff (single-engine aircraft).

To conduct an analysis, enter the flight's route, payload, and fuel details into the Flights view. After entering details, tap the **Takeoff** button to open the Takeoff Analysis view. Results are calculated when a runway is selected.

The **Takeoff** or **Landing** button may be hidden under the following conditions:

- The selected aircraft does not support Runway Analysis.
- A Runway Analysis license for the aircraft has not been purchased.
- A non-performance tier account is being used to plan the flight.
- Runway data for the airport is unavailable.
- The airport specified does not have an ICAO, IATA, FAA, or other short-code identifier. Only airports with identifiers are supported by Runway Analysis.

DEPARTURE / DESTINATION			
	ETD ETA	Aug 29, 2022 9:55 AM MDT	
Departure	Takeoff Info	KBDU	
Destination	Landing Info	KSNA	
Alternate	Landing Info	KONT	

Takeoff Analysis Button

16. RUNWAY ANALYSIS

16.3.1 Takeoff Analysis View

The Takeoff Analysis view is organized into sections. At the top of the Takeoff Analysis view, a Performance Summary displays key performance metrics for quickly evaluating a takeoff.

Each Takeoff Analysis section is described in detail throughout this chapter.

Takeoff Analysis Sections

- Performance Summary
- Destination Runway
- Obstacle Analysis (multi-engine only)
- Weather
- Aircraft Configuration
- Performance

Takeoff Analysis Default Data

When planning a new flight, Takeoff Analysis is automatically populated with the latest runway data, current (or forecast) weather, and default aircraft configuration.

Each field in blue text can be edited from this view to plan hypothetical conditions or circumstances that are unique to the flight.

For example, if the runway's usable length has changed due to construction, you can manually edit the runway's length to represent current conditions.

The screenshot displays the 'Takeoff Analysis View' for KMLU to 00R. It is organized into several sections:

- Performance Summary:** TOW: 8,268lbs, TOFL: 2,539', V1/VR/V2/VEPR: 95/97/105/115, Level Off Alt: 1,650'. MTOW: 10,700 lbs | Structural Weight Limited.
- DEPARTURE RUNWAY:** Runway: 04 >, Usable Length: 7,504 ft, Lineup Allowance: 0 ft, Slope: -0.01%, Surface Condition: Dry.
- OBSTACLE ANALYSIS:** Obstacle Analysis: (toggle), Engine Out Procedure: Straight Out, Additional Departure Obstacles: 0 >.
- WEATHER:** Wind Direction: USE °M 0°T, Wind Speed: 0 kts, Temperature: 24°C, Altimeter: USE hPa 30.00 inHg. Note: Loaded KMLU METAR, issued: 48m ago. METAR KMLU 011053Z 0000KT 10SM SCT065 SCT085 24/22 A3000.
- AIRCRAFT CONFIGURATION:** Takeoff Weight: 8,268 lbs, Takeoff Flaps: 15°, Anti-Ice: Off, Anti-skid: Operable, Type II/III/IV Deice Fluid: Not Applied, Rolling Takeoff: No.

Takeoff Analysis View

16. RUNWAY ANALYSIS

16.3.2 Multi-Engine Takeoff Analysis

When planning with a multi-engine aircraft, Takeoff Analysis determines if the aircraft can perform (or abort) a takeoff in the event of an engine failure. If an aircraft cannot perform (or abort) a takeoff at the maximum gross weight, Runway Analysis will determine the maximum takeoff weight (MTOW) that it can.

Takeoff Analysis does not provide all engine operating (AEO) results for multi-engine aircraft.

Multi-Engine Takeoff Analysis Constraints

When analyzing a takeoff, multiple aircraft performance and environmental constraints are evaluated to ensure the aircraft can depart (and abort) in compliance with the selected (FAA or ICAO) obstacle corridor standards (specified in the aircraft's Field Performance settings). Constraints that are evaluated include:

Aircraft Performance Constraints

- Climb Gradient
- Takeoff Distance
- Stopping Distance
- Braking Energy
- Tire Speed Limits

Environmental Constraints

- Wind
- Temperature
- Available Runway Distance
- Surface Conditions
- Obstacles

Determining Maximum Takeoff Weight

When an aircraft cannot perform an OEI takeoff at the aircraft's maximum structural takeoff weight, Takeoff Analysis calculates a unique maximum takeoff weight (MTOW) for the flight by reducing the MTOW until all constraints are satisfied or the takeoff is deemed impossible.

For example, when planning operations from a short runway, the MTOW is reduced so that the distance required to accelerate and stop is less than the runway's accelerate and stop distance available (ASDA). In this example, available runway distance is the constraint that limits the aircraft from departing at its maximum structural weight. If a longer runway were selected, the MTOW would increase if there were no other limiting constraints.

16. RUNWAY ANALYSIS

Identifying the Limiting Constraint

Takeoff Analysis displays the MTOW and limiting constraint for the flight at the bottom of the Performance Summary. There are ten potential limiting constraints (see below).

KTEX to KMYJ		Takeoff Runway 27		Summary
Planned Takeoff Weight	TOW 9,598 lbs	TOFL 5,781'	V1 / VR / V2 / VFS 105 / 106 / 108 / 124	Level Off Alt 9,842'
	MTOW: 9,770 lbs Obstacle Limited			
	Maximum Takeoff Weight	Limiting Constraint		

Limiting Constraints

Variables that have the potential to limit the maximum takeoff weight or render the takeoff impossible are listed below. When a constraint limits the maximum takeoff weight (MTOW), the text in bold is displayed at the bottom of the performance summary, followed by the word “*Limited*” (e.g., Runway Limited).

- **Structural Weight** is the maximum weight for the aircraft type defined by the aircraft flight manual. If an aircraft is not limited by performance or environmental constraints, MTOW is determined by the aircraft’s structural weight limit.
- **Obstacles** along the flight path can limit MTOW or deem a takeoff impossible. An aircraft must be able to clear all obstacles along the flight path by the selected FAA or ICAO lateral and vertical distance. If an aircraft cannot clear all obstacles, MTOW is reduced until takeoff is deemed possible.
- **Runway** length can reduce MTOW and deem a takeoff impossible. The aircraft must be able to takeoff or abort, given the available runway distance. If takeoff or abort distances exceed available runway, MTOW is reduced until takeoff is deemed possible.
- **Climb** gradient can reduce MTOW or deem a takeoff impossible. The aircraft must achieve the minimum climb gradient as required per the aircraft’s certification rules. The climb constraint does not factor in obstacles.
- **Temperature** can not exceed the aircraft flight manual’s published temperature limits.
- **Wind** cannot exceed the aircraft flight manual’s published wind limits.

16. RUNWAY ANALYSIS

- **Brake Energy** required to stop the aircraft cannot exceed the published limits. This constraint is most common with downslope runways or departures with a tailwind.
- **Tire Speed** cannot exceed the aircraft flight manual's published limits.
- **V_{MC}** is the minimum ground control speed or V_{MCG}. V1 cannot be lower than the published minimum control speed.
- **AFM Data** limits exist when data interpolation is not possible. When an AFM Data limit is applicable, Runway Analysis uses the next available lower value. For example, if the planned takeoff weight is 18,500 lbs, yet performance data only exists for 20,000 lbs and 15,000 lbs, Takeoff Analysis will limit MTOW to 15,000 lbs and the performance summary will indicate AFM Data Limited.

Takeoff Impossible Error

If Takeoff Analysis determines the planned takeoff weight exceeds the maximum takeoff weight for the conditions, the flight is deemed impossible and an error banner is displayed near the top of the Takeoff Analysis view. To clear the Takeoff impossible error, try the following suggestions.

- Select a different runway or a different Engine Out Procedure.
- Reduce Start Fuel or Payload.
- Plan a shorter leg (results in reduced fuel load).
- Select a more fuel efficient en route performance profile.
- Manually edit winds or temperature to determine if departing under different conditions results in a possible takeoff.

NOTE: If you selected the Maximum Fuel Policy on the Flights view and the Takeoff Analysis shows a warning, tapping back will prompt ForeFlight to automatically reduce the planned Start Fuel to the lower limit calculated by Takeoff Analysis. If you selected a Fuel Policy other than Maximum, you must manually reduce the fuel quantity or payload to the constrained value to remove the warning.

16. RUNWAY ANALYSIS

16.3.3 Single-Engine Takeoff Analysis

Takeoff Analysis for single-engine aircraft calculates the total distance required for takeoff given the selected runway, aircraft performance, and environmental conditions.

16.3.4 Takeoff Analysis - Performance Summary

Takeoff Analysis key performance results are always visible at the top of the view in the Performance Summary. Additional performance results are available in the Takeoff Analysis Performance section.

The Performance Summary is populated once a runway is selected. Results are initially based on the aircraft's default takeoff configuration and the current or forecast weather. Results are updated each time a new departure runway is selected or a configurable field is edited. If a takeoff is deemed impossible, the Performance Summary is blank.

Information in the summary varies based on the aircraft type. The information found in the summary is representative of the performance results that can be calculated using the aircraft's flight manual.

Complete performance results for can also be found in the Runway Analysis [Summary Document](#).

KBDU to KSEA		Takeoff Runway 08		Summary
TOW	BFL	V1 / VR / V2 / VSE		Level Off Alt
62,589 lbs	3,726'	102 / 107 / 120 / 148		6,687'
MTOW: 67,468 lbs AFM Data Limited				

Multi-Engine Performance Summary

KBDU to KSEA		Takeoff Runway 08		
Weight	Total Dist	VR	50' Speed	VENR
8,136 lbs	2,561'	73 kias	90 kias	170 kias

Single-Engine Performance Summary

16. RUNWAY ANALYSIS

16.3.5 Takeoff Analysis - Departure Runway

The Departure Runway section contains fields that define the runway environment. The fields in this section are automatically populated with the latest data and represent the variables that affect the selected aircraft's takeoff performance.

A field is only included in the Departure Runway section if it is documented in the aircraft flight manual as a variable that affects takeoff performance (e.g., Surface Condition).

The Departure Runway values can be overwritten to accommodate unique circumstances (e.g., runway NOTAMs). To overwrite a value, tap the applicable field and enter a new value.

DEPARTURE RUNWAY	
Runway	↓ 3kts → 4kts 11 >
TORA	5,158 ft
TODA	5,158 ft
ASDA	5,158 ft
Lineup Allowance	0 ft
Slope	-0.16%
Surface Condition	Dry

Departure Runway Section

16. RUNWAY ANALYSIS

16.3.6 Selecting a Departure Runway

To select a departure runway, tap the **Runway** field and select a runway from the list. Each available runway for the airport is included in the list even if the runway is closed. When a NOTAM is issued to close a runway, a *Closed* tag is displayed next to the runway name.

NOTE: Runway distance reductions via NOTAM are not factored by Runway Analysis.

When weather data is available via the internet, ADS-B, or SiriusXM, the wind component for each runway is displayed. Headwind components are displayed in green, tailwinds in red, and crosswind components in grey. The weather used to determine the wind component is displayed below the list of available runways.

The screenshot shows a 'Takeoff' screen with a list of runways. Each entry includes the runway ID, dimensions, surface, condition, slope, and wind components. Annotations identify specific features:

- Runway Details:** Points to the 'Details' button for Rwy 03.
- Wind Components:** Points to the red and grey wind indicators for Rwy 21.
- Closed Runway:** Points to the 'Closed' tag next to Rwy 26.
- Weather Source:** Points to the METAR information at the bottom of the screen.

Runway	Dimensions	Surface	Condition	Slope	Headwind	Tailwind	Crosswind	Status
Rwy 03	10,000' x 150'	Concrete	good condition	0.11%	5kts	3kts		Open
Rwy 21	10,000' x 150'	Concrete	good condition	-0.11%	5kts	3kts		Open
Rwy 08	13,793' x 150'	Concrete	good condition	0.31%	2kts	5kts		Open
Rwy 26	13,793' x 150'	Concrete	good condition	-0.31%	2kts	5kts		Closed
Rwy 30	6,000' x 150'	Concrete	good condition	-0.03%	3kts	5kts		Closed

Loaded KABQ METAR, issued: 26m ago
METAR KABQ 311252Z 01005KT 10SM FEW020 FEW045 SCT070 SCT130 18/13 A3033

Selecting a Departure Runway

16. RUNWAY ANALYSIS

Runway Details

When selecting a runway, the **Details** button opens a new view with additional runway information including:

- Surface dimensions
- Surface type and condition
- Wind components
- Glide Slope Indicators
- Slope
- Magnetic heading
- Lighting
- Elevation
- Available procedures

Runway 11 5,158' x 150', 319' MSL Asphalt, excellent condition	
SURFACE	
Dimensions	5,158' x 150'
Type	Asphalt, excellent condition
WIND COMPONENTS	
Rwy 11	→ 3kts ↓ 2kts
Wind: 050° at 4 kts (22m ago)	
GLIDESLOPE INDICATOR	
Rwy 11	4-box VASI (on left)
SLOPE	
Rwy 11	-0.16%
HEADING	
Rwy 11	106°M
LIGHTING	
Appr. Rwy 11	None
Edge	Medium Intensity
ELEVATION	
Rwy 11 Touchdown	319' MSL
PROCEDURES	
<small>NOT SAVED</small> RNAV (GPS) Rwy 11	Map
<small>NOT SAVED</small> VOR or TACAN Rwy 11	Map

Runway Detail View

16. RUNWAY ANALYSIS

Departure Runway Field Definitions

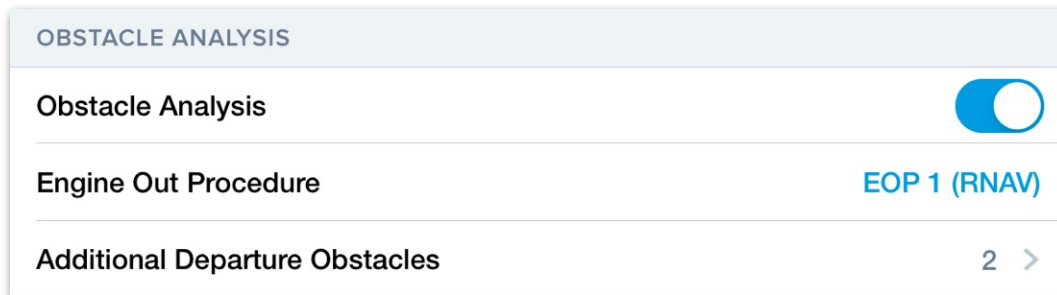
Definitions for terms and abbreviations found in the Departure Runway section are listed below.

- **TORA** - The portion of the runway suitable for the takeoff ground roll.
- **TODA** - Takeoff Distance Available (includes stopway and clearway).
- **ASDA** - Accelerate Stop Distance Available (includes stopway).
- **Stopway** - Paved area beyond TORA that can be used for stopping during a rejected takeoff
- **Clearway** - Unpaved area clear of obstacles beyond the runway that can be used for a portion of the initial climb with unbalance field length takeoffs.
- **Lineup Allowance** - Distance loss in takeoff calculations due to lining the aircraft on the centerline (typically only applicable to large jets and airliners). Lineup Allowance is set to zero by default.
- **Slope** - The difference in elevation from the beginning of the runway to the end, divided by the runway length, and multiple by one hundred.
- **Surface Condition** - The physical condition of the runway according to the options published in the aircraft's flight manual. Dry/Not Contaminated is the default value.

16. RUNWAY ANALYSIS

16.3.7 Takeoff Analysis - Obstacle Analysis

Obstacle Analysis is *exclusive* to multi-engine aircraft. This section enables and disables the obstacle constraint, selects the engine out procedure, and is used to specify additional obstacles along the departure runway centerline. The Obstacle Analysis section is made available when a runway has been selected.



Obstacle Analysis Section

Obstacle Analysis Toggle Switch

The first row of the Obstacle Analysis section is a toggle switch for enabling or disabling the Obstacle Analysis.

When enabled, Takeoff Analysis evaluates the selected Engine Out Procedure and Additional Departure Obstacles to ensure clearance can be maintained. If obstacle clearance cannot be maintained, obstacles become the limiting constraint and the maximum takeoff weight is reduced until the flight is deemed possible. Obstacle Analysis includes banked climb performance degradation.

When Obstacle Analysis is disabled, the Engine Out Procedure field is removed and obstacles are not evaluated for that phase of flight. Departure obstacles manually added are still evaluated when Obstacle Analysis is disabled.

16. RUNWAY ANALYSIS

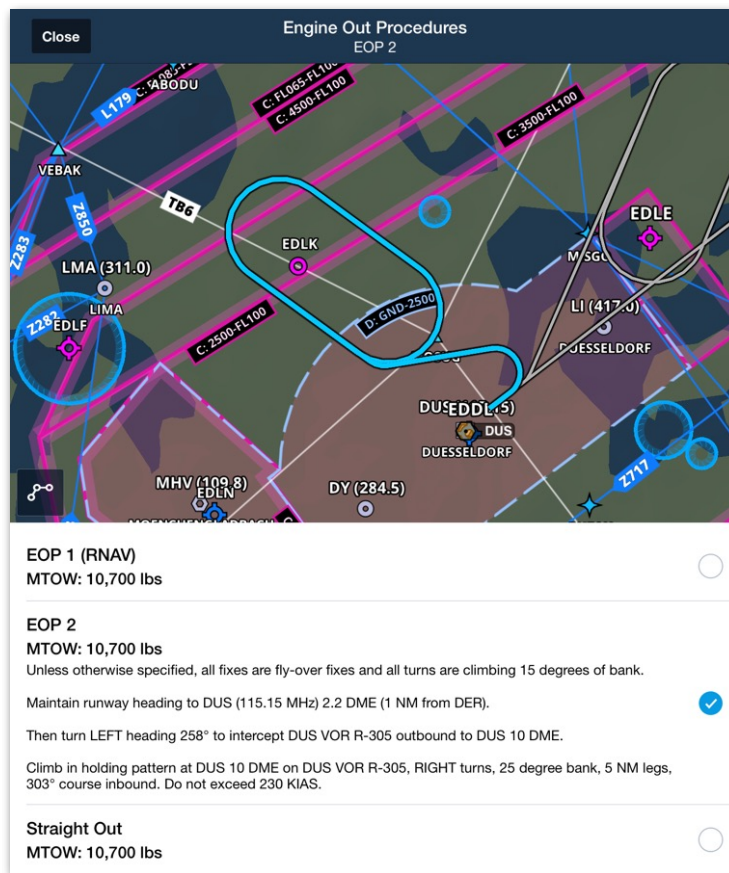
16.3.8 Takeoff Analysis - Engine Out Procedure

The Engine Out Procedure (EOP) specifies the route that will be flown in the event of an engine failure. The selected EOP is used for Obstacle Analysis and is included in the Runway Analysis [Summary Document](#).

The *Straight Out* procedure analyzes obstacles along the runway heading and is selected by default. To select a different EOP, tap the field and select an option from the list (if available).

ForeFlight Designed Engine Out Procedures

Engine Out Procedures labeled **EOP** are designed by ForeFlight. There are over 9,000 ForeFlight EOPs to choose from, with more being regularly added.



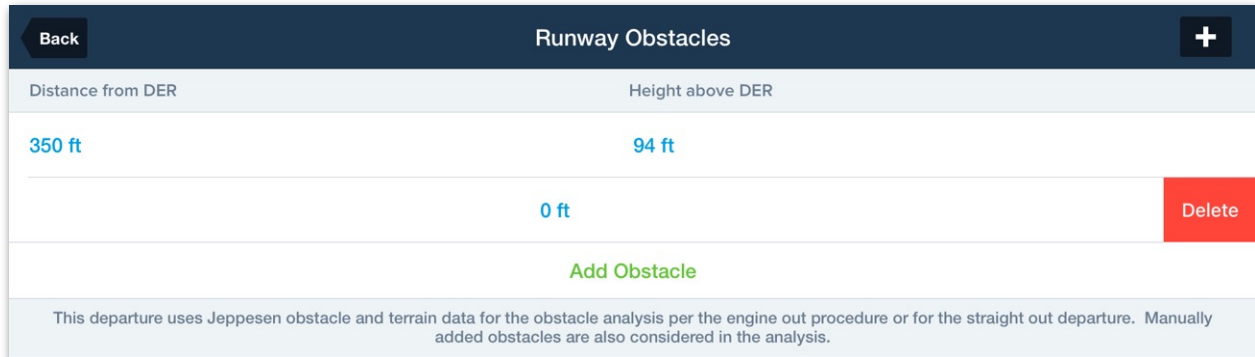
Engine Out Procedures - EDDL Düsseldorf

When possible, ForeFlight EOPs are overlaid onto existing Standard Instrument Departure (SID) procedures. All ForeFlight EOPs are designed in accordance with FAA Advisory Circular 120-91A.

16. RUNWAY ANALYSIS

16.3.9 Takeoff Analysis - Additional Departure Obstacles

The Additional Departure Obstacle field is used to manually add obstacles along the runway extended centerline. This feature is useful for adding obstacles that are issued via NOTAM and are not yet in the obstacle database.



Distance from DER	Height above DER
350 ft	94 ft
0 ft	Delete

[Add Obstacle](#)

This departure uses Jeppesen obstacle and terrain data for the obstacle analysis per the engine out procedure or for the straight out departure. Manually added obstacles are also considered in the analysis.

Additional Departure Obstacles

Adding Obstacles

To add an obstacle, follow the steps below.

1. Tap **Additional Departure Obstacles**.
2. Tap **Add Obstacle** or the **[+]** bottom in the upper right corner.
3. Manually specify a distance from the departure end of the runway (DER).
4. Manually specify a height above the DER.
5. To add additional obstacles, repeat steps 1-3.
6. When complete, tap the **Back** button near the top of the screen.

Deleting Obstacles

To delete an obstacle, swipe from right to left and tap **Delete**. When complete, tap the **Back** button near the top of the screen.

NOTE: It is not possible to add obstacles not aligned with the extended centerline.

16. RUNWAY ANALYSIS

16.3.10 Takeoff Analysis - Weather

Takeoff Analysis automatically loads the airport's latest METAR, TAF, MOS forecast, or general forecast (using ForeFlight Daily Weather) according to the flight's estimated departure time. If the departure airport does not provide weather information, Runway Analysis uses the appropriate weather from a nearby airport. The weather source and raw text are displayed at the bottom of the Weather section.

WEATHER		Reset
Wind Direction	USE °M	100°T
Wind Speed		7 kts
Temperature		90°F
Altimeter	USE hPa	29.92 inHg

Loaded KHOU TAF, issued: 3h 4m ago
131720Z 1318/1418 10007KT P6SM FEW040 FEW100

Takeoff Analysis Weather Section (KHOU TAF)

Temperature

The Aerodrome Forecast (TAF) does not include temperature data. If the Weather section indicates data is derived from a TAF, temperature data will be provided by the MOS forecast. When the MOS forecast issues a range of temperatures, the maximum temperature in the range is used.

16. RUNWAY ANALYSIS

Custom Weather

Each field in the weather section can be edited to allow for scenario planning. When a weather field is edited, the source and raw text at the bottom of the section change to “Using Custom Weather.”

When custom weather information has been entered, the performance results are updated, and the edited values are used throughout Takeoff Analysis. For example, if Wind Speed is manually edited, the wind components are updated to reflect the custom weather when selecting a runway.

WEATHER		Reset
Wind Direction	USE °M	270°T
Wind Speed		25 kts
Temperature		21 °C
Altimeter	USE hPa	30.59 inHg
Using Custom Weather		

Takeoff Analysis Custom Weather

Wind Direction

Wind Direction is given relative to true north by default. To use magnetic winds, tap the **Use °M** button. Using magnetic winds changes the weather source to custom.

Altimeter

Altimeter information can be displayed in inches of mercury (inHg) or hectopascal (hPa). To convert from one unit to the other, tap the button in the altimeter field.

Weather Reset

To revert the weather back to the current METAR or forecast weather after making edits, tap the **Reset** button in the top right corner of the Weather section.

16. RUNWAY ANALYSIS

16.3.11 Takeoff Analysis - Aircraft Configuration

The Aircraft Configuration section is automatically populated with the planned takeoff weight and default values from the aircraft's **Field Performance** settings.

Each field in the section can be edited to accommodate a non-standard takeoff configuration. Adjusting the aircraft's takeoff configuration updates the planning results.

AIRCRAFT CONFIGURATION	Reset
Takeoff Weight	8,054 lbs
Takeoff Flaps	15°
Anti-Ice	On
Anti-skid	Operable
Type II/III/IV Deice Fluid	Not Applied
Rolling Takeoff	No

Takeoff Analysis Aircraft Configuration

Aircraft Configuration Checks

Some aircraft equipment may have limitations that prohibit a configuration from being selected. For example, this aircraft is prohibited from applying deicing fluid with takeoff flaps. When takeoff flaps are selected, the Deice Fluid Applied option is displayed in grey but is not selectable.

Type II/III/IV Deice Fluid

Not Applied

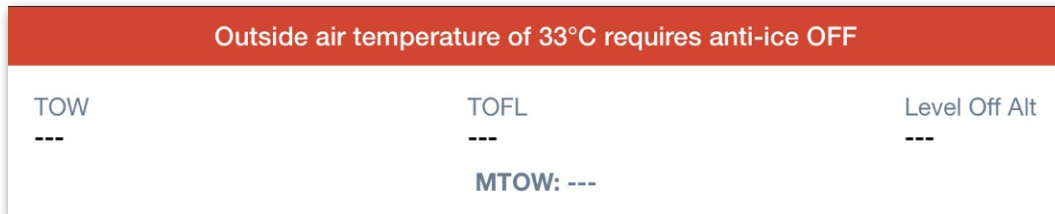
Applied

Configuration Unavailable

16. RUNWAY ANALYSIS

Aircraft Configuration Errors

If a takeoff configuration is selected that exceeds a limit, an error is displayed. In this example, the anti-ice setting was enabled outside of published limits.



Takeoff Configuration Error Message

Aircraft Configuration - V1 Type

Takeoff decision speed (V1) is a calculated value that is affected by multiple variables (takeoff weight, thrust, aircraft configuration, and runway length). Most non-transport category aircraft calculate a single V1 speed using the balanced field length technique.

Some larger aircraft provide performance results for multiple V1 speeds. When planning with one of these types of aircraft, there are options for selecting a V1 speed (V1 Min, V1 BFL, or V1 Max).

Balanced Field Length (BFL)

The balanced field length is a condition where the distance required to stop the aircraft after an abort (at V1) equals the distance required to continue the takeoff and reach 35 ft above the runway surface. With a single V1 speed, the pilot can abort or continue the takeoff at V1 in the event of an engine failure.

Unbalanced Field Length

When planning with an aircraft that supports unbalanced V1 speed calculations, Takeoff Analysis provides **V1 Min**, **V1 BFL**, and **V1 Max** options.

- **V1 Min** is the minimum V1 speed published for the flight conditions and results in a shorter accelerate stop distance but a higher accelerate-go distance.
- **V1 BFL** is the speed that results in equal accelerate-stop and accelerate-go distances.
- **V1 Max** is the maximum V1 speed published for the flight conditions and results in a shorter accelerate go distance, but a higher accelerate stop distance.

16. RUNWAY ANALYSIS

16.3.12 Takeoff Analysis - Emergency Return

The Emergency Return section is used to perform a Landing Analysis for the departure airport in the event of an emergency after departure. To conduct an Emergency Return analysis, tap the field and select a runway.

If an Emergency Return results in an overweight condition, a warning message is displayed at the top of the Emergency Return view. However, that warning is not also displayed on the Flights view since an emergency return is often expected to be overweight.

Back		Landing Runway 17L (Return To Base)		Summary	
Landing Weight	Actual Dist.	VAPP	VREF		
7,694 lbs	2,377'	103 kias	96 kias		
MLW: 9,900 lbs Structural Weight Limited					
RETURN TO BASE RUNWAY					
Runway				17L	>
LDA				3,500 ft	
Slope				-0.17%	
Surface Condition				Dry	
Landing Factor				1.0	

Emergency Return - Landing Analysis

16. RUNWAY ANALYSIS

16.3.13 Takeoff Analysis - Performance

The Performance section contains all takeoff performance results for the selected runway. The items in the Performance section vary by aircraft type and represent the information found in the aircraft flight manual. The results discussed in this section are only included in the results if they are related to the selected aircraft. Performance results cannot be edited directly.

KCXO to KSEZ		Takeoff Runway 32		Summary
TOW	BFL	V1 / VR / V2 / VSE	Level Off Alt	
91,482 lbs	5,310'	123 / 128 / 140 / 180	1,683'	
MTOW: 98,124 lbs Obstacle Limited				
PERFORMANCE				
Trim Setting Units	6.65 (at 38.1% MAC)			
TO Thrust Rated EPR	1.57			
TO Thrust LP RPM	93.5%			
V1	123 kcas			
VR	128 kcas			
V2	140 kcas			
Accel-Stop Distance	5,310'			
Accel-Go Distance	5,310'			
Level-Off MSL	1,683'			
2nd Seg Gross Climb Gradient	5.4%			
VSE	180 kcas			
Enroute Net Gradient (at level-off)	4.6%			

Takeoff Analysis - Performance Section

16. RUNWAY ANALYSIS

Performance Results

Performance results include values related to aircraft power, speed, distance, and altitude. These values correlate to individual takeoff, climb, and level-off segments as defined in the aircraft's flight manual.

Some aircraft are certified with two level-off and accelerate segments. The first segment is typically between 400 ft and 1,500 ft AGL and the second is 1,500 ft or higher. Once the aircraft is 1,500 ft or higher and reaches the en-route speed, Takeoff Analysis is complete.

If the aircraft is certified with two level-off and accelerate segments, the performance results are included in the Takeoff Analysis.

16. RUNWAY ANALYSIS

Takeoff Trim

Runway Analysis supports Takeoff Trim for select aircraft (listed below). To generate Takeoff Trim results, calculate weight and balance (W&B) using the integrated W&B tool with a profile that has %MAC enabled. If Weight & Balance is not calculated with %MAC enabled, the error message “CG Unavailable” is displayed in place of the trim results.

Takeoff Trim results are displayed near the top of the Takeoff Analysis Performance section and in the [Runway Analysis Summary Document](#).

- Challenger 300
- Challenger 604
- Challenger 605
- Challenger 650
- Falcon 900DX/900DX API Winglets
- Falcon 900EX/900EX EASy
- Falcon 900LX
- Global 5000 87.7k
- Global 5000 88.7k
- Global 5000 89.7k
- Global 5000 92.5k
- Global 6000 98k
- Global 6000 99.5k
- Global Express 93.5k
- Global Express 95k
- Global Express 96k
- Global Express 98k
- Global XRS 98k
- Global XRS 99.5k
- Global 7500
- Learjet 35A
- Learjet 40XR
- Learjet 45XR
- Learjet 60
- Learjet 60XR
- Learjet 70
- Learjet 75
- Phenom 300/300E
- Gulfstream IV
- Gulfstream IV/SP
- Gulfstream V
- Gulfstream VII-500
- Gulfstream VII-600
- Gulfstream 150
- Gulfstream 200
- Gulfstream 280
- Gulfstream 300
- Gulfstream 350
- Gulfstream 400
- Gulfstream 450
- Gulfstream 550
- Gulfstream 650
- Gulfstream 650ER
- Pilatus PC-24
- Cessna 680 Citation Sovereign
- Cessna 680 Citation Sovereign+
- Cessna 680A Citation Latitude

16. RUNWAY ANALYSIS

Speed-Related Definitions

The following results related to aircraft indicated airspeed may be found in the Performance section.

- **V₁** is the speed by which the pilot must initiate an action to abort the takeoff in the event of an engine failure.
- **V_R** is the speed at which the pilot initiates rotation by pulling back on the yoke or stick to transition to flight.
- **V₂** is the speed that must be attained when the aircraft is 35 ft above the runway surface with one engine inoperative. V₂ is also the target climb speed after engine failure to maintain through initial level-off.
- **50' Speed** is the climb speed reached at the end of the total takeoff distance while 50 ft AGL (gear down and takeoff flaps).
- **V_{SE}** is the clean configuration climb speed after all obstacles have been cleared.
- **V_{FTO}** is the takeoff final climb segment speed.
- **V_{ENR}** is the en route climb speed, or the target speed after all obstacle segments have been completed and the aircraft is clear of all obstacles. Once the aircraft reaches this speed, the Takeoff Analysis portion of the flight is complete.

Distance-Related Results

The following aircraft distance-related results may be found in the Performance section.

- **Ground Roll** - Takeoff roll (ground roll) is the portion of the takeoff procedure during which the airplane is accelerated from a standstill to an airspeed that provides sufficient lift to become airborne.
- **BFL** is the balanced field length. This distance is determined by finding the V₁ speed that results in an equal distance for accelerate-go and accelerate-stop.
- **Total Dist** is the distance required to complete a takeoff to 35 ft above the runway surface.
- **TOFL** is the takeoff field length, or the length required to complete a takeoff to 35 ft above the runway surface.

16. RUNWAY ANALYSIS

16.3.14 Takeoff Analysis - Engine Out Procedure

The Engine Out Procedure section at the bottom of Takeoff Analysis displays the textual portion of the selected engine out procedure (EOP) when planning with a multi-engine aircraft. The EOP is selected in the Obstacle Analysis section.

KMLU to 00R		Takeoff Runway 04		Summary
TOW	TOFL	V1 / VR / V2 / VENR		Level Off Alt
8,054 lbs	2,518'	95 / 97 / 106 / 115		1,644'
MTOW: 10,700 lbs Structural Weight Limited				
EMERGENCY RETURN				
Emergency Return <input checked="" type="checkbox"/>				
PERFORMANCE				
Takeoff Thrust N1				99.3%
V1				95 kias
VR				97 kias
V2				106 kias
VENR				115 kias
TOFL				2,518'
Level-Off MSL				1,644'
1st Net Grad (airport alt)				8.6%
2nd Net Grad (level-off alt)				10.3%
ENGINE OUT PROCEDURE				
RNAV procedure, GPS required. Unless otherwise specified, all fixes are fly-by fixes and all turns are climbing 15 degrees of bank.				
Maintain runway heading direct LURBY.				
Climb in holding pattern at LURBY, RIGHT turns, 25 degree bank, 5 NM legs, 045° course inbound. Do not exceed 230 KIAS.				

Engine Out Procedure Section

16. RUNWAY ANALYSIS

16.4 Conducting Landing Analysis

Landing Analysis determines the maximum landing weight, landing distance, and landing reference speed for the selected runway and aircraft configuration.

To conduct a Landing Analysis, enter the flight's route, payload, and fuel details into the Flights view then tap the **Landing** button next to the destination or alternate airport and select a runway.

To conduct a Landing Analysis for the departure airport, select the **Emergency Return** option from the Takeoff Analysis view. Landing Analysis results are calculated once a runway is selected.

The **Takeoff** or **Landing** buttons may be hidden under the following conditions:

- The selected aircraft does not support Runway Analysis.
- A Runway Analysis license for the aircraft has not been purchased.
- A non-performance tier account is being used to plan the flight.
- Runway data for the airport is unavailable.

The screenshot shows a mobile application interface for flight planning. At the top, it says "DEPARTURE / DESTINATION". Below this, there are two buttons: "ETD" (highlighted in blue) and "ETA" (grey). To the right, the date and time "Aug 29, 2022 9:55 AM MDT" are displayed. The main content is organized into three rows: "Departure", "Destination", and "Alternate". Each row has a "Takeoff" button, an "Info" button, and an airport code. The "Takeoff" button is present for "Departure" (KBDU) but is missing for "Destination" (KSNA) and "Alternate" (KONT). The "Landing" button is present for "Destination" and "Alternate" and is highlighted with a red border. The "Info" button is present for all three rows.

Category	Takeoff	Info	Airport
Departure	Takeoff	Info	KBDU
Destination		Info	KSNA
Alternate		Info	KONT

Landing Analysis Buttons

16. RUNWAY ANALYSIS

16.4.1 Landing Analysis View

The Landing Analysis view is organized into sections. At the top of the Landing Analysis view, a Performance Summary displays key performance metrics for quickly evaluating a landing.

Each Landing Analysis section is described in detail throughout this chapter.

Landing Analysis Sections

- Performance Summary
- Destination Runway
- Weather
- Aircraft Configuration
- Performance

Takeoff Analysis Default Data

When planning a new flight, Landing Analysis is automatically populated with the latest runway data, current (or forecast) weather, and default aircraft configuration.

Each field in blue text can be edited from this view to plan hypothetical conditions or circumstances that are unique to the flight.

For example, if the runway’s usable length has changed due to construction, you can manually edit the runway’s length to represent current conditions.

The screenshot displays the 'Landing Analysis View' interface. At the top, there are navigation tabs: '00R to KMLU', 'Landing Runwa...', and 'Summary'. Below this, a performance summary shows: Landing Weight (7,463lbs), Actual Dist. (2,241'), VAPP (102kias), and VREF (95kias). A note indicates 'MLW: 9,900 lbs | Structural Weight Limited'. The 'DESTINATION RUNWAY' section lists: Runway (22 >), LDA (7,504 ft), Slope (0.01%), Surface Condition (Dry), and Landing Factor (1.0). The 'WEATHER' section includes a 'Reset' button and shows: Wind Direction (0°T), Wind Speed (0 kts), Temperature (27°C), and Altimeter (30.00 inHg). A note states 'Loaded KMLU TAF, issued: 26m ago 011120Z 0112/0212 00000KT P6SM BKN070 BKN250'. The 'AIRCRAFT CONFIGURATION' section shows: Landing Weight (7,463 lbs), Landing Flaps (35°), VREF Increment (+0 KIAS), Anti-Ice (Off), and Anti-skid (Operable). The 'PERFORMANCE' section shows: VAPP (102 kias) and VREF (95 kias).

Landing Analysis View

16. RUNWAY ANALYSIS

16.4.2 Landing Analysis - Performance Summary

Landing Analysis performance results are always visible at the top of the view in the Performance Summary. Additional performance data is available in the Performance section.

Performance results are displayed once a destination runway is selected. Results are initially based on the aircraft's default landing configuration and the current or forecast weather. Results are updated each time a new destination runway is selected, or a configurable field is edited.

If a landing is deemed impossible due to a limit being exceeded, the performance summary will be blank.

Information in the summary varies based on the aircraft type. The information found in the summary is representative of the performance results that can be derived from the aircraft's flight manual.

KSEZ to KABQ		Landing Runway 03	
Weight	Total Dist	VAPP	
7,070 lbs	2,970'	72 kias	

Landing Analysis Performance Summary - Single Engine Aircraft

KSEZ to KABQ		Landing Runway 03		Summary
Landing Weight	Actual Dist.	VAPP	VREF	
7,663lbs	2,491'	103kias	96kias	
MLW: 9,900 lbs Structural Weight Limited				

Landing Analysis Performance Summary - Multi Engine Aircraft

16. RUNWAY ANALYSIS

16.4.3 Determining Maximum Landing Weight

Landing Analysis calculates a unique maximum landing weight (MLW) for the flight by reducing the MLW until all constraints are satisfied or the landing is deemed impossible.

For example, when planning operations to a short runway, the maximum landing weight is reduced so that the distance required to land and stop is less than the runway's landing distance available (LDA).

Identifying the Limiting Constraint

Landing Analysis displays the MLW and limiting constraint for the flight at the bottom of the performance summary. There are seven **potential constraints** that can limit the MLW.



16. RUNWAY ANALYSIS

Landing Impossible Error

If Landing Analysis determines the required landing distance exceeds the landing distance available, an error message is displayed at the top of the view.

To clear the error, try the following suggestions:

- Select a different runway.
- Reduce Start Fuel or Payload.
- Manually edit winds to determine if landing under different environmental conditions results in a successful landing.
- Select a different Surface Condition (e.g., Dry).
- Adjust the Landing Factor.
- Adjust the Aircraft Configuration (e.g., enable drag-producing equipment).

KDWH to 7TA0		Landing Runway 18		Summary
Required landing distance exceeds available by 84'				
Landing Weight	7,663lbs	Actual Dist.	---	
MLW: 7,228 lbs Runway Limited				

Landing Impossible Error

16. RUNWAY ANALYSIS

Limiting Constraints

Variables that have the potential to limit the maximum landing weight or render the landing impossible are listed below. When a constraint limits the maximum landing weight (MLW), the bold text in this section is displayed at the bottom of the performance summary, followed by the word “*Limited*” (e.g., Runway Limited).

- **Structural Weight** is the maximum structural landing weight for the aircraft type as defined by the aircraft flight manual. If an aircraft is not limited by performance or environmental constraints, MLW is determined by the aircraft’s structural weight limit.
- **Runway** length and weight capacity can reduce the MLW or deem a landing impossible.
- **Temperature** can not exceed the aircraft flight manual’s published temperature limits.
- **Wind** components cannot exceed the aircraft flight manual’s published wind limits.
- **Brake Energy** required to stop the aircraft cannot exceed the published limits. This constraint is most common on downslope runways or landings with a tailwind.
- **Tire Speed** cannot exceed the aircraft flight manual’s published tire speed limits.
- **AFM Data** limits exist when data interpolation is not possible. When an AFM Data limit is applicable, Runway Analysis uses the next available lower value. For example, suppose the planned landing weight is 18,500 lbs, yet performance data only exists for 20,000 lbs and 15,000 lbs. In this case, Landing Analysis will limit MLW to 15,000 lbs and the performance summary will indicate AFM Data Limited.

16. RUNWAY ANALYSIS

16.4.4 Landing Analysis - Destination Runway

The Destination Runway section contains various fields for defining the runway environment. The variables (e.g., landing distance available) are automatically populated with the latest available data and can be overwritten to accommodate unique circumstances (e.g., runway NOTAMs). To overwrite a value, tap the field and enter a new value.

The fields available in the Destination Runway section vary by aircraft type. A field is only included in the Destination Runway section if it is documented as a variable that affects landing performance in the aircraft's flight manual (e.g., Surface Condition).

DESTINATION RUNWAY	
Runway	22 >
LDA	7,504 ft
Slope	0.01%
Surface Condition	0.5in Water
Landing Factor	1.0

Destination Runway Section

NOTE: Runway distance reductions via NOTAM are not factored by Runway Analysis.

16. RUNWAY ANALYSIS

16.4.5 Selecting a Destination Runway

To select a destination runway, tap the **Runway** field and choose a runway from the list. Each available runway for the airport is included in the list even if the runway is closed. When a NOTAM is issued to close a runway, a *Closed* tag is displayed next to the runway name.

When weather data is available, the wind components for each runway are displayed. Headwind components are displayed in green, tailwinds in red, and crosswind components in grey. The weather used to determine the wind component is displayed below the list of available runways.

The screenshot shows a mobile application interface for runway selection. At the top, there is a dark blue header with the word "Landing" in white. Below the header is a list of runways. Each runway entry includes the runway name (e.g., Rwy 03, Rwy 21, Rwy 08, Rwy 26, Rwy 30), dimensions (e.g., 10,000' x 150'), surface and condition (e.g., Concrete, good condition), and slope (e.g., 0.11%). To the right of each entry, wind components are shown: a green arrow pointing down for headwind (e.g., 5kts), a red arrow pointing up for tailwind (e.g., 3kts), and a grey arrow pointing right for crosswind (e.g., 3kts). A blue "Details" button is located to the right of each entry. A "Closed" tag is visible next to Rwy 08 and Rwy 30. At the bottom of the list, there is a weather source section with the text "Loaded KABQ METAR, issued: 26m ago" and the METAR string "METAR KABQ 31125Z 01005KT 10SM FEW020 FEW045 SCT070 SCT130 18/13 A3033".

Runway	Dimensions	Surface/Condition	Slope	Headwind	Tailwind	Crosswind	Status
Rwy 03	10,000' x 150'	Concrete, good condition	0.11%	5kts	3kts		Available
Rwy 21	10,000' x 150'	Concrete, good condition	-0.11%		5kts	3kts	Available
Rwy 08	13,793' x 150'	Concrete, good condition	0.31%	2kts		5kts	Closed
Rwy 26	13,793' x 150'	Concrete, good condition	-0.31%		2kts	5kts	Closed
Rwy 30	6,000' x 150'	Concrete, good condition	-0.03%		3kts	5kts	Closed

Weather Source: Loaded KABQ METAR, issued: 26m ago
METAR KABQ 31125Z 01005KT 10SM FEW020 FEW045 SCT070 SCT130 18/13 A3033





Selecting a Destination Runway

16. RUNWAY ANALYSIS

Runway Details

When selecting a runway, the **Details** button opens a new view with additional runway information, including:

- Surface dimensions
- Surface type and condition
- Wind components
- Glide Slope Indicators
- Slope
- Magnetic heading
- Lighting
- Elevation
- Available procedures

 Runway 11 5,158' x 150', 319' MSL Asphalt, excellent condition	
SURFACE	
Dimensions	5,158' x 150'
Type	Asphalt, excellent condition
WIND COMPONENTS	
Rwy 11 	→ 3kts ↓ 2kts
Wind: 050° at 4 kts (22m ago)	
GLIDESLOPE INDICATOR	
Rwy 11	4-box VASI (on left)
SLOPE	
Rwy 11	-0.16%
HEADING	
Rwy 11	106°M
LIGHTING	
Appr. Rwy 11	None
Edge	Medium Intensity
ELEVATION	
Rwy 11 Touchdown	319' MSL
PROCEDURES	
<small>NOT SAVED</small> RNAV (GPS) Rwy 11	 Map
<small>NOT SAVED</small> VOR or TACAN Rwy 11	 Map

Runway Detail View

16. RUNWAY ANALYSIS

Destination Runway Field Definitions

Definitions for most terms and abbreviations used in the Landing Runway section can be found below. Items will vary by aircraft type and represent the data found in the aircraft's flight manual.

- **LDA** - Runway Landing Distance Available. It does not include unusable runway distance as specified by NOTAM.
- **Stopway** - The paved area beyond the portion of the runway suitable for the takeoff ground roll that can be used for stopping during a rejected takeoff.
- **Clearway** - The unpaved area clear of obstacles beyond the takeoff runway that can be used for a portion of the air distance with unbalance field length takeoffs.
- **Slope** - The difference in elevation from the beginning of the runway to the end, divided by the runway length and multiple by one hundred.
- **Surface Condition** - The physical condition of the runway according to the options published in the aircraft's flight manual. Dry/Not Contaminated is the default value.
- **Landing Factor** - The value by which the calculated landing distance is multiplied to produce the Factored Distance.
- **Factored Distance** - A longer landing distance achieved by multiplying the actual distance (also called unfactored distance) with a multiplier larger than 1.0, called the factor. This is done to provide a safety buffer distance to avoid landing overruns. The landing factor is never less than 1.0.

DESTINATION RUNWAY	
Runway	22 >
LDA	7,504 ft
Slope	0.01%
Surface Condition	0.5in Water
Landing Factor	1.0

Destination Runway Section

16. RUNWAY ANALYSIS

16.4.6 Landing Analysis - Weather

Landing Analysis automatically loads the airport's latest METAR, TAF, MOS forecast, or general forecast (using ForeFlight Daily Weather) according to the flight's estimated departure time. If the destination airport does not provide weather information, a nearby airport's weather is used. The weather source and the raw METAR or forecast are displayed at the bottom of the weather section.

WEATHER		Reset
Wind Direction	<input type="button" value="USE °M"/>	100°T
Wind Speed		7 kts
Temperature		90°F
Altimeter	<input type="button" value="USE hPa"/>	29.92 inHg

Loaded KHOU TAF, issued: 3h 4m ago
131720Z 1318/1418 10007KT P6SM FEW040 FEW100

Landing Analysis Weather Section (KHOU TAF)

Temperature

The Aerodrome Forecast (TAF) does not include temperature data. If the Weather section indicates data is derived from a TAF, temperature data will be provided by the MOS forecast. When the MOS forecast issues a range of temperatures, the maximum temperature in the range is used.

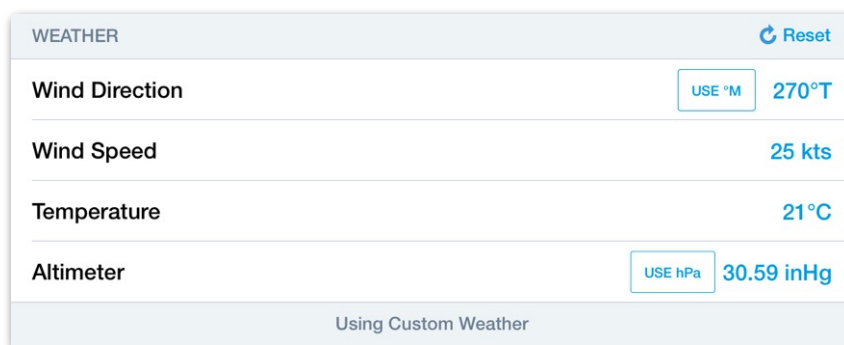
NOTE: ForeFlight Dispatch does not use MOS forecast temperature data. Flights planned with ForeFlight Dispatch use temperature from the METAR when the flight's estimated time of departure is within 3 hours. If the ETD is greater than 3 hours when planning with Dispatch, the temperature field needs to be manually entered.

16. RUNWAY ANALYSIS

Custom Weather

Each field in the weather section can be edited to allow for scenario planning. When a weather field is edited, the source and raw text at the bottom of the section change to “Using Custom Weather.”

When custom weather information has been entered, the performance results are updated, and the edited values are used throughout Landing Analysis. For example, if Wind Speed is manually edited, the wind components are updated to reflect the custom weather when selecting a runway.



The screenshot shows a 'WEATHER' section with a 'Reset' button in the top right. It contains four rows of weather data, each with a unit selection button and a value:

Field	Unit Selection	Value
Wind Direction	USE °M	270°T
Wind Speed		25 kts
Temperature		21 °C
Altimeter	USE hPa	30.59 inHg

At the bottom of the section, it says 'Using Custom Weather'.

Takeoff Analysis Custom Weather

Wind Direction

Wind Direction is given relative to true north by default. To use magnetic winds, tap the **Use °M** button. Using magnetic winds changes the weather source to custom.

Altimeter

Altimeter information can be displayed in inches of mercury (inHg) or hectopascal (hPa). To convert from one unit to the other, tap the button in the altimeter field.

Weather Reset

To revert the weather back to the current METAR or forecast weather after making edits, tap the **Reset** button in the top right corner of the Weather section.

16. RUNWAY ANALYSIS

16.4.7 Landing Analysis - Aircraft Configuration

The Aircraft Configuration section is automatically populated with the planned landing weight and the default values from the aircraft's **Field Performance** settings.

Each field in the section can be edited to accommodate a non-standard landing configuration. Adjusting the aircraft's landing configuration updates the planning results.

AIRCRAFT CONFIGURATION	
Landing Weight	18,100 lbs
Landing Flaps	45°
VREF Increment	+0 KIAS
Anti-Ice	Off
Unprotected Surfaces Ice Accum.	No

Landing Analysis Aircraft Configuration Section

Aircraft Configuration Checks

Some aircraft equipment may have limitations that prohibit a configuration from being selected. If a configuration is not possible, the item will be displayed but is not selectable.

Aircraft Configuration Errors

If a landing configuration is selected that exceeds a limit, an error message is displayed at the top of Landing Analysis, and the performance results are blank.

16. RUNWAY ANALYSIS

16.4.8 Landing Analysis - Performance

The Landing Analysis Performance section displays landing results for the selected runway (and bailed landing results for single-engine aircraft). The items in the Performance section vary by aircraft type and represent the information found in the aircraft's flight manual. Most aircraft provide landing results related to speed and distance.

PERFORMANCE	
Approach Speed	72 kias
Total Distance	2,970'
Ground Roll	1,652'
Balked LDG Climb Torque	41.9 psi
Balked LDG Climb Speed	85 kias
Balked LDG Climb Rate	1,248 fpm

Landing Analysis Performance Section

Speed-Related Definitions

The following results may be found in the Landing Analysis Performance section.

- **V_{APP}** (Approach Speed) - A target indicated airspeed flown during the approach phase of the landing, typically at approach flap setting and gear up.
- **V_{REF}** (Reference Speed) - A target indicated airspeed slower than V_{APP} flown at landing flap settings and gear down to be achieved by 50 ft height when crossing the landing threshold.

Distance-Related Definitions

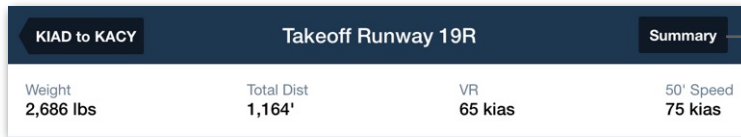
- **Ground Roll** - The distance required to decelerate the aircraft to normal taxi speed after touchdown.
- **Actual Landing Distance** - The demonstrated (during flight testing) total landing distance achievable by the aircraft.
- **Factored Distance** - A longer landing distance achieved by multiplying the actual distance (also called unfactored distance) with a multiplier larger than 1.0. This is done to provide a safety buffer and thus avoiding landing overruns.

16. RUNWAY ANALYSIS

16.5 Runway Analysis Summary Document

Runway Analysis includes a Summary Document. There are two document formats. One for single-engine aircraft and another for multi-engine.

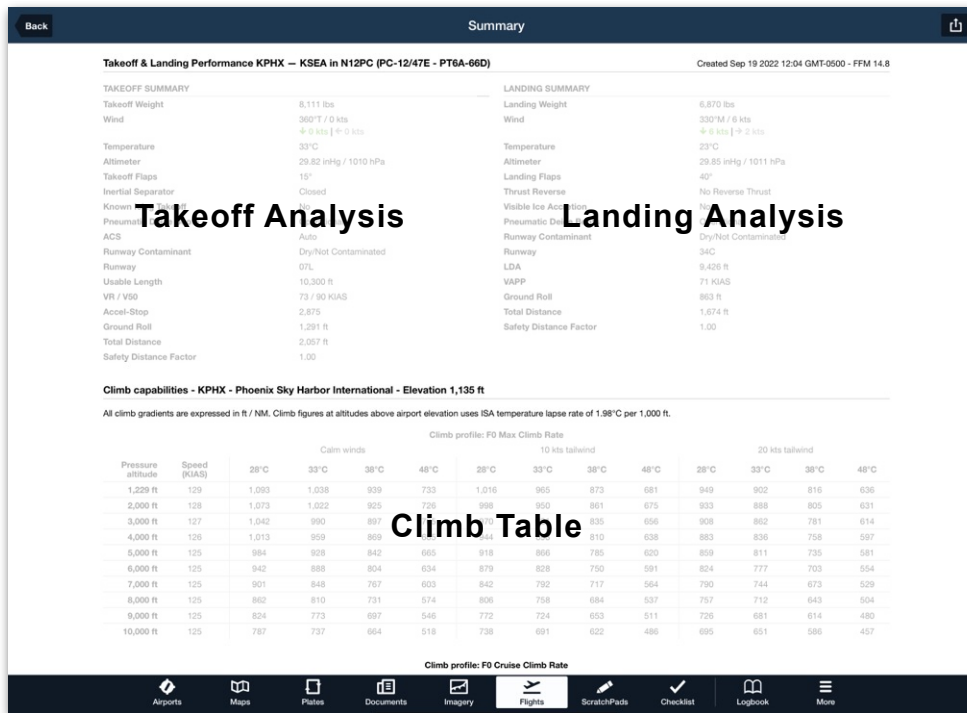
To generate the Summary Document, use Runway Analysis to select runways for the departure, destination, and alternate airport. Tap **Summary** in the upper-right corner of the Takeoff Analysis or Landing Analysis view. If an emergency return runway or alternate airport runway is not selected, the summary document omits this information.



Generate Summary Document

16.5.1 Single-Engine Summary Document

The Single-Engine Summary Document is organized into three sections. Takeoff and landing performance results are displayed at the top of the document. Below the takeoff and landing data is a climb performance table (when climb data is available). If an emergency return or alternate airport runway is selected, the performance results for those runways is displayed below the climb table. The climb table includes performance data for the current temperature and -5°C, +5°C, and +15°C deltas.



Single-Engine Runway Analysis Summary Document

16. RUNWAY ANALYSIS

16.5.2 Multi-Engine Summary Document

The Multi-Engine Summary Document is organized into four sections.

- Takeoff and Landing Summary for the selected runways.
- Maximum Takeoff Weight Analysis for all runways at the departure airport.
- Maximum Landing Weight Analysis for all runways at the destination airport.
- Landing Summary for the alternate airport and emergency return (if selected).

Takeoff and Landing Summary Section

The Multi-Engine Takeoff and Landing Summary section contains performance, environmental, aircraft configuration, and engine-out procedure data for the selected runways. If a takeoff or landing is deemed impossible, the summary section is blank, and an error message is displayed instead.

TAKEOFF SUMMARY		LANDING SUMMARY	
Takeoff Weight	9,383 lbs	Landing Weight	7,463 lbs
Wind	300°T / 4 kts ↑ 4 kts ← 1 kts	Wind	--
Temperature	27°C	Temperature	32°C
Altimeter	30.03 inHg / 1017 hPa	Altimeter	30.02 inHg / 1017 hPa
Takeoff Flaps	15°	Landing Flaps	35°
Anti-Ice	Off	VREF Increment	+0 KIAS
Anti-skid	Operable	Anti-Ice	Off
Type II/III/IV Deice Fluid	Not Applied	Anti-skid	Operable
Rolling Takeoff	No	Runway	07R
Obstacle Criteria	FAA 120-91A	LDA	7,800 ft
Runway / EOP	13L / Straight Out	Surface Condition	Dry
TORA / TODA / ASDA	5,148 / 5,148 / 5,148 ft	VAPP / VREF	102 / 95 KIAS
Surface Condition	Dry	Actual Distance	2,323 ft
Takeoff Thrust N1	98.5%	Appch Climb Gradient	10.9%
V1 / VR / V2 / VLENR	94 / 98 / 105 / 118 KIAS		
TOFL	3,041 ft		
Level Off Altitude	1,665 ft		
TAKEOFF ENGINE OUT PROCEDURE			
Continue straight on extended runway centerline.			

Takeoff and Landing Summary Section

16. RUNWAY ANALYSIS

Max Takeoff Weight Analysis

The Maximum Takeoff Weight (MTOW) Analysis section contains the MTOW for each runway at the departure airport. Performance results for temperatures above and below the planned temperature are displayed on unique rows. Results for all available engine-out procedures and displayed in columns.

The constraint that limits MTOW is displayed below the results for the scenario. If a takeoff is deemed impossible for a runway, the text **Takeoff Impossible** replaces the performance results.

Max Takeoff Weight Analysis - KDWH - David Wayne Hooks Memorial - Elevation 152 ft								
Runway	17L			17R			17W	
TORA/TODA/ASDA	3,500 / 3,500 / 3,500 ft			7,009 / 7,009 / 7,009 ft			2,530 / 2,530 / 2,530 ft	
Slope	-0.17%			-0.09%			0%	
Winds	↑ 3 kts ← 4 kts			↑ 3 kts ← 4 kts			↑ 3 kts ← 4 kts	
	OAT	EOP 1 (RNAV)	EOP 2	Straight Out	EOP 2 (RNAV)	EOP 3	Straight Out	Straight Out
MTOW (lbs) LIMIT	20°C	10,351 Obstacle	10,011 Obstacle	10,011 Obstacle	10,700 Structural	10,700 Structural	10,700 Structural	Takeoff Impossible
	22°C	10,234 Obstacle	9,910 Obstacle	9,911 Obstacle	10,700 Structural	10,700 Structural	10,700 Structural	Takeoff Impossible
	24°C	10,127 Obstacle	9,802 Obstacle	9,802 Obstacle	10,700 Structural	10,700 Structural	10,700 Structural	Takeoff Impossible
	26°C	10,014 Obstacle	9,689 Obstacle	9,689 Obstacle	10,700 Structural	10,700 Structural	10,700 Structural	Takeoff Impossible
	28°C	9,884 Obstacle	9,568 Obstacle	9,568 Obstacle	10,700 Structural	10,700 Structural	10,700 Structural	Takeoff Impossible
	30°C	9,757 Obstacle	9,457 Obstacle	9,458 Obstacle	10,700 Structural	10,700 Structural	10,700 Structural	7,208 Runway
	32°C	9,629 Obstacle	9,321 Obstacle	9,321 Obstacle	10,700 Structural	10,700 Structural	10,700 Structural	7,594 Runway
Runway	35L			35R			35W	
TORA/TODA/ASDA	6,700 / 6,700 / 6,700 ft			3,500 / 3,500 / 3,500 ft			2,530 / 2,530 / 2,530 ft	
Slope	0.09%			0.17%			0%	
Winds	↓ 3 kts → 4 kts			↓ 3 kts → 4 kts			↓ 3 kts → 4 kts	
	OAT	EOP 1 (RNAV)	EOP 2	Straight Out	EOP 3 (RNAV)	EOP 4	Straight Out	Straight Out
MTOW (lbs) LIMIT	20°C	10,700 Structural	10,700 Structural	10,700 Structural	10,700 Climb	10,700 Climb	10,700 Climb	8,195 Runway
	22°C	10,700 Structural	10,700 Structural	10,700 Structural	10,700 Climb	10,700 Climb	10,700 Climb	8,451 Runway
	24°C	10,700 Structural	10,700 Structural	10,700 Structural	10,700 AFMData	10,700 AFMData	10,700 AFMData	8,640 Runway
	26°C	10,700 Structural	10,700 Structural	10,700 Structural	10,691 Runway	10,691 Runway	10,691 Runway	8,803 Runway
	28°C	10,700 Structural	10,700 Structural	10,700 Structural	10,558 Runway	10,558 Runway	10,558 Runway	8,923 Runway
	30°C	10,700 Structural	10,700 Structural	10,700 Structural	10,454 Runway	10,454 Runway	10,454 Runway	9,003 Runway
	32°C	10,700 Structural	10,700 Structural	10,700 Structural	10,282 Runway	10,282 Runway	10,282 Runway	8,811 Runway

Max Takeoff Weight Analysis Section

16. RUNWAY ANALYSIS

Max Landing Weight Analysis

The Maximum Landing Weight (MLW) Analysis calculates the landing distance and MLW for all runways at the destination airport. Results are given for three scenarios: zero winds, ten-knot tailwind, and the planned winds. If a landing is deemed impossible, the results are replaced with the text **Landing Impossible**.

Max Landing Weight Analysis - KLGB - Long Beach (Daugherty Field) - Elevation 60 ft						
Runway	08L		08R		12	
LDA	4,887 ft		3,918 ft		8,650 ft	
Slope	-0.32%		-0.46%		-0.34%	
Winds	↓ 16 kts ← 1 kts		↓ 16 kts ← 1 kts		↓ 12 kts → 11 kts	
	Dist (ft)	MLW (lbs) LIMIT	Dist (ft)	MLW (lbs) LIMIT	Dist (ft)	MLW (lbs) LIMIT
Planned winds	2,461	78,600 Structural	2,461	78,600 Structural	2,514	78,600 Structural
Zero winds	2,672	78,600 Structural	2,672	78,600 Structural	2,672	78,600 Structural
10 kts tail	3,140	78,600 Structural	3,140	78,600 Structural	3,140	78,600 Structural
Runway	26L		26R		30	
LDA	3,918 ft		5,660 ft		7,414 ft	
Slope	0.46%		0.32%		0.34%	
Winds	↑ 16 kts → 1 kts		↑ 16 kts → 1 kts		↑ 12 kts ← 11 kts	

Maximum Landing Weight Analysis Section

Emergency Return and Alternate Landing Analysis

When an Emergency Return runway or Alternate Airport runway is selected, a summary of the performance, environmental, and aircraft configuration data is displayed below the Max Landing Weight Analysis section.

EMERGENCY RETURN		ALTERNATE LANDING - KBFI - BOEING FIELD/KING COUNTY INTERNATIONAL	
Landing Weight	9,546 lbs	Landing Weight	7,673 lbs
Wind	360°T / 0 kts ↓ 0 kts ← 0 kts	Wind	320°T / 5 kts ↓ 5 kts → 1 kts
Temperature	33°C	Temperature	19°C
Altimeter	29.82 inHg / 1010 hPa	Altimeter	29.86 inHg / 1011 hPa
Landing Flaps	35°	Landing Flaps	35°
VREF Increment	+0 KIAS	VREF Increment	+0 KIAS
Anti-ice	Off	Anti-ice	Off
Anti-skid	Operable	Anti-skid	Operable
Runway	25R	Runway	32R
LDA	10,300 ft	LDA	3,334 ft
Surface Condition	Dry	Surface Condition	Dry
VAPP / VREF	114 / 107 KIAS	VAPP / VREF	103 / 96 KIAS
Actual Distance	2,887 ft	Actual Distance	2,175 ft
Appch Climb Gradient	5.8%	Appch Climb Gradient	13.6%

Emergency Return and Alternate Landing Section

16. RUNWAY ANALYSIS

16.5.3 Summary Document Options

The Multi-Engine and Single-Engine Summary Documents can be annotated, shared, printed, or attached to a Flight by tapping the share button in the upper-right corner.

Share Button

The screenshot shows the 'Summary' document interface. At the top right, a share button is highlighted with a label 'Share Button'. A share menu is open, displaying options: AirDrop, Messages, Mail, Copy, Save to Flight's Files, Markup, and Print. The background document content includes:

Takeoff & Landing Performance KIAD – KACY in BONANZ (Bonanza A36 - IO-550-B)

TAKEOFF SUMMARY		LANDING SUMMARY	
Takeoff Weight	2,686 lbs	Landing Weight	
Wind	210°T / 5 kts ↓ 5 kts ← 3 kts	Wind	
Temperature	24°C	Temperature	
Altimeter	30.02 inHg / 1017 hPa	Altimeter	
Takeoff Flaps	Up	Landing Flaps	
Runway	19R	Runway	
Usable Length	9,400 ft	LDA	
VR / V50	65 / 75 KIAS	VREF	
Ground Roll	691 ft	Ground Roll	
Total Distance	1,164 ft	Total Distance	
Safety Distance Factor	1.00	Safety Distance Factor	

Climb capabilities - KIAD - Washington Dulles International - Elevation 313 ft

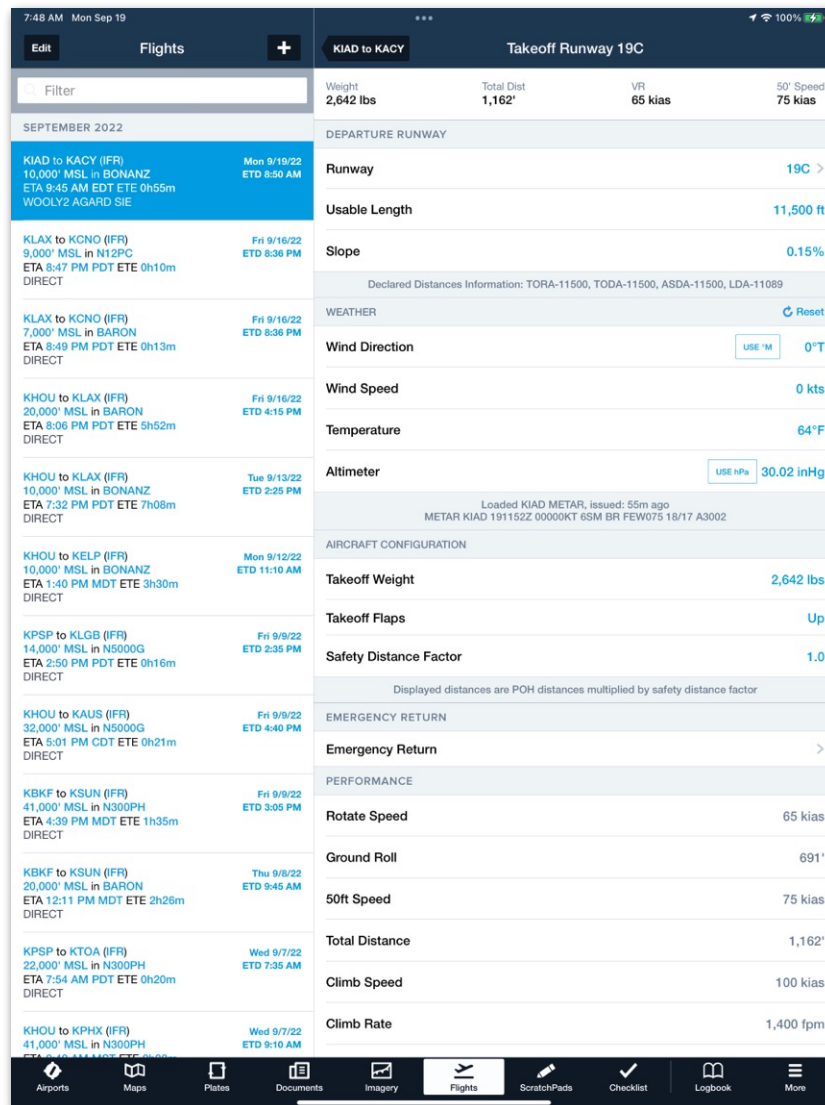
All climb gradients are expressed in ft / NM. Climb figures at altitudes above airport elevation uses ISA temperature

Pressure altitude	Speed (KIAS)	Calm winds				10 kts tailwind			
		19°C	24°C	29°C	39°C	19°C	24°C	29°C	39°C
222 ft	100	836	836	836	836	761	761	761	761
1,000 ft	100	824	824	824	824	750	750	750	750
2,000 ft	100	808	808	808	808	737	737	737	737
3,000 ft	100	792	792	792	791	724	724	724	724
4,000 ft	100	778	775	770	761	712	709	705	696
5,000 ft	100	750	745	740	731	687	683	679	670
6,000 ft	100	721	717	712	697	662	658	653	640
7,000 ft	100	694	685	671	642	638	630	617	590
8,000 ft	100	644	630	616	589	593	580	567	542
9,000 ft	100	591	577	563	536	545	532	519	494

TAKEOFF & LANDING PERFORMANCE

Takeoff & Landing Performance provides integrated takeoff and landing distance calculations for over 300 popular *piston* aircraft and is included with all Performance-tier subscriptions. Jet and turboprops can calculate takeoff and landing performance with a **Runway Analysis** license.

Compared to calculating takeoff and landing distances by hand, Takeoff & Landing Performance is a faster, integrated alternative. Takeoff & Landing Performance calculations can also be completed using ForeFlight Web. This chapter discusses how to configure your aircraft's default Takeoff & Landing Performance settings, and how to calculate results.



ForeFlight Mobile - Takeoff & Landing Performance

17. TAKEOFF & LANDING PERFORMANCE

17.1 Configuring Takeoff & Landing Performance

The first step to configuring an aircraft for Takeoff & Landing Performance is determining if the aircraft type is supported. Aircraft that support Takeoff & Landing Performance display a label below the aircraft type and include additional performance settings.

17.1.1 Verifying Takeoff & Landing Performance Support

To check if your aircraft supports Takeoff & Landing Performance, select **More > Aircraft** and choose an aircraft profile. Tap the **Aircraft Type** field and ensure the **Supports Takeoff & Landing Performance** label is displayed.

If the label is missing, either the aircraft type is not yet supported or a Performance tier account is not being used.

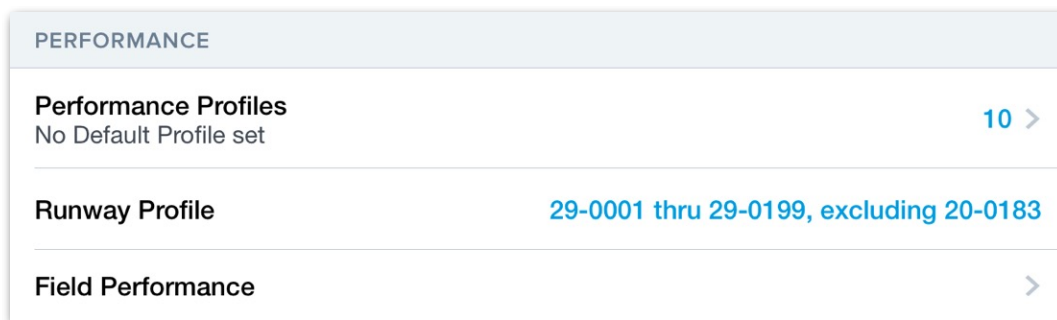
Aircraft Type	Performance Tier	Supports Takeoff & Landing Performance
M-20R Ovation IO-550-G5 10 ForeFlight Performance Profiles Supports Takeoff & Landing Performance W&B Template Available	M20P	Yes (checked)
M-20R Ovation IO-550-N8B STC SE02930AT 10 ForeFlight Performance Profiles Supports Takeoff & Landing Performance	M20P	No
M-20S Eagle IO-550-G 310HP with STC SE02930AT 10 ForeFlight Performance Profiles Supports Takeoff & Landing Performance	M20P	No
M20A O-360-A1A 3 ForeFlight Performance Profiles W&B Template Available	M20P	No

17. TAKEOFF & LANDING PERFORMANCE

17.1.2 Takeoff & Landing Performance Settings

Another method for determining Takeoff & Landing support is checking the aircraft profile's Performance section. Aircraft that support Takeoff & Landing Performance have settings for selecting a Runway Profile and configuring the aircraft's default takeoff and landing configuration. If these settings are missing, the aircraft does not support Takeoff & Landing Performance.

To access the settings, select **More > Aircraft**, and choose an aircraft profile. Tap **Runway Profile** or **Field Performance** in the aircraft's Performance section to edit the settings.



Takeoff & Landing Performance Settings

Runway Profile

The Runway Profile setting specifies the serial number, weight limit, or special equipment for which the Takeoff & Landing Performance data is applicable. If more than one profile exists for the aircraft type, tap the **Runway Profile** setting and choose the correct version for your aircraft.



Runway Profile Setting

17. TAKEOFF & LANDING PERFORMANCE

Field Performance

The Field Performance setting specifies the default takeoff and landing configuration for the aircraft (e.g., flap settings). These settings are unique to the aircraft type and reflect the variables in the performance section of the aircraft flight manual that affect Takeoff & Landing Performance. Some aircraft do not offer Field Performance settings, while others provide multiple configuration settings. If an aircraft does not provide Field Performance settings, the field is omitted from the menu.

Changes to the Field Performance settings are reflected in *subsequently* planned flights. Takeoff and landing configurations can also be adjusted per flight using the Flights view. Edits to the takeoff or landing configuration using the Flights view do not affect the aircraft's default settings.

Field Performance settings are broken into two sections (takeoff and landing). Settings can be edited by tapping the appropriate field and selecting another option from the drop-down menu.

The settings and drop-down menus only contain options that are specified in the aircraft's flight manual (e.g., Takeoff Flaps may only have options for 10° and 20°). It is impossible to set a value if it is not included in the flight manual.

BARON		Field Performance	Reset
TAKEOFF			
Runway Surface			Dry Paved
LANDING			
Landing Flaps			30°
Runway Surface			Dry Paved

Field Performance Settings

17. TAKEOFF & LANDING PERFORMANCE

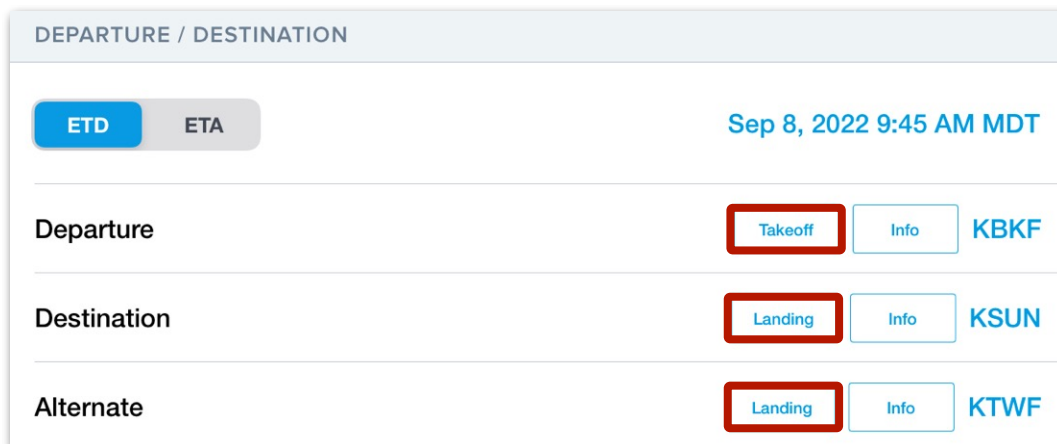
17.2 Calculating Takeoff Performance

Takeoff distances are calculated from the Departure / Destination section of the Flights view. To calculate Takeoff Performance results, begin by entering the flight's route, payload, and fuel details into the Flights view.

After entering flight details, tap the **Takeoff** button to open the Takeoff Performance view.

If the **Takeoff** button is missing, it is impossible to calculate Takeoff Performance. The **Takeoff** or **Landing** buttons can be hidden under the following conditions:

- The selected aircraft does not support Takeoff & Landing Performance.
- A non-performance tier account is being used to plan the flight.
- Runway data for the airport is unavailable.
- The airport specified does not have an ICAO, IATA, FAA, or other short-code identifier. Only airports with identifiers are supported by Takeoff & Landing Performance.



Takeoff & Landing Performance Buttons

17. TAKEOFF & LANDING PERFORMANCE

17.2.1 Takeoff Performance View

The Takeoff Performance view is organized into six sections. Each section is automatically populated with the latest runway, weather, and default aircraft configuration data.

Blue text in this view can be edited for hypothetical planning purposes or to accommodate circumstances that are unique to the flight. For example, if the runway's usable length is reduced due to construction, you can manually edit the length to represent the available runway. Each section of the Takeoff Performance view is described in detail throughout this chapter.

The screenshot displays the 'Takeoff Performance View' for flight from KBKF to KSUN on Runway 32. The interface is organized into several sections:

- Performance Summary:** Shows a weight of 5,094 lbs and a 50' speed of 94 kias.
- DEPARTURE RUNWAY:** Includes fields for Runway (32), Usable Length (11,006 ft), Slope (-0.73%), and Runway Surface (Dry Paved). It also provides declared distances: TORA-11006, TODA-11006, ASDA-11006, and LDA-11006.
- WEATHER:** Features a 'Reset' button and fields for Wind Direction (320°T), Wind Speed (8 kts), Temperature (17°C), and Altimeter (30.08 inHg).
- AIRCRAFT CONFIGURATION:** Shows Takeoff Weight (5,094 lbs), Takeoff Flaps (0°), and Safety Distance Factor (1.0).
- EMERGENCY RETURN:** Includes an 'Emergency Return' field.
- PERFORMANCE:** Displays Liftoff Speed (81 kias) and Ground Roll (1,676').

Takeoff Performance View Sections

17. TAKEOFF & LANDING PERFORMANCE

17.2.2 Takeoff Performance Summary

The Performance Summary contains key values that allow you to quickly evaluate the takeoff.

KBKF to KSUN		Takeoff Runway 32	
Weight	Total Dist	50' Speed	
5,094 lbs	2,859'	94 kias	

Takeoff Performance Summary

Results are displayed at the top of the view when a runway is selected and are initially based on the aircraft's default takeoff configuration and the current weather. The summary generally contains the planned takeoff weight, the total distance required to achieve a height of 35' above the runway surface, and target airspeeds for the takeoff.

The Performance Summary is updated each time a new departure runway is selected or a configurable field is edited.

Complete results are available in the Performance section at the bottom of the Takeoff Performance view.

17. TAKEOFF & LANDING PERFORMANCE

17.2.3 Takeoff Performance - Departure Runway

The Departure Runway section contains fields that define the runway environment. The fields in this section are automatically populated with the latest data and represent items that affect the selected aircraft's takeoff performance.

Some aircraft do not provide performance data for common variables such as the runway's surface condition (rain, snow, etc). As a result, if your aircraft flight manual does not include this data, the Departure Runway section will not include it either.

A field is only included in the Departure Runway section if it is documented in the aircraft's flight manual as a variable that affects takeoff performance. Departure Runway values can be overwritten to accommodate unique circumstances. To overwrite a value, tap the applicable field, enter a new value, and tap **Close**.

DEPARTURE RUNWAY	
Runway	↓ 4kts ← 6kts 04 >
Usable Length	7,602 ft
Slope	-0.04%
Declared Distances Information: TORA-7602, TODA-7602, ASDA-7602, LDA-7602	

Takeoff Performance Departure Runway Section

Declared Distances

Declared runway distances are displayed at the bottom of the Departure Runway section.

- **TORA** - The portion of the runway suitable for the takeoff ground roll.
- **TODA** - Takeoff Distance Available (includes stopway and clearway).
- **ASDA** - Accelerate Stop Distance Available (includes stopway).
- **Stopway** - Paved area beyond TORA that can be used for stopping during a rejected takeoff.
- **Clearway** - Unpaved area clear of obstacles beyond the runway that can be used for a portion of the initial climb.
- **LDA** - Runway Landing Distance Available.

17. TAKEOFF & LANDING PERFORMANCE

17.2.4 Selecting a Departure Runway

To select a departure runway, tap the **Runway** field and select a runway from the list. Each available runway for the airport is included in the list even if the runway is closed. When a NOTAM is issued to close a runway, a *Closed* tag is displayed next to the runway name. If a runway's usable length is reduced due to a NOTAM, the reduced useable length is not automatically reflected in the Departure Runway section.

When weather data is available via the internet, ADS-B, or SiriusXM, the wind components for each runway are displayed. Headwind components are displayed in green, tailwinds in red, and crosswind components in grey. The weather used to determine the wind component is displayed below the list of available runways.

The screenshot shows a mobile application interface for selecting a departure runway. The title bar is dark blue with 'Takeoff' written in white. Below the title bar, there is a list of runways. Each runway entry includes the runway ID, dimensions, surface type, condition, and slope. To the right of each entry, there are wind component indicators (headwind in green, tailwind in red, crosswind in grey) and a 'Details' button. A 'Closed' tag is present next to the runway name for Rwy 08, Rwy 26, Rwy 30, and Rwy 30. At the bottom of the screen, there is a weather source section with the text 'Loaded KABQ METAR, issued: 26m ago' and the METAR string 'METAR KABQ 311252Z 01005KT 10SM FEW020 FEW045 SCT070 SCT130 18/13 A3033'. Callout lines point to 'Runway Details', 'Wind Components', 'Closed Runway', and 'Weather Source'.

Runway	Dimensions	Surface	Condition	Slope	Headwind	Tailwind	Crosswind	Status
Rwy 03	10,000' x 150'	Concrete	good condition	0.11%	5kts	3kts		Available
Rwy 21	10,000' x 150'	Concrete	good condition	-0.11%		5kts	3kts	Available
Rwy 08	13,793' x 150'	Concrete	good condition	0.31%	2kts	5kts		Closed
Rwy 26	13,793' x 150'	Concrete	good condition	-0.31%	2kts	5kts		Closed
Rwy 30	6,000' x 150'	Concrete	good condition	0.03%	3kts	5kts		Closed
Rwy 30	6,000' x 150'	Concrete	good condition	-0.03%	3kts	5kts		Closed

Weather Source: Loaded KABQ METAR, issued: 26m ago
METAR KABQ 311252Z 01005KT 10SM FEW020 FEW045 SCT070 SCT130 18/13 A3033




Selecting a Departure Runway

17. TAKEOFF & LANDING PERFORMANCE

Runway Details

When selecting a runway, the **Details** button opens a new view with additional runway information including:

- Surface dimensions
- Surface type and condition
- Wind components
- Glide Slope Indicators
- Slope
- Magnetic heading
- Lighting
- Elevation
- Available procedures

Runway 11 5,158' x 150', 319' MSL Asphalt, excellent condition	
SURFACE	
Dimensions	5,158' x 150'
Type	Asphalt, excellent condition
WIND COMPONENTS	
Rwy 11 	→ 3kts ↓ 2kts
Wind: 050° at 4 kts (22m ago)	
GLIDESLOPE INDICATOR	
Rwy 11	4-box VASI (on left)
SLOPE	
Rwy 11	-0.16%
HEADING	
Rwy 11	106°M
LIGHTING	
Appr. Rwy 11	None
Edge	Medium Intensity
ELEVATION	
Rwy 11 Touchdown	319' MSL
PROCEDURES	
<small>NOT SAVED</small> RNAV (GPS) Rwy 11	 Map
<small>NOT SAVED</small> VOR or TACAN Rwy 11	 Map

Runway Detail View

17. TAKEOFF & LANDING PERFORMANCE

17.2.5 Takeoff Performance - Weather

The Weather section displays the departure airport's latest METAR, TAF, MOS, or general forecast based on weather data availability and the flight's estimated departure time.

If the airport does not provide weather information, a nearby airport's weather is used. Each field in the weather section can be manually edited. The weather source and raw text are displayed at the bottom of the weather section.

WEATHER		Reset
Wind Direction	<input type="button" value="USE °M"/>	100°T
Wind Speed		7 kts
Temperature		90°F
Altimeter	<input type="button" value="USE hPa"/>	29.92 inHg

Loaded KHOU TAF, issued: 3h 4m ago
131720Z 1318/1418 10007KT P6SM FEW040 FEW100

Takeoff Performance Weather Section (KHOU TAF)

Temperature

The Terminal Aerodrome Forecast (TAF) does not provide temperature data. If Takeoff & Landing Performance indicates that weather data is provided by a TAF, temperature from the MOS forecast will be used. When the MOS forecast issues a range of temperatures, the maximum temperature in the range is used.

17. TAKEOFF & LANDING PERFORMANCE

Custom Weather

Each field in the weather section can be edited to allow for scenario planning. When a weather field is edited, the source and raw text at the bottom of the section change to “Using Custom Weather”.

When custom weather information has been entered, the performance results are updated and the edited values are used throughout Takeoff Performance. For example, if Wind Speed is manually edited, the wind components are updated to reflect the custom weather when selecting a runway.

WEATHER		Reset
Wind Direction	<input type="button" value="USE °M"/>	270°T
Wind Speed		25 kts
Temperature		21°C
Altimeter	<input type="button" value="USE hPa"/>	30.59 inHg

Using Custom Weather

Takeoff Analysis Custom Weather

Wind Direction

Wind Direction is given relative to true north by default. To use magnetic winds, tap the **Use °M** button. Using magnetic winds changes the weather source to custom.

Altimeter

Altimeter information can be displayed in inches of mercury (inHg) or hectopascal (hPa). To convert from one unit to the other, tap the button in the altimeter field. Changing altimeter units does not result in custom weather.

Weather Reset

To revert the weather back to the current METAR or forecast weather after making edits, tap the **Reset** button in the top right corner of the Weather section.

17. TAKEOFF & LANDING PERFORMANCE

17.2.6 Takeoff Performance - Aircraft Configuration

The Aircraft Configuration section is populated with the planned takeoff weight and default values from the aircraft's **Field Performance** settings.

Each field in the section can be edited to accommodate a non-standard takeoff configuration. Adjusting the aircraft's takeoff configuration from this view updates the planning results and not the aircraft's default configuration.

Safety Distance Factor

The Safety Distance Factor is a user-specified safety margin. The Safety Distance Factor has a minimum and default value of 1.0 and can only be edited on a per-flight basis.

When a value other than 1.0 is entered in the Safety Distance Factor field, all distance results are multiplied by the user-specified amount. For example, to add a 25% safety margin to all results, enter a Safety Distance Factor of 1.25. To revert back to the original calculations, change the Safety Distance Factor to 1.0.



Adding a Safety Distance Factor

17. TAKEOFF & LANDING PERFORMANCE

17.2.7 Takeoff Performance - Emergency Return

The Emergency Return section is used to determine Landing Performance for the departure airport in the event of an emergency after departure. To conduct an Emergency Return analysis, tap the field and select a runway.

If an Emergency Return results in an overweight condition, a warning message is displayed at the top of the Emergency Return view. However, that warning is not also displayed on the Flights view since an emergency return is often expected to be overweight.

Back Landing Runway 19C (Return To Base)		
Weight 2,642 lbs	Total Dist 1,317'	VREF 78 kias
RETURN TO BASE RUNWAY		
Runway	↓ 3kts ← 1kts	19C >
Usable Length		11,089 ft
Slope		0.15%
Declared Distances Information: TORA-11500, TODA-11500, ASDA-11500, LDA-11089		
WEATHER		Reset
Wind Direction	USE *M	190°T
Wind Speed		3 kts
Temperature		72°F
Altimeter	USE hPa	30.02 inHg
Loaded KIAD METAR, issued: 59m ago KIAD 191252Z 19003KT 10SM FEW075 22/18 A3002		
AIRCRAFT CONFIGURATION		
Landing Weight		2,642 lbs
Landing Flaps		Down
Safety Distance Factor		1.0
Displayed distances are POH distances multiplied by safety distance factor		

Emergency Return View

17. TAKEOFF & LANDING PERFORMANCE

17.2.8 Takeoff Performance - Performance Details

The Performance section includes results for the selected runway given the planned weather and aircraft configuration. Performance results are interpolated from flight manual performance data and are not physics-based.

The items in the Performance section vary by aircraft type and represent the information found in the aircraft flight manual (including the name of the performance parameter).

PERFORMANCE	
Rotate Speed	65 kias
Ground Roll	804'
50ft Speed	75 kias
Total Distance	1,350'
Climb Speed	100 kias
Climb Rate	1,400 fpm
Climb Gradient	12.4%

Takeoff Performance Section

17. TAKEOFF & LANDING PERFORMANCE

Performance Parameter Definitions

This table lists generic takeoff output labels for most aircraft, though not all aircraft provide every output label and some aircraft have specific output labels that apply only to that aircraft and are not listed here. Consult your aircraft's flight manual for further detail on the specific aircraft configuration used for these outputs.

Takeoff Output Label	Description
Rotate Speed	Target takeoff speed upon which to initiate takeoff rotation.
Liftoff Speed	Approximate speed when main gear leaves the runway; faster than rotate speed, but slower than 50 ft speed.
Ground Roll	Takeoff distance from brake release point until main gear lifts off the runway.
50 ft Speed	Initial climb speed reached at end of total takeoff distance and at the obstacle height of 50 ft AGL with gear down and takeoff flaps.
Total Distance	Takeoff distance from brake release point through reaching 50 ft obstacle height point above ground level (AGL). Consists of ground roll distance and air segment for initial climb, all at takeoff flap setting and gear down (if retractable).
Accel-Stop Distance	Distance from brake release point through acceleration to a reject speed and subsequent deceleration to a full stop; aircraft never leaves the runway (this distance is typically only found with twin engine aircraft).
Climb Speed	Target speed for the initial climb after reaching the 50 ft AGL takeoff point, typically gear up, if retract (see POH for flap setting used).
Climb Rate	Instantaneous rate of climb in ft/min for the initial climb after reaching the 50 ft AGL takeoff point typically gear up, if retract (see POH for flap setting used).
Climb Gradient	Instantaneous climb gradient (rise/run) for the initial climb after reaching the 50 ft AGL takeoff point typically gear up, if retract (see POH for flap setting used).
Takeoff Climb Speed	Target speed for the initial climb after reaching the 50 ft AGL takeoff point in the POH-defined takeoff flap and gear configuration.

17. TAKEOFF & LANDING PERFORMANCE

Takeoff Output Label	Description
Takeoff Climb Rate	Instantaneous rate of climb in ft/min for the initial climb after reaching the 50 ft AGL takeoff point in the POH-defined takeoff flap and gear configuration.
Takeoff Climb Gradient	Instantaneous climb gradient (rise/run) for the initial climb after reaching the 50 ft AGL takeoff point in the POH-defined takeoff flap and gear configuration.
Cruise Climb Speed	Target enroute climb speed, typically flaps up and gear up, if retract.
Cruise Climb Rate	Enroute climb rate, typically flaps up and gear up, if retract.
Cruise Climb Gradient	Enroute climb gradient, typically flaps up and gear up, if retract.
OEI Climb Speed	Target climb speed when one engine inoperative (OEI) on a twin engine aircraft.
OEI Climb Rate	Climb rate when one engine inoperative (OEI) on a twin engine aircraft.

17. TAKEOFF & LANDING PERFORMANCE

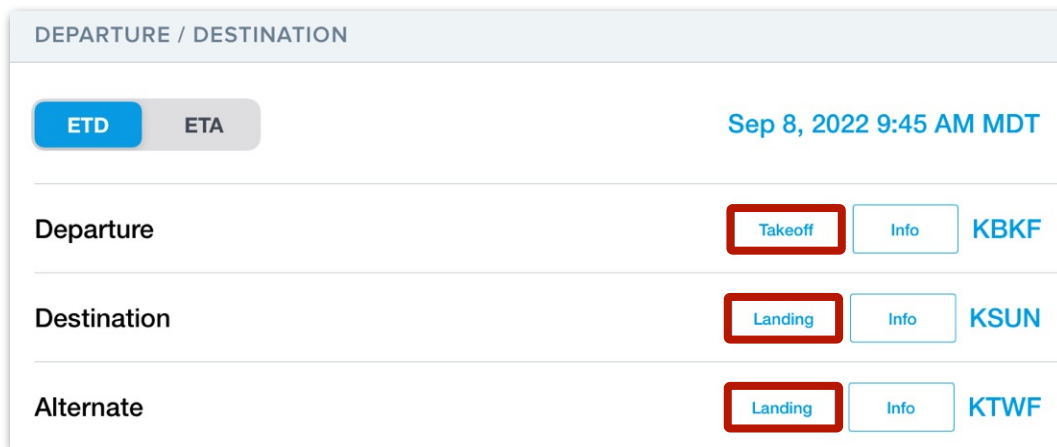
17.3 Calculating Landing Performance

Landing Performance results can be calculated for the departure, destination, and alternate airport. To calculate results, begin by entering the flight's route, payload, and fuel details into the Flights view.

To calculate Landing Performance, tap the **Landing** button next to the destination or alternate airport and select a runway. To calculate Landing Performance for the departure airport, select the **Emergency Return** option from the Takeoff Performance view.

If the **Landing** button is missing, it is not possible to calculate Landing Performance. The **Takeoff** or **Landing** buttons can be hidden under the following conditions:

- The selected aircraft does not support Takeoff & Landing Performance.
- A non-performance tier account is being used to plan the flight.
- Runway data for the airport is unavailable.



Takeoff & Landing Performance Buttons

17. TAKEOFF & LANDING PERFORMANCE

17.3.1 Landing Performance View

The Landing Performance view is organized into five sections. The Landing Performance view is populated with the latest runway, weather, and default aircraft configuration data.

Blue text in this view can be edited for hypothetical planning purposes or to accommodate circumstances that are unique to the flight. For example, if the runway's usable length is reduced due to construction, you can manually edit the length to represent the available runway distance.

Performance Summary	
Weight	4,720 lbs
Total Distance	1,789'
VREF	92 kias

DESTINATION RUNWAY

Runway	21
Usable Length	4,919 ft
Slope	-0.81%
Runway Surface	Dry Paved

Declared Distances Information: TORA-4919, TODA-4919, ASDA-4919, LDA-4919

WEATHER [Reset](#)

Wind Direction	260°T
Wind Speed	11 kts
Temperature	75°F
Altimeter	29.96 inHg

Loaded KONT TAF, issued: 4h 50m ago
FM162100 26011KT P6SM SKC

AIRCRAFT CONFIGURATION

Landing Weight	4,720 lbs
Landing Flaps	30°
Safety Distance Factor	1.0

Displayed distances are POH distances multiplied by safety distance factor

PERFORMANCE

50ft Speed	92 kias
Total Distance	1,789'

Imagery Flights ScratchPads Checklist Logbook More

Landing Performance Sections

17. TAKEOFF & LANDING PERFORMANCE

17.3.2 Landing Performance Summary

A summary of the Landing Performance results is always visible at the top of the Landing Performance view.

KLAX to KCNO		Landing Runway 21	
Weight	Total Dist	VREF	
4,720 lbs	1,789'	92 kias	

Landing Performance Summary

The summary displays the planned landing weight, the distance required to land and stop the aircraft, and the landing reference speed. Complete results are available in the Performance section at the bottom of the Landing Performance view.

Performance Summary results are displayed when a runway is selected and are based on the aircraft's default landing configuration, weather, and latest runway data. Performance results are updated each time a new landing runway is selected or a configurable field is edited.

17. TAKEOFF & LANDING PERFORMANCE

17.3.3 Landing Performance - Destination Runway

The Destination Runway section contains fields that define the runway environment. The fields in this section are automatically populated with the latest data and represent items that affect the selected aircraft's takeoff performance.

Some aircraft do not provide performance data for common variables such as the runway's surface condition (rain, snow, etc). As a result, if your aircraft flight manual does not include this data, the Destination Runway section will not include it either.

Destination Runway values can be overwritten to accommodate unique circumstances. To overwrite a value, tap the applicable field, enter a new value, and tap **Close**.

DESTINATION RUNWAY	
Runway	↓ 9kts ← 7kts 21 >
Usable Length	4,919 ft
Slope	-0.81%
Runway Surface	Dry Paved
Declared Distances Information: TORA-4919, TODA-4919, ASDA-4919, LDA-4919	

Landing Performance - Destination Runway Section

Declared Distances

Declared runway distances are displayed at the bottom of the section.

- **TORA** - The portion of the runway suitable for the takeoff ground roll.
- **TODA** - Takeoff Distance Available (includes stopway and clearway).
- **ASDA** - Accelerate Stop Distance Available (includes stopway).
- **Stopway** - Paved area beyond TORA that can be used for stopping during a rejected takeoff.
- **Clearway** - Unpaved area clear of obstacles beyond the runway that can be used for a portion of the initial climb.
- **LDA** - Runway Landing Distance Available.

17. TAKEOFF & LANDING PERFORMANCE

17.3.4 Selecting a Destination Runway

To select a destination runway, tap the **Runway** field and select a runway from the list. Each available runway for the airport is included in the list even if the runway is closed. When a NOTAM is issued to close a runway, a *Closed* tag is displayed next to the runway name. If a runway's usable length is reduced due to a NOTAM, the reduced useable length is not automatically reflected in the Destination Runway section.

When weather data is available via the internet, ADS-B, or SiriusXM, the wind component for each runway is displayed. Headwind components are displayed in green, tailwinds in red, and crosswind components in grey. The weather used to determine the wind component is displayed below the list of available runways.

The screenshot shows a mobile application interface titled "Landing Runway 21". It features a list of runways with the following details:

Runway	Dimensions	Material	Slope	Headwind	Tailwind	Crosswind	Status
Rwy 03	10,000' x 150'	Concrete, good condition	0.11%	5kts	3kts		Available
Rwy 21	10,000' x 150'	Concrete, good condition	-0.11%	5kts	3kts		Available
Rwy 08	13,793' x 150'	Concrete, good condition	0.31%	2kts	5kts		Available
Rwy 26	13,793' x 150'	Concrete, good condition	-0.31%	2kts	5kts		Available
Rwy 03	6,000' x 150'	Concrete, good condition	0.03%	3kts	5kts		Closed
Rwy 30	6,000' x 150'	Concrete, good condition	-0.03%	3kts	5kts		Closed

At the bottom of the screen, the weather source is displayed: "Loaded KABQ METAR, issued: 26m ago" and "METAR KABQ 311252Z 01005KT 10SM FEW020 FEW045 SCT070 SCT130 18/13 A3033".

Callouts in the image identify: "Runway Details" (pointing to the 'Details' button), "Wind Components" (pointing to the wind speed and direction indicators), "Closed Runway" (pointing to the 'Closed' tag), and "Weather Source" (pointing to the METAR text).

Selecting a Destination Runway

17. TAKEOFF & LANDING PERFORMANCE

Runway Details

When selecting a runway, the **Details** button opens a new view with additional runway information including:

- Surface dimensions
- Surface type and condition
- Wind components
- Glide Slope Indicators
- Slope
- Magnetic heading
- Lighting
- Elevation
- Available procedures

Runway 11	
5,158' x 150', 319' MSL Asphalt, excellent condition	
SURFACE	
Dimensions	5,158' x 150'
Type	Asphalt, excellent condition
WIND COMPONENTS	
Rwy 11 →	→ 3kts ↓ 2kts
Wind: 050° at 4 kts (22m ago)	
GLIDESLOPE INDICATOR	
Rwy 11	4-box VASI (on left)
SLOPE	
Rwy 11	-0.16%
HEADING	
Rwy 11	106°M
LIGHTING	
Appr. Rwy 11	None
Edge	Medium Intensity
ELEVATION	
Rwy 11 Touchdown	319' MSL
PROCEDURES	
<small>NOT SAVED</small> RNAV (GPS) Rwy 11	Map
<small>NOT SAVED</small> VOR or TACAN Rwy 11	Map

Runway Detail View

17. TAKEOFF & LANDING PERFORMANCE

17.3.5 Landing Performance - Weather

The Weather section displays the destination airport's latest METAR, TAF, MOS, or general forecast based on weather data availability and the flight's estimated arrival time.

If the airport does not provide weather information, Landing Performance uses the appropriate weather from a nearby airport. Each field in the weather section can be manually edited. The weather source and raw text are displayed at the bottom of the weather section.

WEATHER		Reset
Wind Direction	<input type="button" value="USE °M"/>	100°T
Wind Speed		7 kts
Temperature		90°F
Altimeter	<input type="button" value="USE hPa"/>	29.92 inHg

Loaded KHOU TAF, issued: 3h 4m ago
131720Z 1318/1418 10007KT P6SM FEW040 FEW100

Takeoff Performance Weather Section (KHOU TAF)

Temperature

The Terminal Aerodrome Forecast (TAF) does not provide temperature data. If Takeoff & Landing Performance indicates weather data is provided by a TAF, temperature from the MOS forecast will be used. When the MOS forecast issues a range of temperatures, the maximum temperature in the range is used.

17. TAKEOFF & LANDING PERFORMANCE

Custom Weather

Each field in the weather section can be edited to allow for scenario planning. When a weather field is edited, the source and raw text at the bottom of the section change to “Using Custom Weather”.

When custom weather information has been entered, the results are updated and the edited values are used throughout Landing Performance. For example, if Wind Speed is manually edited, the wind components are updated to reflect the custom weather when selecting a runway.

WEATHER		Reset
Wind Direction	USE °M	270°T
Wind Speed		25 kts
Temperature		21°C
Altimeter	USE hPa	30.59 inHg
Using Custom Weather		

Takeoff Analysis Custom Weather

Wind Direction

Wind Direction is given relative to true north by default. To use magnetic winds, tap the **Use °M** button. Using magnetic winds changes the weather source to custom.

Altimeter

Altimeter information can be displayed in inches of mercury (inHg) or hectopascal (hPa). To convert from one unit to the other, tap the button in the altimeter field.

Weather Reset

To revert the weather back to the current METAR or forecast weather after making edits, tap the **Reset** button in the top right corner of the Weather section.

17. TAKEOFF & LANDING PERFORMANCE

17.3.6 Landing Performance - Aircraft Configuration

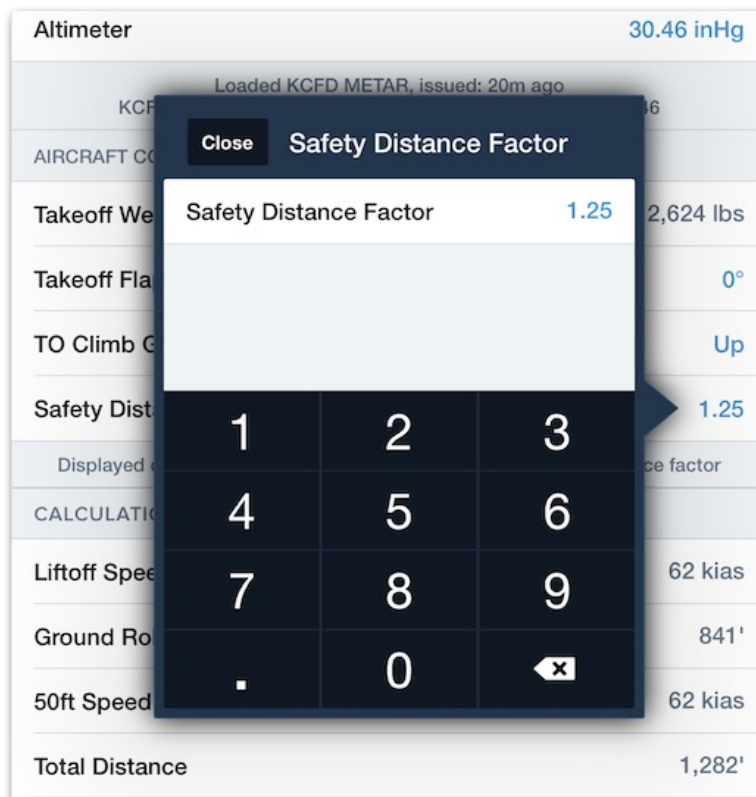
The Aircraft Configuration section is populated with the planned landing weight and default values from the aircraft's **Field Performance** settings.

Each field in the section can be edited to accommodate a non-standard landing configuration. Adjusting the aircraft's landing configuration from this view updates the planning results and not the aircraft's default configuration.

Safety Distance Factor

The Safety Distance Factor is a user-specified safety margin. The Safety Distance Factor has a minimum and default value of 1.0 and can only be edited on a per-flight basis.

When a value other than 1.0 is entered in the Safety Distance Factor field, all distance results are multiplied by the user-specified amount. For example, to add a 25% safety margin to all results, enter a Safety Distance Factor of 1.25. To revert back to the original calculations, change the Safety Distance Factor to 1.0.



Adding a Safety Distance Factor

17. TAKEOFF & LANDING PERFORMANCE

17.3.7 Landing Performance - Performance Details

The Performance section includes results for the selected runway given the planned weather and aircraft configuration. Performance results are interpolated from flight manual performance data and are not physics-based.

The items in the Performance section vary by aircraft type and represent the information found in the aircraft flight manual (including the name of the performance parameter).

PERFORMANCE	
50ft Speed	92 kias
Total Distance	1,789'
Ground Roll	1,112'
Go-Around Climb Speed	92 kias
Go-Around Climb Rate	1,453 fpm
Go-Around Climb Gradient	14.7%

Landing Performance Results

17. TAKEOFF & LANDING PERFORMANCE

Landing Output Labels

This table lists generic landing output labels used for most aircraft, though not all aircraft provide every output label, and some aircraft have specific output labels that apply only to that aircraft and are not listed here. Consult your aircraft's POH or AFM for further detail on the specific aircraft configuration used for these outputs.

<i>Landing Output Label</i>	<i>Description</i>
50 ft Speed (or Approach Speed)	Target threshold crossing speed for landing and at 50 ft AGL (obstacle height point). Typically referred to as the reference speed (V_{REF}), some manuals call it the approach speed (V_{APP}).
Total Distance	Landing distance from 50 ft AGL obstacle height point (over approach end runway threshold) until full stop is reached. Consists of air portion with flare, touchdown and stopping portion.
Ground Roll	Landing distance from touchdown point on the runway until full stop is reached.
Go-Around/Balked Landing Climb Speed	Target go-around speed, typically in landing flap/gear configuration.
Go-Around/Balked Landing Climb Rate	Go-around climb rate in ft/min. Consult POH for flap and gear configuration.
Go-Around/Balked Landing Climb Gradient	Go-around climb gradient (rise/run). Consult POH for flap and gear configuration.

17. TAKEOFF & LANDING PERFORMANCE

17.4 Takeoff & Landing Summary Document

Takeoff & Landing Performance includes a summary document. The document includes a climb performance table (when climb data is available) and Takeoff & Landing Performance data for all selected runways. If an emergency return runway or an alternate airport runway is not selected, the summary document does not include this information.

Back
Share

Summary

Takeoff & Landing Performance KIAD — KACY in BONANZ (Bonanza A36 - IO-550-B)
Created Sep 19 2022 09:41 GMT-0500 - FFM 14.8

TAKEOFF SUMMARY

Takeoff Weight 2,686 lbs

Wind 360°T / 0 kts
↓ 0 kts | ← 0 kts

Temperature 18°C

Altimeter 30.02 inHg / 1017 hPa

Takeoff Flaps Up

Runway 19C

Usable Length 11,500 ft

VR / V50 65 / 75 KIAS

Ground Roll 691 ft

Total Distance 1,162 ft

Safety Distance Factor 1.00

LANDING SUMMARY

Landing Weight 2,604 lbs

Wind 250°T / 5 kts
↓ 4 kts | ← 4 kts

Temperature 25°C

Altimeter 29.99 inHg / 1016 hPa

Landing Flaps Down

Runway 22

LDA 6,144 ft

VREF 78 KIAS

Ground Roll 796 ft

Total Distance 1,310 ft

Safety Distance Factor 1.00

Climb capabilities - KIAD - Washington Dulles International - Elevation 313 ft

All climb gradients are expressed in ft / NM. Climb figures at altitudes above airport elevation uses ISA temperature lapse rate of 1.98°C per 1,000 ft.

Pressure altitude	Speed (KIAS)	Calm winds				10 kts tailwind				20 kts tailwind			
		13°C	18°C	23°C	33°C	13°C	18°C	23°C	33°C	13°C	18°C	23°C	33°C
222 ft	100	836	836	836	836	761	761	761	761	697	697	697	697
1,000 ft	100	824	824	824	824	750	750	750	750	689	689	689	689
2,000 ft	100	808	808	808	808	737	737	737	737	677	677	677	677
3,000 ft	100	792	792	792	792	724	724	724	724	667	667	667	667
4,000 ft	100	778	778	776	766	712	712	710	701	656	656	654	647
5,000 ft	100	756	751	746	736	693	688	684	675	639	635	631	623
6,000 ft	100	727	722	718	708	668	663	659	650	617	613	609	600
7,000 ft	100	700	695	688	659	643	639	632	606	595	591	585	561
8,000 ft	100	661	647	633	605	608	596	583	557	564	552	540	516
9,000 ft	100	607	593	580	552	560	547	534	509	519	507	496	472

EMERGENCY RETURN

Landing Weight 2,686 lbs

Wind 190°T / 3 kts
↓ 3 kts | ← 1 kts

Temperature 22°C

Altimeter 30.02 inHg / 1017 hPa

Landing Flaps Down

Runway 19C

LDA 11,089 ft

VREF 78 KIAS

Ground Roll 802 ft

Total Distance 1,317 ft

Safety Distance Factor 1.00

ALTERNATE LANDING - KTTN - TRENTON MERCER

Landing Weight 2,604 lbs

Wind --

Temperature 24°C

Altimeter 29.96 inHg / 1015 hPa

Landing Flaps Down

Runway 24

LDA 6,006 ft

VREF 78 KIAS

Ground Roll 837 ft

Total Distance 1,361 ft

Safety Distance Factor 1.00

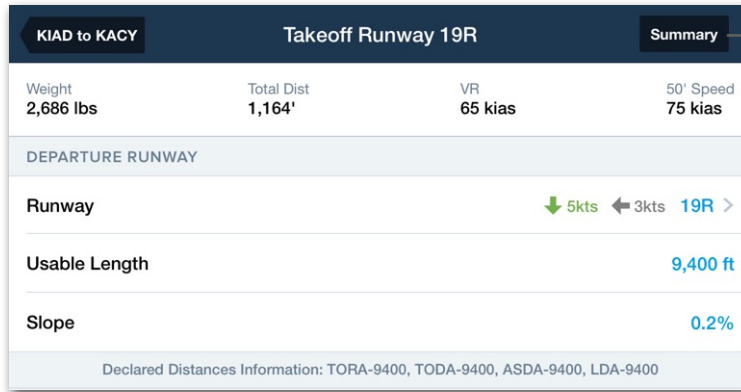
Airports
Maps
Plates
Documents
Imagery
Flights
ScratchPads
Checklist
Logbook
More

Takeoff & Landing Performance Summary Document

17. TAKEOFF & LANDING PERFORMANCE

17.4.1 Generating the Summary Document

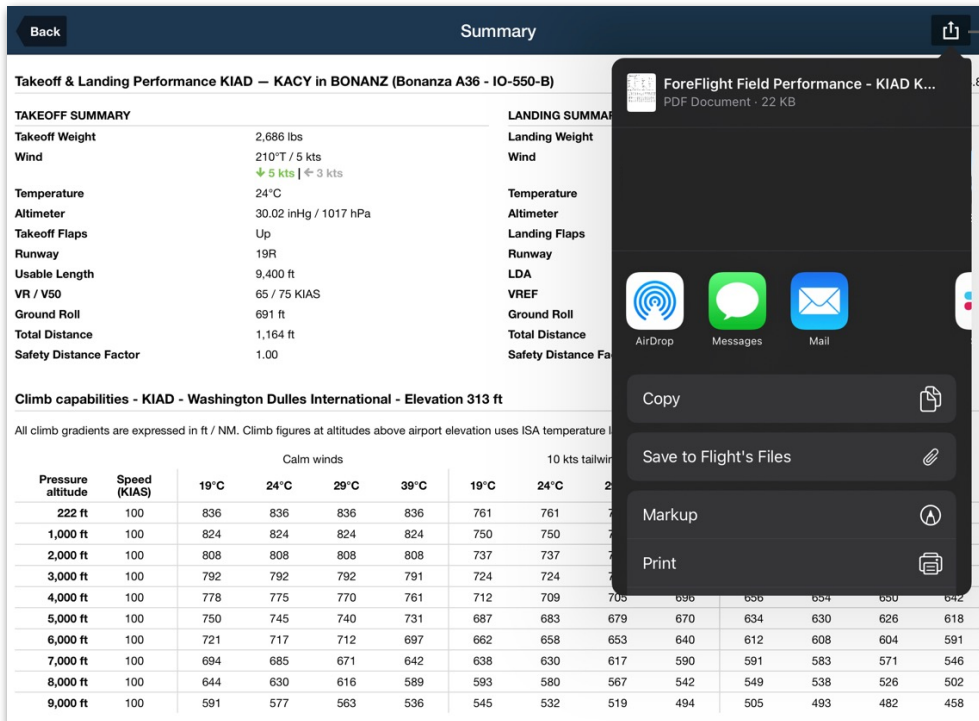
To generate the Summary Document, select Takeoff & Landing Performance runways for the departure, destination, and alternate airport. Tap **Summary** in the upper-right corner of the Takeoff or Landing Performance view.



Generate Summary Document

17.4.2 Summary Document Options

The Summary can be annotated, shared, printed, or attached to a Flight by tapping the share button in the upper-right corner when viewing the document.



Share Button

NAVLOG

ForeFlight Navlog is a printable, sharable document that contains a flight summary, per-leg performance results, departure and arrival airport details, various blank fields for recording flight actuals, current weather, and more. There are four different Navlog types. Navlog availability depends on your ForeFlight subscription.

Navlogs are synced to your account and saved indefinitely, provided the flight is not deleted. If a flight is deleted from ForeFlight Mobile or ForeFlight Web, the Navlog is also deleted and cannot be restored.

KRMRY to KPRC														Navlog		KRMRY to KPRC										
KRMRY — KPRC (Jan 10, 2023) in N71562 (P46T - PA-46-500TP Malibu Meridian) IFR														Created Jan 10 2023 1347Z		Winds Jan 10 2023 0600Z										
Max Climb 125 KIAS - Max Speed Cruise @ FL250 - Normal 350 TO																										
ETE	1h52m	Distance	519NM	Avg Wind	38kt tail (235°/074)	ETD	6:00 AM PST / 1400Z	ETA	8:52 AM MST / 1552Z	TOW	4519 lbs	ELW	3954 lbs													
Block Fuel	794 lbs	Taxi Fuel	42 lbs	Flight Fuel	607 lbs	Reserve Fuel	187 lbs	Alternate Fuel	0 lbs	Extra Fuel	0 lbs	Landing Fuel	187 lbs													
Route										RAIM (5° Mask, With Baro-aid)																
SNS PXN NTELL Q174 FLCHR BTY J92 DRK										✓ RAIM: No outages predicted																
WAYPOINT	AIRWAY	HDG	CRS	ALT	CMP	DIR/SPD	ISA	SPD KT	TAS	GS	DIST NM	LEG	REM	FUEL LB	USED	REM	ACT	LEG	TIME	ETE	ACT					
KRMRY		-	-	257	-	-	-4	0	0	-	519	42	752					-	1:52	-						
SNS	DCT	059	055	6500	T33	231/034	-4	150	183	13	506	109	685					0:05	1:47	0:05						
FLCHR		136	120	FL250	T12	239/077	-3	260	272	25	267	346	449					0:06	0:57	0:55						
BTY	DCT	166	149	FL250	H27	239/077	-3	260	233	19	248	368	427					0:05	0:52	1:00						
100-BLD	J92	116	102	FL250	T37	240/077	-3	260	297	4	244	371	424					0:00	0:52	1:00						
BLD	J92	120	106	FL250	T34	240/078	-3	260	293	100	144	463	331					0:21	0:31	1:21						
KADDY	J92	126	112	FL250	T29	243/074	-2	260	289	27	117	489	305					0:06	0:25	1:27						
PRFUM	J92	125	112	FL250	T35	249/072	-2	260	295	26	91	513	281					0:05	0:20	1:32						
-TOD-	J92	126	113	FL250	T34	248/072	-2	260	294	35	56	545	250					0:07	0:13	1:39						
CADDU	J92	124	113	17100	T48	251/056	0	240	288	22	34	563	231					0:05	0:08	1:44						
HOBES	J92	124	114	15800	T28	245/048	+3	240	268	5	29	568	227					0:01	0:07	1:45						
DRK	J92	122	114	6100	T20	238/035	+4	212	232	25	4	600	195					0:06	0:01	1:51						
KPRC	DCT	124	123	5045	H6	157/006	+1	187	181	4	-	607	187					0:01	-	1:52						
WINDS ALOFT	FL 210 (ISA: -27°C)		FL 230 (ISA: -31°C)		FL 250 (ISA: -35°C)		FL 270 (ISA: -38°C)		FL 290 (ISA: -42°C)																	
SNS	(T57)	216/073	-7	(T55)	214/073	-7	(T59)	214/079	-7	(T64)	215/085	-5	(T67)	219/083	-4											
PXN	(T37)	212/083	-3	(T39)	212/093	-4	(T35)	209/095	-5	(T30)	207/093	-5	(T31)	208/088	-5											
-TOC-	(T52)	214/077	-1	(T45)	209/074	-3	(T47)	209/078	-4	(T50)	210/082	-6	(T46)	207/081	-7											
NTELL	(T54)	214/077	-1	(T47)	209/076	-3	(T49)	209/079	-4	(T52)	210/083	-6	(T48)	207/082	-7											
CABAB	(T59)	227/064	-1	(T62)	229/066	-3	(T68)	230/073	-4	(T75)	230/080	-6	(T80)	230/085	-7											
TTMSN	(T62)	237/071	-1	(T66)	238/075	-2	(T70)	238/080	-4	(T74)	237/086	-5	(T80)	235/096	-6											
SKANN	(T51)	235/061	0	(T61)	239/070	-2	(T67)	239/077	-3	(T70)	238/082	-5	(T70)	234/086	-6											
FLCHR	(T7)	235/061	0	(T12)	239/071	-2	(T12)	239/077	-3	(T10)	238/082	-5	(T3)	233/085	-6											
BTY	(H23)	235/061	0	(H24)	239/071	-2	(H26)	240/077	-3	(H31)	238/081	-5	(H39)	233/085	-6											
100-BLD	(T27)	235/061	0	(T34)	239/071	-2	(T37)	240/077	-3	(T37)	238/081	-5	(T30)	233/085	-6											
BLD	(T25)	237/063	+1	(T30)	240/069	-1	(T35)	243/074	-2	(T37)	244/076	-4	(T29)	238/075	-5											
KADDY	(T27)	246/057	0	(T32)	248/066	-1	(T35)	249/072	-2	(T35)	247/075	-3	(T26)	240/077	-4											
PRFUM	(T26)	245/057	0	(T31)	247/066	-1	(T34)	248/072	-2	(T34)	247/076	-4	(T26)	241/076	-5											
-TOD-	(T29)	252/053	+1	(T35)	254/061	-1	(T31)	249/064	-2	(T26)	242/070	-3	(T21)	237/086	-2											
CADDU	(T29)	252/054	+1	(T34)	254/061	-1	(T31)	249/064	-2	(T25)	242/070	-3	(T20)	237/086	-3											
HOBES	(T29)	251/054	+1	(T34)	254/061	-1	(T31)	249/064	-2	(T25)	242/070	-3	(T20)	237/085	-3											

Performance Tier Standard Navlog

18. NAVLOG

18.1 Generating Navlogs

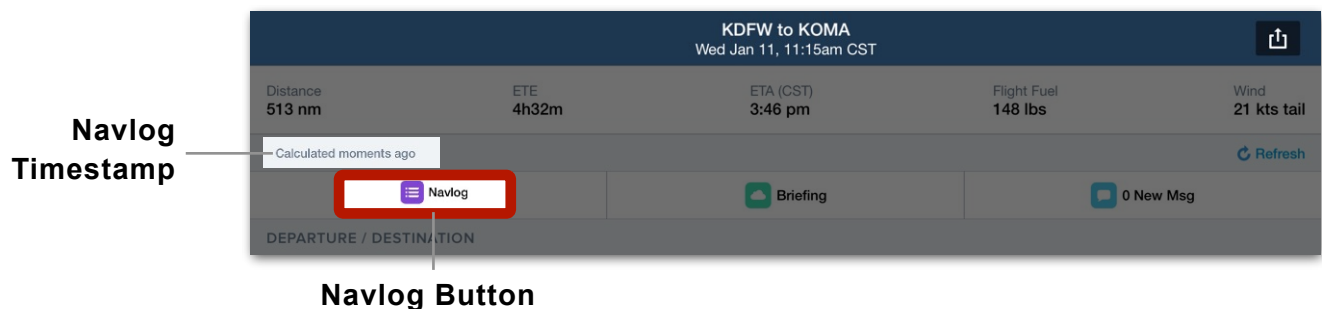
Navlogs are generated using ForeFlight's cloud-based flight planning engine. Therefore, an active internet connection is required to generate Navlogs. This feature is independent of the NavLog on the Maps view and may contain slightly different flight planning results.

ForeFlight's cloud-based flight planning engine is more accurate than the planning engine available on the Maps view as it factors more variables (e.g., aircraft weight, temperatures aloft, etc.).

Navlogs are generated without user input. A new Navlog is generated every time a change is made to the Flights view. Once a Navlog is generated, it is saved locally to the device and can be accessed offline. In other words, if you plan a flight while connected to the Internet, the Navlog will be available for offline viewing.

18.1.1 Accessing Navlogs

Navlogs are accessed from the ForeFlight Mobile or ForeFlight Web *Flights* view by tapping the **Navlog** button near the top of the screen.



When the **Navlog** button is tapped, the *latest* Navlog is displayed in the Navlog viewer. It is not possible to view historical Navlogs that were generated as the flight was being planned.

Navlogs are synced to your account. Generating a Navlog using ForeFlight Web and then tapping the **Navlog** button in ForeFlight Mobile results in the same document, and vice versa.

IMPORTANT: An internet connection is required to generate a Navlog.

18. NAVLOG

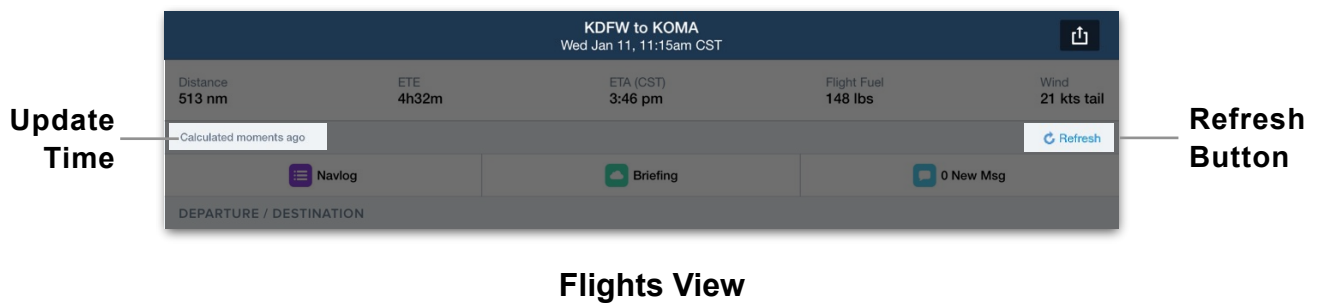
18.1.2 Refreshing Navlogs

Pilots who generate Navlogs in advance of their estimated departure time are encouraged to refresh their Navlogs prior to flight as updated weather forecasts may be available.

IMPORTANT: The Navlog does not automatically refresh; an internet connection is required to refresh the Navlog.

There are three methods for refreshing the Navlog.

- Tapping the **Refresh** button on the Flights view (recommended).
- Opening the Navlog and tapping the refresh icon in the left corner of the lower toolbar.
- Editing the flight.



The time at which the Navlog was generated is displayed above the Navlog button and on the Navlog itself. To incorporate the latest weather forecasts, the Navlog must be refreshed.

When the Navlog is refreshed with any of the techniques listed above, the Navlog is updated with the latest available weather, and the Navlog timestamp is updated.

18. NAVLOG

18.2 Navlog Types

There are four types of Navlogs. The table below indicates available Navlog types per subscription.

Subscription	Basic	Standard	International	Custom
Basic Plus	✓			
Pro Plus	✓			
Performance Plus		✓	✓	
Business Pro	✓			
Business Performance		✓	✓	
MFB Pro	✓			
MFB Performance		✓	✓	
Business + Dispatch		✓	✓	✓
MFB + Dispatch		✓	✓	✓

Navlog types per subscription

All Navlog types are read-only, printable, and shareable documents. Navlogs cannot be edited using the Navlog viewer. The Navlog must be printed or opened with a viewer capable of editing PDFs to make annotations.

The Basic Navlog contains essential flight planning details. The Standard and International Navlogs contain additional flight planning details in commonly used standard and international formats. Basic, Standard, and International Navlog types are discussed in detail later in this chapter.

Custom Navlogs can be created with a ForeFlight Dispatch account. See the [ForeFlight Dispatch Guide](#) for additional information.

18. NAVLOG

18.2.1 Basic Navlog

The Basic Navlog is available to Basic Plus, Pro Plus, Business Pro, and MFB Pro customers. As depicted below, the Basic Navlog is organized into sections. Each section is described in detail throughout this chapter.

KCNO — KVNY (Jan 10, 2023) In N8303P (PA44 - XXXX) IFR Created Jan 10 2023 1519Z
Winds Jan 10 2023 0600Z

ETE 0h23m **Distance** 46NM **Avg Wind** 4kt head (220°/025) **ETD** 7:30 AM PST / 1530Z **ETA** 7:53 AM PST / 1553Z **Flight Fuel** 8 g **Taxi Fuel** 3 g

Route
PIRRO JOFRY

WAYPOINT	AIRWAY	MAG HDG	CRS	ALT	WIND DIR/SPD	ISA	SPD KT TAS	GS	DIST NM LEG	REM	TIME LEG	REM	ETE	ACT
KCNO		-	-	650	-	-	0	0	0	-	46	-	0:23	-
-TOC-	DCT	261	276	6000	T4	191/020	0	80	84	10	36	0:06	0:17	0:06
PIRRO	DCT	266	275	6000	H12	220/025	+1	135	123	3	33	0:02	0:15	0:08
-TOD-	DCT	288	299	6000	H2	220/025	+1	135	133	8	25	0:04	0:11	0:12
JOFRY	DCT	287	297	5800	T3	220/025	+1	135	138	1	24	0:00	0:11	0:12
KVNY	DCT	261	270	802	H8	199/021	0	135	127	24	-	0:11	-	0:23

WINDS ALOFT	2000 FT (ISA: 11°C)		4000 FT (ISA: 7°C)		6000 FT (ISA: 3°C)	
	(COMP) WIND	ISA	(COMP) WIND	ISA	(COMP) WIND	ISA
-TOC-	(T12) 160/024	-1	(H9) 210/024	+1	(H13) 220/025	+1
PIRRO	(T13) 160/024	-1	(H7) 210/024	+1	(H11) 220/025	+1
-TOD-	(T20) 160/024	-1	(T2) 211/024	+1	(H2) 220/025	+1
JOFRY	(T2) 161/024	-1	(T1) 211/024	+1	(H3) 220/025	+1

0h19m (-0:05), 4 g Avg wind comp: T14 0h22m (-0:01), 5 g Avg wind comp: H3 0h23m (0:00), 5 g Avg wind comp: H4

SUMMARY & TIMES		NOTES	
PIC	Your Name Here	Out:	In: Block time:
Souls on board	1	Off:	On: Flight time:
Tail	N8303P (PA44)	Start:	Stop: Hobbs time:
Profile	Basic Performance Profile @ 6000'	Start:	Rem: Fuel used:
Distance	46NM	Signature:	
ETD	7:30 AM PST / 1530Z		
ETE	0h23m		
ETA	7:53 AM PST / 1553Z		
Route	PIRRO JOFRY		
Altitude	6000'		

AIRPORT	ETA	WX	TWR/CTAF	CLR	GND	ELEV	LONGEST RWY
DEP KCNO	-	125.85	118.5	N/A	121.6	650	08R / 26L 7000 ft
DEST KVNY	7:53 AM PST / 1553Z	127.55	120.2	126.6	121.7	802	16R / 34L 8001 ft

KCNO CHINO

KVNY VAN NUYS

Flight Summary

Detailed Planning Results

Winds Aloft

Summary, Times, and Notes

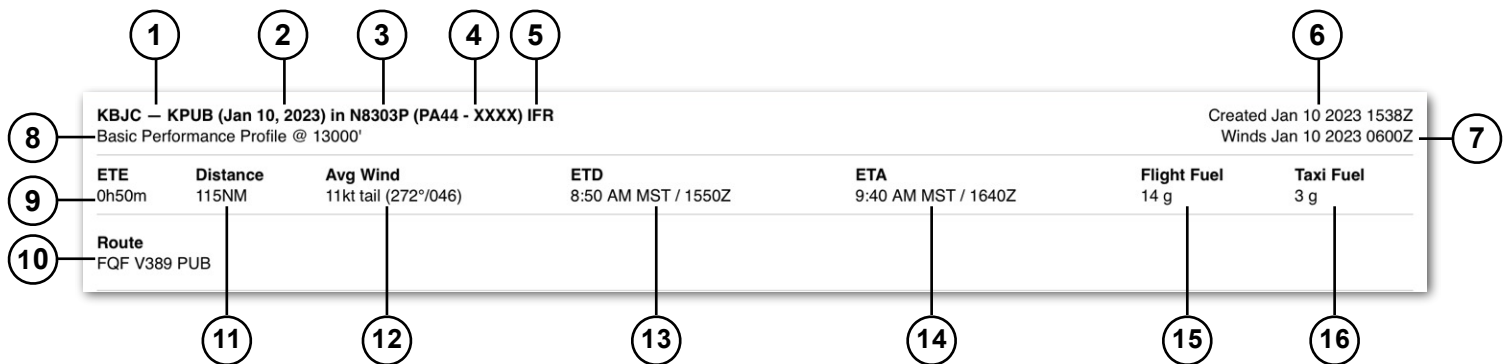
Airport Details

Airport Diagrams

18. NAVLOG

Basic Navlog Flight Summary Section

The Basic Navlog summary section provides an overview of the flight.



1. Departure and destination identifiers, names (for airports without identifiers), or lat/long coordinates (if the location is not an airport, navaid, or waypoint).
2. Departure date. The date format cannot be edited.
3. Aircraft registration (tail number). If a flight plan is *filed* with a callsign, the callsign is included in this section.
4. Aircraft type code.
5. Flight Rules.
6. Navlog generation timestamp.
7. Winds aloft data timestamp.
8. Selected aircraft performance profile.
9. Estimated flight time en route.
10. Route waypoints (including airways, arrival and departure procedures, nav aids, and waypoints) listed as identifiers or lat/long coordinates if there is no identifier.
11. Total distance along the route.
12. Average wind and wind component for the duration of the flight.
13. Estimated departure time in departure airport's local and Zulu formats.
14. Estimated arrival time in local and Zulu formats.
15. Total flight fuel.
16. Taxi fuel as specified in the Aircraft profile.

18. NAVLOG

Basic Navlog Planning Results Section

Detailed per-leg flight planning results are provided via a table. The table includes each waypoint that defines the route, including those that are not explicitly included in the route but are a part of terminal procedures or airways.

Each waypoint's row describes the leg of the flight leading to it from the previous waypoint. In the image below, the leg of the flight from KIAH to BBYSE is described on the row for BBYSE. In other words, to get to the next waypoint, read that waypoint's row.

WAYPOINT	AIRWAY	MAG		ALT	CMP	WIND DIR/SPD	ISA	SPD KT		DIST NM	
		HDG	CRS					TAS	GS	LEG	REM
KIAH		-	-	96	-	-	+4	0	0	-	200
BBYSE	STYCK8	338	348	4500	T8	232/016	+6	80	85	7	193
SPICR	STYCK8	322	332	12100	H4	266/016	+8	80	76	12	181
-TOC-	STYCK8	323	332	14000	H14	292/020	+9	80	66	3	178
WLLIS	STYCK8	327	332	14000	H17	298/020	+9	135	118	15	163
STYCK	STYCK8	325	333	14000	H21	289/028	+8	135	114	39	124

How to read planning results from KIAH to BBYSE

Routes with legs greater than 100 nm

If any leg in the route is longer than 100 nm, that leg is subdivided into 100 nm increments. Each of these increments becomes a new leg and is assigned a unique name representing the distance from it to the waypoint.

In the example below, the leg "300-KOMA" is reached when the aircraft is 300 nm from KOMA.

If the waypoint is an airport without an identifier, the airport's lat/long coordinates are listed instead e.g. "300-5036N00827E" for 300 nm from Garbenheimer Weisen Airfield.

WAYPOINT	AIRWAY	MAG		ALT	CMP	WIND DIR/SPD	ISA	SPD KT		DIST NM		LEG	TIME		ACT
		HDG	CRS					TAS	GS	LEG	REM		REM	ETE	
KDFW		-	-	606	-	-	+7	0	0	-	507	-	3:50	-	
500-KOMA	DCT	351	003	3900	T15	237/023	+7	80	95	7	500	0:05	3:45	0:05	
-TOC-	DCT	340	003	14000	T16	258/033	+9	80	96	20	480	0:12	3:33	0:17	
400-KOMA	DCT	345	003	14000	H6	276/041	+9	135	129	80	400	0:38	2:55	0:55	
300-KOMA	DCT	343	003	14000	H8	276/046	+10	135	127	100	300	0:47	2:08	1:42	
200-KOMA	DCT	349	003	14000	T4	262/036	+9	135	139	100	200	0:43	1:25	2:25	
100-KOMA	DCT	352	004	14000	T4	261/028	+7	135	139	100	100	0:43	0:42	3:08	
-TOD-	DCT	353	004	14000	T3	265/026	+5	135	138	38	62	0:16	0:26	3:24	
KOMA	DCT	360	004	985	T8	222/018	+2	135	143	62	-	0:26	-	3:50	

Direct flight from KDFW to KOMA divided into 100 nm segments

18. NAVLOG

Top of Climb and Descent

The Basic Navlog includes waypoints for the top of climb (TOC) and top of descent (TOD). These waypoints are calculated automatically using the latest weather forecasts and selected aircraft performance profile.

WAYPOINT	AIRWAY	MAG		ALT	WIND		ISA	SPD KT		DIST NM		LEG	TIME		ETE	ACT
		HDG	CRS		DIR	SPD		TAS	GS	LEG	REM		REM	ETE		
KIAH		-	-	96	-	-	+4	0	0	-	200	-	1:49	-		
BBYSE	STYCK8	338	348	4500	T8	232/016	+6	80	85	7	193	0:05	1:44	0:05		
SPICR	STYCK8	322	332	12100	H4	266/016	+8	80	76	12	181	0:10	1:34	0:15		
-TOC-	STYCK8	323	332	14000	H14	292/020	+9	80	66	3	178	0:02	1:32	0:17		
WLLIS	STYCK8	327	332	14000	H17	298/020	+9	135	118	15	163	0:08	1:24	0:25		
STYCK	STYCK8	325	333	14000	H21	289/028	+8	135	114	39	124	0:20	1:04	0:45		
-TOD-	DCT	334	346	14000	H16	284/032	+9	135	119	62	62	0:32	0:32	1:17		
CQY CEDAR CREEK 114.8	DCT	331	345	13400	H12	281/035	+9	135	123	2	60	0:01	0:31	1:18		
HOWDY	CQY1	304	314	10600	H27	275/033	+9	135	108	17	43	0:09	0:22	1:27		
KDFW	CQY1	302	313	606	H20	253/029	+9	135	115	43	-	0:22	-	1:49		

Top of climb and descent waypoints

Basic Navlog Planning Table Definitions

Definitions for the values found in the planning table are given below.

1	2	3	4	5	6	7	8	9	10	11	12	13	14			
WAYPOINT	AIRWAY	MAG		ALT	WIND		ISA	SPD KT		DIST NM		LEG	TIME		ETE	ACT
		HDG	CRS		DIR	SPD		TAS	GS	LEG	REM		REM	ETE		
KIAH		-	-	96	-	-	+4	0	0	-	200	-	1:49	-		
BBYSE	STYCK8	338	348	4500	T8	232/016	+6	80	85	7	193	0:05	1:44	0:05		
SPICR	STYCK8	322	332	12100	H4	266/016	+8	80	76	12	181	0:10	1:34	0:15		
-TOC-	STYCK8	323	332	14000	H14	292/020	+9	80	66	3	178	0:02	1:32	0:17		
WLLIS	STYCK8	327	332	14000	H17	298/020	+9	135	118	15	163	0:08	1:24	0:25		
STYCK	STYCK8	325	333	14000	H21	289/028	+8	135	114	39	124	0:20	1:04	0:45		

1. Route waypoints (including airway and terminal procedure waypoints not explicitly included in the route, top of climb and descent, and 100 nm waypoints) listed as identifiers or lat/long coordinates if there is no identifier.
2. Airway or terminal procedure by which the waypoint is defined. If no airway or terminal procedure defines the point, the route is direct (DCT).
3. Magnetic heading (magnetic course corrected for winds).
4. Magnetic course (true course corrected for geographic variation).
5. Altitude (MSL) at which the waypoint is crossed.

18. NAVLOG

6. Average wind component for the leg (e.g., T8 is an eight-knot tailwind and H4 is a four-knot headwind).
7. *Average* wind direction and speed for the leg at the planned altitude.
8. Temperature in degrees celsius for the planned altitude in relation to the International Standard Atmosphere (ISA). For example, ISA at 14,000' is -12.5°C. A temperature of +9 in the Navlog results in an ambient temperature of -3.5°C at altitude.
9. Average true airspeed (TAS) and groundspeed (GS) for the leg.
10. Leg distance (left) and total flight distance remaining.
11. Estimated time for the leg rounded to the nearest minute.
12. Estimated total time remaining for the flight.
13. Estimate total time en route when crossing the waypoint.
14. Blank field to record actual flight time. This field cannot be edited using the Navlog viewer. The Navlog must be printed or opened with a viewer capable of editing PDFs.

18. NAVLOG

Alternate Airports

When an alternate airport is included in the flight, the Navlog introduces an “APPCH” waypoint to add time and distance representative of the time and fuel required to fly a missed approach procedure and instrument approach.

With the exception of Dispatch accounts, alternate fuel calculations use the same cruise, climb, and descent profiles as the flight to calculate the fuel to the alternate airport.

The routing from the initial destination airport to the alternate airport is not direct, nor does it reflect a published approach. Rather, it serves as an estimate for flight planning purposes.

A fuel buffer is added to account for the additional routing and varies by aircraft type. Jet and Turboprop aircraft add a 30 nm buffer. Piston aircraft add a 15 nm buffer. There is no alternate buffer added when planning with a helicopter.

ALTERNATE #1 KBAF / ROUTE: DCT											
CRUISE PROFILE: MAX CRUISE 33/2400 @ FL50											
KBDL N4156.3/W07241.1	100 6100	- - +13/-2	- -	0 0	- 29	28	-	0	- 0:09	-	
-TOC- N4159.2/W07235.0	DCT 5000 6100	T21 233/020 +7/-3	071 071	133 154	6 23	26	2	70	0:02 0:07	0:02	
-TOD- N4202.8/W07227.6	DCT 5000 6100	T34 236/034 +3/-2	071 071	199 233	6 17	24	4	52	0:02 0:05	0:04	
APPCH N4204.0/W07225.0	DCT 4300 6100	T21 229/033 +4/-1	073 071	180 201	3 14	24	4	40	0:00 0:05	0:04	
KBAF N4209.5/W07243.0	DCT 270 6100	H11 228/022 +8/-2	300 306	183 172	14 -	20	8	44	0:05 -	0:09	

Alternate Airport Planning Results

18. NAVLOG

Basic Navlog Winds Aloft Table

The Winds Aloft table includes forecast wind and temperatures at each waypoint for five different altitudes up to the planned cruise altitude in 2,000 ft increments. A brief summary is included at the bottom of each column. The summary reflects the flight planning results should the aircraft be flown at that particular altitude.

The winds and temperatures in this section reflect the forecast weather at the specific waypoint and not an average across route segments. To read the table, find the appropriate waypoint in the left column. Follow its row to the right to the desired altitude column. Definitions for the values found in the Winds Aloft table are given below.

WINDS ALOFT	6000 FT (ISA: 3°C)		8000 FT (ISA: -1°C)		10000 FT (ISA: -5°C)		12000 FT (ISA: -9°C)		14000 FT (ISA: -13°C)	
	(COMP) WIND	ISA	(COMP) WIND	ISA	(COMP) WIND	ISA	(COMP) WIND	ISA	(COMP) WIND	ISA
BBYSE	(T3) 244/015	+8	(H1) 259/015	+8	(H7) 278/016	+9	(H13) 292/021	+9	(H17) 303/022	+9
SPICR	(H2) 246/015	+9	(H5) 260/015	+9	(H10) 273/017	+9	(H15) 286/020	+9	(H18) 298/020	+9
-TOC-	(H2) 246/015	+9	(H5) 260/015	+9	(H10) 273/017	+9	(H15) 286/020	+9	(H17) 298/020	+9
WLLIS	(H4) 254/018	+8	(H8) 265/018	+8	(H10) 269/021	+9	(H12) 272/022	+9	(H21) 289/028	+8
STYCK	(H4) 253/019	+9	(H8) 265/019	+8	(H10) 267/022	+9	(H12) 271/023	+9	(H21) 288/028	+8
-TOD-	(T1) 251/024	+9	(H1) 256/026	+8	(H5) 262/029	+9	(H11) 272/032	+9	(H17) 281/035	+9
CQY	(T0) 251/024	+9	(H2) 256/026	+8	(H6) 262/029	+9	(H12) 272/032	+9	(H18) 281/035	+9
HOWDY	(H12) 251/024	+9	(H15) 256/027	+8	(H19) 261/030	+9	(H25) 272/032	+9	(H30) 281/035	+9
	1h34m (-0:15), 21 g Avg wind comp: H4		1h37m (-0:12), 22 g Avg wind comp: H6		1h40m (-0:09), 22 g Avg wind comp: H9		1h44m (-0:05), 23 g Avg wind comp: H11		1h49m (0:00), 24 g Avg wind comp: H16	

1. Route waypoints (including airway and terminal procedure waypoints not explicitly included in the route) listed as identifiers or lat/long coordinates if there is no identifier.
2. International Standard Atmospheric (ISA) temperature rounded to the nearest degree for the altitude (e.g., 6000 FT ISA 3°C).
3. Wind component at the waypoint (in parenthesis). For example, (T8) is an eight-knot tailwind and (H4) is a four-knot headwind. Forecast true wind direction and speed to the right of the wind component.
4. Temperature in degrees celsius compared to the International Standard Atmospheric temperature (ISA).
5. From left to right: Estimated time en route for the altitude column. Estimated time en route difference (rounded to the nearest minute) compared to the planned cruise altitude. Required fuel for the altitude column.
6. Average wind component of the entire flight for the altitude column.

18. NAVLOG

Basic Navlog Summary & Times

The Summary & Times section contains information provided by Flights, Accounts, and the flight plan filing form.

SUMMARY & TIMES	
PIC	Your Name Here
Souls on board	1
Tail	N12345 (B350)
Profile	Basic Performance Profile @ FL350
Distance	513NM
ETD	12:50 PM CST / 1850Z
ETE	6h12m
ETA	7:02 PM CST / 0102Z
Route	BLECO8 ZEMMA PER HTHWY TIMMO1
Altitude	FL350

Basic Navlog Summary & Times Section

- **PIC** is automatically populated with the name associated with your account. Tap **More > Account** to change the name.
- **Souls on board** is one by default. If a flight plan is filed, the *Persons on Board* field is copied from the filing form to this section of the Navlog. Performance tier customers can edit this field using the Flight's Payload section.
- **Tail** reflects the selected aircraft's registration number and type code.
- **Profile** reflects the aircraft's selected Performance Profile.
- **Distance** reflects the total distance along the route.
- **ETD** is the estimated departure time in local and Zulu formats.
- **ETE** is the estimated time en route for the planned cruise altitude.
- **ETA** is the estimated arrival time in local and Zulu formats.
- **Route** waypoints, including airways, arrival and departure procedures, nav aids and waypoints.
- **Altitude** reflects the planned cruise altitude.

18. NAVLOG

Basic Navlog Notes Section

The Notes section provides blank fields for manually recording flight times. These fields cannot be edited using the Navlog viewer. The Navlog must be printed or opened with a viewer capable of editing PDFs.

NOTES		
Out:	In:	Block time:
Off:	On:	Flight time:
Start:	Stop:	Hobbs time:
Start:	Rem:	Fuel used:
Signature:		

Basic Navlog Notes Section

Basic Navlog Airport Details

The Airport Details section includes commonly used airport frequencies, field elevation, longest runway, and FBO location details.

AIRPORT	ETA	WX	TWR/CTAF	CLR	GND	ELEV	LONGEST RWY	
DEP	KDFW	-	135.925	134.9	128.25	121.85	18L / 36R	13401 ft
DEST	KOMA	7:02 PM CST / 0102Z	120.4	132.1	119.9	121.9	14R / 32L	9502 ft

KDFW DALLAS-FORT WORTH INTERNATIONAL	KOMA EPPLEY AIRFIELD

Basic Navlog Airport Details Section

18. NAVLOG

18.2.2 Standard Navlog

The Standard Navlog is only available to Performance Plus, Business Performance, and MFB Performance customers. The Navlog Settings (gear) button in the upper toolbar toggles between the Standard Navlog format and the **International** format.

The Standard Navlog is similar to the **Basic Navlog**, with the exception of some additional features. Those features are circled below and discussed in this section.

KAUS to KSAT
Navlog
KAUS to KSAT
📄 ⚙️

KAUS — KSAT (Aug 10, 2022) in N12345 (B350 - King Air 350ER) VFR Created Aug 10 2022 2022Z
Winds Aug 10 2022 2000Z

1600 RPM/ITT 785C or 100% TQ - Max Cruise Power 1500 RPM @ 4500' - M0.47/245 KIAS 1500 FPM

ETE 0h13m	Distance 57NM	Avg Wind 2kt tail (105°/005)	ETD 3:35 PM CDT / 2035Z	ETA 3:48 PM CDT / 2048Z	TOW 11013 lbs	ELW 10779 lbs
Block Fuel 859 lbs	Taxi Fuel 100 lbs	Flight Fuel 334 lbs	Reserve Fuel 525 lbs	Alternate Fuel 0 lbs	Extra Fuel 0 lbs	Landing Fuel 525 lbs

Route
DCT

RAIM (5° Mask, With Baro-aid)
✓ RAIM: No outages predicted


WAYPOINT	AIRWAY	MAG		ALT	WIND		ISA	SPD KT		DIST NM		FUEL LB			LEG	TIME REM	ETE	ACT
		HDG	CRS		DIR	SPD		TAS	GS	LEG	REM	USED	REM	ACT				
KAUS		-	-	542	-	-	+22	0	0	-	57	100	759		-	0:13	-	
-TOC-	DCT	222	223	4500	T2	115/004	+20	173	175	4	53	129	729		0:02	0:11	0:02	
-TOD-	DCT	222	223	4500	T2	105/005	+18	269	271	42	11	287	572		0:09	0:02	0:11	
KSAT	DCT	222	223	809	T2	113/005	+20	257	259	11	-	334	525		0:02	-	0:13	

WINDS ALOFT	2000 FT (ISA: 11°C)			4000 FT (ISA: 7°C)			6000 FT (ISA: 3°C)			8000 FT (ISA: -1°C)			10000 FT (ISA: -5°C)		
	(COMP) WIND	ISA		(COMP) WIND	ISA		(COMP) WIND	ISA		(COMP) WIND	ISA		(COMP) WIND	ISA	
-TOC-	(T1) 118/004		+21	(T2) 109/005		+19	(T3) 096/005		+16	(T4) 085/005		+15	(T5) 070/005		+13
-TOD-	(T1) 117/004		+21	(T2) 108/005		+19	(T3) 096/005		+17	(T4) 086/005		+15	(T4) 070/005		+13


SUMMARY & TIMES		FUEL & WEIGHTS		NOTES	
PIC	Your Name Here	Block Fuel	859 lbs	Out:	In: Block time:
Souls on board	1	Taxi Fuel	100 lbs	Off:	On: Flight time:
Tail	N12345 (B350)	Flight Fuel	334 lbs	Start:	Stop: Hobbs time:
Profile	1600 RPM/ITT 785C or 100% TQ - Max Cruise Power 1500 RPM @ 4500' - M0.47/245 KIAS 1500 FPM	Reserve Fuel	525 lbs	Start:	Rem: Fuel used:
Fuel Flow	525 lbs/hr (Per Engine)	Alternate Fuel	0 lbs	Signature:	
Distance	57NM	Extra Fuel	0 lbs		
ETD	3:35 PM CDT / 2035Z	Payload	200 lbs		
ETE	0h13m	ZFW	10254 lbs		
ETA	3:48 PM CDT / 2048Z	TOW	11013 lbs		
Route	DCT	ELW	10779 lbs		
Altitude	4500'				

	AIRPORT	ETA	WX	TWR/CTAF	CLR	GND	ELEV	LONGEST RWY	
DEP	KAUS	-	124.4	121.0	125.5	121.9	542	18R / 36L	12250 ft
DEST	KSAT	3:48 PM CDT / 2048Z	118.9	119.8	126.7	121.9	809	04 / 22	8505 ft

KAUS
AUSTIN-BERGSTROM INTERNATIONAL



KSAT
SAN ANTONIO INTERNATIONAL



Standard Navlog Additional Features

18. NAVLOG

Additional Standard Navlog Features

The following features are only included with the Standard Navlog.

ETE 0h56m	Distance 395NM	Avg Wind 29kt tail (283°/042)	ETD 2:35 PM EST / 1935Z	ETA 3:31 PM EST / 2031Z	TOW 15488 lbs	ELW 14063 lbs
Block Fuel 2475 lbs	Taxi Fuel 200 lbs	Flight Fuel 1625 lbs	Reserve Fuel 850 lbs	Alternate Fuel 0 lbs	Extra Fuel 0 lbs	Landing Fuel 850 lbs

The diagram shows a table of flight data with callouts 1 through 7 pointing to specific fields. Callout 1 points to TOW, 2 to ELW, 3 to Block Fuel, 4 to Reserve Fuel, 5 to Alternate Fuel, 6 to Extra Fuel, and 7 to Landing Fuel.

1. Planned takeoff weight.
2. Estimated landing weight (ramp weight minus taxi, takeoff, and flight fuel).
3. Block fuel refers to the total quantity of fuel in the aircraft's tanks prior to engine start (sum of taxi, flight, alternate, reserve, and extra fuel).
4. The default amount of reserve fuel as determined by the aircraft profile or as manually edited on the flight planning form.
5. Fuel required to fly to the alternate airport (if specified).
6. Extra fuel as determined by the fuel policy or manually specified.
7. Fuel amount upon landing at destination (start fuel minus taxi and fuel to destination).

18. NAVLOG

Standard Navlog RAIM Prediction

The Standard Navlog can include a RAIM prediction for the flight. If conducted, the RAIM calculation will indicate whether or not outages are predicted.

RAIM (5° Mask, With Baro-aid)

✓ RAIM: No outages predicted

This calculation is conducted assuming the aircraft is equipped with barometric pressure-aiding equipment, and the GPS antenna is installed on the airframe to ensure a maximum 5-degree airframe mask angle.

The Standard Navlog includes RAIM prediction for any flight that meets one of the following criteria.

- The flight is conducted entirely within the continental United States, Alaska, Hawaii, or Puerto Rico.
- The flight begins and ends in the continental United States and spends less than or equal to 15 minutes in Canadian airspace.
- The flight begins and ends in the continental United States and spends less than or equal to 15 minutes in Mexican airspace.
- The flight begins and ends in Alaska and spends less than or equal to 15 minutes in Canadian airspace.

Per-leg Fuel Calculations

The Standard Navlog's per-leg flight planning table includes three additional columns.

These columns reflect the amount of fuel used per leg, the amount of planned fuel remaining at the waypoint, and a field for manually recording actual fuel amounts.

The actual fuel (ACT) field cannot be edited using the Navlog viewer. The Navlog must be printed or opened with a viewer capable of editing PDFs to record actual fuel amounts.

FUEL LB		
USED	REM	ACT
200	6590	
403	6387	
578	6212	
835	5955	
841	5949	

Additional Fuel Columns

18. NAVLOG

Standard Navlog Fuel Flow

The Standard Navlog includes a Fuel Flow field in the Summary & Times section. This is a calculated value that reflects the average fuel flow for the entirety of the flight.

SUMMARY & TIMES	
PIC	Your Name Here
Souls on board	2
Tail	C560 (C56X)
Profile	250 KIAS / M0.65 - Max Cruise Thrust @ FL410 - Normal 2000 fpm
Fuel Flow	800 lbs/hr (Per Engine)
Distance	395NM
ETD	2:35 PM EST / 1935Z
ETE	0h58m
ETA	3:33 PM EST / 2033Z
Route	EWC WOMBT PIGGZ SLT HNK STELA1
Altitude	FL410

Standard Navlog Fuel Flow

18. NAVLOG

18.2.3 International Navlog

The International Navlog is only available to Performance Plus, Business Performance, and MFB Performance customers. The Navlog Settings (gear) button in the upper toolbar can be used to toggle between the International and Standard Navlog formats.

The International Navlog contains much of the same information as the **Basic** and **Standard Navlogs**, however, it also includes fields pertinent to international flights.

LFPB to LECO
Navlog
LFPB to LECO

LFPB – LECO (Jan 11, 2023) in BARON (B58T - Baron 58TC) IFR
130 KIAS - Max Cruise 33/2400 @ FL240 - 190 KIAS

Created Jan 11 2023 2057Z
Winds Jan 11 2023 1200Z

ETE 2h51m	Distance 596NM	Avg Wind 24kt head (301°/055)	ETD 10:10 PM CET / 2110Z	ETA 1:01 AM CET / 0001Z	Avg TAS 232kt	Altitude FL240
---------------------	--------------------------	---	------------------------------------	-----------------------------------	-------------------------	--------------------------

Route
LGL5F LGL UT176 ROLEN UZ15 DIDAK UN872 ERIGA UN741 AZFIC LOTEE UP600 MEGAT MEGAT2J

FUEL	(G)	TIME	ACTUALS	WEIGHTS (LBS)	LIMITS	INFO
Taxi	7			BEW	4200	- PIC Your Name Here
Destination	112	2:51		Payload	200	1500 Souls on board 1
Alternate Fuel	0	-		ZFW	4400	5700 Signature
Final Reserve	20	0:32		TOW	5192	6200
Additional	0	-		ELW	4520	6200
Min required	139	3:24				
Extra	0	-				
Total	139	3:24				
Landing	20	-				

ALTRVSM CHECKS	ALT #1	ALT #2	STAND-BY	NOTES
RAMPA				Out: In: Block time:
				Off: On: Flight time:
				Start: Stop: Hobbs time:
				Start: Rem: Fuel used:

Departure ATIS

Clearance

WAYPOINT COORDINATES	AWY ALT MSA	WIND DIR/SPD OAT/ASA	MAG HDG CRS	KT TAS GS	DIST LEG REM	REM	FUEL G USED ACTL	FLOW	LEG REM	TIMES ETE ATE	ETA ATA	REMARKS
LFPB N4858.2/E00226.5	220 3500	- - +8/-6	- -	0 0	- 596	132	7	0	-	2:51	-	
PB253 N4855.1/E00215.7	LGL5F FL79 3500	H35 269/039 0/-5	250 245	146 112	8 588	128	10	57	0:04 2:47	0:04		
PG286 N4857.5/E00153.6	LGL5F FL199 3500	H47 285/047 -14/-2	279 278	165 117	15 573	121	18	56	0:07 2:40	0:11		
-TOC- N4856.9/E00143.2	LGL5F FL240 3500	H50 301/067 -29/-2	277 263	168 118	7 566	118	21	53	0:04 2:36	0:15		
LESGA N4853.3/E00048.3	LGL5F FL240 3500	H60 306/073 -35/-3	275 263	240 180	36 530	110	28	38	0:12 2:24	0:27		

Navlog updated: Jan 11, 2:57 PM CST
Moments ago

International Navlog

ForeFlight Mobile Pilot's Guide

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18. NAVLOG

International Navlog Layout

As depicted below, the International Navlog is organized into sections. Each section is described in detail throughout this chapter.

KPT - KBDL (Jan 11, 2023) in BARON (B5BT - Baron 58TC) IFR
 130 KIAS - Max Cruise 332400 @ FL200 - 190 KIAS
 Created Jan 11 2023 2050Z
 Winds Jan 11 2023 1200Z

ETE	Distance	Avg Wind	ETD	ETA	Avg TAS	Altitude
1h33m	955NM	32kt tail (275°/044)	3:55 PM EST / 2055Z	5:28 PM EST / 2228Z	223kt	FL200

Route
 EWC WOMBT PIGGZ SLT HNK STELA1 RAIM (5° Mask, With Baro-aid)
✓ RAIM: No outages predicted

FUEL	(G)	TIME	ACTUALS	WEIGHTS (LBS)	LIMITS	INFO
Taxi	7			BEW	4200	- PIC
Destination	62	1:33		Payload	200	1500 Souls on board
Alternate Fuel	0	-		ZFW	4400	5700 Signature
Final Reserve	20	0:30		TOW	4893	6200
Additional	0	-		ELW	4520	6200
Min required	89	2:04				
Extra	0	-				
Total	89	2:04				
Landing	20	-				

ALTRVSM CHECKS

ALT #1	ALT #2	STAND-BY	NOTES
			Out: In: Block time:
			OR: On: Flight time:
			Start: Stop: Hobbs time:
			Start: Rem: Fuel used:

Departure ATIS

Clearance

WAYPOINT COORDINATES	AWY ALT MSA	WIND DIR/SPO OAT/ISA	MAG HDG CRS	KT TAS GS	DIST LEG REM	REM	FUEL G USED ACTL	FLOW	LEG REM	TIMES ETE ATE	ETA ATA	REMARKS
KPT N4029.5/W08014.0	1203 4200	- +10/-3	- -	0 -	395	82	7	0	-	1:33	-	
EWC N4049.5/W08012.7 ELLWOOD CITY 115.8	DCT 15100 4200	T6 265/025 -4/-3	003 012	157 20	163 375	75	14	56	0:08 1:25	0:08		
-TOC- N4056.0/W08001.8	DCT FL200 5400	T38 269/045 -20/0	051 061	167 10	205 365	72	16	55	0:03 1:22	0:11		
TOMES N4208.7/W07258.0	STELA1 5300 6100	T9 258/013 -8/-8	151 148	210 219	5 18	23	66	34	0:02 0:05	1:28		
KBDL N4156.3/W07241.1	STELA1 173 6100	T1 177/005 -5/-14	148 148	182 184	18 -	20	69	33	0:05 -	1:33		

Arrival ATIS

ALTITUDE	AVG WIND	TIME	MAX CRUISE 332400 (PLAN)	FUEL TIME	ECON CRUISE 342200	FUEL
16000 ft (ISA -3°C)	T27	1h36m (+0:04)		65 g	1h54m (+0:21)	50 g
FL 180 (ISA -2°C)	T31	1h34m (+0:01)		63 g	1h51m (+0:18)	49 g
FL 200 (ISA -2°C)	T32	1h33m (0:00)		62 g	1h49m (+0:16)	50 g
FL 220 (ISA -2°C)	T32	1h32m (-0:01)		62 g	1h47m (+0:15)	50 g
FL 240 (ISA -3°C)	T32	1h31m (-0:02)		61 g	1h45m (+0:13)	51 g

AIRPORT	ETA	WX	TWR/CTAF	CLR	GND	ELEV	LONGEST RWY
DEP KPT	-	135.9	128.3	126.75	127.8	1203	10R / 28L 11500 ft
DEST KBDL	5:28 PM EST / 2228Z	118.15	120.3	121.75	121.9	173	06 / 24 9510 ft

KPT PITTSBURGH INTERNATIONAL

KBDL BRADLEY INTERNATIONAL

ICAO FPL
 (FPL-BARON-IG
 @SETL-NIN
 -KPT2055
 -N62307200 DCT EWC DCT WOMBT DCT PIGGZ DCT SLT DCT HNK STELA1
 -KBDL0133
 -DOF/230111 EETKZNY0036 KZBW0058)

Flight Summary

ALT/RVSM Checks and Notes

ATIS and Clearance

Detailed Planning Results

Arrival ATIS

Comparison Table

Airport Details

Airport Diagrams

ICAO Flight Plan

18. NAVLOG

International Navlog Flight Summary Section

The International Navlog summary section provides an overview of the flight.

The screenshot shows a flight summary form with the following fields and callouts:

- 1**: LFPB — LECO (Jan 11, 2023) in C560 (C56X - 560 Citation XLS) IFR
- 2**: 250 KIAS / M0.65 - Max Cruise Thrust @ FL450 - Normal 2000 fpm
- 3**: Created Jan 11 2023 2148Z
- 4**: Winds Jan 11 2023 1200Z
- 5**: ETE 1h37m
- 6**: Distance 596NM
- 7**: Avg Wind 21kt head (299°/051)
- 8**: ETD 10:10 PM CET / 2110Z
- 9**: ETA 11:47 PM CET / 2247Z
- 10**: Avg TAS 386kt
- 11**: Altitude FL450
- 12**: Route LGL5F LGL UT176 ROLEN UZ15 DIDAK UN872 ERIGA UN741 AZFIC LOTEE UP600 MEGAT MEGAT2J
- 13**: FUEL (LBS) TIME ACTUALS WEIGHTS (LBS) LIMITS INFO

FUEL	(LBS)	TIME	ACTUALS	WEIGHTS (LBS)	LIMITS	INFO
Taxi	200			BEW	12813	PIC
Destination	2280	1:37		Payload	800	2287
Alternate Fuel LEST	513	0:10		ZFW	13613	15100
Final Reserve	850	0:45		TOW	20200	20200
Additional	0	-		ELW	17920	18700
Min required	3844	2:33				
Extra	2943	2:40				
Total	6787	5:13				
Landing	4307	-				

1. Departure and destination identifiers, names (for airports without identifiers), or coordinates (if the location is not an airport, navaid, or waypoint).
2. Departure date. The date format cannot be edited.
3. Aircraft registration (tail number). If a flight plan is *filed* with a callsign, the callsign is included in this section.
4. Aircraft type code.
5. Flight Rules.
6. Navlog generation timestamp.
7. Winds aloft data timestamp.
8. Selected aircraft performance profile.
9. From left to right:
 - Estimated flight time en route.
 - Total route distance.
 - Average wind component, direction, and speed.
 - Estimated departure time in local and Zulu formats.
 - Estimated arrival time in local and Zulu formats.
 - Average true airspeed for the entirety of the flight.
 - Planned cruise altitude.

18. NAVLOG

10. Route waypoints (including airways, arrival and departure procedures, navaids, and waypoints) listed as identifiers or lat/long coordinates if there is no identifier.
11. The Fuel section includes required and optional fuel amounts. When a time is provided, it is calculated at the aircraft's en route cruise fuel flow. The Actuals column can be used to record actual fuel amounts during flight. From top to bottom, the fuel section includes:
 - Taxi fuel as specified in the Aircraft profile or manually edited on Flights.
 - Total flight fuel and flight time.
 - Total fuel and time required for the alternate airport (if specified).
 - Total reserve fuel amount and time.
 - Total additional fuel amount and time.
 - Minimum fuel required with
 - Extra fuel amount and time.
 - Total planned fuel amount (sum of taxi, destination, alternate, final reserve, additional, extra, and additional fuel).
 - Fuel amount at landing.
12. The Weights section includes planned and aircraft weight limits. If a limit is exceeded, the Navlog does *not* display an error message or change the text to indicate the exceedance. Weights include, from top to bottom:
 - The aircraft's basic empty weight (BEW) as defined by the aircraft profile.
 - Total payload (passengers and cargo).
 - Zero fuel weight and maximum zero fuel weight capacity.
 - Planned takeoff weight and maximum takeoff weight for the aircraft.
 - Estimated landing weight and maximum landing weight for the aircraft.
13. The Info section contains the following fields:
 - PIC is automatically populated with the name associated with your account. Tap **More** > **Accounts** to change the name.
 - Souls on board is copied from the Flight's payload section.
 - The Signature field can be signed after the navlog is printed or using an annotation-capable PDF viewer.

18. NAVLOG

International Navlog Blank Fields

The following section can be used to record altitudes, times, fuel amounts, weather observations, IFR clearances, or any other notes deemed appropriate.

The Navlog must be printed or opened with a viewer capable of editing PDFs to record actual fuel amounts, as the International Navlog is a read-only document.

ALT/RVSM CHECKS	ALT #1	ALT #2	STAND-BY	NOTES
RAMP				Out: In: Block time:
				Off: On: Flight time:
				Start: Stop: Hobbs time:
				Start: Rem: Fuel used:
Departure ATIS				
Clearance				

Blank fields for recording ALT/RVSM, notes, ATIS, and IFR clearances

International Navlog Planning Results Section

Detailed per-leg flight planning results are provided via a table. The table includes each waypoint that defines the route, including those that are not explicitly included in the route but are a part of terminal procedures or airways.

18. NAVLOG

Planning results for two adjacent waypoints are located on the bottom row of the two waypoints. For example, the heading, distance, and speed requirements between LESGA and LGL are located on the lower row of the two rows. In other words, once you cross a waypoint, the applicable flight details for the next leg are on the following row.

WAYPOINT COORDINATES	AWY ALT MSA	WIND DIR/SPD OAT/ISA	MAG HDG CRS	KT TAS GS	DIST LEG REM	REM	FUEL LBS USED ACTL	FLOW	LEG REM	TIMES ETE ATE	ETA ATA	REMARKS
LFPB N4858.2/E00226.5	220 3500	- - +8/-6	- -	0 0	- 596	6587	200	0	- 1:37	-		
PB253 N4855.1/E00215.7	LGL5F FL74 3500	H36 265/038 0/-6	247 245	248 214	8 588	6483	304	2875	0:02 1:35	0:02		
PG286 N4857.5/E00153.6	LGL5F FL178 3500	H45 282/045 -13/-3	278 278	335 290	15 573	6332	455	2973	0:03 1:32	0:05		
LESGA N4853.3/E00048.3	LGL5F FL359 3500	H49 308/072 -41/-4	271 263	349 300	43 530	6033	754	2071	0:08 1:24	0:13		
LGL N4847.4/E00031.8 L'AIGLE 112.7	LGL5F FL386 3500	H26 308/070 -63/-7	251 241	354 328	12 518	5977	810	1486	0:03 1:21	0:16		

How to read planning results from LESGA to LGL

Routes with legs greater than 100 nm

If a route has legs that are more than 100 nm in length, the legs are automatically divided into 100 nm increments for more accurate flight planning. Each leg is defined by an automatically created waypoint that follows the notation: Distance - [waypoint ID or lat/long coordinates]

WAYPOINT COORDINATES	AWY ALT MSA	WIND DIR/SPD OAT/ISA	MAG HDG CRS	KT TAS GS	DIST LEG REM	REM	FUEL LBS USED ACTL	FLOW	LEG REM	TIMES ETE ATE	ETA ATA	REMARKS
LFPB N4858.2/E00226.5	220 3500	- - +8/-7	- -	0 0	- 564	6587	200	0	- 1:33	-		
500-LECO N4822.9/E00105.3	DCT FL337 3500	H21 296/052 -23/-4	244 236	323 302	64 500	6070	717	2427	0:13 1:20	0:13		
-TOC- N4736.4/W00035.0	DCT FL450 3500	H19 308/059 -63/-7	243 235	373 355	82 418	5750	1037	1388	0:14 1:06	0:27		
400-LECO N4726.0/W00056.8	DCT FL450 3500	H25 294/044 -60/-3	240 234	411 386	18 400	5698	1089	1112	0:03 1:03	0:30		
300-LECO N4826.9/W00254.5	DCT FL450 3500	H20 301/046 -60/-4	240 234	412 392	100 300	5413	1374	1117	0:15 0:48	0:45		
200-LECO N4525.8/W00447.9	DCT FL450 3500	H20 303/052 -63/-6	240 233	416 396	100 200	5126	1661	1136	0:15 0:33	1:00		
-TOD- N4447.3/W00555.3	DCT FL450 1000	H23 297/051 -65/-8	238 232	418 396	61 139	4949	1838	1144	0:10 0:23	1:10		
100-LECO N4422.8/W00637.2	DCT FL331 1000	H18 307/061 -65/-8	240 232	410 392	39 100	4842	1945	1081	0:06 0:17	1:16		
LECO N4318.1/W00822.6	DCT 330 6200	H4 299/028 -20/0	236 231	338 334	100 -	4422	2365	1402	0:17 -	1:33		

Direct route between LFPB and LECO with 100 nm legs

18. NAVLOG

Top of Climb and Descent

The Basic Navlog includes waypoints for the top of climb (TOC) and top of descent (TOD). These waypoints are calculated automatically using the latest weather forecasts and selected aircraft performance profile.

WAYPOINT COORDINATES	AWY ALT MSA	WIND DIR/SPD OAT/TASA	MAG HDG CRS	KT TAS GS	DIST LEG REM	REM	FUEL LBS USED ACTL	FLOW	LEG REM	TIMES ETE ATE	ETA ATA	REMARKS
LFPB N4858.2/E00226.5	220 3500	- - +8/-7	- -	0 0	- 564	6587	200	0	- 1:33	-		
500-LECO N4822.9/E00105.3	DCT FL337 3500	H21 296/052 -23/-4	244 236	323 302	64 500	6070	717	2427	0:13 1:20	0:13		
-TOC- N4736.4/W00035.0	DCT FL450 3500	H19 308/059 -63/-7	243 235	373 355	82 418	5750	1037	1388	0:14 1:06	0:27		
400-LECO N4726.0/W00056.8	DCT FL450 3500	H25 294/044 -60/-3	240 234	411 386	18 400	5698	1089	1112	0:03 1:03	0:30		
300-LECO N4626.9/W00254.5	DCT FL450 3500	H20 301/046 -60/-4	240 234	412 392	100 300	5413	1374	1117	0:15 0:48	0:45		
200-LECO N4525.8/W00447.9	DCT FL450 3500	H20 303/052 -63/-6	240 233	416 396	100 200	5126	1661	1136	0:15 0:33	1:00		
-TOD- N4447.3/W00555.3	DCT FL450 1000	H23 297/051 -65/-8	238 232	418 396	61 139	4949	1838	1144	0:10 0:23	1:10		
100-LECO N4422.8/W00637.2	DCT FL331 1000	H18 307/061 -65/-8	240 232	410 392	39 100	4842	1945	1081	0:06 0:17	1:16		
LECO N4318.1/W00822.6	DCT 330 6200	H4 299/028 -20/0	236 231	338 334	100 -	4422	2365	1402	0:17 -	1:33		

Top of climb and descent waypoints

18. NAVLOG

International Navlog Table Definitions

Definitions for the values found in the planning table are given below. All definitions are given per column from top to bottom. Blank fields cannot be edited using the Navlog viewer. The Navlog must be printed or opened with a viewer capable of editing PDFs to record actuals.

①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬
WAYPOINT COORDINATES	AWY ALT MSA	WIND DIR/SPD OAT/ISA	MAG HDG CRS	KT TAS GS	DIST LEG REM	REM	FUEL LBS USED ACTL	FLOW	LEG REM	TIMES ETE ATE	ETA ATA	REMARKS
LFPB N4858.2/E00226.5	220 3500	- - +11/-3	- - -	0 0	- 740	6587	200	0	- 1:57	-		
-TOC- N4839.4/E00222.4	DCT FL140 3500	H3 270/037 -4/-5	194 187	282 279	19 721	6388	399	2922	0:04 1:53	0:04		
OLZOM N4809.3/E00215.9	DCT FL140 3500	T1 283/046 -14/-2	194 187	374 376	30 691	6223	564	2037	0:05 1:48	0:09		
ABDOS N4739.9/E00231.8	R31 FL130 3500	T24 286/043 -12/-1	164 158	368 392	32 659	6068	719	1949	0:05 1:43	0:14		

1. Route waypoints (including airway and terminal procedure waypoints not explicitly included in the route) listed as identifiers or lat/long coordinates for airports without identifiers. Coordinates for waypoints are included in the Degree, Minute, Decimal Minute (DDMM.m) format and cannot be changed.
2. Airway (AWY) or terminal procedure that includes the waypoint. If an airway or procedure does not define the waypoint, the route between points is direct (DCT). Altitude (ALT) at which the waypoint is crossed. Minimum safe altitude (MSA) within 25 nm of the waypoint as determined by ForeFlight's terrain and obstacle evaluation tool.
3. *Average* wind component for the leg (e.g., T8 is an average eight-knot tailwind and H4 a four-knot headwind). *Average* wind direction and speed for the leg at the planned altitude. Average outside air temperature (OAT) at the planned altitude and its divergence from the International Standard Atmospheric (ISA) temperature.
4. Magnetic heading (magnetic course corrected for winds) and Magnetic course (true course corrected for geographic variation).
5. Knots true airspeed (TAS) and groundspeed (GS).

18. NAVLOG

6. Leg distance and distance remaining for the flight in nautical miles. Navlog distance units cannot be adjusted.
7. Fuel remaining at each waypoint. Fuel units reflect the selection in the aircraft profile.
8. Planned fuel use per leg and a blank area to notate actual fuel (ACTL) usage. Fuel units reflect the selection in the aircraft profile.
9. Average fuel flow per leg. Fuel units reflect the selection in the aircraft profile.
10. Estimated time en route per leg. Total time remaining per waypoint.
11. Cumulative time en route per leg and a blank area to notate actual cumulative en route time.
12. Blank fields to notate estimated and actual time of arrival based on the actual departure time.
13. Blank field for recording any remarks deemed necessary by the pilot.

International Navlog Alternate Airports

When an alternate airport is included in the flight, the Navlog introduces an "APPCH" waypoint to add time and distance representative of the time and fuel required to fly a missed approach procedure and instrument approach.

Alternate fuel calculations use the same cruise, climb, and descent profiles to calculate the fuel to the alternate airport.

The routing from the initial destination airport to the alternate airport is not direct, nor does it reflect a published approach. Rather, it serves as an estimate for flight planning purposes.

The alternate routing varies by aircraft type. Jet and Turboprop aircraft add a 30 nm buffer. Piston aircraft add a 15 nm buffer. There is no alternate buffer added when planning with a helicopter.

18. NAVLOG

International Navlog Arrival ATIS

The arrival ATIS section can be used to record the weather for the destination airport. This field cannot be edited using the Navlog viewer. The Navlog must be printed or opened with a viewer capable of editing PDFs to record the weather.

Arrival ATIS

Arrival ATIS section

18. NAVLOG

International Navlog Comparison Table

The International Navlog comparison table lists various hypothetical performance results. The table is composed of four columns and five rows.

The two rightmost columns include the selected performance profile with (plan) appended its name and the aircraft's performance profile with the best range. It is not possible to manually select another alternate performance profile.

Alternate cruise altitudes are listed in increments of 2,000 ft up to the planned cruise altitude. To the right of each alternate cruise altitude is its average wind component (e.g., H36 is an average 36 knot headwind).

Reading the Comparison Table

To read the comparison table, follow the desired cruise altitude to the desired performance profile to find the estimated time en route and the required fuel for that combination. The time difference compared to the currently planned route is given in parentheses (e.g., -0:05 is a five-minute shorter route).

The performance results for the planned cruise altitude and performance profile are displayed in **bold text**.

ALTITUDE	AVG WIND	TIME	Selected Performance Profile		Alternate Performance Profile	
			MAX CRUISE THRUST (PLAN)	FUEL	LONG RANGE CRUISE	FUEL
FL 340 (ISA: -4°C)	H36	1h59m (-0:06)	492 g	2h35m (+0:30)	411 g	
FL 360 (ISA: -4°C)	H35	2h00m (-0:05)	466 g	2h33m (+0:28)	403 g	
FL 380 (ISA: -8°C)	H35	2h01m (-0:04)	446 g	2h31m (+0:26)	395 g	
FL 400 (ISA: -8°C)	H32	2h01m (-0:04)	431 g	2h27m (+0:21)	389 g	
FL 430 (ISA: -7°C)	H29	2h00m (-0:05)	413 g	2h18m (+0:13)	384 g	

NOTE: The comparison table performance results are for a single climb and descent to the alternate altitude. As a result, if your planned route has step climbs or descents, the comparison table performance results may not match the Navlog for your altitude and performance profile combination.

18. NAVLOG

International Navlog Flight Information Region

The Flight Information Region (FIR) section includes details for the FIRs that the aircraft will enter. Each FIR includes:

- The identifier and name (e.g., LFFF - Paris)
- The estimated time en route (EET) while within the boundaries of the FIR.
- The FIR entry and exit time in Zulu format.
- The total distance covered in the FIR.

FLIGHT INFORMATION REGION	EET	ENTRY	EXIT	DISTANCE	FLIGHT INFORMATION REGION	EET	ENTRY	EXIT	DISTANCE
LFFF - PARIS	-	2145Z	2214Z	162NM	LFFF - FRANCE	1:32	2317Z	2317Z	1NM
LFBB - BORDEAUX	0:29	2214Z	2317Z	278NM	LECM - MADRID	1:32	2317Z	0012Z	295NM

International Navlog Flight Information Region section

Airport Details

The Airport Details section includes commonly used airport frequencies, field elevation, longest runway, and FBO location details (if available).

AIRPORT	ETA	WX	TWR/CTAF	CLR	GND	ELEV	LONGEST RWY
DEP EKKA	-	120.575	121.5	N/A	N/A	171	09L / 27R 9816 ft
DEST EDDB	11:54 PM CET / 2254Z	133.63	120.03	121.605	129.505	156	07R 13123 ft

EKKA MIDTJYLLANDS LUFTHAVN	EDDB BERLIN BRANDENBURG
--------------------------------------	-----------------------------------

International Navlog Airport Details

18. NAVLOG

International Navlog ICAO Flight Plan

The International Navlog includes the coded ICAO flight plan (FPL) at the bottom of the document. This information exists whether or not a flight plan is filed.

```
ICAO FPL  
(FPL-N750HK-IG  
-H25B/M-N/N  
-EKKA2205  
-N0378F340  
-EDDB0049  
-DOF/230112 EET/EDVV0021 EDUU0025 EDWW0040)
```

International Navlog ICAO Flight Plan

18.3 Printing and Sharing Navlogs

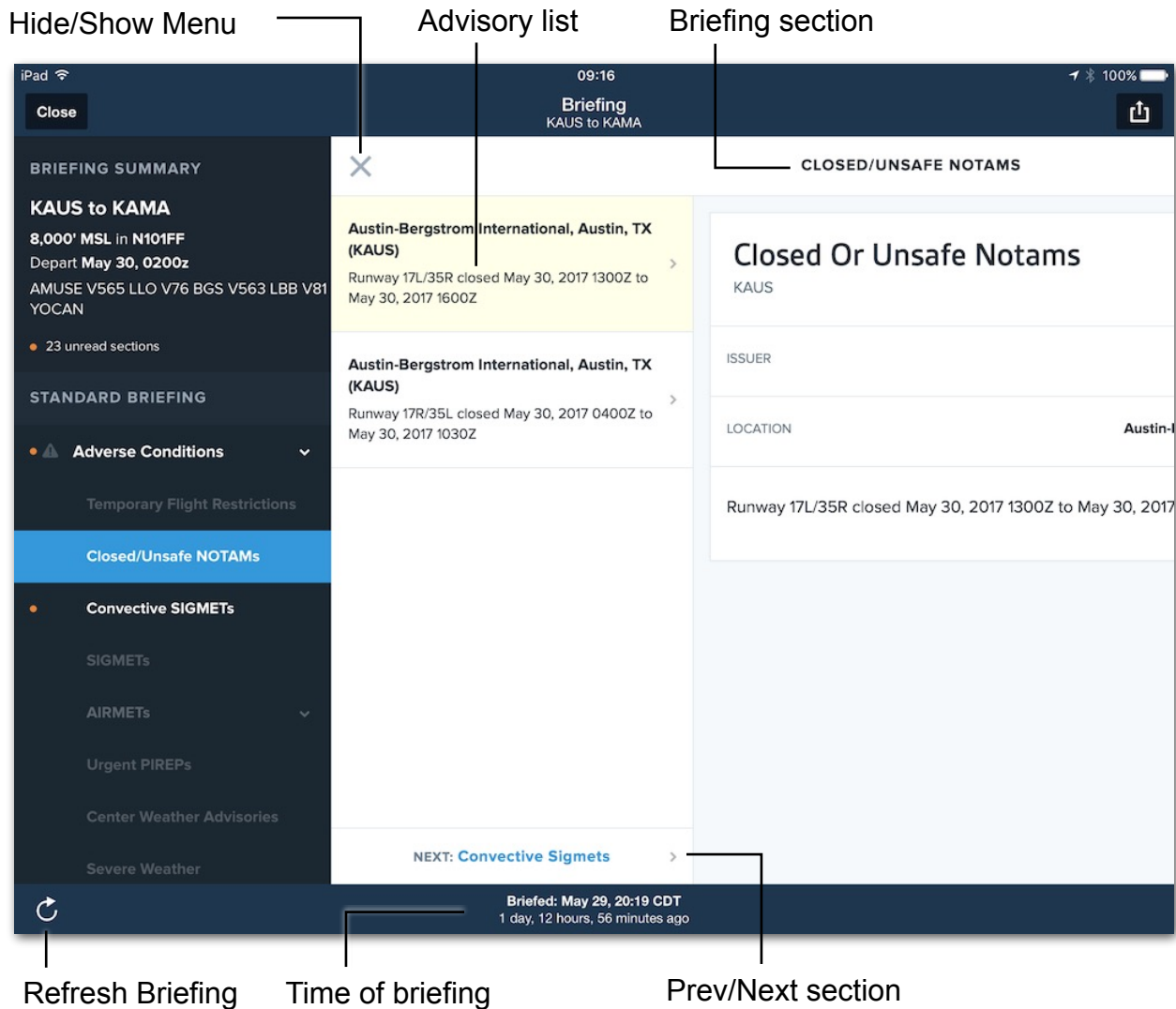
Navlogs can be printed and shared using the built-in iOS share menu. To print or share a Navlog:

1. Open the Navlog by tapping the **Navlog** button.
2. Tap the **Send To** button in the upper toolbar.
3. Choose an option from the menu.

When a Navlog is printed or shared, it is automatically divided into pages to accommodate a standard 8.5 by 11-inch standard sheet of paper.

BRIEFING

ForeFlight Briefing provides a graphical and translated weather briefing. You can switch between HTML and PDF formats by selecting **More > Settings > Flights > Briefing Format**.



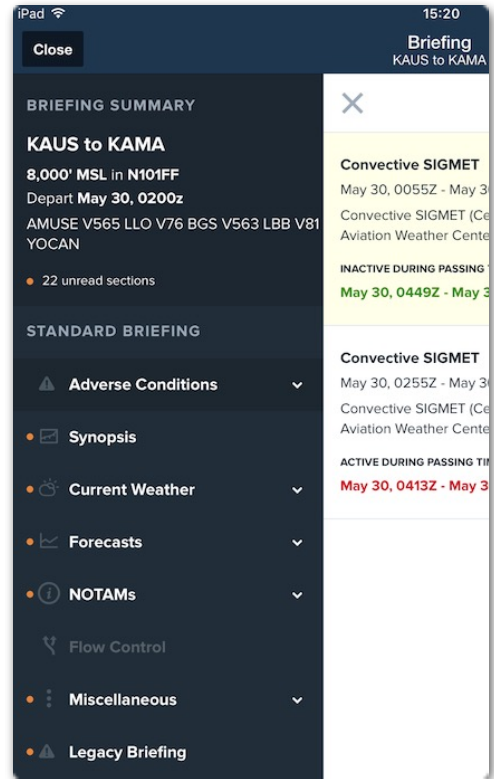
ForeFlight Briefings are included in ForeFlight's Sync system, so any briefing you retrieve on one device or ForeFlight Web will also become available on all your other signed-in internet connected devices. You can tap on any graphic in the Briefing to view it in full screen, and double-tap or pinch to zoom.

19. BRIEFING

19.1 About the Design

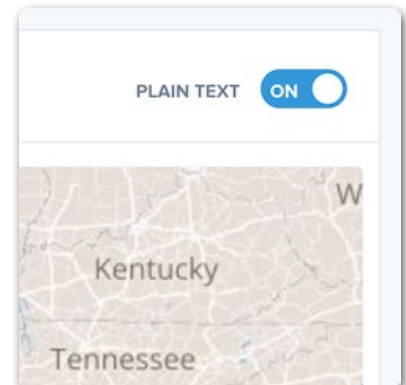
ForeFlight Briefing is organized into sections that can be accessed by tapping the Menu button in the upper-left corner of the screen, or by swiping right. This opens a sidebar with a summary of the briefing at the top, followed by the list of sections. Sections with a carat next to them contain subsections which can be accessed by tapping the section to expand it. Tapping on a section with no subsections will take you to that page of the briefing. Orange dots indicate that a section (or one of its subsections) has not been viewed. Swipe left or tap the “X” button next to the sidebar to hide the menu.

At the bottom or bottom left of each page is the “Next” button, which shows what the next page in the briefing is. Tap it to move to the next page, or tap the smaller “Back” button to its left to move back one page.



19.1.1 Translated Text vs Raw Text

Most pages in the briefing allow you to view both the raw text of the briefing and the translation of that text. On split-screen pages like those in the Adverse Conditions section or the Synopsis page, you can view the raw text by tapping “Show Raw Text” at the bottom of the right column. On full-screen pages like the METARs, TAFs, or NOTAMs pages, a “Plain Text” slider at the top right of the page allows you to toggle the text between raw and translated. The position of this slider is retained between pages in the same briefing.



19. BRIEFING

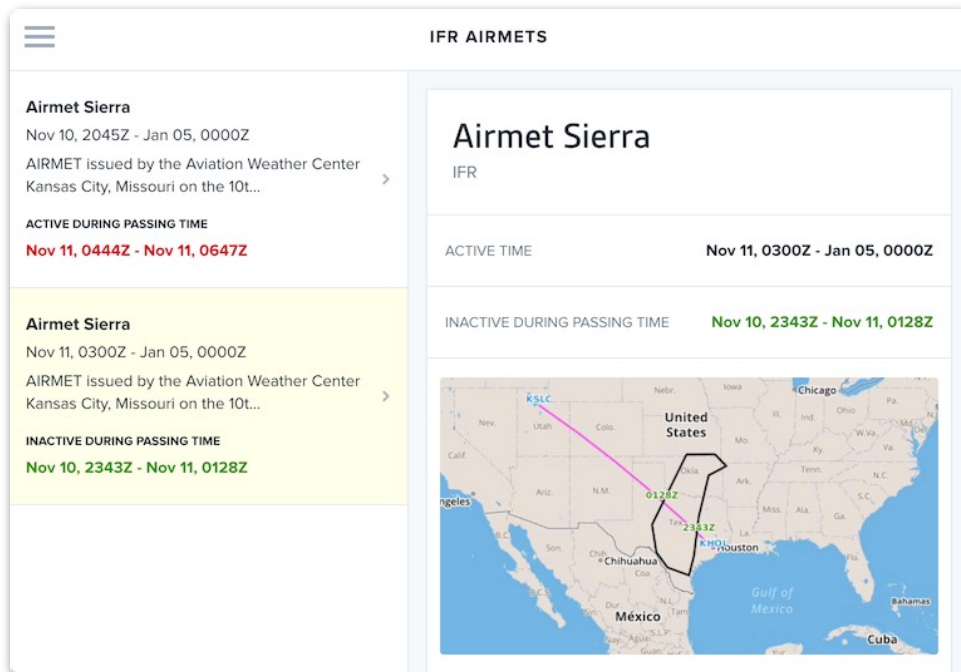
19.2 Briefing Sections

The following sections are included in a ForeFlight Briefing

19.2.1 Adverse Conditions

The Adverse Conditions section includes important safety advisories such as TFRs, closed/unsafe NOTAMs, and AIRMETs and SIGMETs.

These pages are laid out in a split-screen view: on the left is a list of selectable advisories with basic information about each, and on the right is more detailed information about the selected advisory, including the translated text and a map showing the advisory against your route of flight.

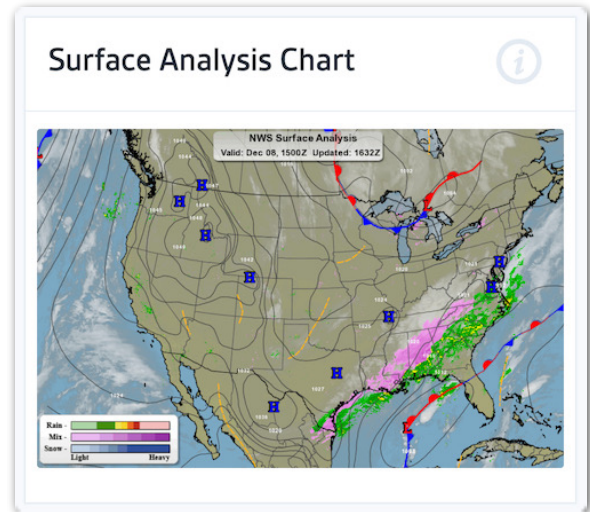


The time at which the advisory is active is shown at the top, and below that is the time interval during which you will pass the advisory. This interval is color-coded based on how close your passing time is to the time at which the advisory is active: **Green** means the advisory won't be active during or near your passing time, **Orange** means the advisory will be active near your passing time, and **Red** means the advisory will be active during your passing time.

19. BRIEFING

19.2.2 Synopsis

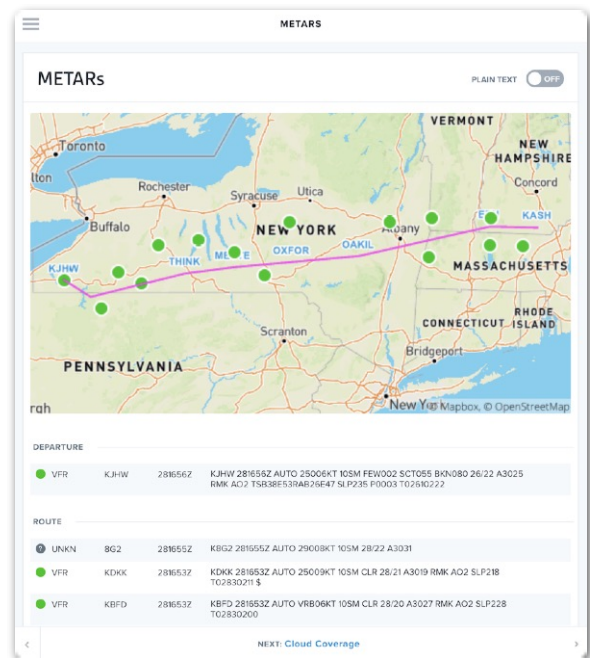
The Synopsis page provides an overview of the weather trends for each geographical area through which your route passes. As with the Adverse Conditions section, you can select each area's forecast from a list on the left, and read the translated text of that forecast on the right. At the top of the left column is the most recent Surface Analysis Chart for the Continental U.S. published by the National Weather Service.



19.2.3 Current Weather

The Current Weather section includes information on current conditions along your route.

The METARs page shows the most recent METARs issued for the airports along your route. At the top of the page is a map showing your route and colored bubbles indicating the flight category at each airport. The coloring for the bubbles is the same as what is used in the Flight Category layer on the Maps view.



19. BRIEFING

19.2.4 Forecasts

The Forecasts section includes information on forecasted conditions along your route. The Cloud Coverage and Vis, Sfc Winds & Precip sections provide graphics showing forecasted cloud coverage and forecasted visibility, surface winds, and precipitation, respectively. Graphics are provided for every region within the continental United States that your route passes through, for all times that your flight is active.

The TAFs page displays TAFs for every airport that issues them along your route. Like the METARs page, it includes a map at the top showing your route and flight categories that correspond to the TAFs that will be valid for each airport during your passing time.

Below the map is a list of TAFs that will be valid at or near the time you pass each airport. Highlighted TAFs will be valid at the time of your passing, which is shown in a box on the left.

TAFS	
1725Z	● VFR KJHW 281627Z 2816/2912 25010G15KT P6SM -SHRA BKN035
	● VFR FM281800 25009KT P6SM VCSH BKN035
	● VFR FM282200 27007KT P6SM SCT050
	● VFR FM290200 00000KT P6SM SCT050
	● VFR Kbfd 281509Z 2815/2912 23007KT P6SM SCT030
1744Z	● VFR FM281630 25008G15KT P6SM VCSH BKN040
	● VFR FM282200 26005KT P6SM VCTS BKN040CB
	● VFR FM290200 00000KT P6SM SCT035
	● VFR FM291000 00000KT 6SM BR VCFG SKC
1757Z	● VFR KROC 281504Z 2815/2912 27012G20KT P6SM BKN035
	● VFR FM281900 26013KT P6SM BKN045
	● VFR FM282200 26011KT P6SM SCT080
	● VFR FM291000 00000KT P6SM SCT080
	● VFR KELM 281120Z 2812/2912 22004KT P6SM FEW250
1757Z	● VFR FM281700 24008G13KT P6SM SCT060
	● VFR FM282300 27005KT P6SM SCT150
	● MVFR TEMPO 2909/2912 3SM BR SCT002 BKN150

HTML Briefing - TAFs

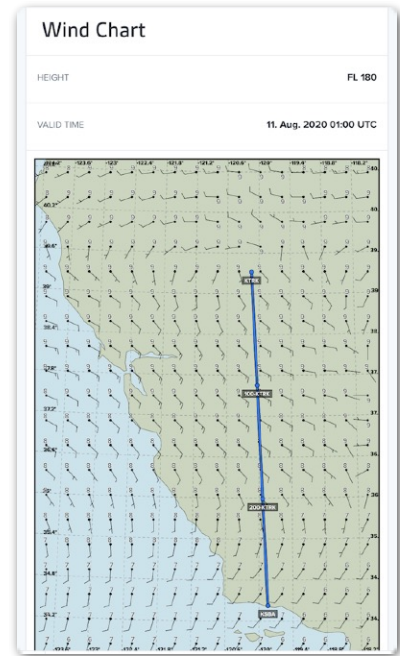
19. BRIEFING

19.2.5 Wind Charts

The Wind chart shows forecasted winds along your planned route. The Height is the enroute altitude in nearest thousands of feet. Latitudes are listed across the top and bottom of the map and Longitudes are listed on each side of the map.

The winds barbs point to the direction that the winds are blowing from. The barbed end points towards the “from” direction and the dotted end points towards the “to” direction. Short barbs indicate 5 knots of wind. Tall barbs indicated 10 knots. Triangular (or pennants) barbs indicate 50 knots. Simply add the sum of the values represented by the barb symbols to determine the wind speed.

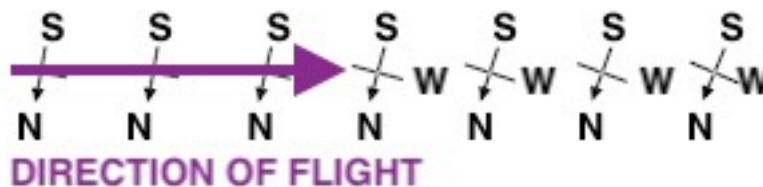
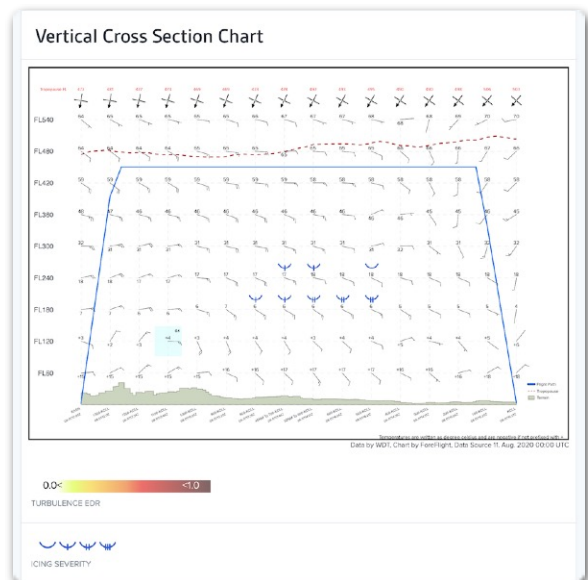
The digit next to each wind barb is the temperature in Celsius and is negative unless a "+" is noted next to the number.



The Vertical Cross Section Chart is evenly divided into 15 segments covering the entire planned route (in this example KASH-KCLL). The divisions do not necessarily correspond to waypoints in the route.

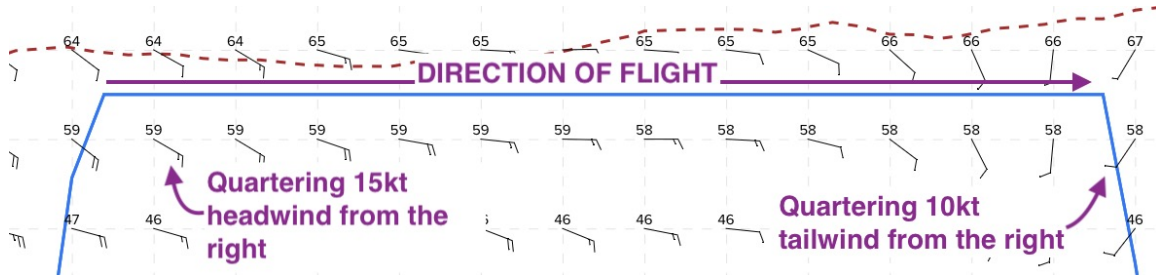
The Tropopause altitude is shown in red numbers at the top of the chart, and if the chart scale permits, as a dashed red line.

The arrow bisected by a line icons represent the direction of North relative to your direction of flight for that segment. The direction of flight is from the left of the page to the right:



19. BRIEFING

The wind barbs are displayed as wind direction relative to your direction of flight. Each short barb represents 5 knots, each long barb 10 knots, so for example a long barb and a short barb is 15 knots. Pennants are 50 knots. If only a single line is plotted, the winds are calm.



Like the Wind Charts, temperatures in Celsius are shown next to each wind barb. Temperatures are negative unless a "+" is noted next to the number.

The blue curves with bisecting lines indicate forecast icing severity: trace, light, moderate, and severe.

Turbulence is depicted by colored boxes indicating turbulence EDR; the EDR scale is shown at the bottom of the page, and the EDR value is shown in the corner of each box.

The highest terrain along your route of flight (+0.1 degree LAT/LON) is shown as a dark green background in each block.

The Winds Aloft Table compares forecasted winds aloft at your filed altitude with winds aloft at other altitudes. Enable the switch in the top-right of the page to limit the altitudes shown to only those within 4,000' of your filed altitude; disable it to show winds aloft forecasts for all altitudes.

Winds Aloft ONLY ALTITUDES WITHIN 4,000FT

VALID: December 08, 1800Z FOR USE: 1400Z - 2100Z 6hr

Station ID	35000 -4000 FT	37000 -2000 FT	39000 FILED	41000 +2000 FT	43000 +4000 FT
HOU	230° 112kts -47°C	230° 101kts -48°C	230° 91kts -50°C	233° 91kts -52°C	236° 92kts -5
DLH	338° 72kts -49°C	334° 61kts -48°C	330° 50kts -47°C	N/A	N/A
PSX	240° 115kts -47°C	240° 104kts -48°C	240° 94kts -50°C	N/A	N/A
CLL	240° 78kts -46°C	240° 72kts -47°C	240° 66kts -49°C	N/A	N/A
SHV	230° 84kts -47°C	230° 80kts -48°C	230° 76kts -49°C	230° 78kts -50°C	230° 80kts -5
LIT	228° 76kts -46°C	224° 77kts -47°C	220° 79kts -49°C	226° 79kts -51°C	233° 80kts -5
FSM	264° 23kts -47°C	252° 29kts -48°C	240° 36kts -49°C	N/A	N/A
SGF	274° 24kts -46°C	262° 29kts -47°C	250° 35kts -48°C	250° 36kts -50°C	250° 37kts -5
COU	260° 32kts -46°C	260° 33kts -47°C	260° 35kts -49°C	N/A	N/A
MKC	342° 36kts -50°C	326° 32kts -50°C	310° 28kts -51°C	296° 29kts -52°C	283° 31kts -5
BRL	268° 36kts -47°C	264° 38kts -48°C	260° 40kts -49°C	N/A	N/A
DSM	350° 53kts -51°C	330° 48kts -50°C	310° 43kts -50°C	310° 38kts -50°C	310° 33kts -5

Each column provides wind forecasts for different altitudes, and each row shows the forecasted winds at each waypoint in your route. If the switch in the top-right of the page is disabled, you can can swipe left and right on each table to view forecasted winds at altitudes that are more than 4,000' from your filed altitude.

19. BRIEFING

19.2.6 NOTAMs

The NOTAMs section includes all the NOTAMs for your flight, apart from the closed/unsafe NOTAMs, which are found in the Adverse Conditions section.

Nearly all of these pages have the same layout, with a map showing your route at the top and the NOTAMs below. The only exception is the Enroute Obstruction NOTAMs page, which has a table at the top showing the total number of obstructions along your route, and how many of them are within 500 feet, 1000 feet, or beyond 1000 feet of your filed altitude, and how many have an unknown MSL altitude.

SCRATCHPADS

ScratchPads lets you record PIREPs, ATIS broadcasts, and other aviation notes using ForeFlight Mobile instead of pen and paper.

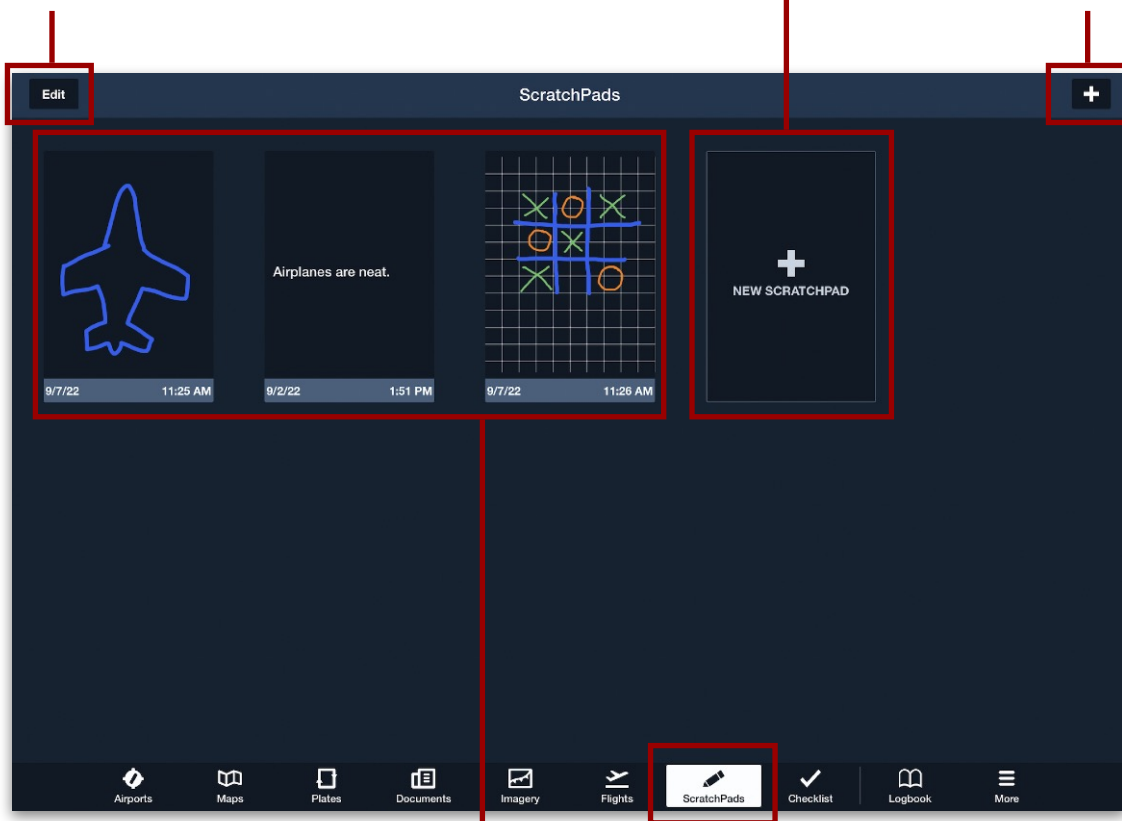
ScratchPads are automatically synced between devices on your account. You can copy, delete, reorder, and save ScratchPads to your device directory. You can also share PDFs of any ScratchPad manually with other devices over the cloud and other apps on your device. If you have a Performance tier subscription, you can attach these PDFs to your [flights](#).

20.1 About the ScratchPads View

ScratchPads are stored in a dedicated view on ForeFlight Mobile (iPad or iPhone). In the navigation toolbar, tap **ScratchPads** to see the available functionality and any existing ScratchPads arranged as thumbnail icons.

Rename, Reorder, or Delete ScratchPads

Create New ScratchPads



Open, Edit, or Share ScratchPads

Open the ScratchPads View

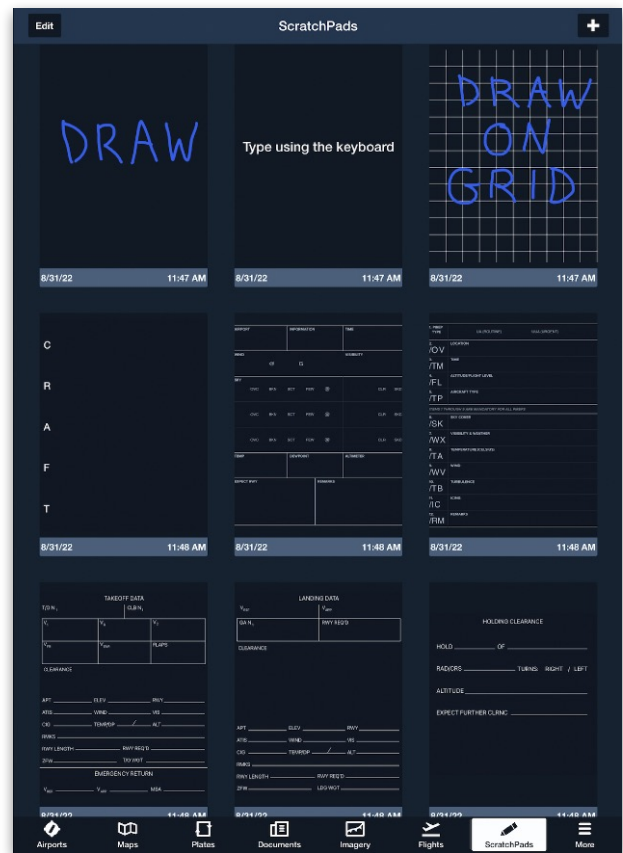
20. SCRATCHPADS

20.2 Selecting a Template

ForeFlight offers nine ScratchPad templates. Each one is an uneditable background image resembling a common aviation form (like a PIREP) or another tool (like a text document) to aid in note-taking. ForeFlight does not allow creating a custom template.

To select a template:

1. On the ScratchPads View, tap **New ScratchPad** or the **+** button in the upper-right corner of the device screen. (You can also tap the **+** button with another ScratchPad currently open.)
2. Select one of the nine available templates from the Choose A Template menu to open a new ScratchPad. The available templates include:
 - **Draw:** A blank canvas.
 - **Type:** A text document that uses the iOS keyboard instead of the Pen tool.
 - **Grid:** A square grid.
 - **CRAFT:** A form to record a clearance (Cleared to, Route, Altitude, Frequency, Transponder code).
 - **ATIS:** A form to record an Automatic Terminal Information Service (ATIS) broadcast.
 - **PIREP:** A form to record a Pilot Report (PIREP).
 - **Takeoff:** Has fields for V-speeds, departure clearance, and runway details.
 - **Landing:** Has fields for V-speeds, local conditions, and clearance information.
 - **Holding:** Has fields for location, direction, and altitude of the hold, and Expect Further Clearance (EFC) time.



Available ScratchPads Templates

20. SCRATCHPADS

20.3 Creating ScratchPads

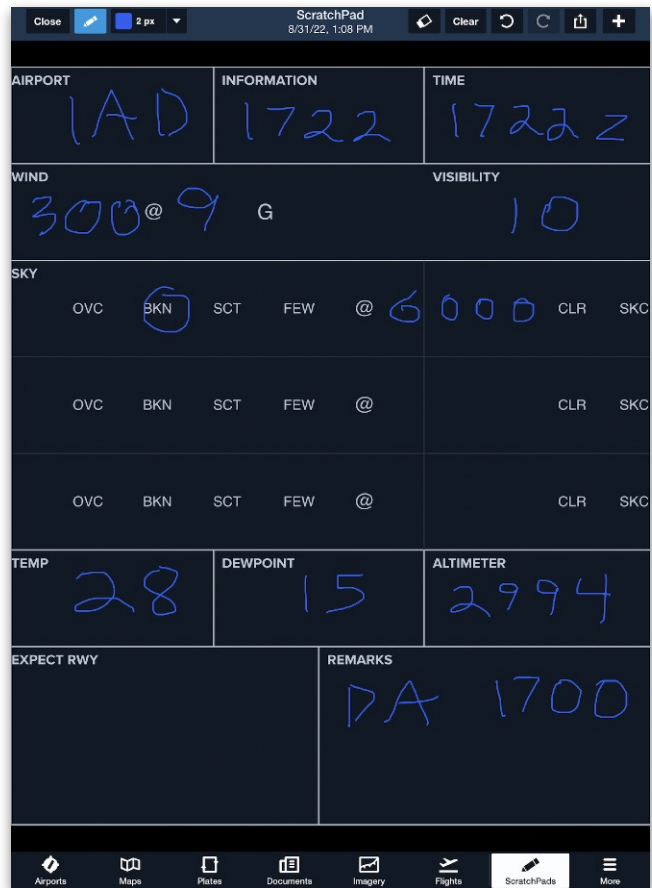
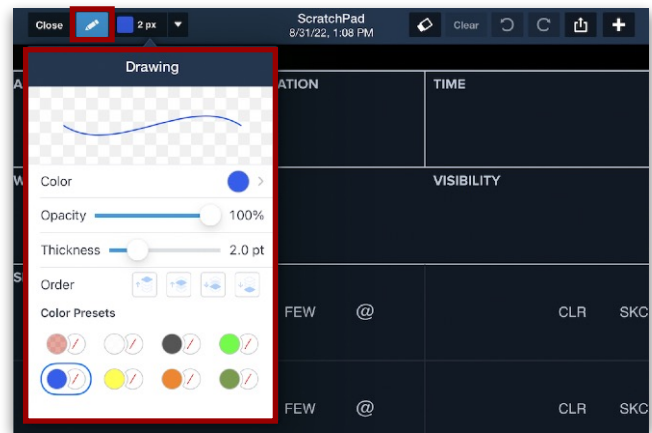
ScratchPads can be written in one of two ways depending on the template selected.

20.3.1 Using the Pen Tool

The majority of templates use the Pen tool (or your finger) to draw annotations as if you were handwriting on a paper form. When using the pen tool, the color, thickness, and opacity can be edited.

To configure and use the Pen tool, follow these steps:

1. With a new ScratchPad open, tap the blue **Pen** icon in the upper-left corner.
2. In the Drawing menu, adjust the line controls as follows:
 - **Color:** Use a color grid, spectrum, sliders, or eye dropper tool.
 - **Opacity:** Use the slider to adjust from 10–100%.
 - **Thickness:** Use a slider to adjust from 0.1–40 pt.
 - **Order:** Configure the most recent marking to overlap above or below previous markings.
 - **Color Presets:** ScratchPads saves the most-recently set color and opacity values in the active (selected) preset. Tap a preset to reuse its saved values or to store another color/opacity combination for future use.

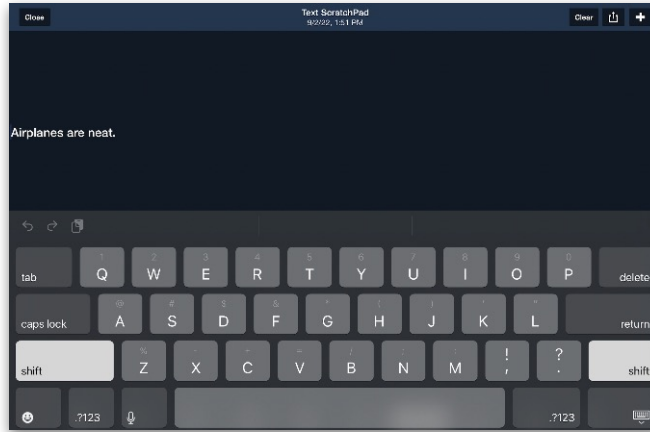


Drawing on the ATIS Template

20. SCRATCHPADS

20.3.2 Using Text

In the Type template, you use the iOS keyboard to write plain-text annotations. Tap anywhere in the template to bring up the keyboard and start typing.



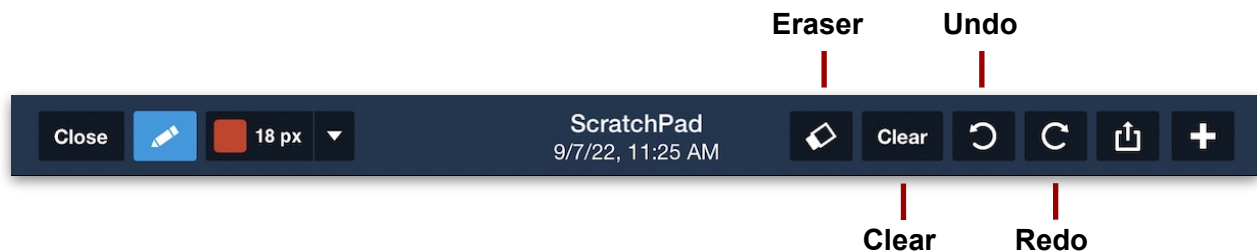
Writing on the Type Template

20.4 Editing ScratchPads

To edit Scratchpad annotations:

- Tap the **Eraser** button to turn the Pen cursor into an eraser. Drag your finger over annotations to erase.
- Tap **Clear** to erase all annotations from the ScratchPad.
- Tap the **Undo** button once or more to undo recent annotations.
- Tap the **Redo** button once or more to redo changes that were recently undone.

NOTE: The Type template only supports the Clear operation, and the Undo and Redo operations only work on changes made since you last opened the ScratchPad.



20. SCRATCHPADS

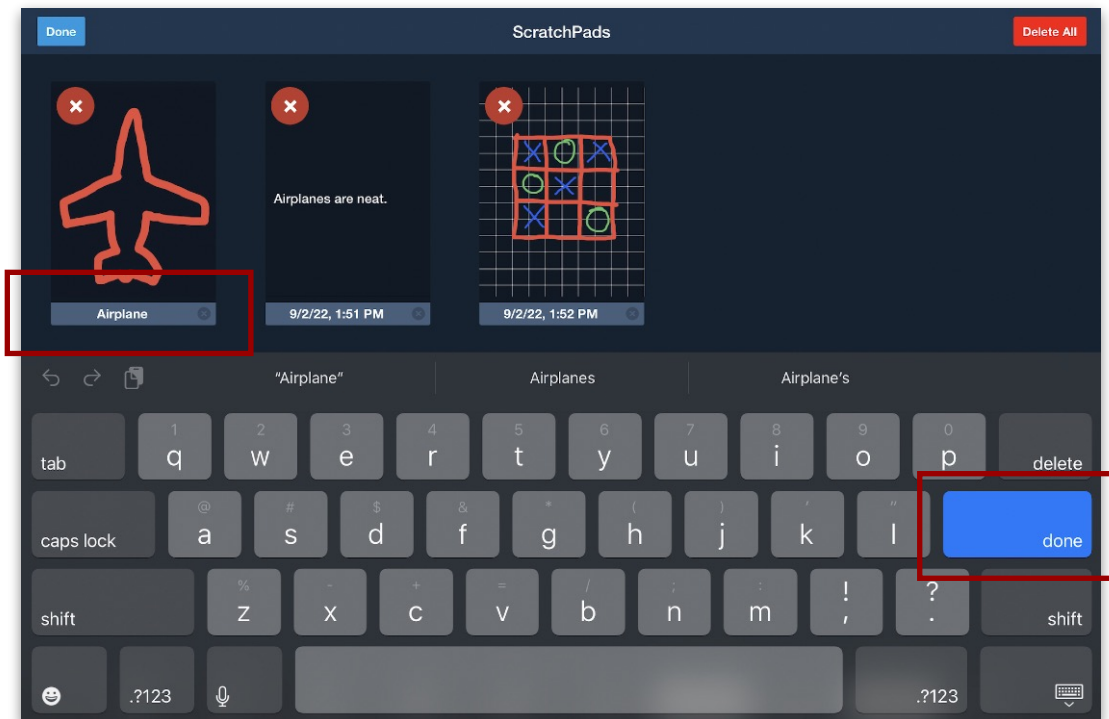
20.5 Saving ScratchPads

After adding annotations to a ScratchPad, tap **Close** to save it. The new ScratchPad is listed as a thumbnail on the ScratchPads View, and it is synced automatically to all of your devices.

20.6 Renaming ScratchPads

The default name for each ScratchPad is the date and time that it was created or last edited. To rename the ScratchPad:

1. On the ScratchPads view, tap **Edit**.
2. Tap the blue name label at the bottom of the ScratchPad thumbnail.
3. Using the iOS keyboard, type a new name.
4. Tap **Done** (either on the keyboard or the top-left corner of the ScratchPads View).



Renaming a ScratchPad

20. SCRATCHPADS

20.7 Deleting ScratchPads

To delete ScratchPads, tap **Edit** on the ScratchPads view and perform one of the following operations:

- To delete an individual ScratchPad, tap the **X** icon at the top-left corner of its thumbnail, and then tap **Done**.
- To delete all ScratchPads at once, tap **Delete All** in the upper-right corner, and then tap **Delete All** again in the confirmation prompt.

20.8 Reordering ScratchPads

Individual ScratchPads are listed in order of their creation dates. To change this order:

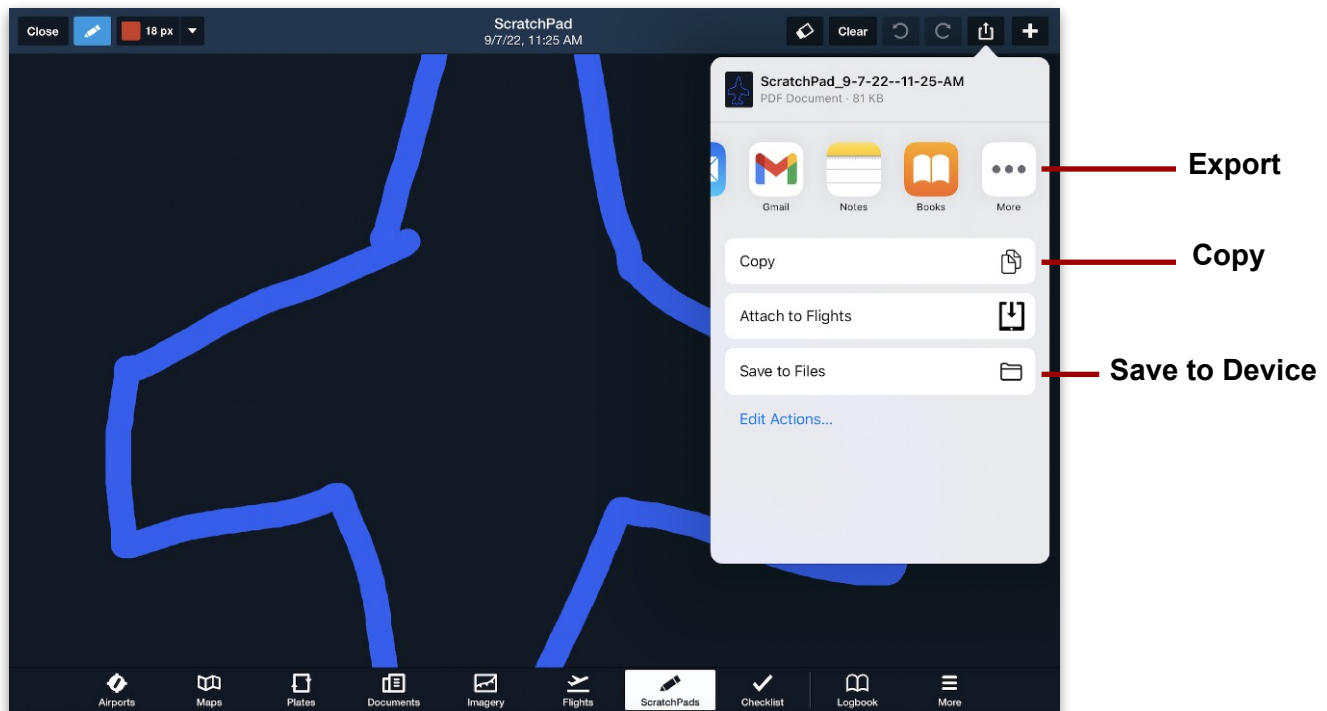
1. On the ScratchPads View, tap **Edit**.
2. Tap and hold your finger on a ScratchPad thumbnail and then drag it to a new position.
3. When you have finished, tap **Done**.

20. SCRATCHPADS

20.9 Exporting ScratchPads

You can export a ScratchPad as a PDF to other locations on your device. To do so, follow these steps:

1. Open the ScratchPad you want to share.
2. Tap the **Send-To** button in the top-right corner.
3. Perform one of the following operations:
 - **Export to another iOS app:** Tap an app icon and follow its instructions. If you don't see the desired app icon, tap **More** to see the whole list.
 - **Attach to Flights:** See the next section.
 - **Copy as PDF image:** Tap **Copy**.
 - **Save to device directory:** Tap **Save to Files** and select or create the destination directory.



Sharing ScratchPads Externally

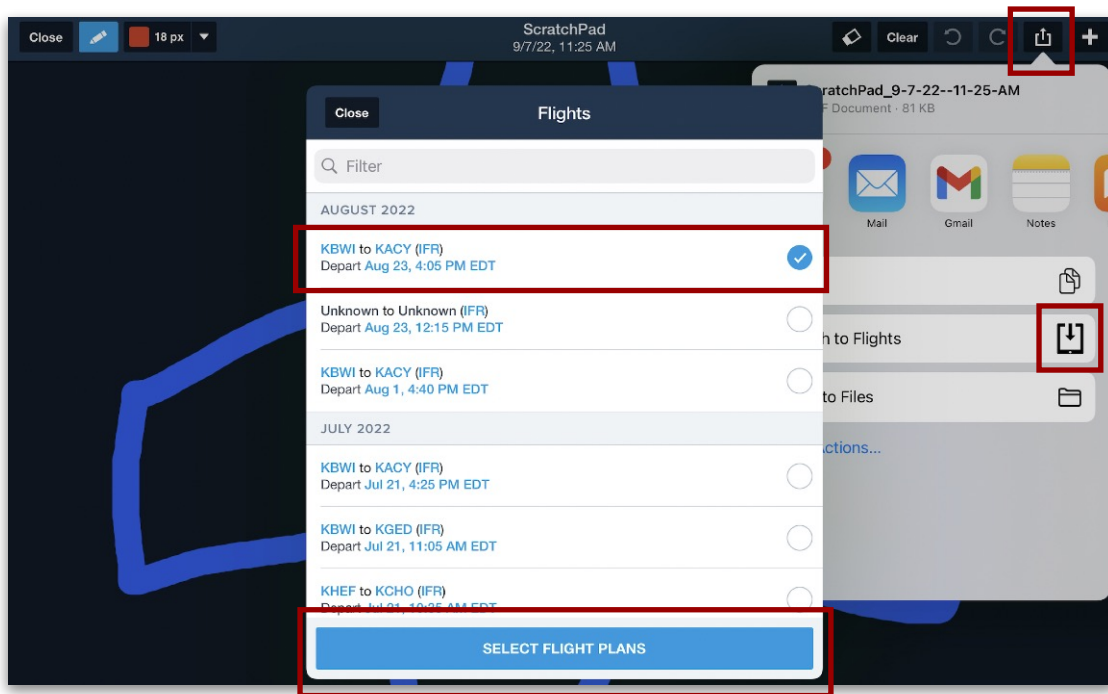
20. SCRATCHPADS

20.10 Attaching ScratchPads to Flights

Performance tier subscribers can attach ScratchPads to one or more **flights**. To do so, follow these steps:

1. Open the ScratchPad you want to attach.
2. Tap the **Send-To** button in the top-right corner.
3. In the Send-To menu, tap **Attach to Flights**.
4. In the Flights window, tap the Flight(s) you want to attach the ScratchPad to.
5. Tap **Select Flight Plans**.

The ScratchPad now appears as a PDF attachment on your flight(s). You can view it by clicking the file attachment button at the top of the Flight Summary pane.



Attaching ScratchPads to Flights

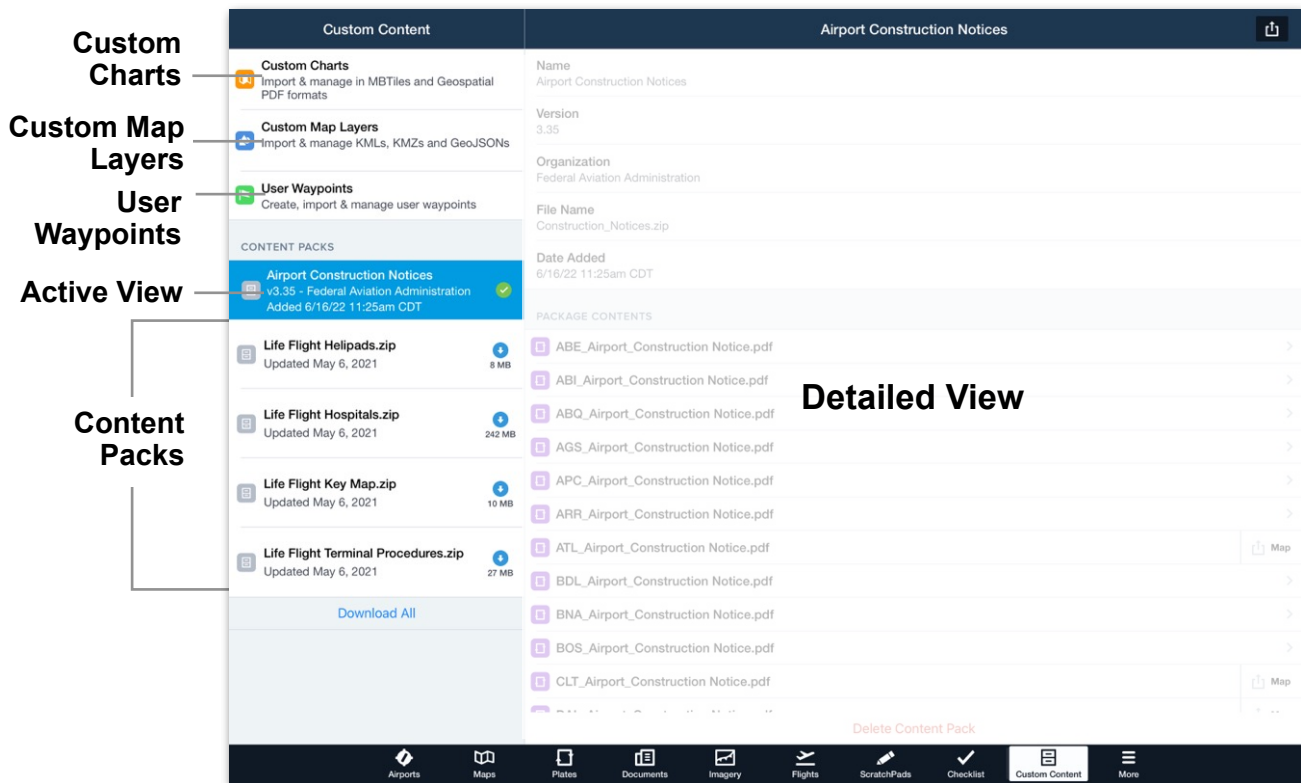
CUSTOM CONTENT

The Custom Content feature allows custom map layers, charts, and user waypoints to be added to ForeFlight. The Custom Content view lists all custom content installed on the device. Select **More > Custom Content** to access the view.

The left side of the Custom Content View list four categories of custom content. Tapping a category displays the contents of the category in a detailed view on the right side of the screen. The four types of custom content are listed below.

- Custom Charts
- Custom Map Layers
- User Waypoints
- Content Packs
- User Waypoints
- Content Packs

The Custom Content view can be used to access custom content, however the typical workflow involves accessing custom content from the Maps, Plates, and Airports views. Custom Charts, Custom Map Layers, and Content Packs do not sync between devices. User Waypoints sync to the devices signed into the account. ForeFlight Web does not support custom content.



Custom Content View

21. CUSTOM CONTENT

21.1 Creating Custom Content

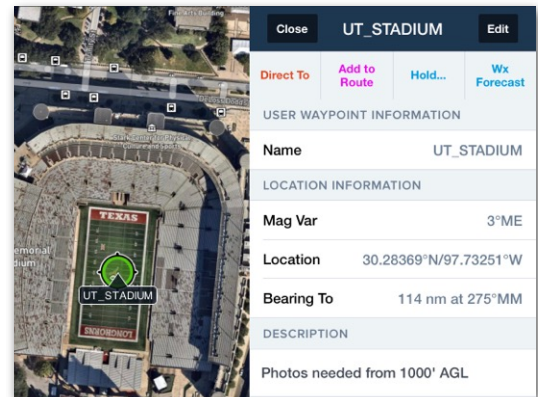
Custom Content cannot be created in ForeFlight (with the exception of user waypoints). Custom content must be created with a 3rd-party program and imported to ForeFlight. This chapter provides a basic overview of creating and importing custom content.

21.2 User Waypoints

User waypoints can be created in ForeFlight Mobile using the Maps or Custom Content pages.

User waypoints are displayed on the map when the **User Waypoint** map layer is selected from the map drop-down menu. The black user waypoint icon is not customizable. For customizable user waypoints, see [Custom Map Layers](#).

User waypoints can be entered in the route editor and used in flight plan filing.



User Waypoint

21.2.1 User Waypoint Fields

User waypoints consist of four fields.

- **Name** - Must be minimum of 3 characters, all one word with no spaces. Names must contain at least one letter and should not duplicate an existing published waypoint's name. Waypoint names can be entered into the flight plan editor for planning purposes.
- **Description** (optional) - User waypoint descriptions are displayed in the user waypoint pop-up when tapped. Descriptions support letters, numbers, and special characters.
- **Location** - Location is defined by latitude/longitude, point/radial/distance, or Military Grid Reference System (MGRS). When adding a user waypoint with Maps, the latitude/longitude is automatically populated.
- **Elevation** (optional) - The elevation field provides ForeFlight with elevation data for flight planning purposes. When an elevation is provided, flight planning results are more accurate. Entering an elevation also allows Profile View to display climbs and descents when the destination or departure are a user waypoint.

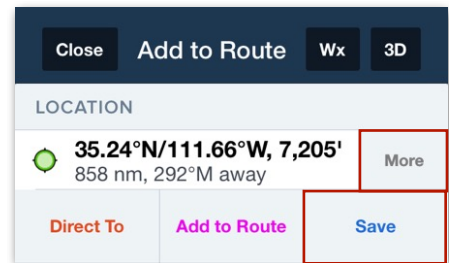
21. CUSTOM CONTENT

21.2.2 Creating User Waypoints - Maps View

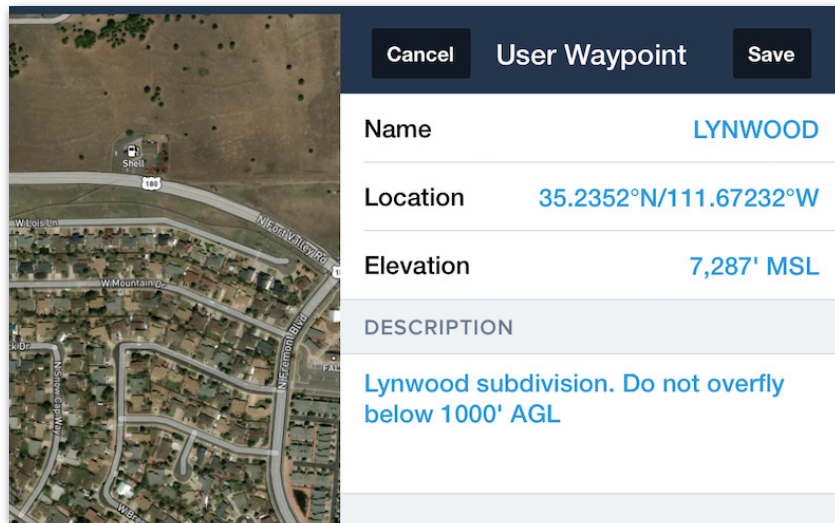
User waypoints can be created on the Maps and Custom Content views. If a user waypoint's coordinates are unknown, creating the user waypoint with the Maps view is recommended.

To create a user waypoint on the map:

1. Open the Maps view and zoom-in to improve waypoint accuracy.
2. Place and hold your finger on the map where you want to add the user waypoint.
3. In the sidebar, tap **More** and select **Save**.
4. Enter a name (recommended). If a name is not entered, the waypoint's coordinates will be used.
5. Verify waypoint location on the map and manually edit coordinates if needed.
6. Enter an elevation in feet MSL (recommended).
7. Provide a description (optional).
8. Tap **Save** near the top of the pop-up.



More + Save Buttons



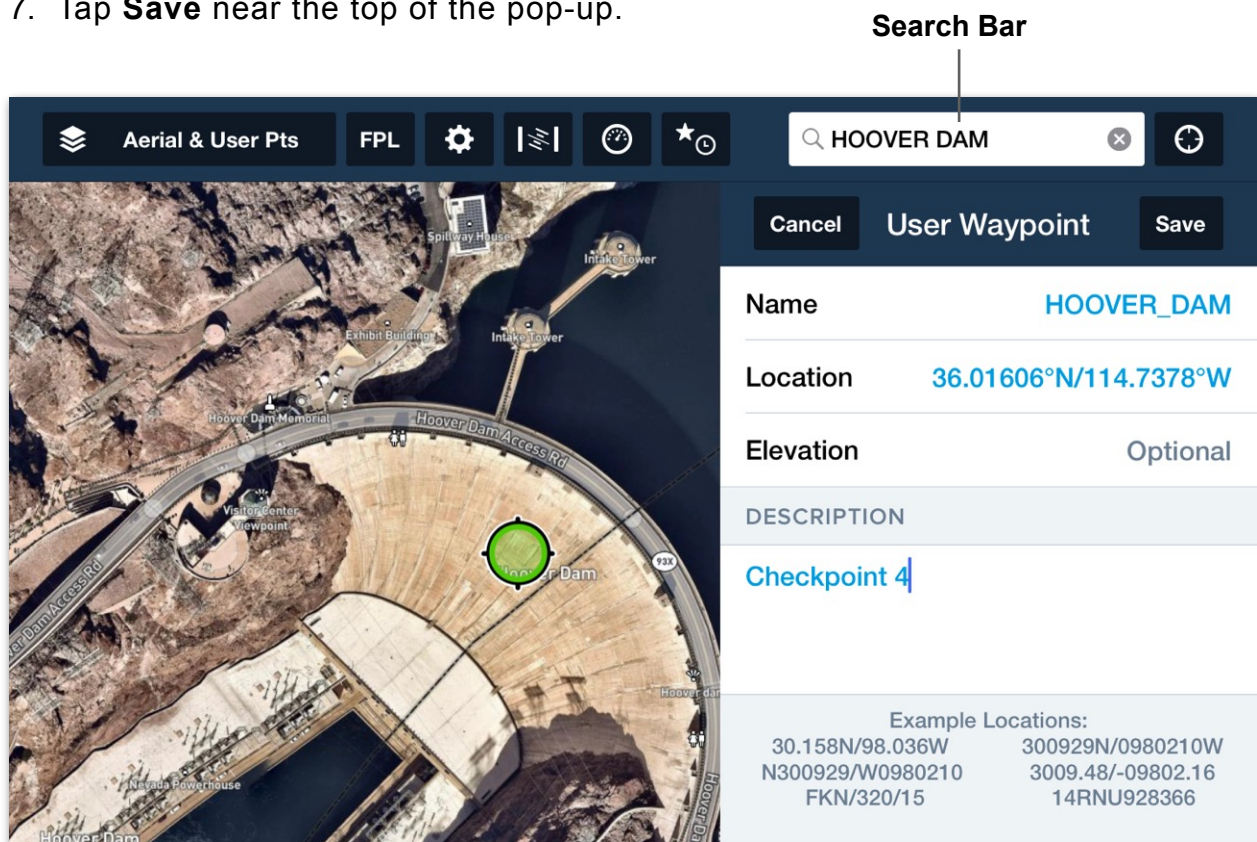
Creating a user waypoint - Maps View

21. CUSTOM CONTENT

21.2.3 Creating User Waypoints - Map Search

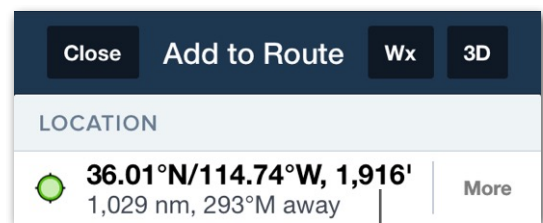
To create a user waypoint with search:

1. Open the Maps view and enter a location or point of interest in the search bar.
2. Locate and tap the location in the list of search results.
3. Tap **Save** near the top of the pop-up.
4. Edit the name if desired.
5. Provide an elevation (recommended).
6. Provide a description (optional).
7. Tap **Save** near the top of the pop-up.



Creating User Waypoint - Search

NOTE: Tap/Hold the map to display elevation. Elevation is displayed next to the coordinates in the Add to Route menu and is the highest point within a 0.25 nm radius.



Elevation

21. CUSTOM CONTENT

21.2.4 Creating User Waypoints - Custom Content View

To create a user waypoint using the Custom Content view:

1. Select **More > Custom Content > User Waypoints**.
2. Tap the **[+]** button in the upper toolbar.
3. Enter a name and location (required).
4. Enter an elevation (recommended), and provide a description (optional).
5. Tap **Save** near the top of the pop-up.

The user waypoint location field can be entered in the following formats:

- Place/bearing/distance - IAH/320/15 (IAH VOR, 320 bearing and 15 nm).
- Military Grid Reference System - 14RNU928366.
- Coordinates (see below).

Supported Coordinate Formats

Coordinates can be entered using any of the following formats. ForeFlight will automatically convert coordinates to display them in the format selected in **More > Settings > Units/Time > Coordinates**.

If no hemisphere is specified, ForeFlight defaults to the north and east hemisphere. Specify the southern hemisphere with a "-" prefix or "S" after the latitude. Specify the western hemisphere with a "-" prefix or "W" after the longitude.

- Decimal Degree - 30.158N/98.036W
- Decimal Minute - 3015.89/-9803.62
- Degree Minute Seconds - 301545N/980355W

The screenshot shows a mobile application interface with a dark blue header. On the left, there is a 'Custom Content' menu with three options: 'Custom Charts' (Import & manage in MBTiles, Geospatial PDF and GeoTIFF formats), 'Custom Map Layers' (Import & manage KMLs, KMZs and GeoJSONs), and 'User Waypoints' (Create, import & manage user waypoints), which is highlighted in blue. On the right, the 'User Waypoint' form is open, featuring a 'Cancel' button at the top left and a 'Save' button at the top right. The form fields are: 'Name' (CHECKPOINT _7), 'Location' (293345N/0891236W), 'Elevation' (1,277' MSL), and 'DESCRIPTION' (Highway overpass).

Creating User Waypoints - Custom Content View

21. CUSTOM CONTENT

21.3 Multiple User Waypoints (Bulk Import)

Multiple user waypoints can be imported in bulk via AirDrop, e-mail, file transfer, or as part of a **content pack**. Bulk user waypoints must be a Comma Separate Value (CSV) file or **Keyhole Markup Language (KML) file**.

CSV files can be created with spreadsheet programs like Microsoft Excel, Google Sheets, or Apple Numbers. KML files can be created with mapping programs like Google Earth or Google My Maps.

21.4 Creating CSV Files

User Waypoint CSV files must follow the formatting defined in this section. CSV files contain a single table with five columns. Each column defines one of the waypoint's fields. CSV files do not need column names. Names in the example below are provided for informational purposes.

NAME	DESCRIPTION	LATITUDE	LONGITUDE	ELEVATION
------	-------------	----------	-----------	-----------

User waypoint CSV file fields

When creating a CSV file, each waypoint is defined on its own row. There's no limit to the number of rows a file can contain. To create a user waypoint CSV file for bulk import, open a new spreadsheet with your preferred program. Add a single table with five columns. Add enough rows for the number of user waypoints in the file. Fill in the table with your user waypoint data. Only one table per file is supported.

NORTH_BASE	North Base	29.243	-97.565	450
WD355	West Delta 355	27.443	-98.123	355
WEST_LAKE_FD	West Lake Fire	28.202	-90.788	1276
VFD23	Volunteer Fire Station	26.955	-93.544	2376
HOME	Home Sweet Home	29.512	-94.233	355
CP_23	Check Point 23	27.909	-91.110	2934

Example CSV File

21. CUSTOM CONTENT

21.4.1 CSV File Field Formatting

CSV files must follow the formatting listed below. If a CSV file does not follow the formatting, it will not import to ForeFlight.

- **Name** (required): Must be formatted with the following properties:
 - Minimum of 3 characters including at least one letter. For example, “12A”.
 - All caps, for example "THE_CABIN", not “The_Cabin”.
 - No spaces between words. Use a "_" or "-" between words. For example, "THE_CABIN" or "THE-CABIN", not "THE CABIN”.
- **Description** (optional): User waypoint descriptions are displayed in the user waypoint pop-up when tapped. Descriptions support letters, numbers, and special characters.
- **Latitude/Longitude** (required): Bulk importing user waypoints requires coordinate entry in the decimal degree format. Prefix latitude or longitude with a minus sign to notate the southern or western hemisphere (e.g. -97.711). If no minus sign is entered, ForeFlight assumes the north and east hemispheres.
- **Elevation** (optional): Enter elevation in feet without any additional notation.

21.4.2 Naming User Waypoint CSV Files

User waypoint CSV files must be named “user_waypoints.csv”. The file name should use lower case letters with no spaces. If a user waypoint file is not named properly, the waypoints will not be added to ForeFlight.

21. CUSTOM CONTENT

21.5 KML User Waypoints

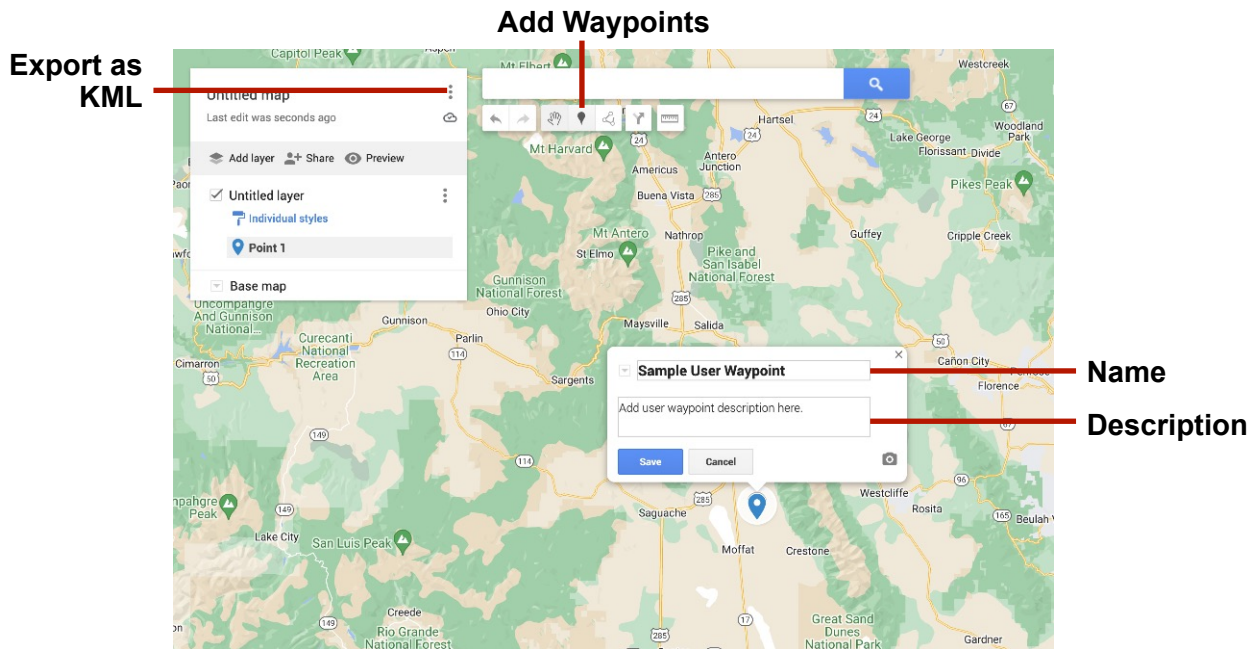
KML is a robust mapping language used to display geographic data in a browser such as Google Earth. If you're new to KML, ForeFlight recommends the following resource: [Google KML Tutorial](#).

ForeFlight supports basic KML features such as waypoints (placemarks), customizable icons, customizable labels, lines, and shapes. Files which only contain waypoints can be imported as a User Waypoint or Custom Map Layer file. If a file contains features other than just waypoints (lines or shapes), it can only be imported as a Custom Map Layer. This section discusses creating KML files for the purpose of bulk importing user waypoints. Icon and label color, size, and opacity changes are ignored when importing a KML file as user waypoints.

21.5.1 Creating KML User Waypoint Files

To create a KML user waypoint file, ForeFlight recommends using [Google My Maps](#).

To create a KML file with My Maps, select the add waypoint button and use the mouse to specify the location of the waypoint. Enter a name and description for the waypoint. Spaces in the name field are automatically replaced by an underscore when imported into ForeFlight. After entering a waypoint name and description, click [Save](#).



Adding Waypoints with Google My Maps

21. CUSTOM CONTENT

Google My Maps does not include elevation data in the KML file. Elevation can be added to user waypoints after they've been imported in **More > Custom Content > User Waypoints**.

When all user waypoints have been added to the map, click the menu button to export the map layer as a KML/KMZ file. ForeFlight can import KML and KMZ files as user waypoints. It's not necessary to specify a particular format. The format (KML or KMZ) is only applicable when importing a custom map layer with custom icons. See **Custom Map Layers** for additional information.

It's not necessary to rename KML/KMZ files. File names are ignored when importing as a user waypoint file. If you have multiple user waypoint KML/KMZ files, renaming the file is recommended so the contents of the file can be easily identified. Save the file to your computer in preparation for importing it to ForeFlight.

21.6 Importing User Waypoints

User waypoints can be added to ForeFlight by incorporating them in a **content pack** or by importing them as stand-alone files. If user waypoints are added via Content Pack, the date the file was added is listed in **More > Custom Content**. Other than the Date Added field, there's no difference in how the waypoints are displayed in ForeFlight Mobile.

When a standalone CSV or KML file is imported, the waypoints are appended to the existing user waypoint list. During the import process, the current user waypoints are compared to the waypoints in the CSV/KML file. Duplicate waypoints are not appended to the waypoint list.

User Waypoints imported via content pack are not appended to the user waypoint list.

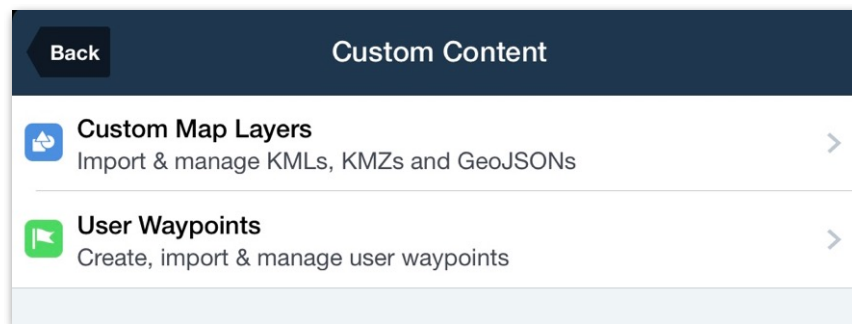
21. CUSTOM CONTENT

21.6.1 Importing a CSV or KML/KMZ file

To import a stand-alone user waypoint file, share the file to your iPad/iPhone via one of the supported methods. ForeFlight supports AirDrop, e-mail, and file transfer.

When opening a CSV or KML/KMZ file on an iPad or iPhone, a list of installed apps which are capable of importing the file are listed. Select **ForeFlight** from the list of installed apps.

After selecting ForeFlight, the app will automatically open and provide prompts for importing. If a KML/KMZ file containing only waypoints is imported, ForeFlight will display a menu for importing the file as a Custom Map Layer or User Waypoint. Select **User Waypoints** to append the waypoints to the current user waypoint list.



KML/KMZ User Waypoint Import Options

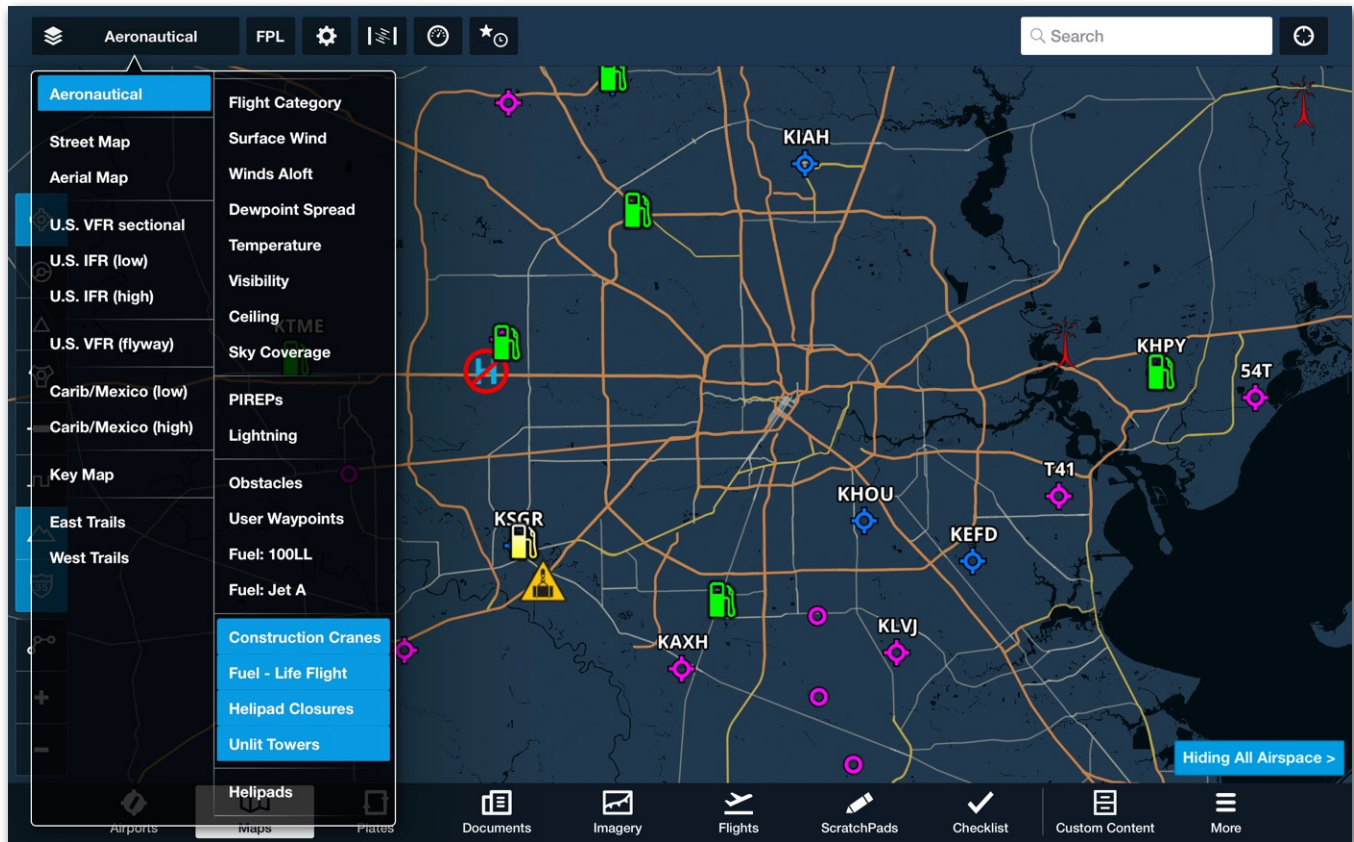
If a KML/KMZ file with lines or shapes is imported, Custom Map Layer will be the only option. If a CSV user waypoint file is imported, User Waypoints will be the only option.

Once the file has been imported, the waypoints can be displayed on the map by selecting **User Waypoints** from the map drop-down menu.

21. CUSTOM CONTENT

21.7 Custom Map Layers

Custom map layers can display shapes, lines, custom icons, and custom labels. Multiple custom map layers can be installed and displayed simultaneously on a device. Custom map layers are selected from the right column of the map layer drop-down menu. Each map layer can have a unique name. ForeFlight supports KML, KMZ, and geoJSON custom map layers.



Custom Map Layers with Custom Icons

21.7.1 Creating Custom Map Layers

There are various programs that allow you to build and export custom map layers. ForeFlight recommends using the [Google Earth Pro](#) desktop app. Google Earth Pro can export custom map layers in the KML and KMZ file format. If you're new to KML, ForeFlight recommends the [Google KML Tutorial](#).

This section provides basic instruction for creating custom map layers with Google Earth Pro. For detailed instructions, the [Google Earth Learn](#) website is recommended.

21. CUSTOM CONTENT

21.7.2 Supported Data Types

KML is a robust mapping language that supports a large variety of features. For example, KML can specify camera perspectives, time-dependent features, and even guided tours. ForeFlight only supports a small sub-set of all KML features.

If you import a file that includes a KML feature that is not listed below, the unsupported feature is ignored by ForeFlight. ForeFlight supports the following KML features.

- Waypoint
- LineString
- LinearRing
- Polygon
- MultiGeometry
- Style
- StyleMap (normal)
- LineStyle
- PolyStyle
- IconStyle
- gx:LabelVisibility

21.7.3 Waypoints

One of the more common custom map layer features is the waypoint. Waypoints are displayed as icons on the map. Waypoints can be added to the route editor for planning purposes and used in flight plan filing. To create a custom map layer with waypoints, click the **Add Placemark** button in the Google Earth Pro upper toolbar.

Add Placemark



Google Earth Pro Toolbar

After clicking the placemark button, drag the waypoint icon to the appropriate position or manually enter the waypoint's latitude/longitude. Enter a waypoint name and description. Custom map layer names do not have to be a single word.

Select a supported icon for the waypoint or use a custom icon and click **OK**. Waypoint icons are discussed on the following pages.

KML/KMZ files exported from Google Earth do not include elevation data.

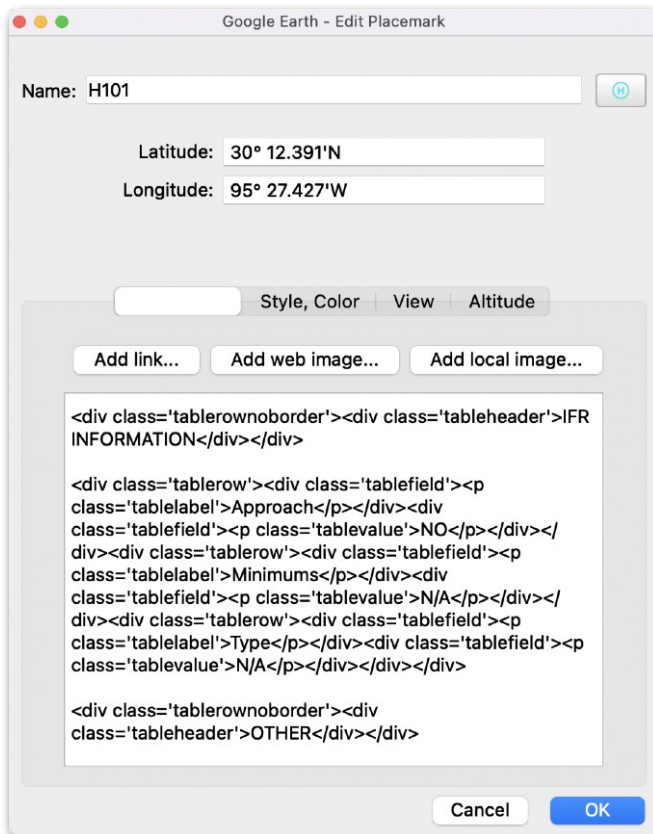
21. CUSTOM CONTENT

Waypoint Descriptions

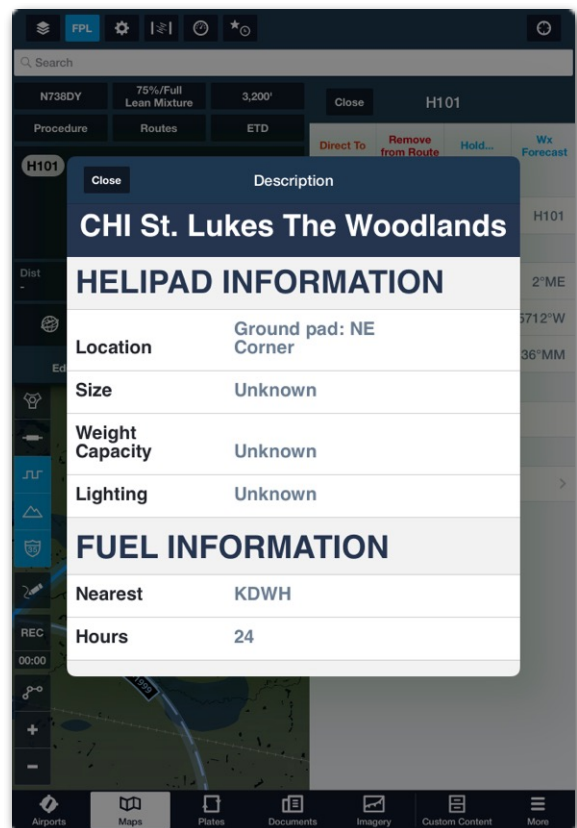
The waypoint description field in ForeFlight supports text and basic HTML formatting. HTML is not required, however when it's used, it allows the look of the description field to be customized. HTML elements such as links, line breaks, headings, font color, and size are supported.

To customize the description section of a waypoint, add the HTML directly to the description field in Google Earth Pro.

To view HTML formatted text in ForeFlight, tap the custom waypoint on the Maps view and tap **More Details** in the Description section of the pop-up.



HTML formatted text in Google Earth Pro



Custom map layer waypoint with HTML formatting

21. CUSTOM CONTENT

Waypoint Icons

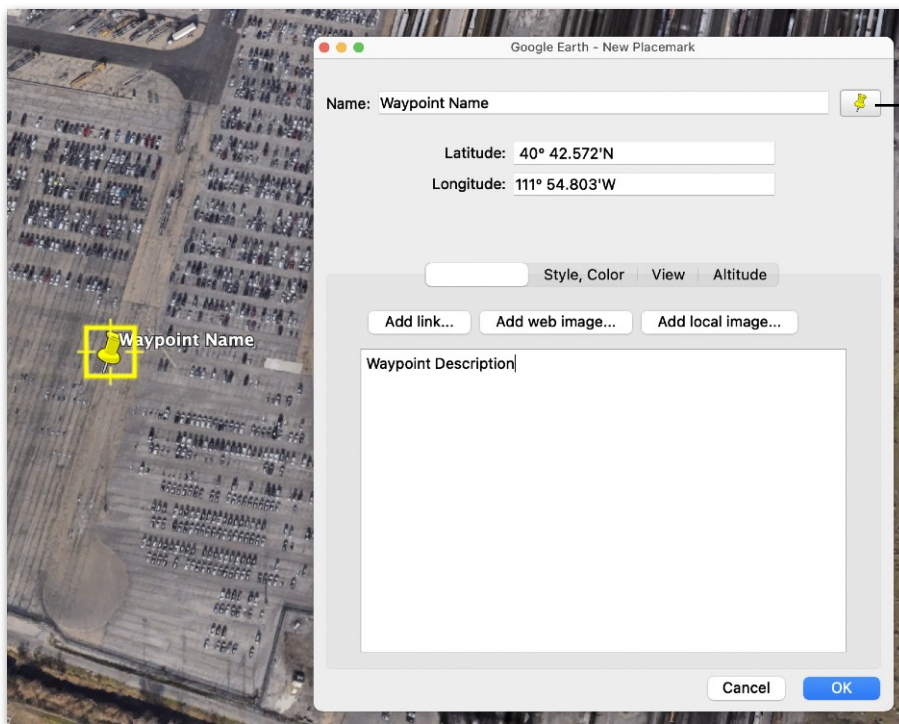
ForeFlight only supports select Google Earth waypoint icons. If an unsupported icon is selected, the default icon is used.

When choosing a waypoint icon, select a supported icon or use the **Add Custom Icon...** option at the bottom of the icon menu.

To select a waypoint icon, click the icon button in the upper right corner of the waypoint menu and select an icon from the subsequent page. Once an icon has been selected, click **OK**.



Default Icon



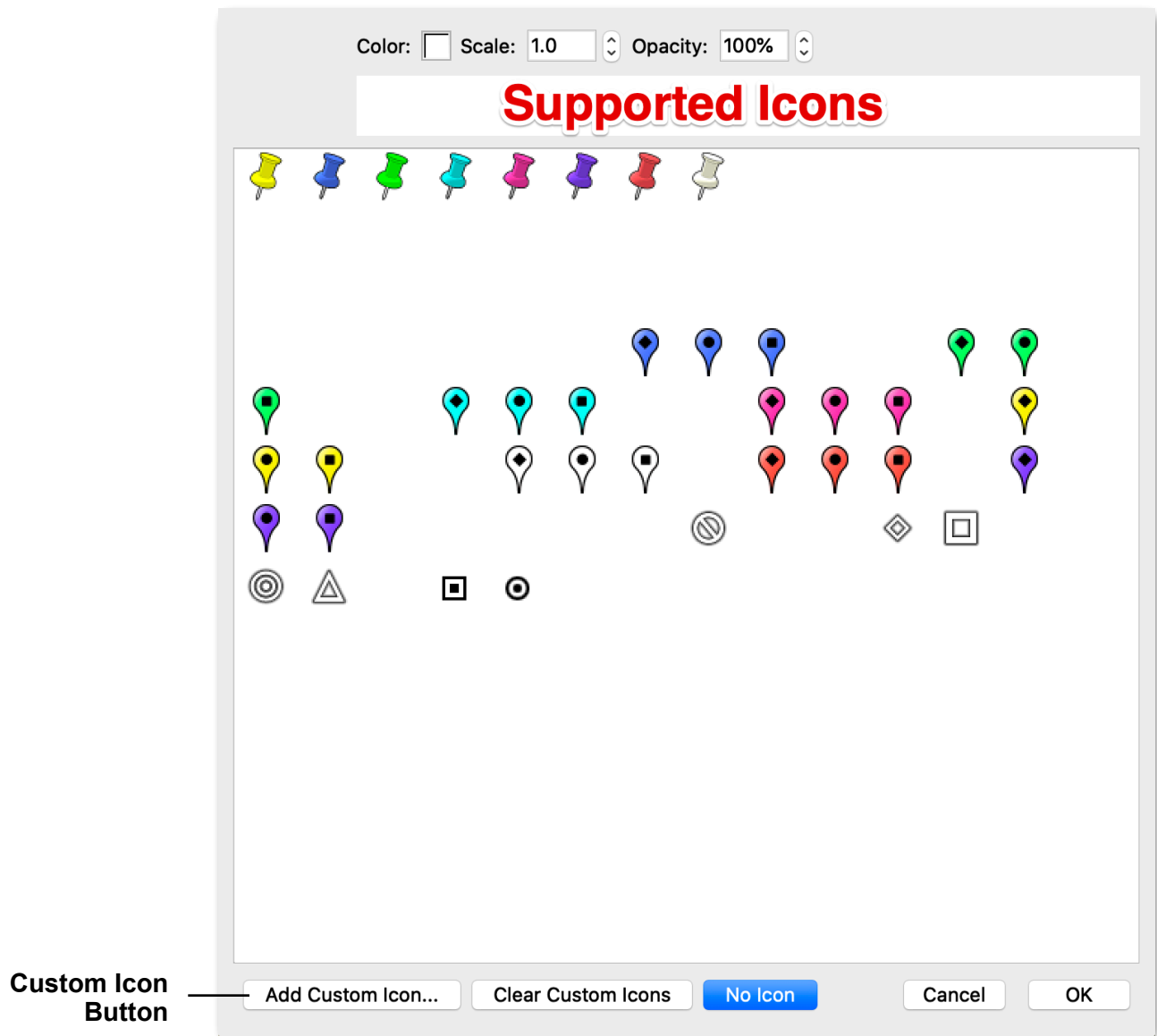
Select Icon Button

Adding Waypoints with Google Earth Pro

21. CUSTOM CONTENT

Supported Icons

The image below depicts the icons that are supported in ForeFlight Mobile. Use the **Add Custom Icon** button at the bottom of the menu to use an image from your computer as the waypoint icon.



Supported Icons

21. CUSTOM CONTENT

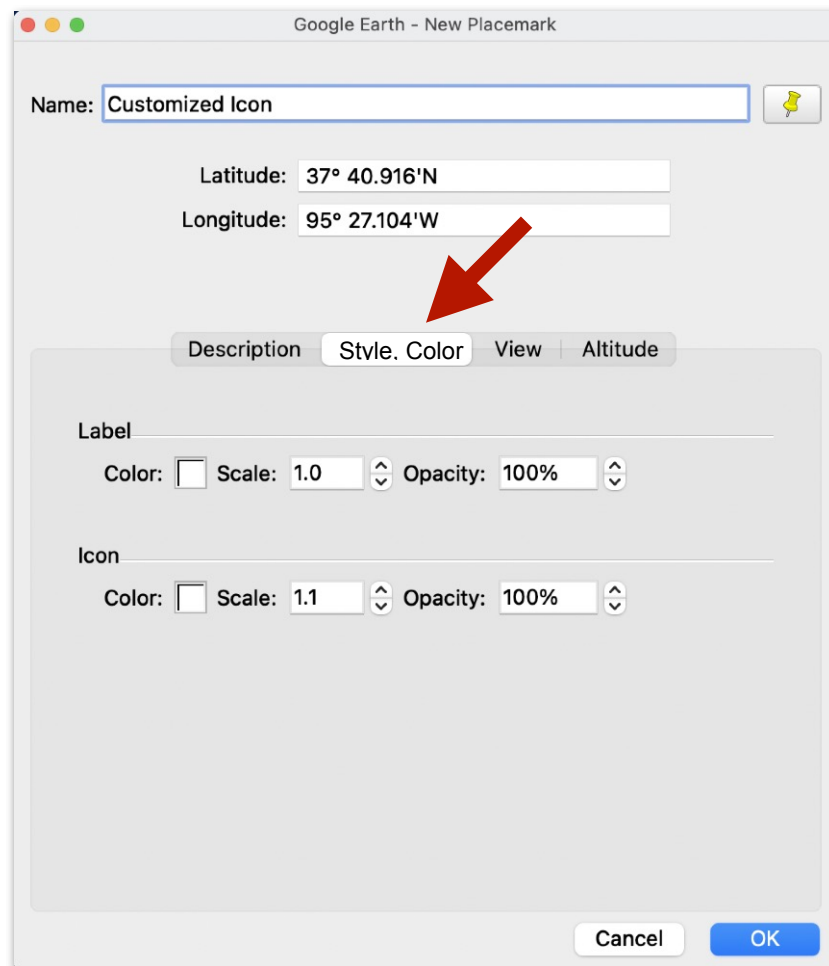
Custom Icons

For best results, custom icons should be PNG image files with transparent backgrounds. The image should be approximately 100 pixels by 100 pixels.

When using a custom icon, your map layer must be saved as a *KMZ file*. KMZ files are zipped files with KML map data and the custom icon image files.

21.7.4 Label and Icon - Style and Color

Label and icon color, size, and opacity can be customized. To make style adjustments, select **Style**, **Color** from the Google Earth waypoint menu. Not all customization fields are supported in ForeFlight. See the following pages for additional information.

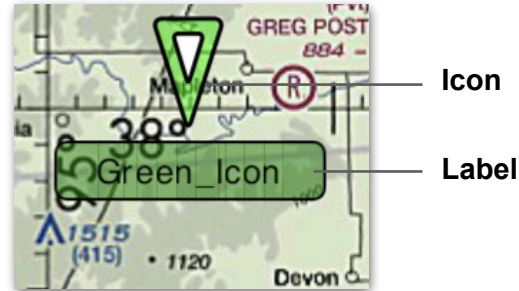
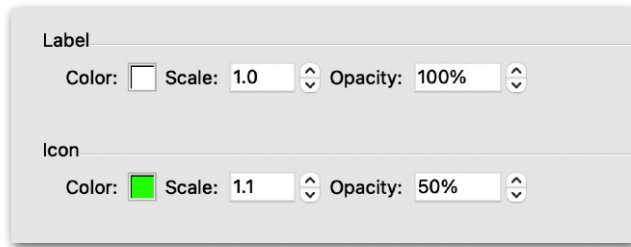


Customizing Waypoints

21. CUSTOM CONTENT

Color and Opacity

Waypoint icons and their associated labels share color and opacity attributes. To adjust the color or opacity of a waypoint, use the *Icon* settings in Google Earth to make adjustments. When using a supported icon, it's not possible to differentiate the color or opacity of the waypoint icon and its label.



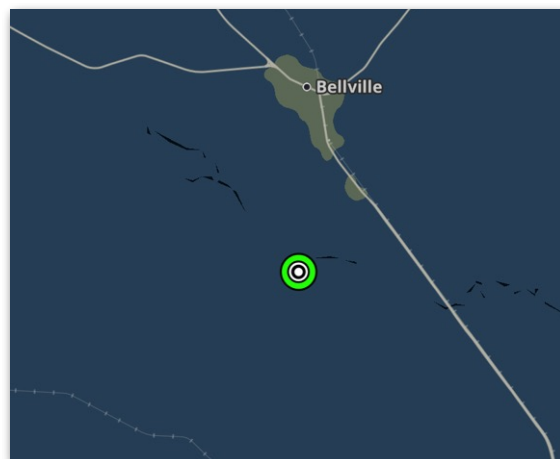
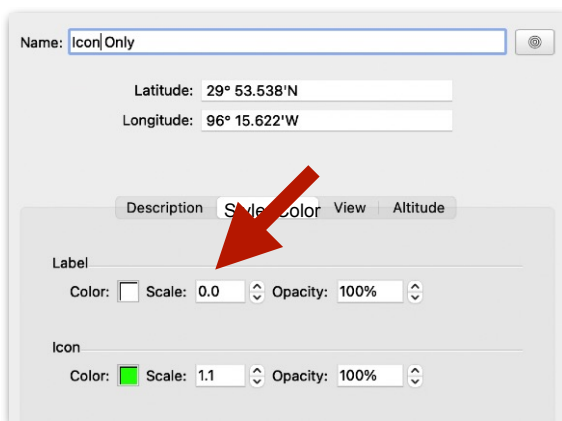
Green icon and label with 50% opacity

Scale

Icon and label scale (size) can be independently adjusted. The maximum label scale is one. A label scale greater than one will not be reflected in ForeFlight.

Specifying a label scale of zero results in the label not being displayed. If the label is not displayed, the waypoint's name can still be used for flight planning purposes. To create a map layer with only icons, set *label scale* to zero as in the image below.

There is no upper limit for *icon* scale. An icon scale greater than one results in a larger icon in ForeFlight. To display a label without an icon, use the **Add Custom Icon** option and use a blank image.

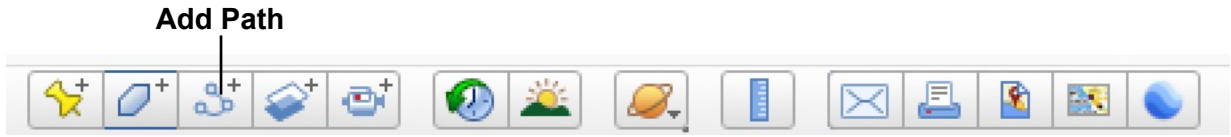


Icon Only Waypoint - Label scale equal to zero

21. CUSTOM CONTENT

21.7.5 Lines

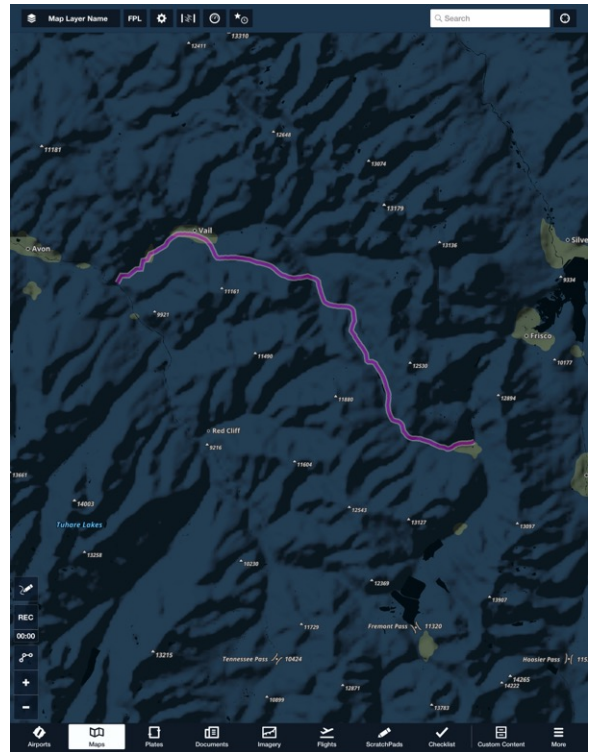
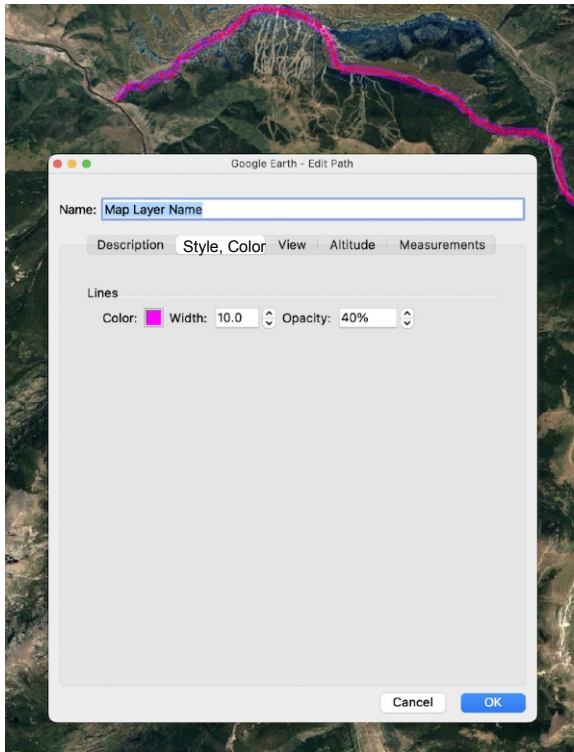
Custom map layers can depict lines. Lines can be included in the same file as waypoints and custom shapes. To add lines to a custom map layer, select the **Add Path** button in the Google Earth Pro upper toolbar.



Google Earth Pro Toolbar

Use the mouse and cursor to add points to the path. Adjust line width and color by selecting **Style, Color**. When all points have been added, click **OK**.

It's not necessary to provide the path with a name as ForeFlight will ignore it. The KML/KMZ file name is what will appear in the map drop-down menu.

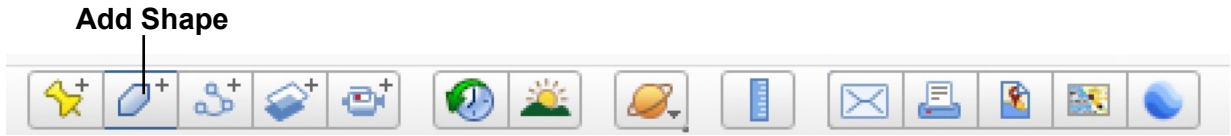


Custom Map Layer Line (path) in Google Earth and ForeFlight Mobile

21. CUSTOM CONTENT

21.7.6 Shapes

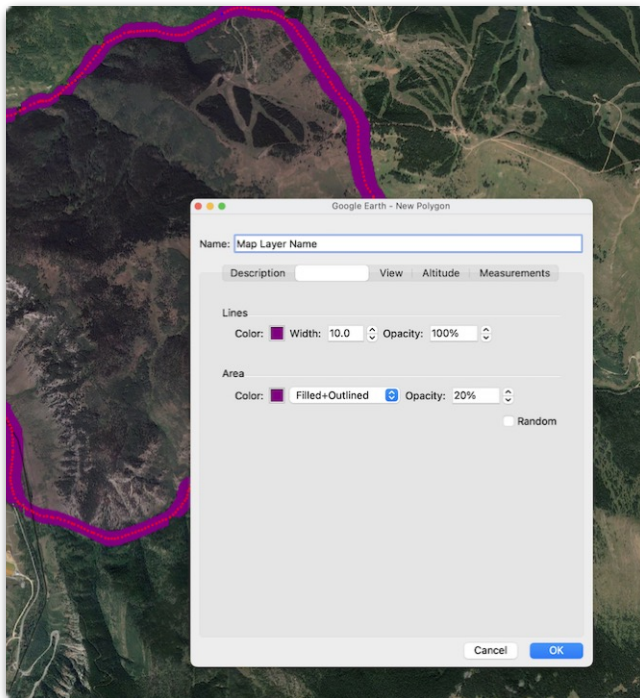
Custom map layers can depict shapes. Shapes can be included in the same file as waypoints and lines. To add shapes (Google Earth Polygons), select the **Add Shape** button in the Google Earth Pro upper toolbar.



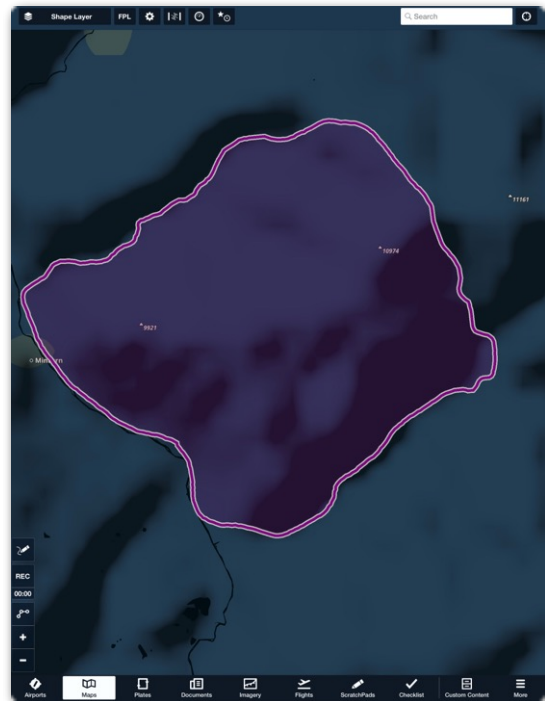
Google Earth Pro Toolbar

Use the mouse and cursor to add points to the shape. Adjust the appearance of the shape with the line and area settings in **Style, Color**. When all points have been added, click **OK**.

ForeFlight does not recognize a shape's name. To display a name over the center of a shape, add a custom waypoint (placemark) with the shape's name.



Google Earth - Polygon



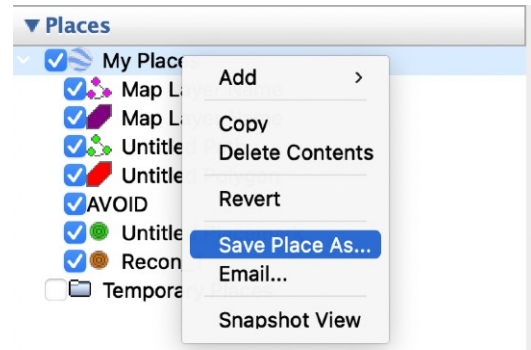
ForeFlight Mobile Custom Map Layer - Shape

21. CUSTOM CONTENT

21.8 Importing Custom Maps

Custom map layers can be imported via content pack or as a stand-alone file. To import a custom map, it must first be exported. To export a map layer, right-click the folder that contains the custom data.

Map layers and folders are displayed in the left column of Google Earth Pro under the **Places** menu.

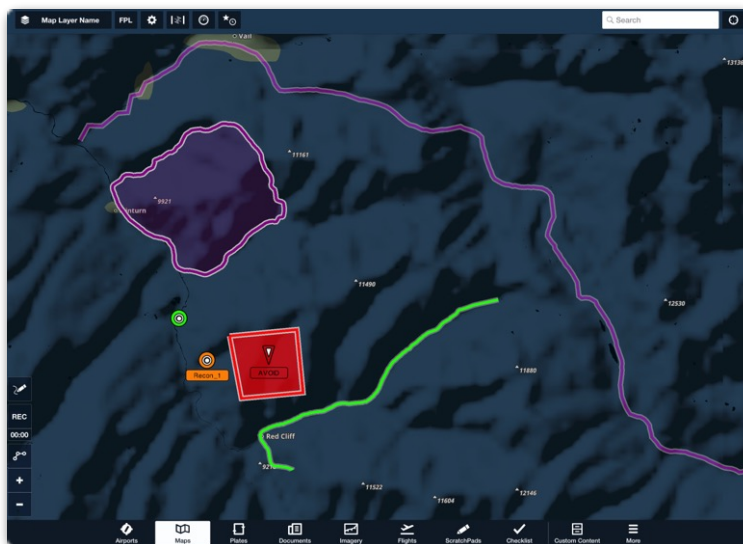


Save Place As....

Select **Save Place As....** and provide a name for the file. The file's name is what will appear in **More > Custom Content > Custom Map Layers** and in the map layer drop-down menu.

If the file contains custom icons, ensure the KMZ file format is selected. After exporting the file to your computer, share the file to your iPad/iPhone via AirDrop, Email, or File Transfer. When your iPad/iPhone receives the file, a list of installed apps which are capable of importing the file are listed. Select **ForeFlight** from the list of installed apps. ForeFlight will automatically open and provide prompts for importing the custom map.

Once the map has been imported, it can be selected from the map drop-down menu. Select **More > Custom Content > Custom Map Layer** to share, delete, or show the map layer.



Custom Waypoints, Lines, and Shapes

21. CUSTOM CONTENT

21.9 Custom Charts

The Custom Charts feature allows you to import custom georeferenced charts in MBTiles, Geospatial PDF, or GeoTiff (MFB only) format. Custom charts can be displayed on the Maps view on top of other charts. Multiple custom charts can be displayed simultaneously on the map.



Custom Chart in ForeFlight Mobile

ForeFlight can not create custom charts. If a chart does not contain geospatial information, a 3rd-party program can be used to add the data. ForeFlight recommends Map Tiler for creating MBTile custom charts and QGIS for creating geospatial PDF. For additional information, see our [Custom Content Support Page](#).

21. CUSTOM CONTENT

21.10 Custom Plates (BYOP)

The Bring Your Own Plates (BYOP) feature allows you to add PDF plates to *published* airports, heliports, and private airports. Common BYOP plates include airport diagrams, private terminal procedures, arrivals, departures, or any other plate needing to be associated with a published airport. It's possible to import custom plates via content pack and as stand-alone files. Importing custom plates via content pack is recommended and discussed in this chapter.

Custom plates are accessed from the Plates, Airports, or Maps procedure view similar to published procedures. If the BYOP plate is georeferenced, the plate is able to be sent to the Map with a Pro Plus or higher subscription. If a plate is not georeferenced, geospatial data can be added to the PDF with various mapping programs. For more information, visit the [How do I create a Geospatial PDF](#) support article.

21.10.1 BYOP Naming Convention

Adding a plate to an airport or heliport is done by renaming the plate according to a specific naming convention. BYOP file names contain three elements separated by underscores. (e.g., *AirportCode_CategoryName_Procedure Name.pdf*). Plates must end with a *.pdf* extension. The three naming elements and examples are listed below.

- **Four character ICAO airport/heliport code:** ICAO codes should be all caps with no spaces immediately followed by and underscore. (e.g., KLAX, 38TE)
- **Procedure Category:** Procedures are divided into four categories by default: Airport, Departure, Arrival, and Approach. Custom plates can be added to the existing categories. If the category name is omitted, a fifth category is created by ForeFlight. The fifth category is named *Other* and any plate without a specified category is added to this folder.

If a category name other than one of the four existing categories is used, a custom procedure category is created in ForeFlight for the airport/heliport. See the example on the following page.

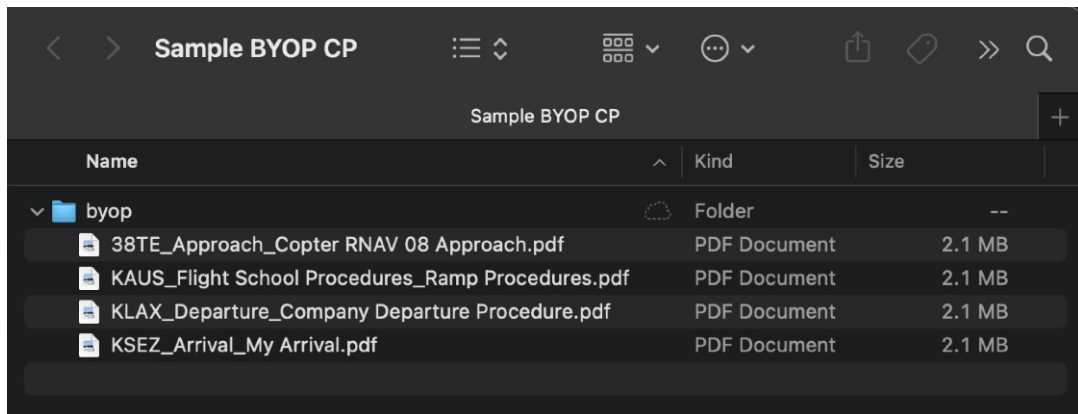
- **Procedure Name:** The procedure name supports letters, numbers, and special characters. The procedure name should be entered exactly as it is to appear in ForeFlight (e.g., COPTER RNAV 09 APPROACH, Ramp Operations).

21. CUSTOM CONTENT

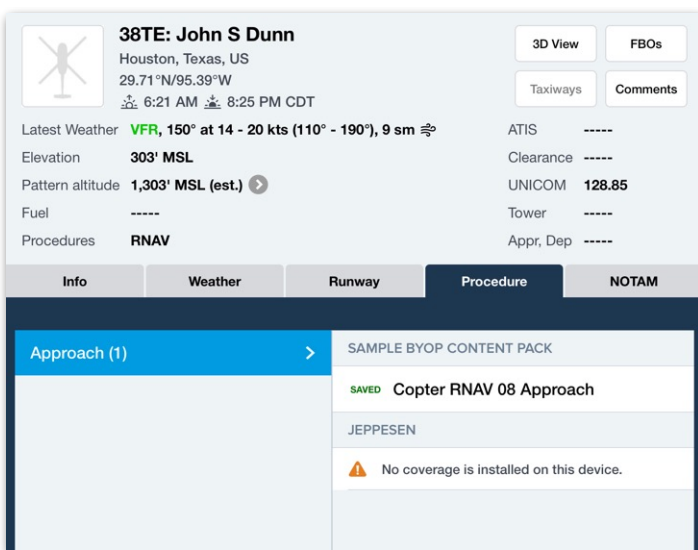
BYOP Examples

In the example below, the first plate (38TE_Approach_Copter RNAV 08 Approach) is added to the existing *Approach* category (left image).

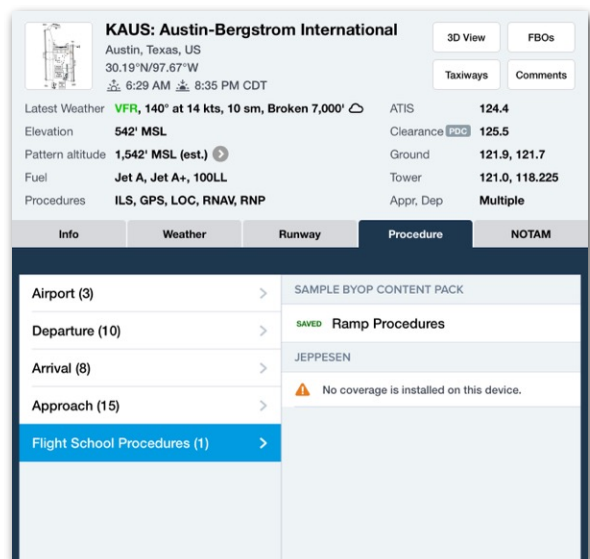
The second plate (KAUS_Flight School Procedures_Ramp Procedures) creates a custom category for Austin International Airport (right page) and adds the Ramp Procedures plate to the category.



BYOP Subfolder



38TE Copter Approach



KAUS Flight School Procedures

21. CUSTOM CONTENT

21.10.2 Importing Plates (BYOP)

Standalone BYOP files can only be imported via wired connection, using Finder (MacOS Catalina 10.15 or later) or iTunes (MacOS Mojave 10.14 or earlier).

To import BYOP files without using Finder or iTunes, the files must be imported via **content pack**. For information on importing standalone BYOP files, refer to the **[BYOP Support Page](#)**.

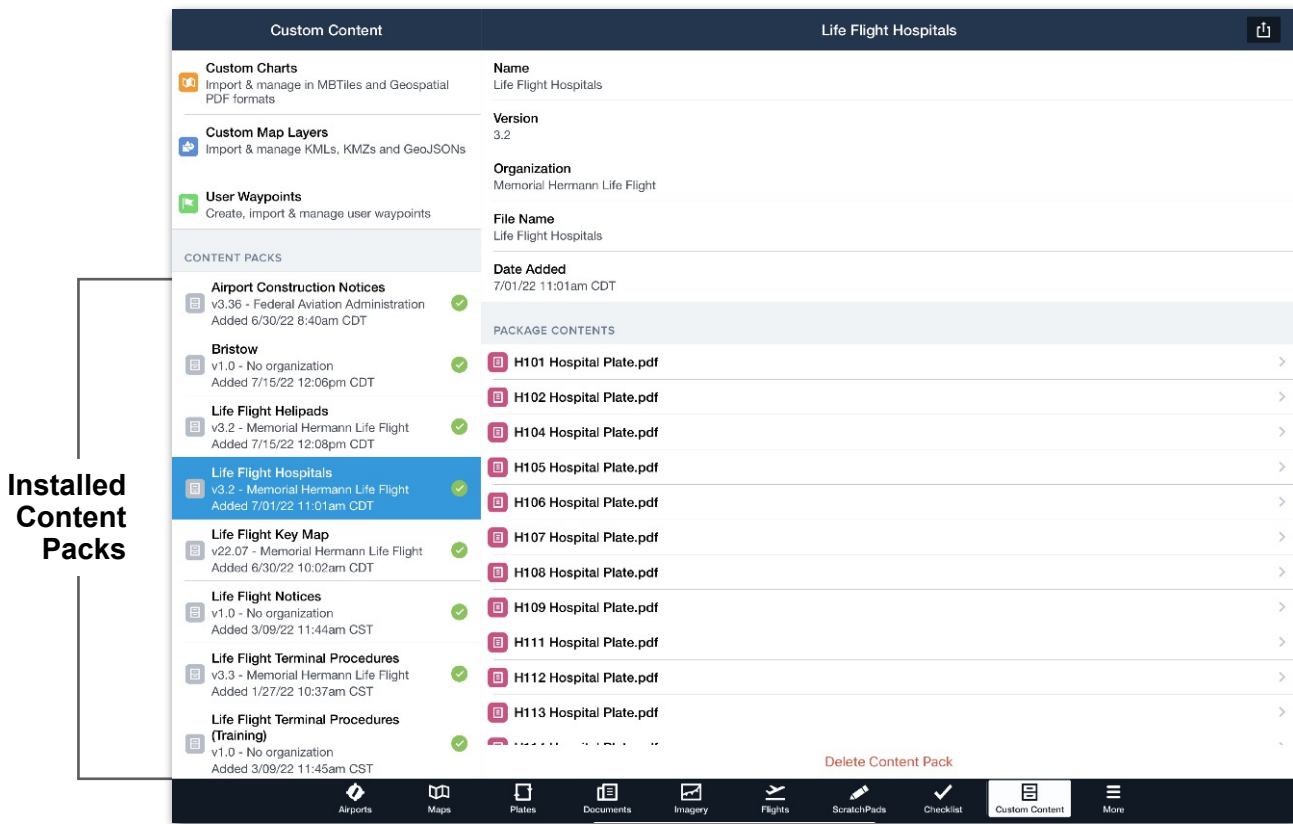
21. CUSTOM CONTENT

21.11 Content Packs

A content pack is a single file that can contain various types of custom content. Content packs are easy to create, install, share, manage, and delete. Content packs add additional capabilities to the custom content features, including the ability to associate files with the waypoints in custom map layers.

Content packs can range from a basic list of user waypoints to complex bundles of geo-referenced charts, plates, map layers, and linked files. Content packs are listed in the left column of the Custom Content view. When tapped, the contents of a pack are listed in the detail view.

Multiple content packs can be installed on a device. Content packs are available to all individual subscribers and Performance level business and MFB subscribers. Example content packs can be found at www.foreflight.com/support/content-packs.



Custom Content View - Content Packs

21. CUSTOM CONTENT

21.11.1 Package Contents

Content packs can contain multiple types of custom content. There's no limit to how many custom content types a content pack can have. Content packs must be 2GB or smaller and must contain at least one type of custom content. The following custom content can be added to a content pack.

- Custom Charts
- User Waypoints
- Plates (BYOP)
- Map Layers
- Associated Files

21.11.2 Creating Content Packs

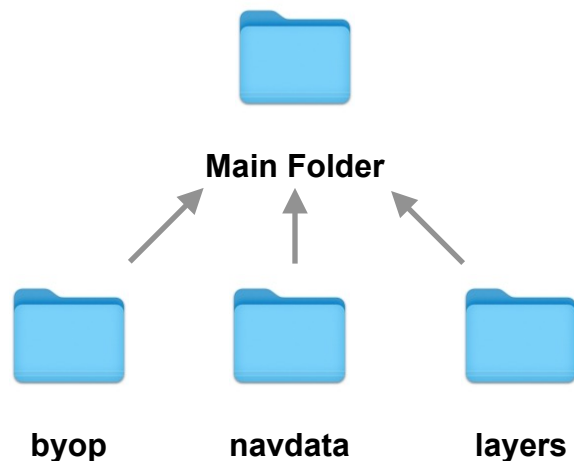
Content packs cannot be created with ForeFlight. To create a content pack, you'll need to use a computer. Begin by dragging and dropping custom content to the appropriate subfolder as described in this section.

Content Pack Structure

Content packs have a main folder and up to three subfolders. The subfolders are placed into the main folder and must be named exactly as depicted below. If a subfolder is empty, it is not necessary to include it in the content pack.

The main folder becomes your content pack once all custom content is added. The main folder does not have a specific naming requirement. Assign the main folder a name that is easily recognizable. The main folder (content pack) name is displayed in ForeFlight.

Content Pack Folder Structure



21. CUSTOM CONTENT

21.11.3 Adding Content to Subfolders

The type of custom content determines which subfolder it's placed in. Add custom content to subfolders per the image below. Each subfolder that contains custom content should be placed in the main content pack folder.



byop

- **Custom Plates**



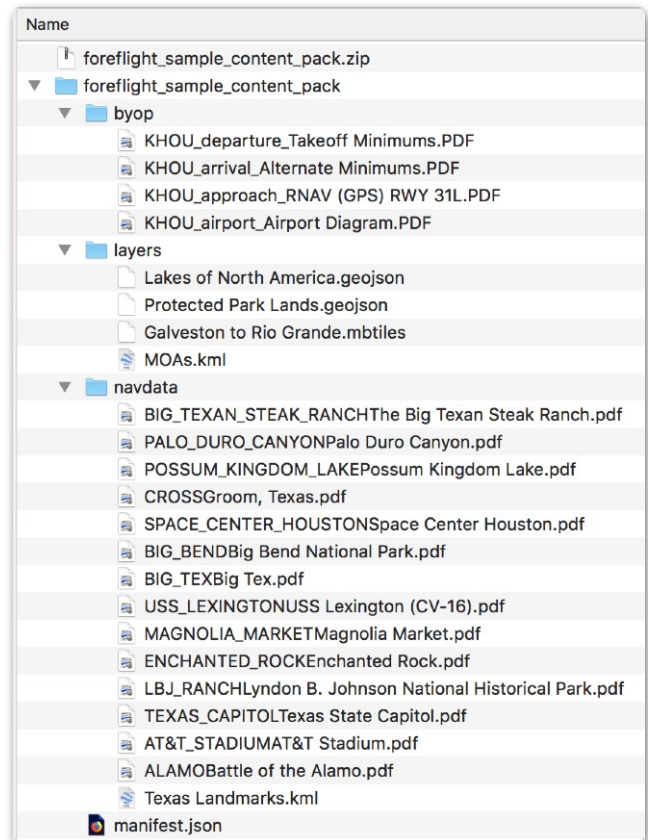
layers

- **MBTile Custom Charts**
- **GeoPDF Custom Charts**
- **GeoJson Custom Charts**



navdata

- **Map Layers (KML/KMZ)**
- **GeoJson Map Layers**
- **Associated Files**
- **User Waypoints**



Content Pack Folder Structure

21.11.4 Manifest

Content packs can also include an optional manifest. The manifest provides information about the content pack to help distinguish it from other content packs. It can also establish effective and expiration dates and specify if the content pack can be shared after being imported.

Information specified in the manifest is displayed at the top of the content pack details view in **More > Custom Content**. Manifests are placed in the main content pack folder. If you don't include a manifest, ForeFlight will use the content pack's file name by default.

21. CUSTOM CONTENT

Manifest Structure

The manifest must be a JSON file and has the following structure.

```
{  
  
"name": "Sample content pack",  
"abbreviation": "FFCP.V2",  
"version": 2.0,  
"expirationDate": "20230101T00:00:00",  
"effectiveDate": "20220101T00:00:00",  
"organizationName": "ForeFlight",  
"noShare": "true"  
}
```

21.11.5 Effective & Expiration Dates

Effective and expiration dates are an optional element of a content pack's manifest. The dates are depicted in the content pack's detail view. ForeFlight will also display red warning text in both the expiration date field and the content pack's summary in the left-hand list for any content pack that has passed its expiration date.

If the content pack includes plates within the **byop** folder, expired plates will display a red "EXPIRED" banner at the top of the Plates view. Expired content packs remain fully functional. The red banners only serve as a notice to the user that the content pack expiration date has passed.

Dates must be specified using the format "YYYYMMDDThh:mm:ss", where Y=year, M=month, D=day, h=hour, m=minute, and s=seconds. Single digit months, days, hours, minutes, and seconds should be preceded by a single 0 character. The "T" in the string date is required, and is a delimiter that separates the date portion from the time portion (see the example manifest JSON above). Both times are interpreted in relation to the device's local time setting, *unless* a "***Z**" suffix is added to indicate zulu time, as in: "YYYYMMDDThh:mm:ss**Z**"

For ForeFlight Military Flight Bag customers, special logic has been implemented to impose an expiration date on *Giant Report* zip files downloaded from the NGA aerodata website. Any content pack with a file name formatted as "Giant_Reports-YYYY-MM-DD" will automatically be assigned an expiration date corresponding to 8 days after the publication date identified in the file name.

21. CUSTOM CONTENT

21.11.6 Disable Content Pack Sharing

To prevent users from **sharing a content pack** from within ForeFlight, add the line “noShare”: “true” to the manifest.json file. This hides the Send To button whenever the content pack is being viewed in ForeFlight’s Custom Content view.

Adding “noShare”: “true” to one content pack does not disable sharing of other content packs installed on the same device. The code must be added to the manifest for each content pack you do not want to be shared.

```
{  
  "name": "Sample Content Pack",  
  "abbreviation": "FFCP.V2",  
  "version": 2.0,  
  "expirationDate": "20230101T00:00:00",  
  "effectiveDate": "20220101T00:00:00",  
  "organizationName": "ForeFlight",  
  "noShare": "true"  
}
```

Disable Content Pack Sharing

Once content pack sharing is disabled, the Send To button will be hidden regardless of how the content pack was imported. For instance, whether you imported it via AirDrop or downloaded it via an integrated cloud drive, the Send To button will remain hidden when you select the content pack from the Custom Content view.

To enable sharing, remove “noShare”: “true” from the manifest.

21. CUSTOM CONTENT

21.11.7 NavData

The navdata subfolder contains **custom map layers**, **user waypoints**, and files that are associated with map layer waypoints.

Content Pack Map Layers

Custom map layers imported via content pack behave similar to map layers imported as standalone files. The exception is that map layers imported via content pack can have waypoints that are linked to supporting files (associated information).

Content Pack User Waypoints

User waypoints imported via content pack are not appended to the user waypoint list. As a result, user waypoints imported via content pack are not synced to the account. A user waypoint file added via content pack is selectable from the map layer dropdown menu. The CSV file name appears in the map layer dropdown menu.

Associated Information

Files that are related to a waypoint in a KML, KMZ, or geojson map layers can be added to the navdata subfolder. Associated files can be image or PDF documents. Adding a file to the navdata subfolder allows you to select the file for viewing from the Maps page.

Associated files are linked to waypoints by their naming convention. To link a file to a waypoint, use the following file naming convention: “Waypoint _Name Document Description”.

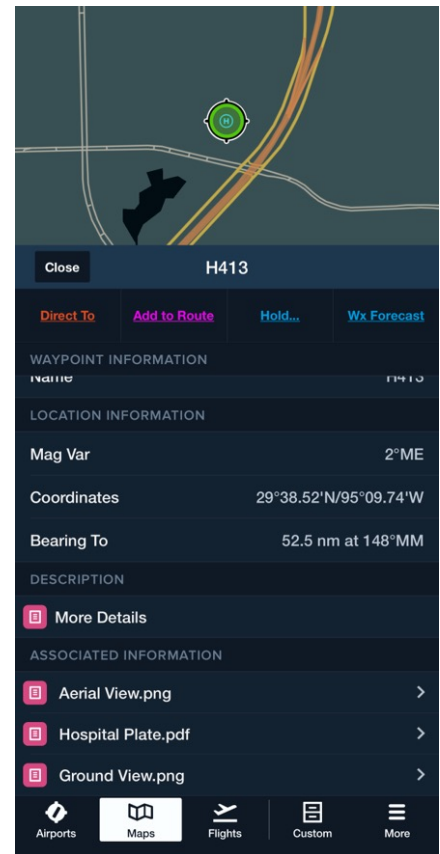
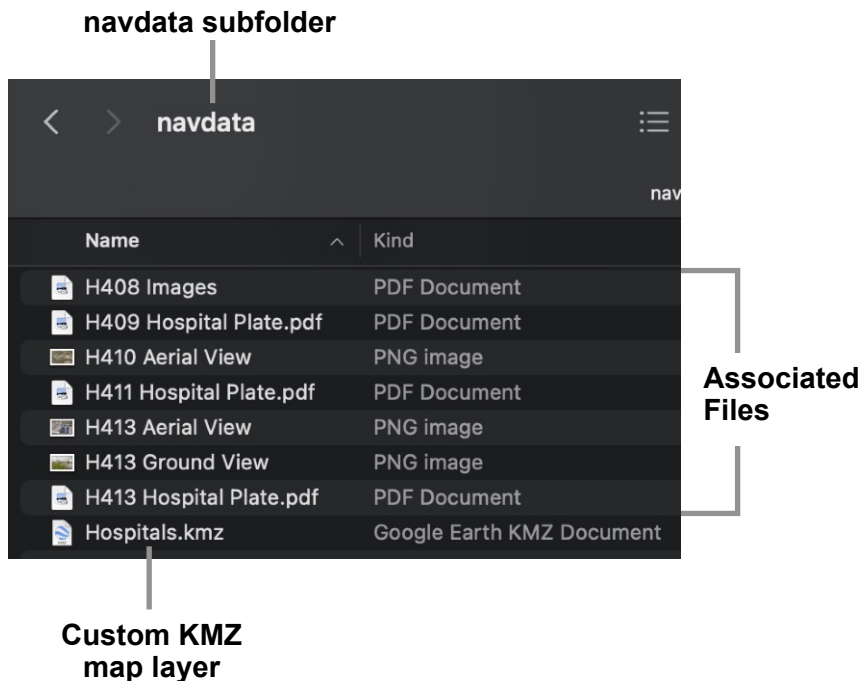
The waypoint name and document description are separated by a space. For example, a document named “H413 Aerial View” links the “Aerial View” file to the H413 waypoint.

21. CUSTOM CONTENT

The first component of a document's name (H413) links the document to the waypoint in the custom map layer. The waypoint name in the associated file should match the waypoint name in the custom map layer.

The second component of the file's name is what will be displayed in the waypoint's slide-over menu. In the image below, note how multiple associated files are linked to the waypoint H413. Each file is accessible by tapping the waypoint on the map. The document description is displayed in ForeFlight exactly as the file is named (e.g. Aerial View, Hospital Plate, Ground View).

Associated PDF, PNG, and IMG files can be accessed from the map by tapping the custom map layer waypoint icon and selecting an associated file. Tapping an associated file opens the file in the Documents view.



**H413 Waypoint with
Associated Information**

21. CUSTOM CONTENT

21.11.8 Layers

The layers subfolder contains custom charts. Custom charts in content packs operate the same as they do on their own. Content packs support the following types of map layer files: MBtiles, FBtiles, geospatial PDF, KML, and GeoJSON.

MBtiles, FBtiles, and geospatial PDFs appear at the bottom of the left column in the Maps layer selector, and KML and GeoJSON files appear in the bottom of the right column.

21.11.9 Importing Content Packs

Before a content pack can be imported, it must be compressed (zipped). Compress the main folder of the content pack and share the zipped file to your device via one of the supported methods. Files can be compressed by right-clicking the content pack's main folder and selecting **compress** from the menu.

Content packs can be imported via AirDrop, Mail, web browser, hyperlink, and cloud document drive (DropBox, Box, S3). Once a content pack has been shared with the device, a menu appears that lists all installed apps capable of importing the content pack. Select **ForeFlight** from the list of installed apps.

After selecting ForeFlight, the app will automatically open and import the content pack. Once the content pack is installed, a confirmation message will appear with options to dismiss the message or view the content pack. Selecting **View** in the pop-up menu displays the content pack in **More > Custom Content**.

Importing/Hosting via Hyperlink

If you have a content pack hosted somewhere that you want to make available for download in ForeFlight, you can configure a hyperlink to make the content pack download through ForeFlight using this URL scheme: "https://foreflight.com/content?downloadURL=<The URL to the content pack location>".

Users can install the content pack to a device with ForeFlight installed by tapping or long-pressing the link and selecting **Open in ForeFlight**. Opening the link with ForeFlight adds the content pack as an available download. If Automatic Downloads are enabled on the device, the content pack will automatically download.

To see this in action, long-press on [this link](#) using a device with ForeFlight installed and tap **Open in ForeFlight**. You can also tap on the link and swipe down on the next page (a 404 page) to find the Open in ForeFlight banner at the top of the page.

21. CUSTOM CONTENT

21.11.10 Content Pack Cloud Drive Integration

If you have a Pro Plus, Performance Plus, Business Performance or MFB Performance plan, you can import content packs into ForeFlight using a linked cloud storage account (Dropbox, Box, or Amazon S3). Importing via cloud drive is the recommended method for multi-pilot accounts.

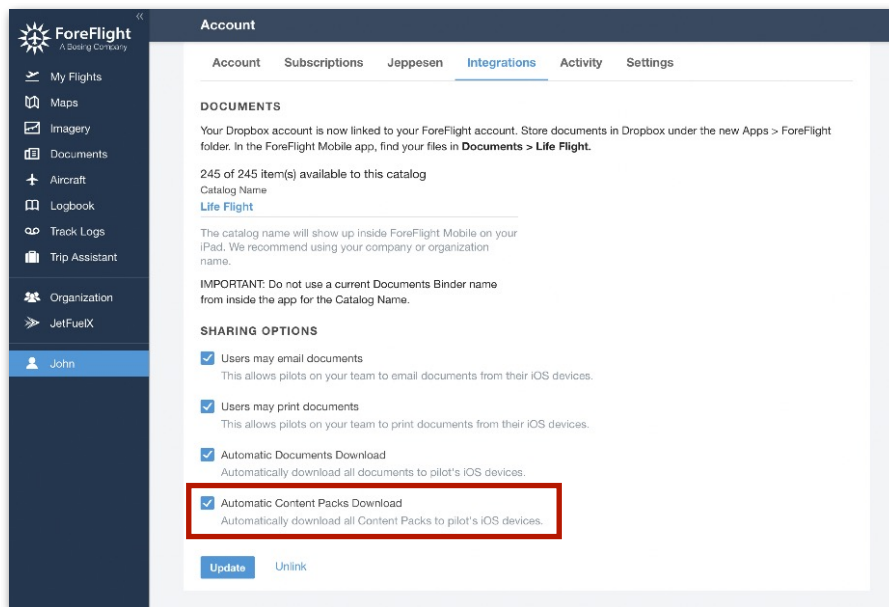
To import content packs via Cloud Documents, add a folder named “contentpack” to the folder you use to import documents. The content pack subfolder must be located in the root folder as depicted below.

- **Dropbox:** ~/Dropbox/Apps/ForeFlight/contentpack/
- **Box:** ~/Box Sync/ForeFlight/contentpack/
- **Amazon S3:** Add the “contentpack” subfolder to the drive used to import documents

Once the contentpack folder is created, add zipped content packs to the folder. Individual files imported via cloud documents, including content packs, must be below 500MB in size.

21.11.11 Automatic Content Pack Download

Content packs imported via cloud drive can be installed automatically or manually. To specify how content packs should be installed, log into **ForeFlight Web** from an administrator account and select **Account** (left sidebar) > **Integrations** > **Cloud Documents**.



Automatic Content Pack Download Setting

21. CUSTOM CONTENT

When automatic content pack downloads are enabled, users are prompted and required to download content packs. A red download badge is displayed for content packs that are uploaded to the document drive and not yet downloaded to the device. When deleting a content pack from ForeFlight Mobile, a prompt to reinstall the content pack is immediately displayed.

If automatic content pack downloads are enabled and **Automatic Downloads** are enabled on the device, content packs uploaded to the cloud drive will be automatically installed on the device when connected to the internet.

If automatic content pack downloads are disabled, users are not required to download content packs. Content packs uploaded to the cloud drive appear as available for download in the **Custom Content** view but a badge is not depicted when new content packs are available.

22.11.12 Updating Content Packs

Content packs can be updated by replacing the content pack in the cloud drive with a file with the same name. When content packs are replaced in cloud drives, ForeFlight installs the updated content pack and automatically removes the old one.

The old content pack is *not* removed if an updated content pack is installed with a different name. If updating a content pack via a method other than integrated cloud drive, ForeFlight does not automatically remove the old content pack.

22.11.13 Content Pack Sharing

By default, content packs can be shared from within ForeFlight Mobile. To share a content pack:

1. Tap **More > Custom Content**.
2. Tap the content pack you want to share.
3. Tap the **Send To** button in the upper toolbar.
4. Use the standard iOS sharing options to share the content pack.

To prevent a content pack from being shared from within ForeFlight Mobile, see **Disable Content Pack Sharing**.

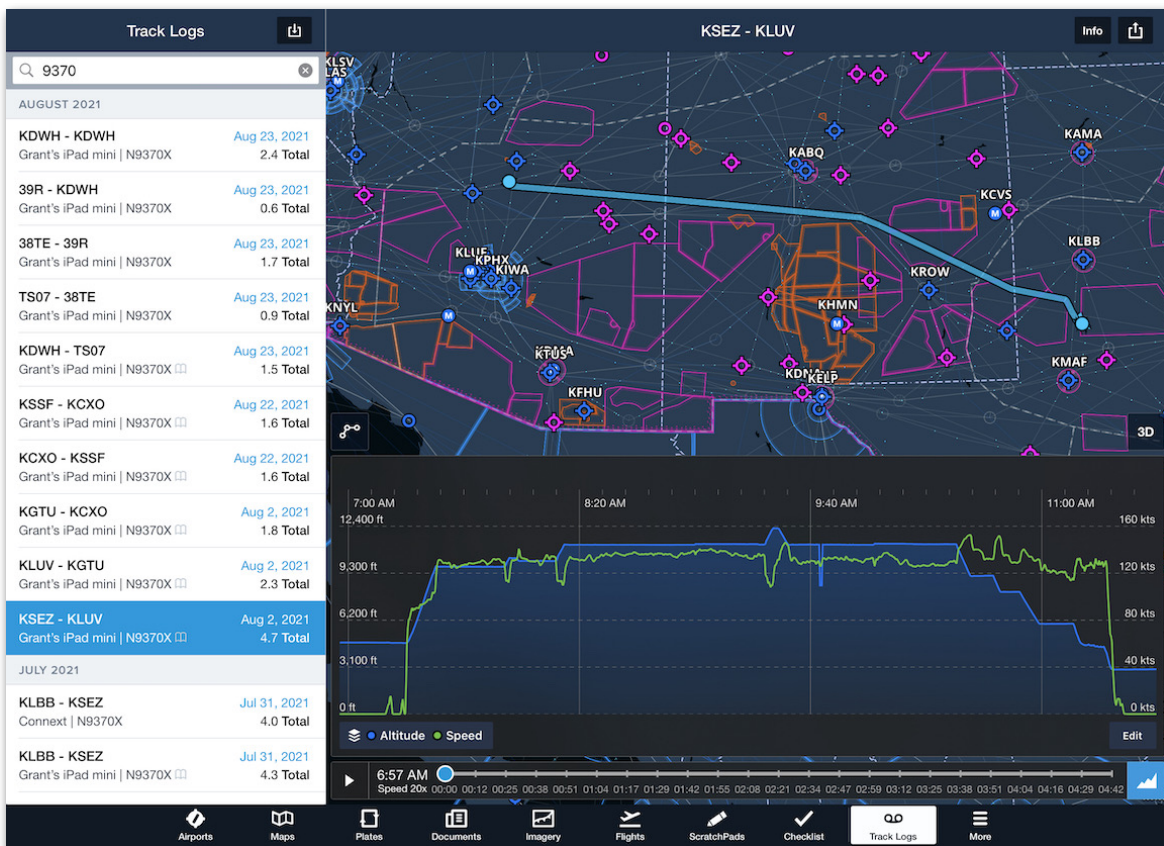
TRACK LOGS

Track Logs is an optional feature included with all ForeFlight subscriptions that allows pilots to record flights using the iPad or iPhone's built-in GPS or a compatible external GPS. Track Logs is a useful, integrated debriefing tool that syncs to your account.

A track log recording can be **shared**, viewed in other apps, and associated with logbook entries. Recordings capture GPS position, altitude, and groundspeed data at a rate of once per second and are less than 300 KB in size per hour. If connected to a supported **external AHRS device**, Track Logs records the flight's pitch and bank at the same rate.

To access the Track Logs view, tap the **Track Logs** button in the navigation toolbar at the bottom of the screen or select **More > Track Logs**. To configure how track logs are recorded, tap **More > Settings** and scroll to the **Track Log section**.

The Maps view can display a button for **manually recording track logs** and a timer to indicate when a track log is being recorded.



Track Logs View

22. TRACK LOGS

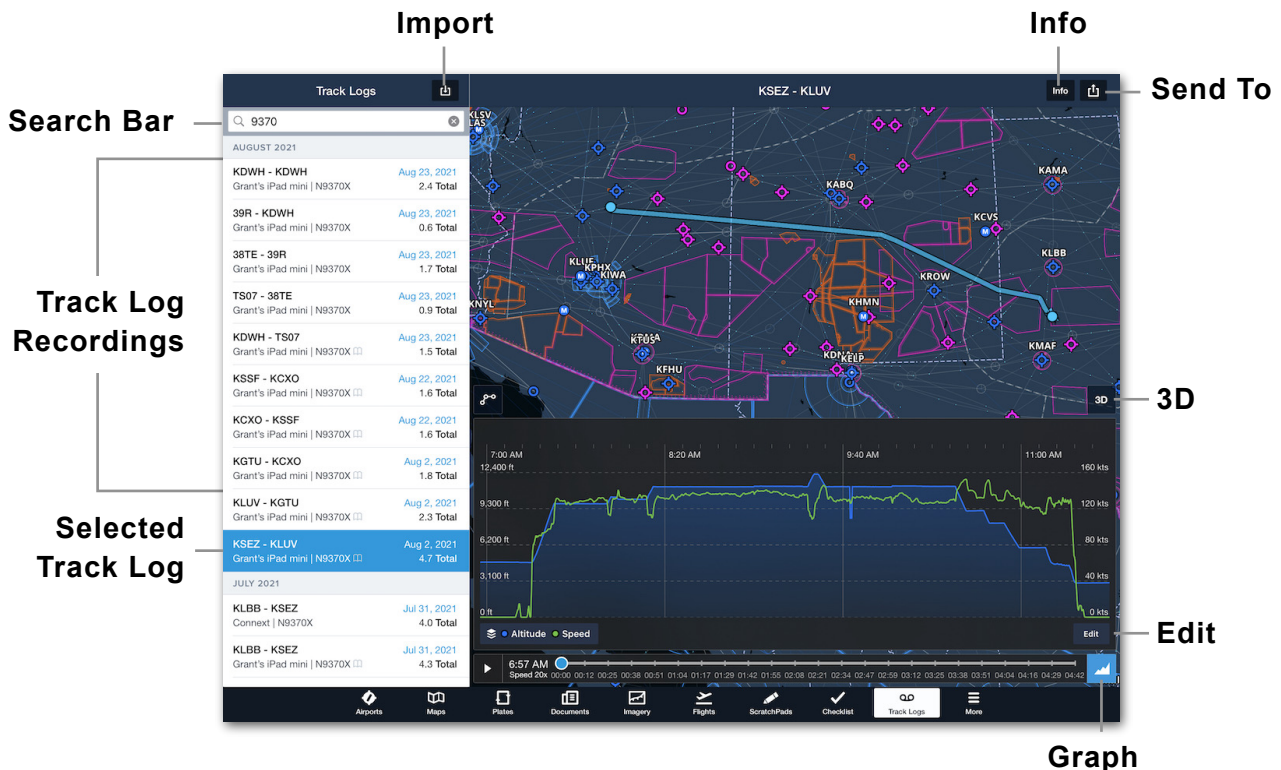
22.1 Design

The Track Logs view displays a list of **Track Log Summaries** on the left, sorted by date. In portrait mode, tap the **Track Logs / Close** button in the upper toolbar to show and hide the summaries.

A search bar at the top of the list allows track logs to be filtered by departure, destination, aircraft, or GPS data source.

The selected track log is highlighted in blue and is displayed on the interactive map and graph to the right. Buttons along the perimeter of the view serve the following functions:

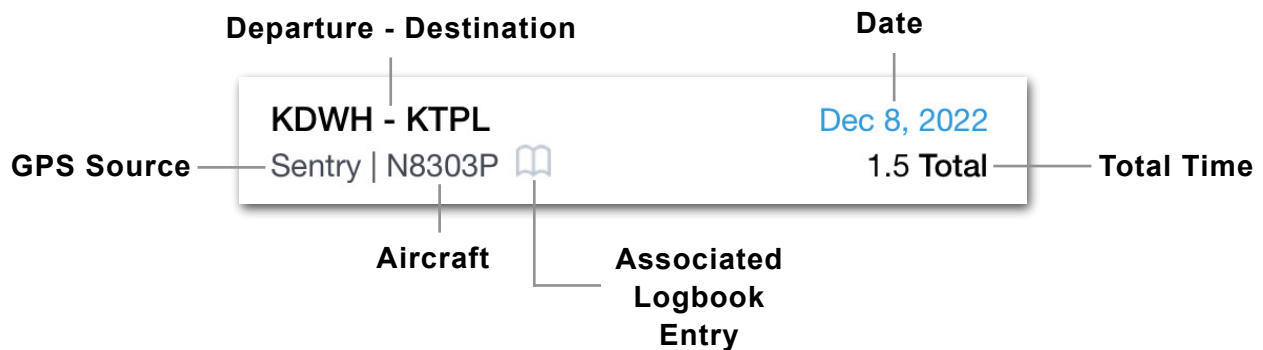
- The **Import** button allows **G1000** and **Sentry Plus** track logs to be imported.
- The **Info** button reveals a pop-up with additional **Track Log Information**.
- The **Send To** button allows the selected track log to be sent to Logbook or shared outside of ForeFlight Mobile.
- The **3D** button opens **Track Log 3D Review**.
- The **Edit** button enables **Track Log Trimming**.
- The **Graph** button hides and shows the **Track Log Graph**.



22. TRACK LOGS

22.1.1 Track Log Summary

Each track log contains a summary with the following information.



- **Departure - Destination:** The starting and ending points are automatically derived by comparing the track log's starting and ending coordinates to nearby airports, seaports, and heliports. If no airport, seaport, or heliport is within 2 nm, the coordinates are displayed. If the incorrect location is automatically filled, it can be corrected by tapping the **Info** button.
- **GPS Source:** When a track log recording is started, the current GPS data source is captured. The GPS source is the *initial* source, not the source used for most of the recording. For example, if a recording is started and an external device is later connected, the track log will indicate the iPad or iPhone was the initial GPS data source. It is *not* possible to adjust this field.
- **Aircraft:** The aircraft's tail number is determined by the following logic:
 - If **ADS-B ownship** is detected during the flight, the ownship aircraft is assigned.
 - If no ownship is detected, the track log's start time is compared to planned flights. If a flight with a similar estimated departure time is found, the aircraft from the flight is assigned.
 - If ownship is not detected and no flights are planned, the default aircraft profile is assigned.
- **Date:** The date at the start of the track log.
- **Total Time:** Time between the start and end of the track log. If a track log is trimmed, the Total Time reflects the edits.
- **Associated Logbook Entry:** If the track log has an **associated logbook entry**, a Logbook Badge is displayed.

22. TRACK LOGS

22.1.2 Track Log Map

The map overlays the selected track log's flight path on top of the **Aeronautical Map**. The Track Log map is similar to the one found on the Maps view, but it cannot be used to interact with or filter the map elements.

When first opened, the flight path is centered on the map. The map is interactive and responds to standard touch gestures. To recenter the map on the flight path after panning or zooming, tap the **Fit To Map** button.

By default, the **Graph** is overlaid on the map. To hide the Graph and display a larger map, tap the **Graph** Button.

If a **Marked Position** was created during the flight, it will appear on the map and can be tapped to edit or review its details.



22. TRACK LOGS

22.1.3 Track Log Graph

The Track Log Graph displays two data types along a linear timescale. Altitude and Speed are shown by default, but any two of the following options may be selected depending on how the track log was recorded. Tap the **Data Menu** to select options.

- **Altitude:** GPS altitude data as provided by the GPS data source.
- **Speed:** Groundspeed as determined by ForeFlight.
- **Pitch:** Pitch attitude as provided by an external AHRS source. If no AHRS external device was connected during the flight or if saving a **Breadcrumb** as a track log, this option is not selectable.
- **Bank:** Bank attitude as provided by an external AHRS source. If no AHRS external device was connected during the flight or if saving a **Breadcrumb** as a track log, this option is not selectable.
- **g Load:** Acceleration data as provided by a Sentry+. If the flight was conducted without Sentry+, this option is not selectable.

Track Log Graph Design

The top data selection (i.e., **Speed** in the screenshot below) is displayed on the left y-axis of the graph. The bottom selection is displayed on the right. The minimum and maximum y-axis values dynamically adjust to reflect the minimum and maximum values recorded during the flight. The track log's local time is displayed across the top of the Graph and a time slider is displayed along the bottom.



22. TRACK LOGS

22.2 Required Equipment

To create a track log, ForeFlight needs access to GPS data. This data can be obtained from either the device's built-in GPS or from an external Bluetooth or Wi-Fi GPS.

If multiple GPS sources are available, Track Logs will use GPS data according to the **GPS priority logic**. When recording a track log, the GPS source that is providing data for the moving map is the same source that is being recorded to the track log.

22.2.1 External GPS

Track Logs can use external Bluetooth or Wi-Fi GPS data. Access to *external* GPS data does *not* rely on the **iOS Location Services** setting. When a track log is recorded while connected to an external GPS, the track log is still considered to be recorded by ForeFlight. The external device simply provides ForeFlight with GPS data.

Wi-Fi GPS Devices

GPS data delivered over Wi-Fi can only be accessed when ForeFlight is actively being used. This leads to two possible scenarios if ForeFlight is closed while recording:

- **Wi-Fi only iPad:** If recording a track log with a Wi-Fi only iPad, the track log will stop two minutes after being closed as GPS data is no longer accessible.
- **Cellular-Capable iPad or iPhone:** If recording a track log with a cellular-capable device, the track log will revert to use built-in GPS data after external GPS data is no longer accessible.

IMPORTANT: If recording track logs with an external Wi-Fi GPS, ForeFlight should remain open for the entirety of the flight. GPS data cannot be accessed via Wi-Fi while ForeFlight is inactive.

NOTE: A change to the GPS source can result in erratic GPS data.

Bluetooth GPS Devices

External Bluetooth GPS data can be accessed when ForeFlight is in the background. The limitations that apply to Wi-Fi GPS devices do not apply to Bluetooth.

22. TRACK LOGS

22.2.2 Built-In GPS

Access to the iPhone or iPad's built-in GPS relies on the **iOS Location Services** setting being enabled.

To record track logs while ForeFlight is in the background, ForeFlight's Location Services setting must be set to **Always**. If the Location Services setting is set to **While Using the App**, Track Logs will not be able to access the built-in GPS data while ForeFlight is inactive.

NOTE: Wi-Fi only iPads do not have built-in GPS and cannot use GPS data from a hotspot-enabled iPhone.

22.2.3 Background Recording

Track logs recorded while using the device's built-in GPS or a Bluetooth GPS can record while ForeFlight is in the background. Track logs recorded with a Wi-Fi only iPad and external Wi-Fi GPS cannot be recorded while ForeFlight is inactive.

22. TRACK LOGS

22.3 Recording Track Logs

There are five methods for recording a track log. The use of one method does not prohibit others. Multiple devices can simultaneously record a track log. For example, if you fly with a backup device, that device may also record a track log, resulting in duplicate recordings for a single flight. In other words, flights have the potential to generate multiple track logs.

Track log recording methods are listed below and described throughout this section.

- Automatic track log recording with ForeFlight.
- Manual track log recording with ForeFlight.
- Saving a **Breadcrumb** as a track log.
- Recording a track log with a **Flight Data Recorder** (FDR).
- Recording a track log with a **Garmin G1000**.

22.3.1 Automatically Recording Track Logs

Automatically recording a track log is the most common way to record. With this method, ForeFlight automatically starts recording after takeoff and stops after landing. Track logs that are automatically started can be manually stopped and vice versa.

Enabling Automatic Recordings

To enable this feature, tap **More** > **Settings** and scroll to the Track Log section. Verify **Enable Auto Start/Stop** is toggled on.

Auto-Start Criteria

In order to detect a takeoff and start a track log, the following must be met:

- ForeFlight must remain open with available GPS data during the takeoff phase.
- Acceleration must be detected and groundspeed must exceed 60 knots.

NOTE: If ForeFlight is opened *after* takeoff, the auto-start feature will not work.

When started automatically, the track log start time reflects when ForeFlight was opened *prior* to takeoff (up to 30 minutes). This time is intended to account for taxiing.

If the start (or end time) is incorrect as a result of using automatic recording, it can be edited. See **Trimming Track Logs** for additional information.

22. TRACK LOGS

Verifying Automatic Starts (Flight Timer)

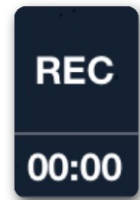
There are no notifications when ForeFlight automatically starts a track log. To verify that a track log recording has started, reference the Flight Timer.

IMPORTANT: If the Flight Timer is not active, ForeFlight is not recording a track log.

Flight Timer

When a track log recording is in progress, either from automatic or manual initiation, the Flight Timer displayed on the Maps view shows the duration of the current recording.

The timer is displayed in the lower left corner of the Maps view below the Track Log **REC** (record) button.



Flight Timer

Auto-Stop Criteria

Track logs are automatically stopped 15 minutes after a landing is detected. This is true for recordings that are started automatically or manually. A landing is defined as the portion of flight where:

- groundspeed slows from above 60 knots to less than 40 knots, and;
- height AGL descends below 250 feet.

In addition to landing auto-stop, track logs also automatically stop when *either* of the following conditions exists:

- ForeFlight is closed and no GPS data is received for 2 minutes, which is a typical scenario when using a Wi-Fi only iPad and Wi-Fi based external GPS. In such a case, GPS data from Wi-Fi cannot be accessed as ForeFlight is inactive.
- A landing is not detected and groundspeed is below 40 knots for two minutes.

NOTE: Once a track log has stopped, it cannot be manually resumed. Additionally, track logs cannot be merged.

Auto-Stop Exceptions

If another takeoff is detected within 15 minutes of a landing, the track log is resumed. This scenario is intended to account for touch-and-go and full-stop taxi back landings.

NOTE: To record multiple legs with stops exceeding 15 minutes as a single track log, disable automatic recording and manually start and stop the track log.

22. TRACK LOGS

22.3.2 Manually Recording Track Logs

Track logs can be manually started and stopped by tapping the **REC** button on the Maps page.

Enabling the REC Button

The REC button is enabled by tapping **Map Settings > Track Log Record Button** or by tapping **More > Settings**, scrolling to the Track Log section, and tapping **Enable Start/Stop Control**.

Manual Recordings with Auto Start/Stop Enabled

Manually starting or stopping a track log is not affected by the automatic track log recording feature. Track logs can be manually started and stopped with automatic track log recordings enabled or disabled.

To manually start a track log recording:

1. Open the ForeFlight Maps page.
2. Tap the **REC** button.
3. The timer starts and the REC button is highlighted blue to indicate that the recording is active. Unlike automatic recordings, no time is added to a track log that is manually started or stopped.

To manually stop a track log recording:

1. Open the ForeFlight Maps page.
2. Tap the **REC** button. A new track log is created for every recording in excess of one minute.

22. TRACK LOGS

22.3.3 Saving Breadcrumbs as Track Logs

Breadcrumbs are an optional feature included with all ForeFlight plans that draw a thin green line on the Map indicating your path since takeoff. When enabled, the breadcrumb automatically displays when groundspeed exceeds 40 knots and height AGL exceeds 250 feet.

Breadcrumbs automatically stop when height AGL decreases below 250 feet or groundspeed slows below 40 knots. See [Breadcrumbs](#) for a video demonstration.

Breadcrumbs remain displayed on the Map until manually cleared or until the user-specified time has elapsed without another flight being detected. To adjust how long breadcrumbs are displayed, tap **More > Settings > Breadcrumbs Clear After** and select an option.

Breadcrumbs are independent of Track Logs. However, they can be saved as a track log, which serves as an alternative (or supplement) to manually or automatically recording a flight.

When a breadcrumb is saved, it is accessible from the Track Logs view and is indistinguishable from other track logs.

Breadcrumbs do not affect ongoing track log recordings. In other words, a track log can be recorded for a flight and a breadcrumb saved as a track log, resulting in duplicate track logs.

When compared to Track Logs, Breadcrumbs have the following differences:

- Breadcrumbs do not record pitch or bank data.
- Breadcrumbs do not contain a timer.
- Breadcrumbs do not automatically save.
- Breadcrumbs do not have a dedicated view.

IMPORTANT: Breadcrumbs do not record pitch or bank data.

22. TRACK LOGS

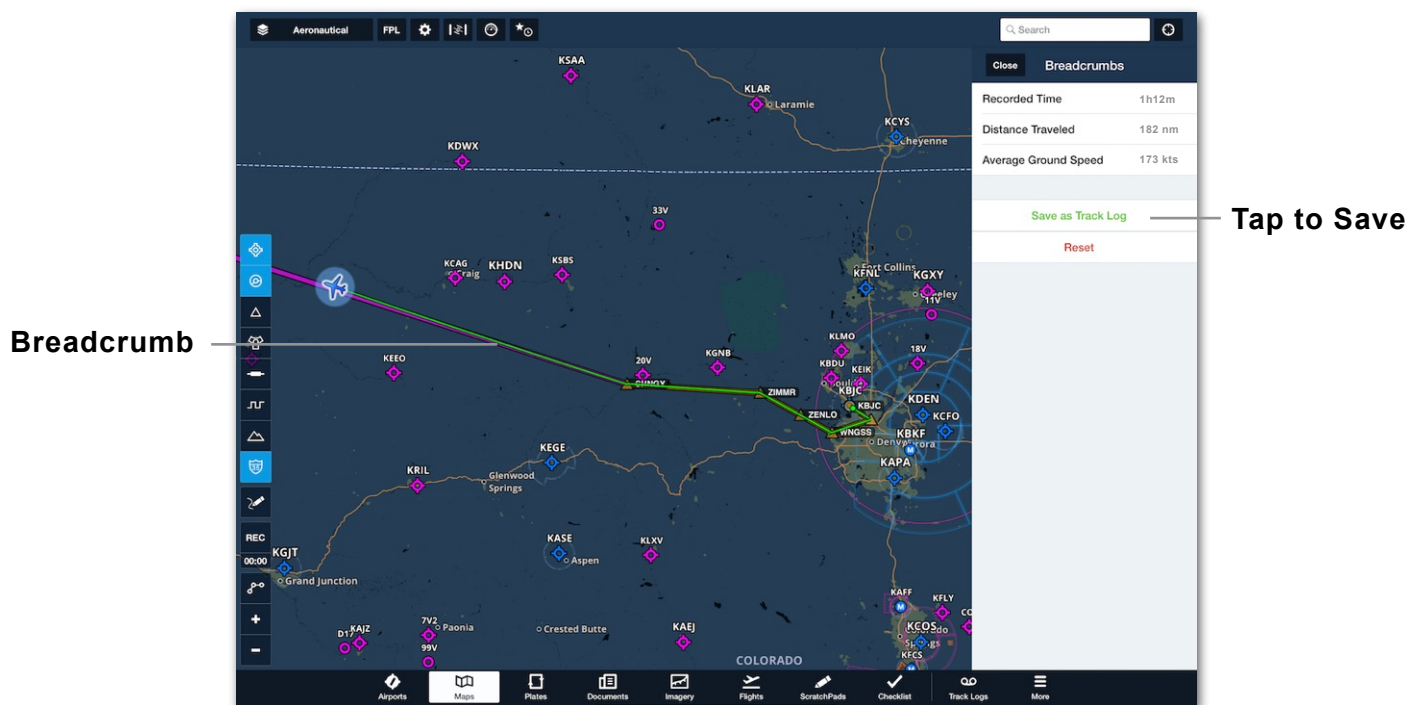
Saving Breadcrumbs as a Track log

Breadcrumbs can be saved at any time. This is useful for saving a particular maneuver or portion of flight. When a breadcrumb is saved, its track log's start and end time reflect the displayed breadcrumb.

After a breadcrumb has been saved, it is cleared from the map and a new breadcrumb is automatically started if groundspeed exceeds 40 knots and height AGL exceeds 250 feet. It is not possible to save a breadcrumb while also leaving it displayed on the map.

To save a breadcrumb:

1. Select the **Maps** view and tap the breadcrumb.
2. Tap **Save as Track Log** in the sidebar. The breadcrumb immediately becomes available in the Track Logs view.



Saving a Breadcrumb

Clearing Breadcrumbs

To clear a breadcrumb without saving it:

1. Select the **Maps** view and tap the breadcrumb.
2. Tap **Reset**.

22. TRACK LOGS

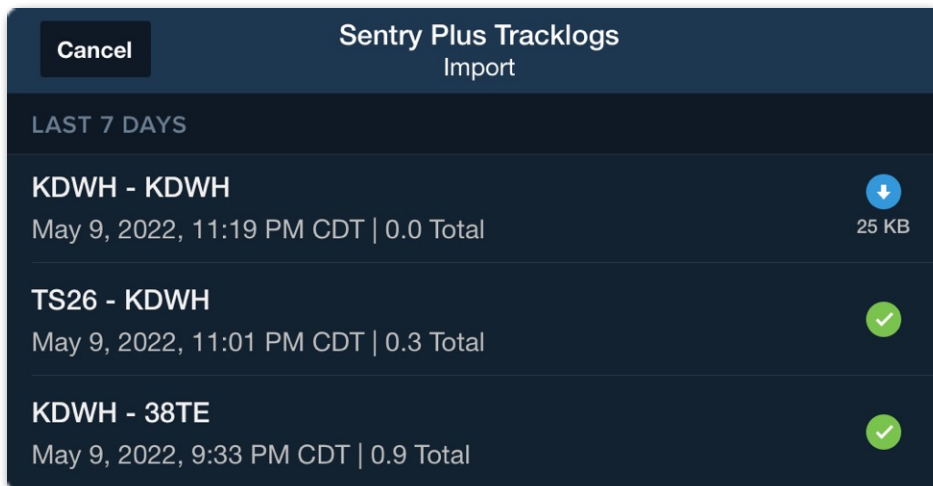
22.3.4 Recording with a Flight Data Recorder

Flight data recorders (FDRs) are external devices that record your GPS and AHRS flight data. As depicted in the image below, the ForeFlight **More > Devices** view is used to import track logs that were recorded with an FDR.

Recording a flight with an FDR does not prohibit ForeFlight from recording a track log or saving a breadcrumb. As such, the two operate independently and it's possible to record multiple track logs simultaneously for the same flight.

ForeFlight supports the following FDRs:

- **Sentry Plus**
- **Stratus 2/2S/2i/3/3i**



Sentry Plus FDR Track Logs

22. TRACK LOGS

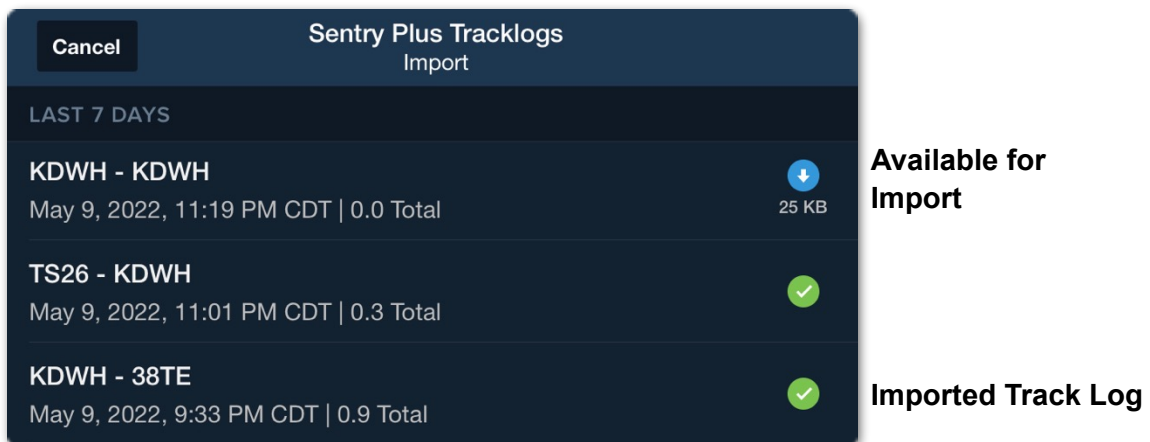
Sentry Plus Flight Data Recorder

The Sentry Plus Flight Data Recorder automatically captures track, altitude, attitude, groundspeed, and g-load data from Sentry Plus every second (1 Hz) for every flight.

The flight data recorder automatically starts recording continuously when Sentry Plus is powered on until it is powered off.

To import Sentry Plus Track logs:

1. Open ForeFlight while connected to Sentry Plus and select **More > Track Logs**.
2. Tap the **Import** button in the upper toolbar.
3. Tap **From Sentry Plus**.
4. Tap the blue download button next to a track log to import it.



Imported and Available Track Logs

Track logs that have already been imported to ForeFlight display a green checkmark. Track logs that have not been imported display a blue download button and an import file size. Sentry Plus track logs can be imported to multiple ForeFlight accounts.

See www.foreflight.com/sentry-guide for additional information or refer to the Sentry Pilot's Guide in-app by selecting **Documents > ForeFlight > Sentry > Sentry Pilot's Guide**.

22. TRACK LOGS

Stratus Flight Data Recorder

The Stratus Flight Data Recorder automatically captures up to 20 hours of track, altitude, attitude, and groundspeed data at a rate of five times per second (5 Hz). Flights are automatically recorded any time the unit is powered on and movement is

NOTE: Track logs cannot be shared in a format that will allow them to be imported to another ForeFlight account.

detected. Track logs are stopped when the unit is powered off. Older track logs are automatically overwritten as new flights are completed.

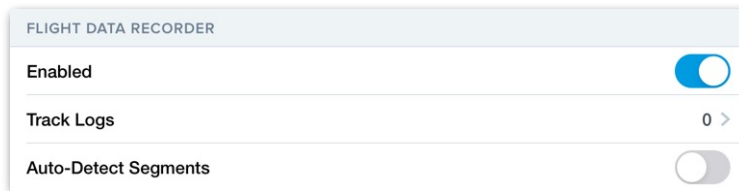
Stratus Flight Data Recorder Settings

The flight data recorder is enabled by default. To disable the Stratus Flight Data Recorder:

1. Go to **More > Devices** and tap the Stratus device tile.
2. Scroll to the Flight Data Recorder section and toggle the **Enabled** switch off.

Auto-Detect Segments

When enabled, the Auto-Detect Segments setting in **More > Devices > Stratus** stops track log recordings when a full-stop landing is detected. New recordings are started when a takeoff is detected.



Stratus Flight Data Recorder Settings

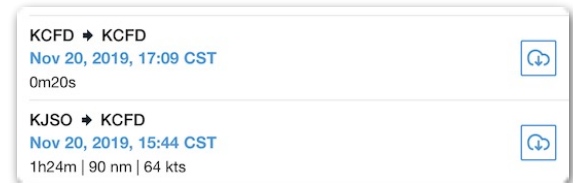
NOTE: ForeFlight can record track logs independently of the Stratus Flight Data Recorder. Importing flights from Stratus may result in duplicate track logs.

22. TRACK LOGS

Viewing Stratus Track Logs

Track logs recorded to Stratus are not automatically downloaded to ForeFlight. To view track logs, they must first be downloaded. To download Stratus track logs:

1. Go to **More > Devices** and tap the **Stratus Device Tile**.
2. Scroll to the Flight Data Recorder section and tap **Track Logs**. The number of track logs available for download are displayed on this row.
3. Locate a flight and tap the **Cloud** icon to download it from Stratus. Once downloaded, select **More > Track Logs** to view the flight.



Stratus Track Logs

22.3.5 Importing G1000 Track Logs

Properly configured Garmin G1000s can record track logs to a CSV file. These files can be transferred to an SD card using the G1000's top card slot. Track logs that have been saved to an SD card can be imported to ForeFlight by using a computer or an SD card reader. For a video demonstration, see [G1000 Track Log Import](#).

Importing G1000 track logs with an SD card reader

To import G1000 track logs using an SD card reader like the one pictured below, follow these steps:

1. Insert the SD card with G1000 track logs into the reader.
2. Plug the reader into your iOS device's Lightning or USB-C port.
3. Open ForeFlight Mobile and tap **More > Track Logs**.
4. Tap the **Import** button in the upper toolbar.
5. Tap **From G1000 (CSV File)**.
6. Locate and choose the SD card using the iOS Files view.
7. Tap the **Track Logs** folder.
8. Select the track logs to import.



SD Card Reader

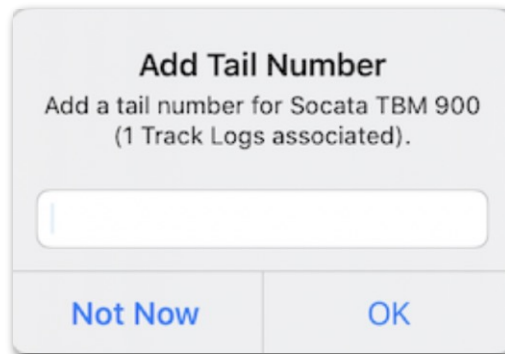
22. TRACK LOGS

Saving G1000 track logs using a computer

Using a computer, track logs can be transferred from the SD card to ForeFlight. This method requires the track logs to be saved to a cloud drive that is accessible from both a computer and your iOS device.

For example, if your computer has access to DropBox, iCloud, or Google Drive, the files can be saved to one of these directories and later accessed and imported with ForeFlight. Follow the steps below to import track logs using a computer:

1. Insert the SD card into a computer that has access to a cloud drive.
2. Copy the track log folder to the drive.
3. Open ForeFlight Mobile and tap **More > Track Logs**.
4. Tap the **Import** button in the upper toolbar.
5. Tap **From G1000 (CSV File)**.
6. Locate and tap the cloud drive, folder, or directory where the track logs are saved using the iOS Files view (e.g., DropBox).
7. Tap the **Track Logs** folder and select the track logs to import.
8. If importing a G1000 track log from a new aircraft, a prompt will appear and is used to enter the tail number to associate with the track log. Future imports from the same aircraft will use the same tail number and will not display the prompt.
9. After importing G1000 track logs, a “NEW” flag is displayed until the Track Logs page is navigated away from.



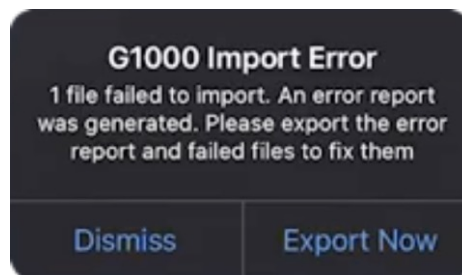
Add Tail Number Prompt

22. TRACK LOGS

Garmin G1000 Import Errors

If ForeFlight is unable to import a G1000 track log, a pop-up appears with an option to **Dismiss** or **Export** an error report. The error report contains the original CSV file and a text file with an explanation of the errors.

Using a program that is compatible with CSV files (e.g., Microsoft Excel), the track log can be edited according to the error report and an import can be reattempted.



Error Pop-up

22. TRACK LOGS

22.3.6 Marked Positions in Track Logs

Performance plan holders can record **Marked Positions** as part of track logs. See the Marked Positions **Support Video** for additional information.

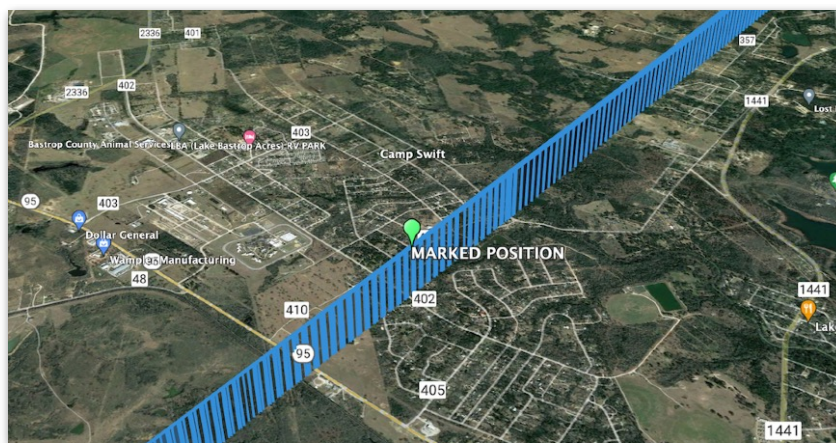
If marked positions are dropped during a flight while a track log is in progress, those marked positions are saved in the track log recording.

Likewise, if marked positions are dropped during a flight with a breadcrumb, and that breadcrumb is converted to a track log, the track log recording will also include the marked positions.



Track Log with Marked Position

When a track log containing marked positions is **exported** as a KML or CSV file, the file includes the marked positions and can be displayed in third-party apps.



KML File with Marked Position in Google Earth

22. TRACK LOGS

22.4 Track Log Review

Track Log Review is an integrated debriefing tool used to view and compare multiple data types simultaneously. To review a Track log, select **More > Track Logs** and tap a **Track Log Summary**. The selected track log's flight path is displayed on the **Interactive Map** and flight data is displayed on the **Track Log Graph**. For a video demonstration, see **Track Log Review**.

22.4.1 Animating Track Logs

Track logs can be reviewed and paused by tapping the **Play / Pause** button. When animating a track log, a thin vertical line appears on the Graph with two color-coded indicators that graphically depict the flight data at that moment. Above the vertical line, the actual flight data readout for that moment is displayed.

The airplane icon, flight data, graph, and flight time are updated dynamically at 20 times (20x) the actual speed of the flight. With the exception of scrubbing, it is not possible to animate track logs at a speed other than 20x.



22. TRACK LOGS

Track Log Scrubbing

Scrubbing a track log is a method for manually animating across a track log's timeline and can be used to animate the track log at a speed other than 20x.

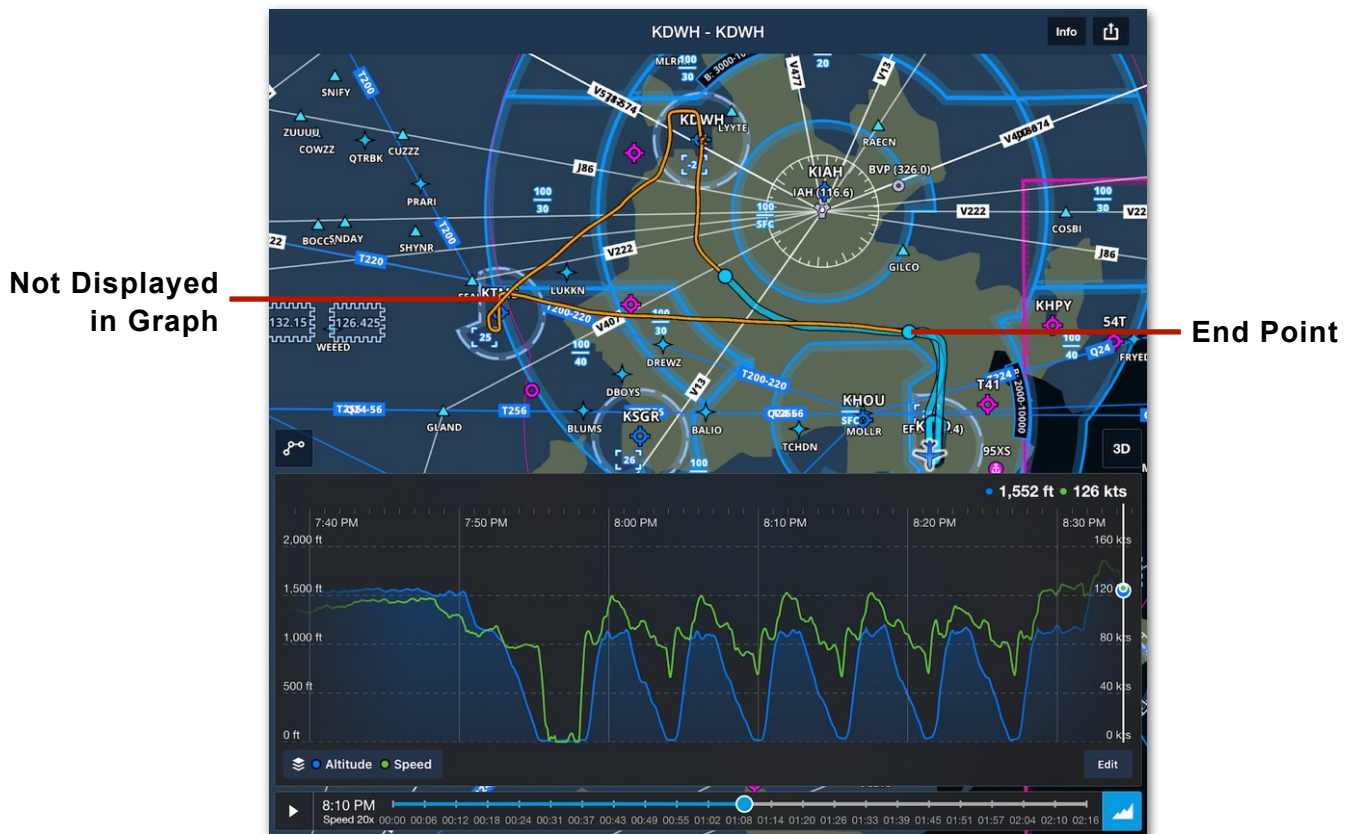
To scrub the track log, drag the blue dot on the time slider left or right. Alternatively, tap *and hold* a finger on the Graph. Without lifting your finger, slide it left or right.

If a track log is being animated and scrubbing is initiated, the animation will resume at the point where your finger was lifted.

Track Log Graph Zoom

The Graph can be zoomed to reveal more detail. To zoom the Graph, place two fingers on the Graph and separate them.

When zoomed in, not all portions of the flight are visible in the Graph. The portions of the flight path that are not visible are changed to a thin, orange path on the map and marked with Start/End points. To view the hidden portions, drag a finger left or right across the Graph.



Track Log Graph Zoom

22. TRACK LOGS

22.4.2 Track Log Info

Text-based track log information is available by tapping the **Info** button in the upper toolbar. When tapped, the Info button reveals a pop-up with up to six sections. Some fields within the pop-up can be edited. Track log definitions are found below.

Summary Section

The Summary section contains the following fields, many of which are editable.

- **Name** is an editable field that describes the track log. By default, the Name is the Start and End point separated by hyphen.
- **Tail Number** is an editable field that is automatically populated using the following logic:
 - If **ADS-B ownship** is detected during the flight, the ownship aircraft is assigned.
 - If no ownship is detected, the track log's start time is compared to planned flights. If a flight with a similar estimated departure time is found, the aircraft from the flight is assigned.
 - If ownship is not detected and no flights are planned, the default aircraft profile is assigned.
- **Date** is an automatically populated non-editable field based on the track log's start time.
- **Start** is the track log's starting location and is automatically derived by comparing the starting coordinates to nearby airports, seaports, and heliports. If no airport, seaport, or heliport is nearby, the starting coordinates are displayed.
- **End** is the track log's ending location and is automatically derived by comparing the ending coordinates to nearby airports, seaports, and heliports. If no airport, seaport, or heliport is nearby, the ending coordinates are displayed.
- **Pilot Name** is an optional, editable field for recording the name of the pilot. The pilot name is not forwarded to associated logbook entries.
- **Recorded On** is a non-editable field that indicates the device that provided the track log with GPS data when the track log was started (e.g., Sentry, Garmin Connex, iPad).
- **Imported From** is a non-editable field that indicates if the track log was imported from a flight data recorder (e.g., Sentry Plus, Stratus, or Garmin G1000).

22. TRACK LOGS

Metrics

The Metrics section is automatically calculated. Individual fields within this section are not editable. However, if a track log is **trimmed**, the Metrics section reflects the updates. Definitions for the Metrics section are found below.

- **Total Distance** is the flight's actual total distance flown.
- **Total Time** is the total time between the start and end of the track log.
- **Flight Time** is the time between detected takeoffs and landings.
- **Night Time** is the total flight time between the end of evening civil twilight and the beginning of morning civil twilight.
- **All Landings** is the number of day and night landings.
- **Average Ground Speed** is the average groundspeed between takeoffs and landings.

Time

Fields within the Time section are not editable. However, if a Track log is **trimmed**, the times reflect the updates. Definitions for the Time section are found below.

- **Time Out** is the start time of the track log in UTC.
- **Time Off** is the first detected takeoff time of the track log in UTC.
- **Time On** is the last detected landing time of the track log in UTC.
- **Time In** is the ending track log time in UTC.

22. TRACK LOGS

Logbook Entries

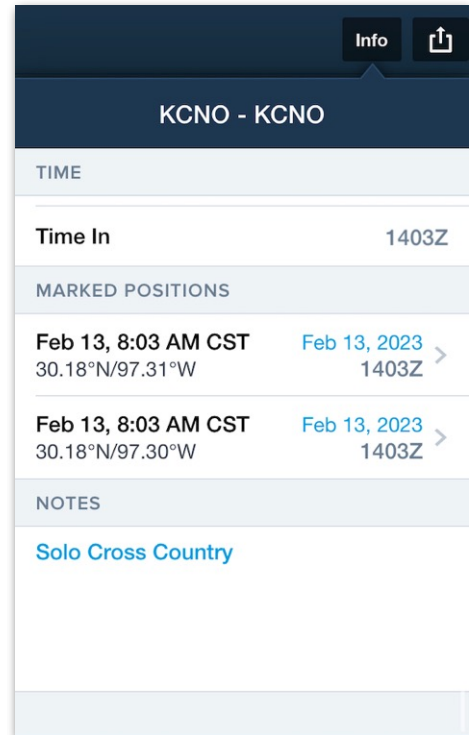
Track logs can be **shared to the Logbook**. Sharing a track log automatically populates fields within the Logbook entry. If a track log is shared to Logbook, the Logbook entries associated with the track log are listed in the Logbook Entries section. If the track log is not associated with a Logbook entry, this field is hidden.

Marked Positions

Marked Positions is an optional section that displays if **Marked Positions** have been added during the flight. Tap the Marked Positions listed in this section to view its details or to make edits.

Notes

The Notes section shows an optional field for recording comments. Notes are not forwarded to the Logbook if the track log is associated with a logbook entry.

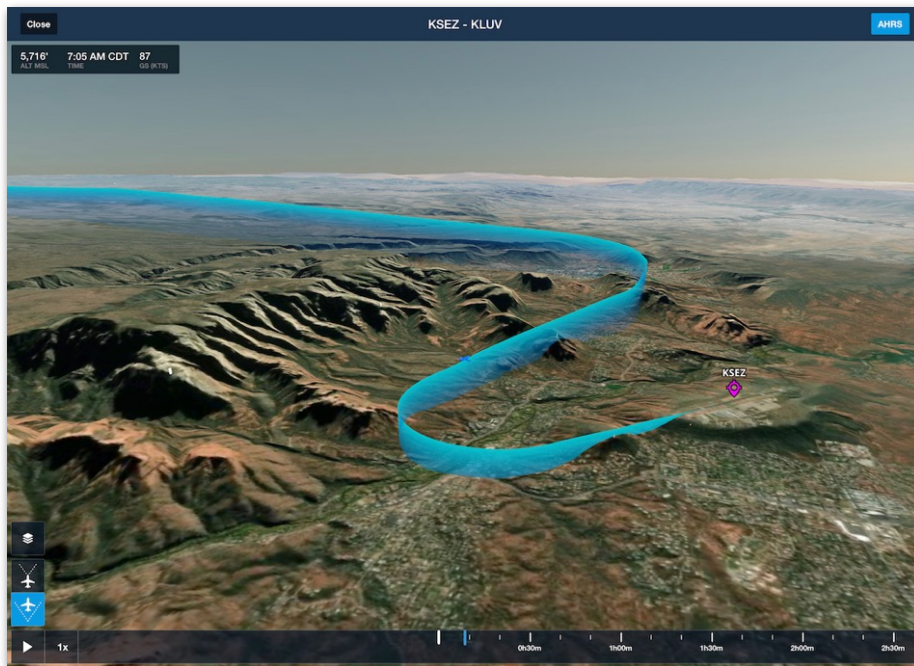


Marked Positions and Notes

22. TRACK LOGS

22.5 Track Log 3D Review

Track Log 3D Review combines high-resolution terrain, aerial imagery, and track log data to help pilots debrief their flights. 3D Review is included with all Performance plans. To review a flight in 3D, tap the **3D** button on the Track Log Map. For a video demonstration, see [Track Log 3D Review](#).



Track Log 3D Review

22.5.1 Design

The view consists of an interactive map, a flight path curtain, buttons for controlling the view, and an interactive time slider. The view supports standard touch gestures, two [viewing modes](#), and is always centered on the airplane.

AHRS Button

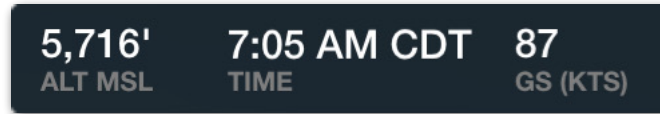
The **AHRS** button in the upper toolbar is enabled by default and causes the airplane's pitch and bank to reflect what was recorded in flight. When disabled, the 3D airplane remains straight and level when the track log is animated.

If a track log is recorded without an external AHRS device or a breadcrumb is converted to a track log, the track log will not contain pitch and bank data, and the 3D airplane will only show straight and level.

22. TRACK LOGS

Flight Details

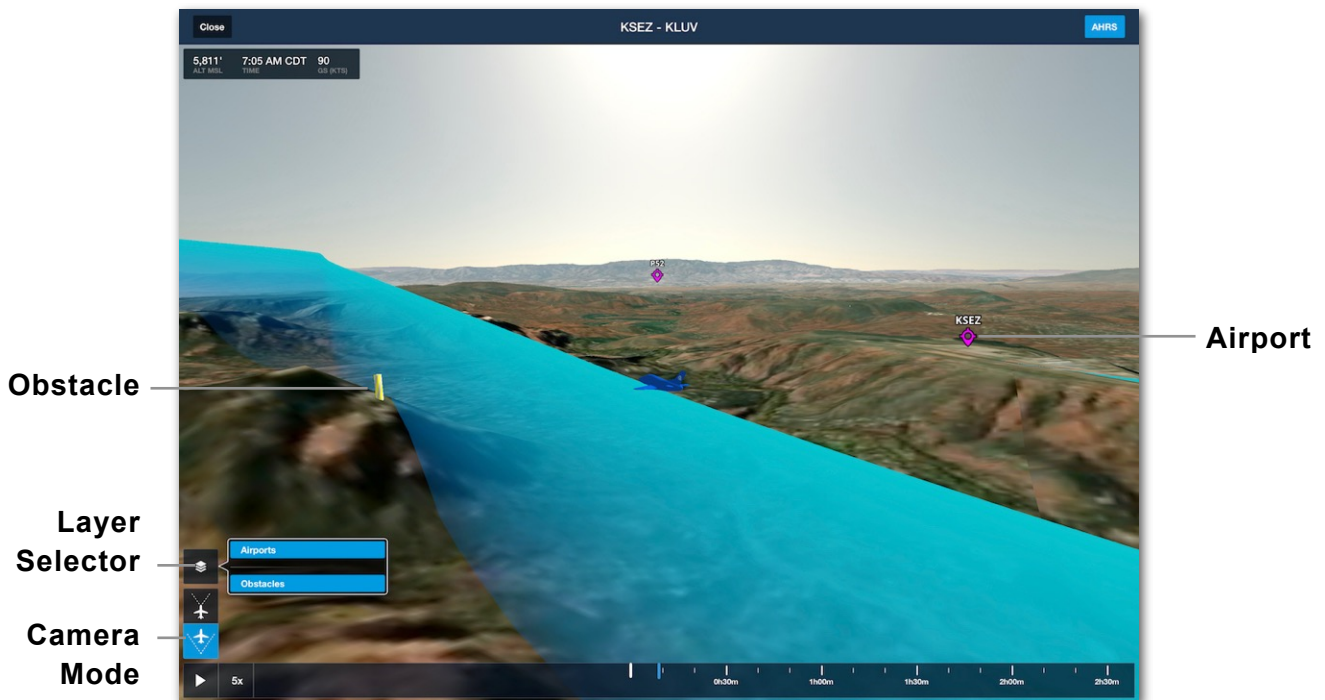
The window in the upper-left corner displays the GPS altitude, groundspeed, and local time of the 3D airplane. As the track log is animated, these values are dynamically updated.



Flight Details

Layer Selector

The Track Log 3D View can display airport and obstacle icons. Tap the **Layer Selector** to toggle these layers on or off. Airport icons can be tapped to reveal the Airport Sidebar. The Airport Sidebar in the Track Log 3D View is similar to the Sidebar available on the Maps view.



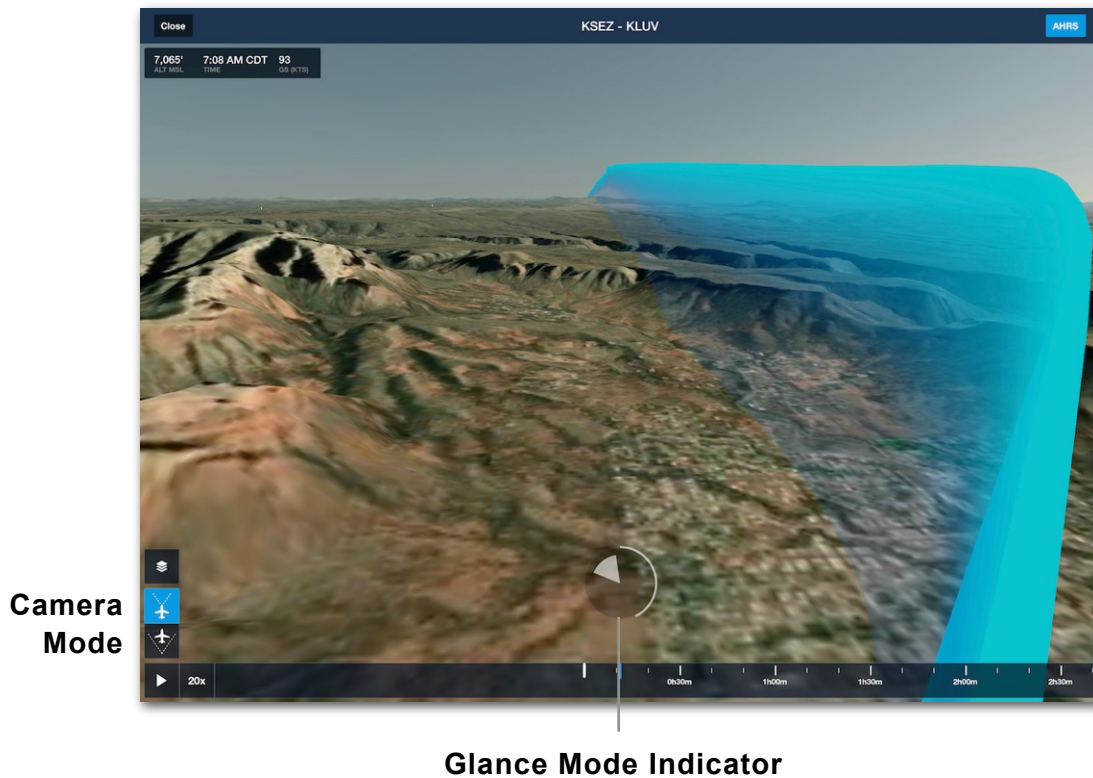
22. TRACK LOGS

22.5.2 3D Review Camera Modes

Track Log 3D Review supports first- and third-person perspectives. Use the buttons in the lower left corner to change perspectives. When in third-person, touch gestures cause the view to rotate about the airplane.

Glance Mode

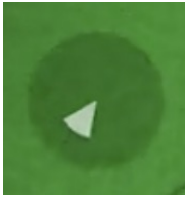
In first-person perspective, touch gestures enable Glance Mode, a zoomable, 360-degree view from the perspective of the cockpit. Once Glance Mode is enabled, a circular field of **view indicator** appears to show the camera orientation relative to the aircraft's ground track and horizon.



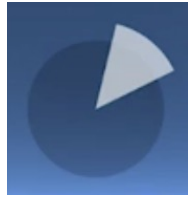
22. TRACK LOGS

Glance Mode View Indicator

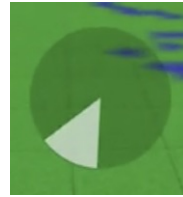
The view indicator “slice” shortens as the view tilts down, lengthens as the view tilts up, narrows as the view zooms in on a point in the distance, and widens as the view zooms back out to normal.



Tilted Down



Tilted Up



Zoomed Out



Zoomed In

Exiting Glance Mode

To exit Glance Mode, tap the view indicator. Glance Mode automatically exits if no touch gestures are made for six seconds, as indicated by a radial timer.

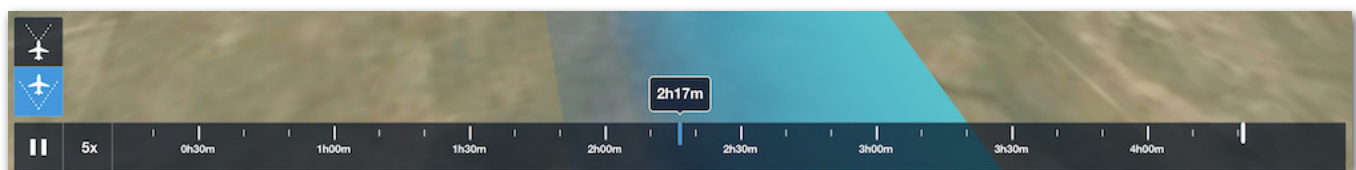


Radial Timer

22.5.3 Time Slider

An interactive time slider at the bottom of the view can be used to locate a specific moment during the flight. Drag the time slider left or right or tap the **Play / Pause** button to animate 3D Review.

3D Review can be animated at 1, 3, 5, 10, or 20 times the actual speed by tapping the current speed selection next to the Play / Pause button.



Time Slider

22. TRACK LOGS

22.6 Trimming Track Logs

Track logs that are **automatically** started and stopped add time at both ends of the recording to serve as an estimate of taxi time. Because the estimate may not accurately reflect the actual taxi time, the beginning and end of the track log can be trimmed. For a video demonstration, see [Trimming Track Logs](#).

Trimming a track log is non-destructive. In other words, if you trim a track log, the data is not deleted. If necessary, trimming can be undone by editing the track log and restoring the trimmed portions. Track logs edited on one device are edited on all other devices signed into the same account.



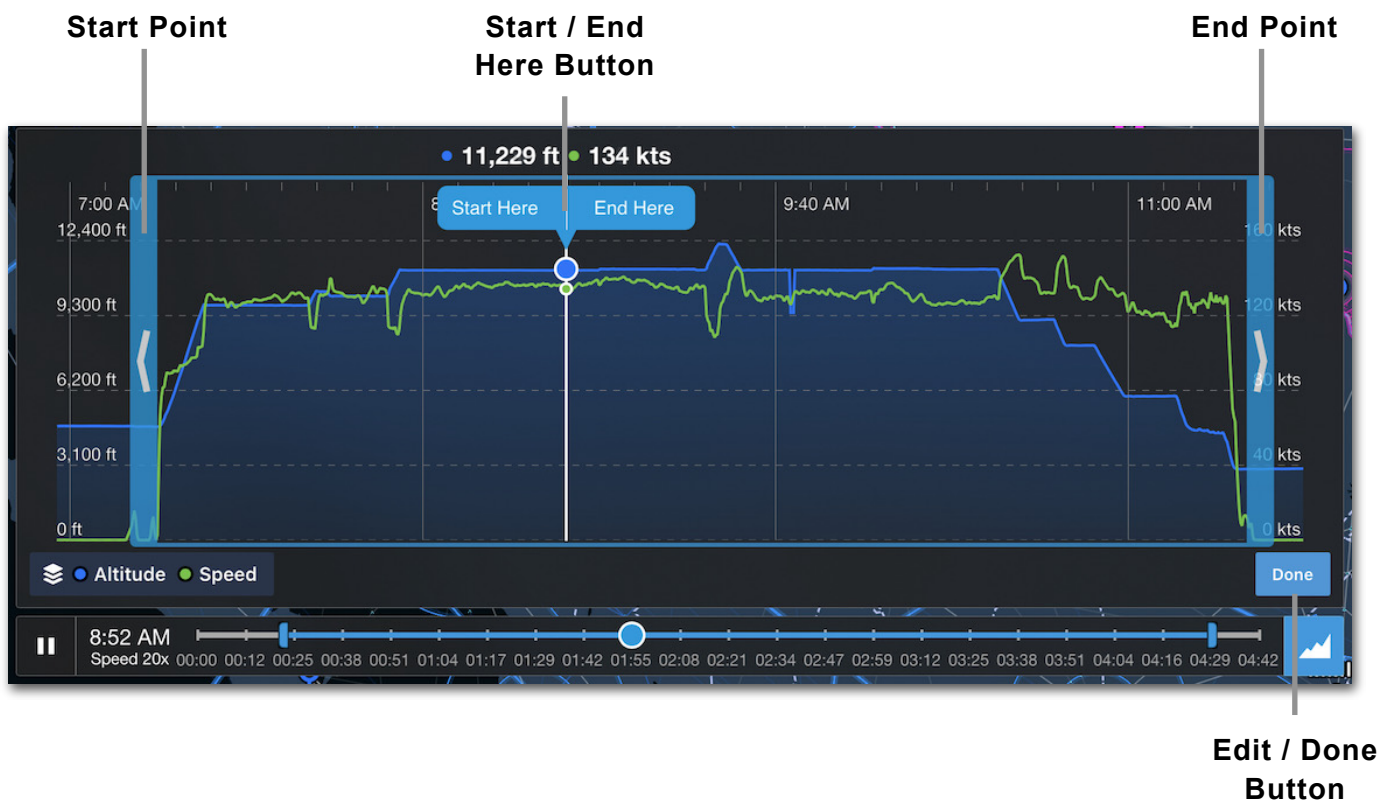
Track Log Trimming

22. TRACK LOGS

Trimming Track Logs

To trim a track log, follow the steps below:

1. Select the track log to be edited and ensure the **Graph** is displayed.
2. Tap the **Edit** button. When in Edit Mode, the graph responds to standard touch gestures.
3. In Edit Mode, perform one or more of the following:
 - Tap and drag the blue bars to set new start and end points.
 - Animate the track log. Tap the **Start Here** or **End Here** button as appropriate.
 - Using the time slider, locate a start or end point. Tap the **Start Here** or **End Here** button as appropriate.
 - Tap and Hold the Graph. Drag your finger to locate a start or end point. Tap the **Start Here** or **End Here** button as appropriate.
4. When the correct start and end points have been set, tap the **Done** button.



22. TRACK LOGS

In Edit mode, the trimmed portion of the map's flight path is colored grey, and a blue bar denotes the new start or end point. After tapping **Done**, the trimmed portion is removed from the map and graph.



Edited Track Logs

After a track log has been trimmed, the fields within **Track Log Info** are automatically updated. If a track log is associated with a Logbook Draft Entry, trimming the track log automatically updates the auto-filled fields in the Logbook entry. Sending a trimmed track log to Logbook will adjust the auto-filled fields to match the new start and end times.

22. TRACK LOGS

22.7 Combining Track Logs

Track logs cannot be combined. Pilots wanting to record multiple legs as a single track log should follow one of the recommended practices.

Manually Record Track Logs

When the Track Log Auto Start/Stop setting is enabled, track logs stop recording when a landing is detected and no takeoff occurs within the next 15 minutes. Once a track log has stopped, it is not possible to resume the recording.

To record a flight with stops that exceed 15 minutes, pilots should disable the Track Log Auto Start/Stop setting and manually start and stop their flights using the REC button.

Save Breadcrumbs as Track Logs

For flights with extended stops between legs, saving a breadcrumb as a track log is a recommended alternative. Unlike track logs that are automatically recorded, breadcrumbs persist on the map for up to four hours after a flight. For more information, see [Breadcrumbs](#).

22.8 Deleting Track Logs

To delete a track log, tap **More > Track Logs** and swipe from right to left across a [Track Log Summary](#).

When a track log is deleted, it cannot be restored. Track logs deleted on one device will be removed from the other devices on the account. If a track log with an associated logbook entry is deleted, the logbook entry does not also get deleted. It is not possible to delete track logs in bulk.

22. TRACK LOGS

22.9 Sharing Track Logs

Track logs can be shared with your Logbook, friends and family, and 3rd-party apps. Track log recipients do not need a ForeFlight account to view shared track logs. Track logs can be shared as a KML, GPX, CSV, or web links.

22.9.1 Logbook

Sharing a track log with **Logbook** creates a new logbook entry with the track log info fields (e.g., Total Time, Night Time, Time Out, Time In) automatically populated in the Logbook. Additionally, the track log becomes associated with the Logbook entry and can be accessed from the Logbook view. Editing a field that was automatically populated by a track log (e.g., Total Time) does not edit the original track log.

When a track log is associated with a logbook entry, a Logbook Badge is displayed in the track log summary. If the track log is associated with more than one logbook entry, a number indicating the number of associations is displayed next to the badge.

22.9.2 Mail

There are two options when sharing a track log via Mail:

- **KML file** shares an attachment that can be opened with mapping apps, including ForeFlight. For more information about KML files, see **Custom Content**.
- **Web link** shares a link to open the track log on ForeFlight Web. The track log webpage can overlay the track log on the Aerial or Street Map. When viewing a track log in ForeFlight Web, the download options in the upper toolbar allow the track log to be downloaded as a KML or GPX file.

22.9.3 ForeFlight.com

Sharing a track log to ForeFlight.com opens the ForeFlight Web Track Log view using the iOS device's default web browser. The ForeFlight Track Log webpage can overlay the track log on the Aerial or Street Map. The download options in the upper toolbar allow the Track log to be downloaded as a KML or GPX file.

22.9.4 OPEN KML IN ...

The OPEN KML IN ... sharing option opens the Apple share menu. Apps that are installed on the device and capable of importing a KML file are displayed. Tap the app to import the KML file. ForeFlight does not appear in the list of apps as it is the app sharing the file.

22. TRACK LOGS

Sending a track log to the Maps view

Track logs cannot be sent directly to the ForeFlight Maps view. To see a track log on the Maps view, it must first be shared as a KML file then imported with ForeFlight Mobile as a **Custom Map Layer**. To view a track log on the map, follow the steps below.

1. Open ForeFlight Mobile and select **More > Track Logs**.
2. Select the track log you want to view on the map from the list.
3. Tap the **Send To** button in the upper toolbar and select one of the following:
 - **Mail > KML file**
 - **OPEN KML IN...**

If Mail was selected, follow the steps below:

1. Email the KML file to an address accessible from the iOS device.
2. Open the Mail app, select the email, and tap the KML attachment.
3. After tapping the attachment, the KML text is opened in a new window. Tap the **Send To** button at the top of this view.
4. Select **ForeFlight** from your list of apps capable of importing KML files.
5. Select **Custom Content > Custom Map Layer** from the Import menu. Once a KML file has been imported, it can be viewed from the Maps view layer menu.

If OPEN KML IN... was selected, follow the steps below:

1. Select where to save the KML file (e.g., Files, Dropbox, Google Drive).
2. Open the file using the app where the file was saved.
3. Tap the share button.
4. Select **ForeFlight** from your list of apps capable of importing KML files.
5. Select **Custom Content > Custom Map Layer** from the Import menu. Once a KML file has been imported, it can be viewed from the Maps view layer menu.

22. TRACK LOGS

22.10 Track Logs on ForeFlight Web

ForeFlight on the Web can be used to review and share track logs. Much of the same functionality exists as with ForeFlight Mobile with the exception of the items discussed below.

22.10.1 ForeFlight Web Track Log Map

The ForeFlight Web Track Log Map overlays the selected track log's flight path on top of the Street Map. The Aeronautical Map is not displayed with ForeFlight Web nor is the Track Log Graph. The following additional map options are available using the ForeFlight Web layer selector.

- Street Map
- Aerial Map
- U.S. VFR chart
- U.S. IFR (low) chart
- U.S. IFR (high) chart

22.10.2 Track Log Download

ForeFlight Web can be used to download four types of track log files.

- **KML (Filtered)** files graphically depict track logs. Track log recorded with a Status Flight Data Recorder record five points per second. The KML (Filtered) download filters the data to one point per second so that the file can be displayed in common mapping files such as Google Earth. If the track log was recorded with a device other than a Stratus Flight Data Recorder, only one point per second is recorded and the file does not get filtered.
- **KML (Full)** files graphically depict track logs. With the exception of the Stratus FDR, all track logs record one data point per second. If the track log was recorded with a Stratus Flight Data Recorder, the KML (Full) file will include higher-resolution five points per second data.
- **GPX** is a widely used file format used to store and share GPS data. Many GPS-enabled devices and apps such as Google Maps can read GPX files.
- **CSV** is a text file with data points separated by commas. Spreadsheet programs, e.g., Microsoft Excel, can open this file type. A CSV file is useful for analyzing track log data. For additional information, see this [support article](#).



FOREFLIGHT CONNECT

ForeFlight Connect is a platform that allows portable and installed avionics to send **weather, traffic, attitude, GPS position**, barometric pressure, SiriusXM weather, and two-way flight plan information to ForeFlight Mobile.

Data from connected devices is used to display your position on the map, show weather and traffic without an internet connection, and to transfer flight plans between supported navigators. ForeFlight Connect is included with all subscriptions and is intended to be used in flight.

23.1 Supported Devices

ForeFlight Connect supports various devices from a number of manufacturers. Supported devices are tested by ForeFlight and are supported by the Pilot Support Team. Supported manufacturers, compatible devices, and their capabilities are listed in tables on the following pages. If a device is not listed in the tables, it is not supported.



Supported Devices and Manufacturers

23. FOREFLIGHT CONNECT

23.1.1 Supported Portable Devices

The table below lists supported portable devices and their capabilities.

	GPS	Attitude (AHRS)	Pressure Altitude	ADS-B Weather + Traffic	SiriusXM Weather	FDR	FLARM
uAvionix							
Sentry Mini	✓			✓			
Sentry	✓	✓	✓	✓			
Sentry Plus	✓	✓	✓	✓		✓	✓
SkyEcho 2	✓		✓	✓			✓
Garmin							
GDL 39	✓		✓	✓			
GDL 39 3D	✓	✓	✓	✓			
GDL 50	✓	✓	✓	✓			
GDL 51	✓		✓		✓		
GDL 52	✓	✓	✓	✓	✓		
GLO	✓						
Appareo							
Stratus 2S	✓	✓	✓	✓		✓	
Stratus 3	✓	✓	✓	✓		✓	
Bad Elf							
GPS Pro	✓		✓				
GPS Pro +	✓		✓				
Lightning	✓		✓				
Dual							
XGPS 150	✓						
XGPS 160	✓						
XGPS 170	✓			✓			
XGPS 190	✓	✓		✓			

23. FOREFLIGHT CONNECT

23.1.2 Supported Garmin Avionics

The table below lists supported Garmin panel avionics and their capabilities.

Garmin	GPS	Attitude (AHRS)	Pressure Altitude	ADS-B Weather + Traffic	Flight Plan Transfer
GTX 345	✓	✓	✓	✓	
GNX 375	✓	✓	✓	✓	✓
GPS 175	✓	✓	✓		✓
G3X Touch	✓	✓	✓	requires GDL 39R	✓
<hr/>					
Flight Stream 110	✓				
with GTX 345	✓	✓	✓	✓	
with GDL 84/88	✓			✓	
<hr/>					
Flight Stream 210	✓	✓	✓		
with GTX 345	✓	✓	✓	✓	
with GDL 84/88	✓	✓	✓	✓	
with GNS 430W	✓	✓	✓		✓
with GNS 530W	✓	✓	✓		✓
with GTN 650 / 750	✓	✓	✓		✓
with G1000	✓	✓	✓		✓
<hr/>					
Flight Stream 510					
with GTX 345	✓	✓	✓	✓	
with GDL 84/88	✓			✓	
with GTN 650 / 750	✓		✓		✓
with G500 / G600		✓			
with G1000 NXi	✓	✓	✓		✓
with G3000	✓	✓	✓		✓
with G5000	✓	✓	✓		✓

23. FOREFLIGHT CONNECT

23.1.3 Other Supported Panel Avionics

The table below lists supported panel avionics and their capabilities.

	GPS	Attitude (AHRS)	Pressure Altitude	ADS-B Weather + Traffic	Flight Plan Transfer
Avidyne					
IFD 440 / 540*	✓			✓	✓
IFD 550*	✓	✓		✓	✓
Dynon					
Skyview**	✓	✓	✓	✓	✓
uAvionix					
echoUAT				✓	
SkySensor	✓		✓	✓	
FreeFlight					
Rangr	✓			✓	
L3 Harris					
Lynx NGT-9000/2000/2500	✓			✓	
Appareo					
ESG / ESGi ***	✓	✓	✓	✓	
Golze Engineering					
ADL 140 / 150B	✓			Satellite Wx	
ADL 180 / 190 / 200	✓	✓		Traffic + Satellite Wx	
ADL Connect for Iridium Go				Satellite Wx	

* Weather and traffic requires firmware 10.2.3.1 or later and a compatible ADS-B receiver. See [Avidyne Remote Wi-Fi Pairing](#) for additional information.

** Weather and traffic requires firmware version 15.4.7 and higher.

*** Appareo ESG and ESGi require a Stratus 2, 2S, or 3 for attitude (AHRS).

23. FOREFLIGHT CONNECT

Supported Panel Avionics (continued)

The table below lists supported panel avionics and their capabilities.

	GPS	Attitude (AHRS)	Pressure Altitude	ADS-B Weather + Traffic	SiriusXM Weather	Flight Plan Transfer
Honeywell*						
Apex FMS with Aspen CG						✓
Aircraft Data Gateway**						✓
Satcom Direct						
Satcom Direct SDR***	✓	✓	✓			
gogo						
gogo ATG****	✓					
gogo AVANCE****	✓					
Baron						
WxWorx XM Receiver					✓	
DAC International						
GDC64	✓			✓		

* Honeywell devices require a Performance Plus or Business Performance subscription.

** Honeywell Aircraft Data Gateway requires SSL certificate and a unique profile installed per device to access the network. Contact Honeywell for SSL certificate and profile information.

*** All customers can connect to Satcom Direct Router or SDR Gateway to receive internet data in ForeFlight. Performance Plus and Business Performance customers can also receive SDR GPS, indicated altitude, and pressure altitude data.

**** Gogo customers must have one of the following systems: AVANCE L5, AVANCE L3, ATG 5000/4000/2000/1000 w/CTR, SCS Elite w/ATG, SCS Media w/ATG.

23. FOREFLIGHT CONNECT

23.1.4 GDL 90 Data Interface

ForeFlight Connect can be used by third-party devices that are not explicitly supported by ForeFlight. These devices can transmit data to and from ForeFlight using the industry standard GDL 90 data interface.

Devices that use the GDL 90 interface to connect to ForeFlight are not supported by the Pilot Support Team. For additional information, visit www.foreflight.com/connect/spec.

23. FOREFLIGHT CONNECT

23.2 Connecting to External Devices

ForeFlight can connect to Wi-Fi and Bluetooth devices. Only one Wi-Fi device can be connected at a time. Multiple simultaneous Bluetooth connections are supported.

Once ForeFlight has connected to an external device (via Wi-Fi or Bluetooth) it can display the device's data (e.g., GPS, Attitude, Weather, and Traffic) in-app.

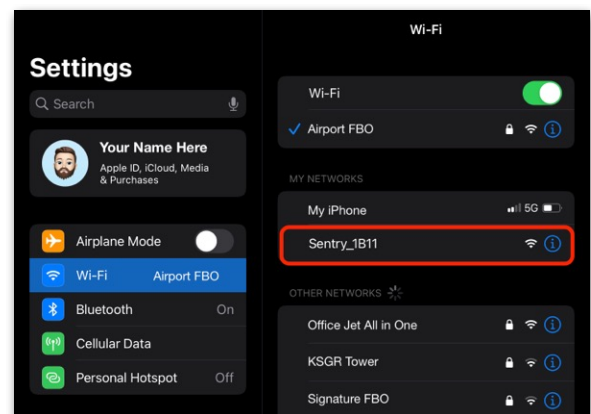
23.2.1 Wi-Fi Devices

Connecting ForeFlight to an external Wi-Fi device is similar to connecting to your home's Wi-Fi router.

Connecting via Wi-Fi

To connect to portable or installed avionics via Wi-Fi:

1. Power the device on and verify it is transmitting a Wi-Fi signal. Most devices automatically transmit a Wi-Fi signal when powered on.
2. Open the iPad or iPhone's Settings app and select **Wi-Fi**.
3. Locate and tap the Wi-Fi device (e.g., Sentry, Stratus, gogo, or SDR).
4. Ensure the device connects to your iPad or iPhone. A checkmark is displayed to the left of the device's name when connected.
5. Open ForeFlight Mobile and select **More > Devices**. If a **tile** is present for the device, it has successfully paired with ForeFlight and can display data from the device in-app.
6. Tap the **Device Tile** to view additional information.



iOS Wi-Fi Settings

CAUTION: Cellular data in ForeFlight is disabled when connected to a Wi-Fi device.

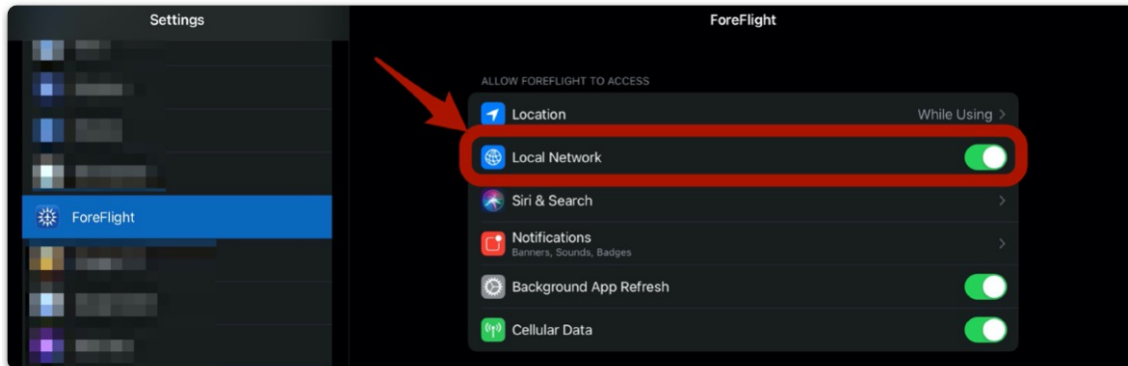
NOTE: The Local Network setting must also be enabled when using a device with iOS 14 or later. See the next page for additional information.

23. FOREFLIGHT CONNECT

iOS 14 Local Network Setting

Devices with iOS 14 or later installed must enable the Local Network setting when connecting to external devices via Wi-Fi. To enable this setting:

1. Open the iPad or iPhone's Settings app and select **ForeFlight**.
2. Toggle the **Local Network** setting on.



iOS Local Network Setting Enabled

23. FOREFLIGHT CONNECT

23.2.2 Bluetooth Devices

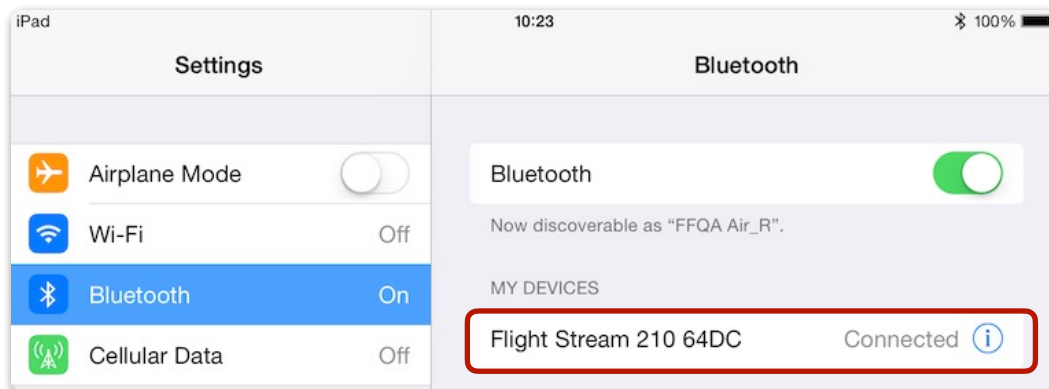
ForeFlight can pair simultaneously to multiple Bluetooth devices. Bluetooth devices can also be paired while simultaneously connected to a Wi-Fi device.

Unlike Wi-Fi, most Bluetooth devices do not pair automatically when powered on. If the Bluetooth device does not automatically pair when powered on, it may be necessary to select it from your list of Bluetooth devices.

Pairing a Bluetooth Device

To pair a Bluetooth device:

1. Power the device on.
2. Enable Bluetooth pairing on the device (see note below).
3. Open the iPad or iPhone's Settings app and select **Bluetooth**.
4. Locate and tap the device in the My Devices or Other Devices section.
5. Ensure the device indicates "Connected".
6. Open ForeFlight Mobile and select **More > Devices**. If a **tile** is present for the device, it has successfully paired with ForeFlight.
7. Tap the **Device Tile** to view additional information.



iOS Bluetooth Settings Page

NOTE: When pairing to a device for the first time or if the device does not appear in your list of Bluetooth devices, it may be necessary to manually enable the device's Bluetooth pairing mode. Instructions for enabling Bluetooth pairing vary by device. Refer to your Bluetooth device's manual for additional instructions.

23. FOREFLIGHT CONNECT

23.2.3 Garmin Avionics

Garmin devices pair via Bluetooth and can simultaneously connect to a maximum of two devices (e.g., two iPads).

There isn't a practical limit for the number of Garmin avionics ForeFlight can connect to. For example, if you have a GTX-345 transponder it is limited to two device pairings. However, your iPad can simultaneously connect to a GTX-345, GDL52, and GNC355.

Garmin Flight Stream

If your aircraft is equipped with a Garmin Flight Stream, ForeFlight should only pair with the Flight Stream. All other installed avionics should be wired to the Flight Stream so that their data is passed through to your portable devices. When configured in this manner, the Flight Stream is the *access point* for all Garmin data.

If a device is not wired to a Flight Stream, you must pair directly to it. When paired to a Flight Stream, information about the devices that are wired to it are listed on the [Garmin Connex Information page](#).

23. FOREFLIGHT CONNECT

23.2.4 Multiple Device Connections

When connected to multiple devices that provide the same data, ForeFlight displays the data from the most appropriate source. See below for additional information.

Multiple Sources of Weather, Traffic, and NOTAM Data

When receiving weather, traffic, and NOTAM data from multiple external sources (e.g., Sentry and Garmin GTX-345), the most *recent* information is displayed. It is not possible to manually select weather, traffic, or NOTAM data from a specific device.

When receiving ADS-B and SiriusXM data, unique map layers exist for radar, turbulence, icing, and clouds allowing you to select a particular data type (e.g., Radar ADSB).

Multiple Sources of Barometric Pressure Data

When connecting to multiple devices, ForeFlight uses barometric data from a single device according to the following logic.

1. If an installed device is connected, the data from it is used.
2. If an installed device is not connected, the portable data source is used.
3. If installed and portable devices are not connected, the iOS device's integrated data is used.

This logic ensures that data from the *installed* device is prioritized, as it is presumed to be superior to a portable device.

NOTE: If connected to a device that normally provides a type of data (e.g., Attitude, GPS, or Barometric Pressure), ForeFlight will *not* automatically revert to the next source should that data type be unavailable. For example, if connected to both a GTX-345 transponder and Sentry and the GTX-345 is not providing attitude data, ForeFlight will not automatically revert to use the attitude data from Sentry. In this scenario, ForeFlight's Attitude Indicator would display No Attitude Data unless the **Use As AHRS** setting was disabled for the GTX-345. See the next page for additional information.

23. FOREFLIGHT CONNECT

Multiple Sources of GPS and AHRS Data

When connected to an external device or multiple external devices, the barometric data source used by ForeFlight is determined by the multiple-device connection logic discussed earlier. The barometric data source cannot be manually selected.

GPS and AHRS use the same multi-device connection logic as barometric data but can be manually selected by disabling sources of higher priority.

For example, if connected to a transponder that provides GPS data, the transponder's GPS data is used by default since it is an installed device. However, if the transponder's GPS is inoperative, ForeFlight will not be able to display GPS data.

To resolve this issue, the use of the transponder's GPS data should be disabled. To disable a GPS data source:

1. Go to **More > Devices** and tap the **Device Tile** of the source to be disabled.
2. Scroll to the device settings at the bottom of the view.
3. Toggle **Use as GPS** off.

Similarly, if the transponder normally provides AHRS data, ForeFlight will use it for the Attitude Indicator. However, if the transponder's AHRS is inoperative, ForeFlight will not be able to display pitch and bank data.

To resolve this issue, the use of the transponder's AHRS data should be disabled. To disable an AHRS data source:

1. Go to **More > Devices** and tap the **Device Tile** of the source to be disabled.
2. Scroll to the device settings at the bottom of the view.
3. Toggle **Use as AHRS** off.

In the above examples, once the GPS or AHRS source is disabled, ForeFlight will use the data from the next source.

23. FOREFLIGHT CONNECT

Connecting to multiple devices of the same type

When connecting to multiple devices of the same type, installed or portable, ForeFlight uses the GPS, Attitude, and Barometric data from those devices in this order:

- Garmin
- Dynon
- Avidyne
- SkyEcho
- Sentry
- Stratus
- Dual, Bad Elf
- FreeFlight
- Lynx
- SXAR1
- Baron MobileLink
- Gogo
- Satcom Direct Router (SDR)
- iOS internal GPS data

NOTE: SDR supplies latitude, longitude, and groundspeed data. GPS altitude and track data delivery are dependent on the router's firmware.

Multiple Device Connection Example

When connected to portable and installed devices, ForeFlight uses the GPS, attitude, and barometric data from the installed device by default. If connected to Garmin and Dynon installed avionics simultaneously, the Garmin's GPS, attitude, and barometric data are used.

If the installed device does not provide one of the data types, for example, attitude data, the Attitude Indicator in ForeFlight will not automatically revert to using the portable device. To display attitude data from the portable device, you must either disable the Use as AHRS setting or disconnect from the installed device.

23. FOREFLIGHT CONNECT

23.2.5 Avidyne Remote Wi-Fi Pairing

The Avidyne IFD 440/540/550 navigators support remote Wi-Fi pairing which allows them to connect to supported ADS-B receivers so that flight plan data can be passed through the ADS-B receiver to ForeFlight. This configuration permits flight plan transfers and ADS-B weather and traffic while being connected to the ADS-B receiver.

For detailed setup instructions, see the appropriate IFD 440/540/550 manual or this [support article](#). Abbreviated IFD 440/540/550 setup instructions can be found below:

1. Enable maintenance mode on the IFD 440/540/550.
2. Navigate to the Wi-Fi configuration page.
3. Enter the SSID (network name) of the supported ADS-B receiver.
4. Change the navigator's Wi-Fi mode to **Remote**.
5. Connect ForeFlight to the ADS-B receiver.

When properly configured, ForeFlight will display two **Devices Tiles**. One tile for the IFD navigator and another for the ADS-B receiver.



Avidyne Remote Wi-Fi Pairing Device Tiles

23. FOREFLIGHT CONNECT

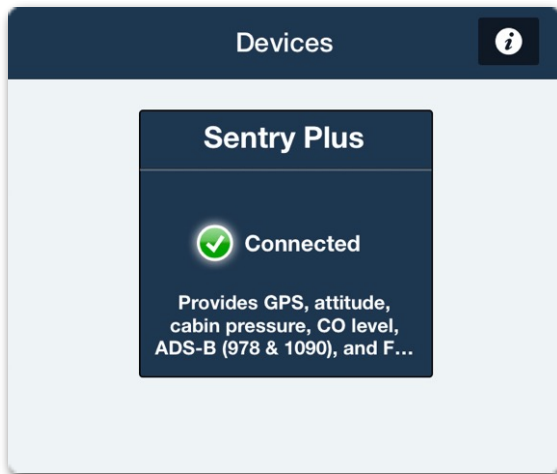
23.3 Device Tiles

Tiles are displayed on the Devices page for each connected device. To access Devices, tap **More > Devices**. The tile indicates connection status and features (e.g., GPS, attitude, and ADS-B data). When connected to multiple Garmin devices, a single Garmin Connext device tile is displayed.

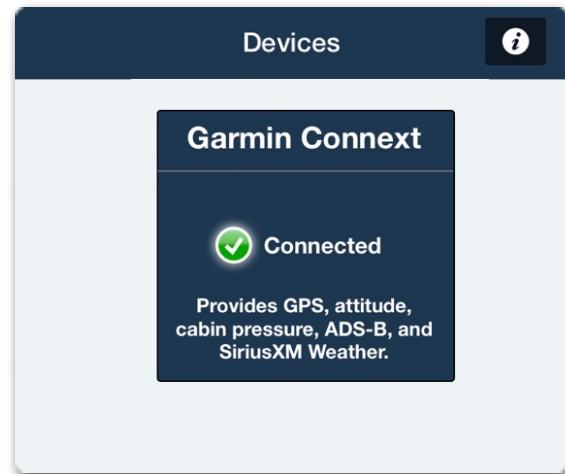
23.3.1 Device Capabilities

The device's capabilities are listed at the bottom of the tile. If a capability is not listed, the device is not providing that data type to ForeFlight. For example, if connected to a Garmin GTX345 and attitude is not listed, the transponder likely has not been **calibrated** and is not transmitting attitude data to ForeFlight.

Bluetooth GPS devices such as the Bad Elf GPS Pro, DUAL XGPS 150, and Garmin GLO indicate their connection status, but no additional information is displayed.



Sentry Plus Device Tile



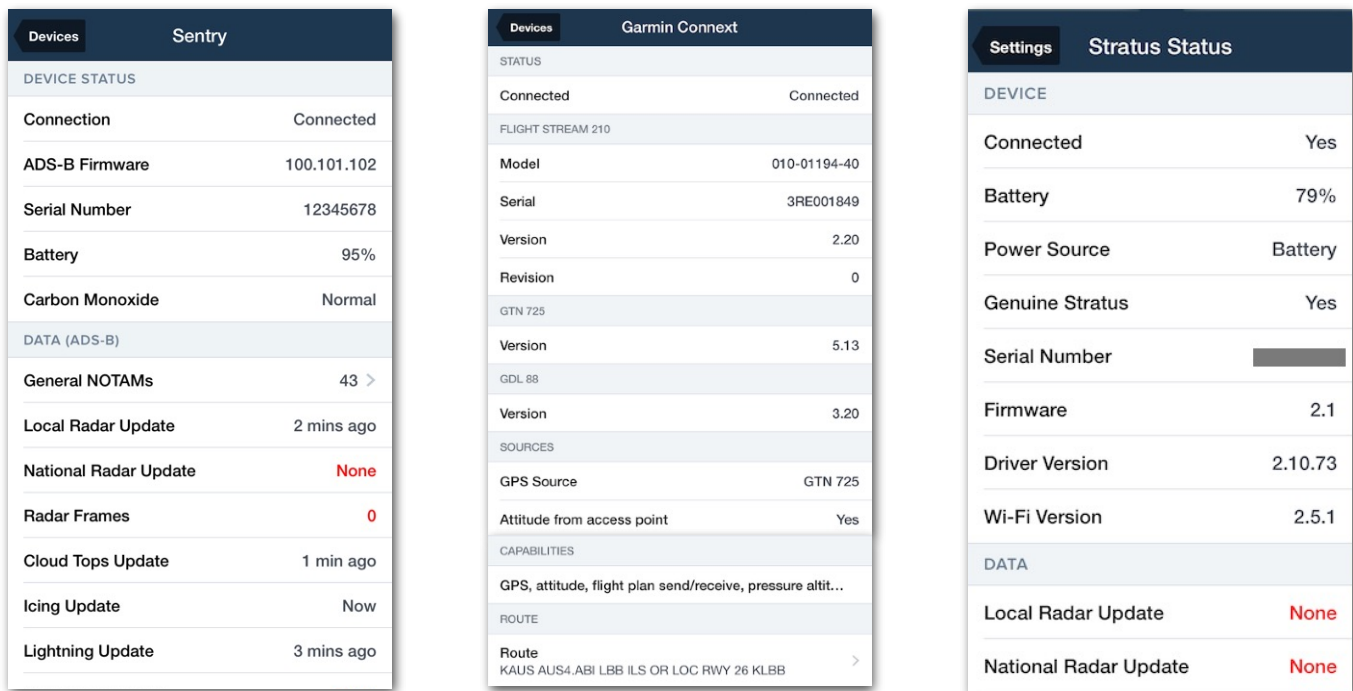
Garmin Connext Device Tile

23. FOREFLIGHT CONNECT

23.4 Device Information

The Device Information view displays device status, identifying information, device capabilities, and device settings. To access the view, go to **More > Devices** and tap the **Device Tile**.

The Device Information view is grouped into sections. Each section only appears if the device provides that type of information (e.g., ADS-B and SiriusXM data). **Device Settings** are discussed later in this chapter.



Sentry, Garmin, and Stratus Device Information Pages

23. FOREFLIGHT CONNECT

23.4.1 General Device Information

The top of the Device Information view lists general information about the device, such as its connection status, battery state, temperature, serial number, firmware, and more. This section is dynamic and varies by device.

When connected to Garmin devices, the view lists each connected device. When multiple Garmin devices can provide the same data (e.g., GPS or attitude), the data source being used by ForeFlight is listed in the Sources section. In this scenario, it is not possible to manually select a different data source.

When connected to a device that supports **flight plan transfer**, the route row displays the route currently loaded in the navigator. Tap the route to load it into the route editor.

The capabilities row displays the cumulative capabilities of all connected devices.

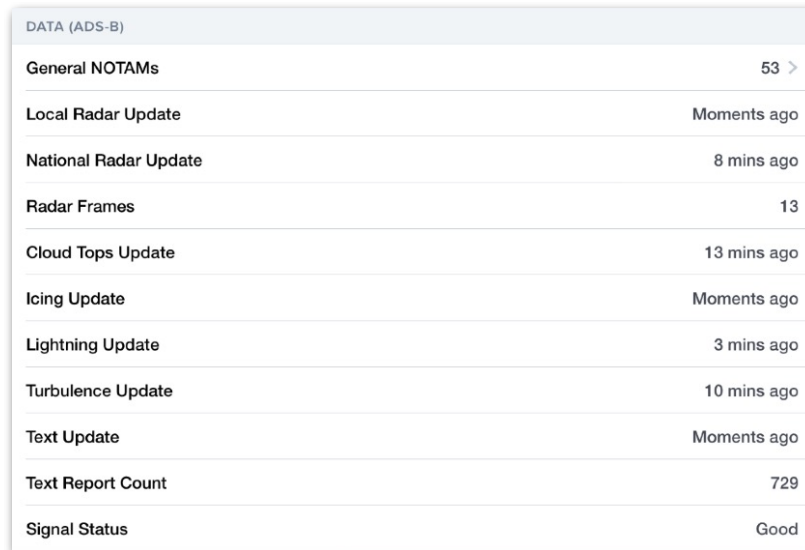
Garmin Connxt	
STATUS	
Connected	Connected
FLIGHT STREAM 210	
Model	010-01194-40
Serial	3RE001849
Version	2.20
Revision	0
GTN 725	
Version	5.13
GDL 88	
Version	3.20
SOURCES	
GPS Source	GTN 725
Attitude from access point	Yes
CAPABILITIES	
GPS, attitude, flight plan send/receive, pressure altit...	

Garmin Connxt General Information

23. FOREFLIGHT CONNECT

23.4.2 ADS-B Data

If connected to an ADS-B device, an ADS-B data section is displayed below the general information. This section lists NOTAM, weather, and ADS-B signal status details.



DATA (ADS-B)	
General NOTAMs	53 >
Local Radar Update	Moments ago
National Radar Update	8 mins ago
Radar Frames	13
Cloud Tops Update	13 mins ago
Icing Update	Moments ago
Lightning Update	3 mins ago
Turbulence Update	10 mins ago
Text Update	Moments ago
Text Report Count	729
Signal Status	Good

ADS-B Data Section

- **General NOTAMs** are displayed once NOTAM data has been received by the ADS-B receiver (may take up to ten minutes). The row displays the NOTAM count and can be tapped to display FIS-B textual NOTAMs.
- **Local Radar Update** indicates the last time **Regional NEXRAD** data was received.
- **National Radar Update** indicates the last time **CONUS NEXRAD** data was received.
- **Radar Frames** indicate how many radar frames have been received.
- **Cloud Tops Update** indicates the last time **Cloud Top** data was received.
- **Icing Update** indicates the last time **Icing** data was received.
- **Lightning Update** depicts the last time **Lightning** data was received.
- **Turbulence Update** depicts the last time **Turbulence** data was received.
- **Text Update** indicates when **METAR** and **TAF** data was last received.
- **Text Report Count** indicates the amount of individual METAR and TAF reports.
- **Signal Status** represents the number of **ADS-B towers** that are being received. This information is also displayed in the upper left corner of the Map when a dynamic map layer is selected.

23. FOREFLIGHT CONNECT

23.4.3 SiriusXM Information

If connected to a device that provides **SiriusXM** data, the Data (SiriusXM) section displays the last time weather products were received. See **SiriusXM Weather** for additional information.

DATA (SIRIUS XM)	
Composite Radar	37 minutes ago
Lowest Tilt Radar	37 minutes ago
Storm Cell Attributes	38 minutes ago
AIR/SIGMETs	37 minutes ago
TFRs	38 minutes ago
METARs	38 minutes ago
TAFs	37 minutes ago
PIREPs	48 minutes ago
Temperatures Aloft	None
Winds Aloft	None
Lightning	36 minutes ago
Cloud Tops	39 minutes ago
Sfc Wind Analysis	48 minutes ago
Icing NOWcast	43 minutes ago
Turbulence	39 minutes ago
Surface Analysis	39 minutes ago
Freezing Level	53 minutes ago
Surface Visibility Forecast	53 minutes ago

SiriusXM Data Information

23. FOREFLIGHT CONNECT

23.4.4 Traffic Information

If connected to an ADS-B receiver, the Traffic section displays the last time ADS-B traffic data was received on the 978 MHz (UAT), 1090 MHz, and **TIS-B** (978 MHz) frequencies.

If ForeFlight is able to determine **Ownship**, additional information can be found by tapping the aircraft in the Ownship row. If Ownship is not detected, **Not Detected** is displayed.

TRAFFIC	
Traffic Update (978/UAT)	Moments ago
Traffic Update (1090)	Moments ago
Traffic Update (TIS-B)	Moments ago
Ownship	Not Detected >

Traffic Information Section

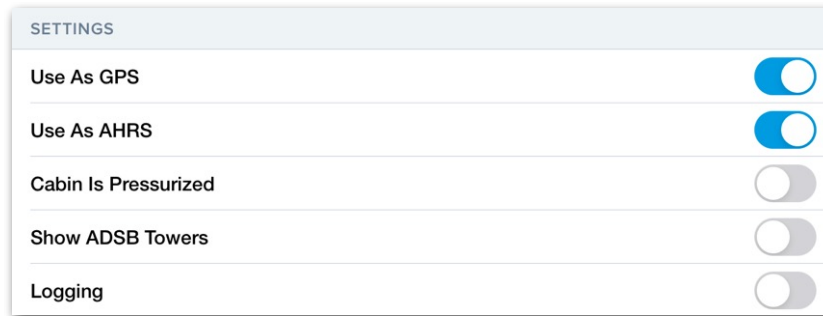
23. FOREFLIGHT CONNECT

23.4.5 Device Settings

The bottom of the Device Information Page is where device-specific settings are found.

Universal Settings

The following settings are universal and appear when connected to any device equipped with the corresponding feature.



Universal Device Settings (Sentry)

- **Use As GPS** allows ForeFlight to receive GPS data from the connected device. When disabled, ForeFlight ignores the GPS data and uses the next source according to **GPS source logic** (if available). If no alternative GPS source is available, ForeFlight will not show your aircraft's position on the map.
- **Use As AHRS** allows ForeFlight to receive the device's pitch and bank data and is enabled by default. When disabled, ForeFlight ignores the AHRS data from the external device and uses the next source according to **AHRS source logic** (if available). If no alternative AHRS source is available, ForeFlight will not show your aircraft's pitch and bank.
- **Cabin is Pressurized** should be selected when flying with a device inside a pressurized cabin. When this setting is enabled, the **Pressure Altitude** instrument is disabled and the barometric data from the device is used to power the Cabin Pressure instrument. When disabled, the Pressure Altitude and Cabin Pressure instruments display the same (uncorrected) value.
- **Show ADSB Towers** displays towers which ForeFlight is receiving data from on the map.
- **Logging** records the data sent from the device for troubleshooting purposes. This setting should only be enabled when requested by the Pilot Support Team. Device logging can degrade performance and is disabled by default. When connected to an SiriusXM device, the setting is labeled "**Stream Logging**".

23. FOREFLIGHT CONNECT

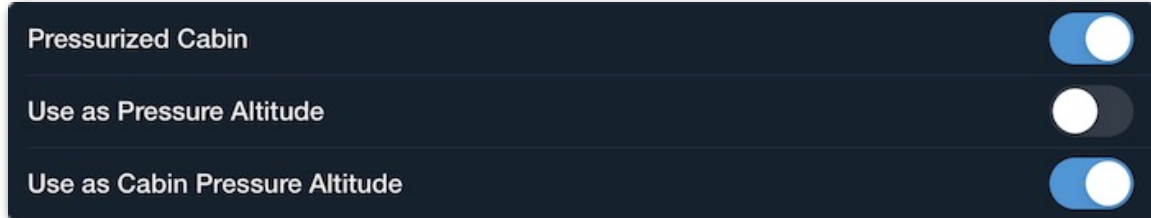
Sentry Settings

Settings are available for testing and muting Sentry's CO alarm. For additional information, refer to the Sentry Pilot's Guide available in-app by selecting **Documents > ForeFlight > Sentry > Sentry Pilot's Guide** or online at www.foreflight.com/sentry-guide.

Garmin Settings

When connected to certain Garmin devices, additional settings allow you to specify the barometric data source. There are three potential settings:

- **Pressurized Cabin** should be enabled when flying a pressurized aircraft.
- **Use as Pressure Altitude** should be enabled when the barometric data comes from outside ambient air. For example, when flying a pressurized aircraft and connected to a transponder that derives pressure data from the pitot system, enable this setting.
- **Use as Cabin Pressure Altitude** should be enabled when the device is inside the pressurized cabin.



Garmin Connex Pressure Settings

23. FOREFLIGHT CONNECT

Garmin Reset AHRS

The Garmin Flight Stream 210 is able to receive a *Reset AHRS* message from ForeFlight. When connected to the Flight Stream 210, a **Reset AHRS** button is displayed near the bottom of the Device Information page.

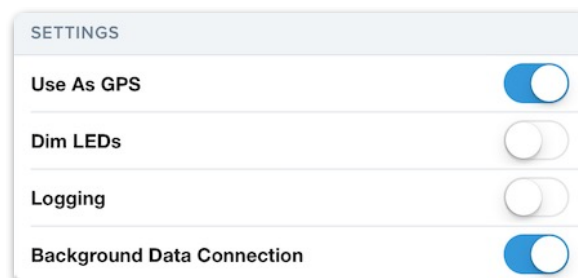
The Reset AHRS button sends a message to the Flight Stream 210 to reset the pitch and bank values to zero. When this message is received, the device's pitch and bank values are reset to zero and reflected on *any display* that uses the AHRS data. For additional information, see [Calibrating AHRS](#).

CAUTION: Do not press the **Reset AHRS** button unless the aircraft's pitch and bank are level.

SXAR1 Settings

There are two unique SXAR1 settings:

- **Dim LEDs** turn ON to dim the SXAR1's status lights, which helps preserve battery life and reduces brightness when flying at night.
- **Background Data Connection** sends updated weather data to ForeFlight even when it is in the background. We recommend leaving this ON, because turning it OFF can result in the loss of Bluetooth connection to SXAR1 if ForeFlight is kept in the background.



23. FOREFLIGHT CONNECT

Stratus Settings

When connected to a Stratus, additional settings may be displayed to include:

- **Turn on When Plugged In** will turn Stratus on when power is provided over a USB cable and turn off after two minutes when power is removed and speed is less than five knots.
- **Wi-Fi Settings** implements security for the Stratus local network. **Disabling the SSID** broadcast hides the Stratus network name from devices that have not already joined the network.

CAUTION: WPA2 security should **not** be enabled when using ForeFlight as the Wi-Fi connection can become unreliable.

- **Ignore Mfg. AHRS Settings** reinitializes Stratus AHRS every time the unit is powered on. This setting should remain disabled unless Stratus has been dropped or has been subjected to large temperature variations.
- **Save AHRS Calibration** stores manual **AHRS calibration** data between power cycles. This setting is useful for aircraft that cannot be calibrated on the ground due to not sitting level. If this setting is enabled, Stratus should not be moved between power cycles. If Stratus is moved, it may need to be recalibrated.
- **Power-Saving Mode** reduces the Wi-Fi transmission power to increase battery life.
- **Auto Shutoff Mode** (Stratus 3 only) turns off Stratus after groundspeed is less than five knots for 30 minutes or if no GPS data is received for 30 minutes after being powered on.
- **Cabin is Pressurized** (Stratus 3 and 2S) should be selected when flying with a device inside a pressurized cabin. When this setting is enabled, the **Pressure Altitude Instrument** is disabled and the barometric data from the device is used to power the Cabin Pressure Instrument. When disabled, the Pressure Altitude and Cabin Pressure instruments display the same (uncorrected) value.
- **LED Brightness** is used to adjust the brightness of the Stratus LEDs.
- **Flight Data Recorder** is discussed in the **Track Logs** chapter.

NOTE: To perform a factory reset, hold the Stratus power button for 30 seconds. A factory reset disables WPA2 security and enables the device SSID broadcast.

23. FOREFLIGHT CONNECT

Satcom Direct and Gogo Settings

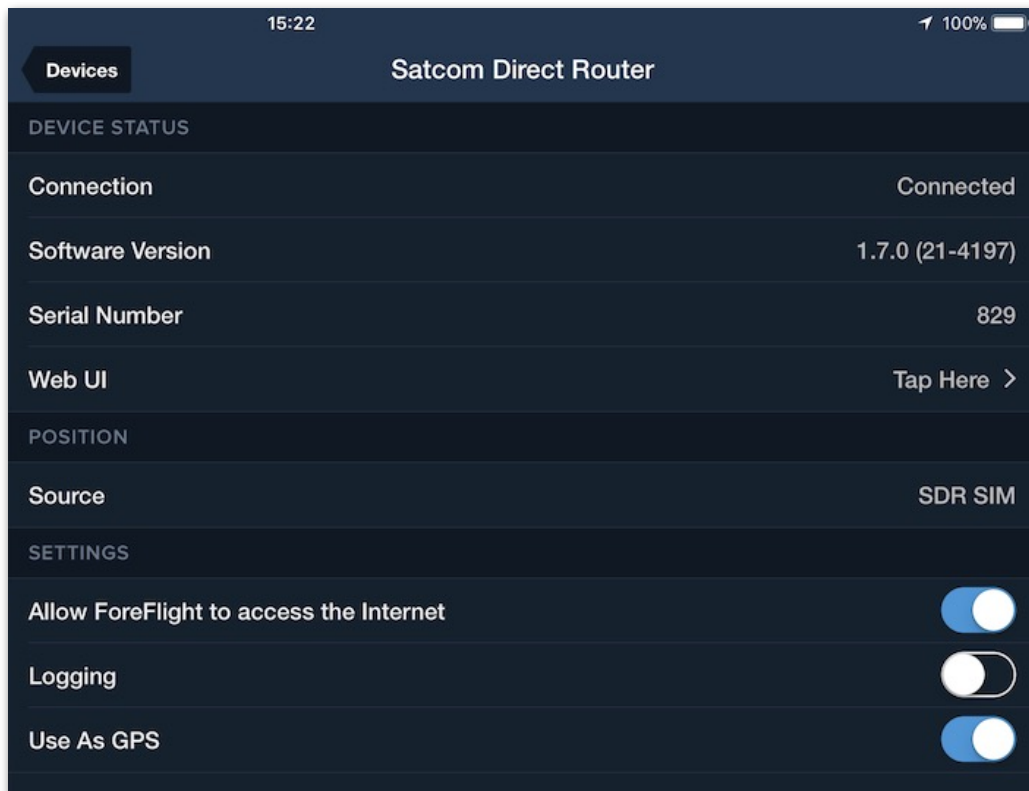
All customers can connect to a Satcom Direct or Gogo Router to receive in-flight internet data. A Performance Plus or Business Performance subscription is required to receive GPS and pressure altitude data from each device. Satcom Direct routers can also provide ForeFlight with track information when properly configured.

Internet Access Settings

When connected to a Satcom Direct or Gogo router, the **Allow ForeFlight to access the Internet** setting can be used to allow or prevent ForeFlight from using internet data. This setting is enabled by default.

Local Area Network Administrator Settings

To access the Satcom Direct Router's Local Area Network administrator page, tap the **Web UI** row.



Satcom Direct Route Device Information Page

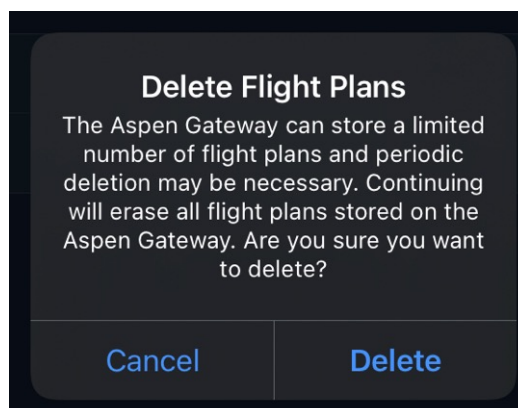
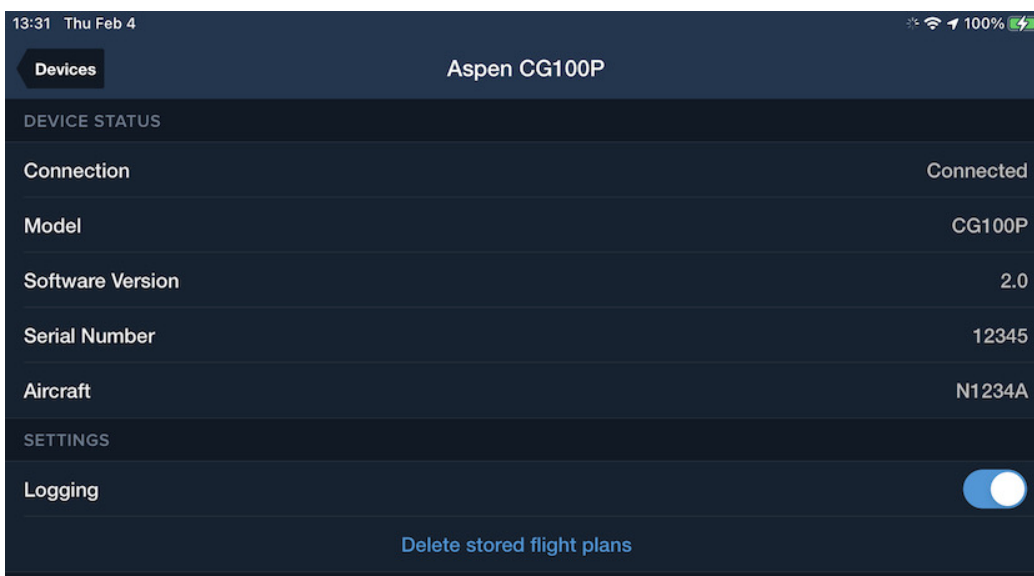
23. FOREFLIGHT CONNECT

Aspen CG100P/CG200P

The Aspen Connected Gateway can store transferred routes on an SD card. When the SD card is full, new routes cannot be transferred until the SD card is cleared.

To clear the routes, tap the CG100P/GC200P Device Tile, then tap **Delete stored flight plans**.

Deleting stored flight plans will clear ALL routes that have been sent to the Connected Gateway.



23. FOREFLIGHT CONNECT

23.5 GPS

ForeFlight can only display GPS position and altitude data from a single source at a time. The source of GPS data is used across all aspects of the app, including:

- **Ownship** - GPS data is used to display your position on the map.
- **Track Logs** record your GPS position.
- **GPS Accuracy Instrument** displays the reported accuracy of the GPS source.

23.5.1 Multiple GPS Data Sources

When GPS data is available from multiple sources, the highest priority source is used. See [multiple-device connection logic](#) for additional information.

Source of GPS Data

The GPS source is displayed above the Accuracy Instrument. If no source is displayed, GPS data is provided by the internal iOS GPS processor.



Garmin, Avidyne, uAvionix, SkyView, FreeFlight GPS Source Labels

23.5.2 GPS Accuracy

The GPS Accuracy Instrument displays the accuracy of position data. GPS accuracy is reported to ForeFlight and displayed in the Instrument Panel rounded to the nearest meter.

Accuracy is calculated by the device's GPS processor by measuring its distance from multiple GPS satellites. GPS accuracy refers to how close the device's calculated position is from the truth, expressed as a radius.

GPS Accuracy Color-Coding

The Accuracy instrument is color-coded based on the reported GPS accuracy. The lower the number, the more accurate the position data.

Green - 20 meters or less. **Orange** - 20 to 60 meters. **Red** - Greater than 60 meters.

NOTE: See [Ownship](#) for additional GPS accuracy implications.

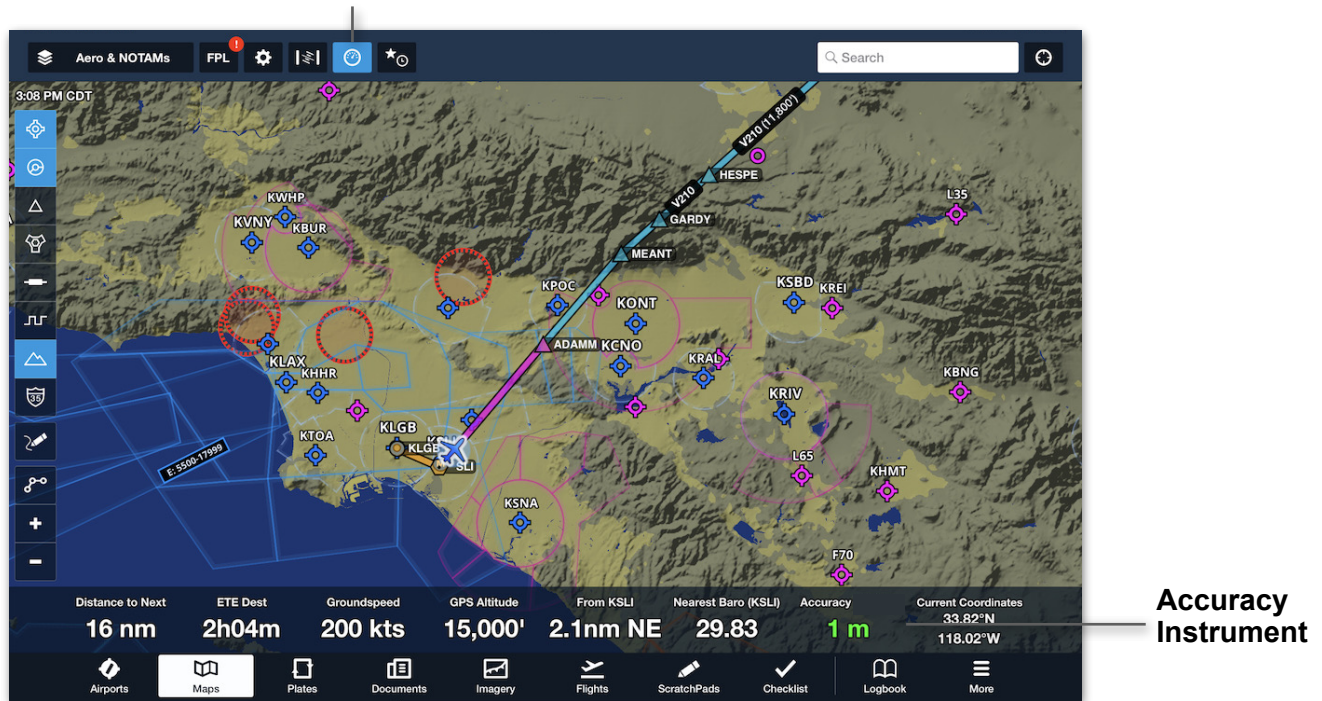
23. FOREFLIGHT CONNECT

Displaying GPS Accuracy

To display GPS Accuracy:

1. Tap the Instrument Panel button in the upper toolbar.
2. If the Accuracy instrument is missing, tap any instrument in the panel and select **Accuracy** from the list.

Show / Hide Instrument Panel



NOTE: Lynx reports GPS accuracy as a range (e.g., between 10 and 30 meters). ForeFlight displays the highest value within the reported range (30m).

NOTE: When GPS data is being sent from Satcom Direct to ForeFlight, the Accuracy instrument will show “Accuracy (A429)”.

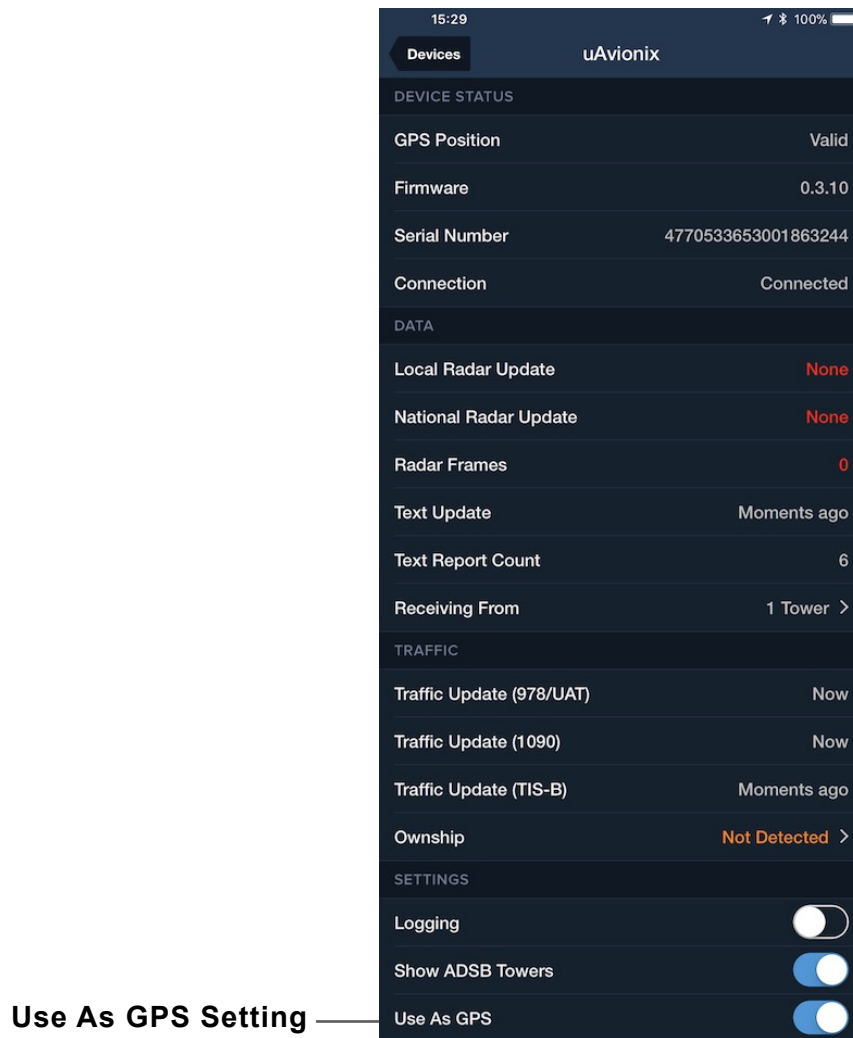
23. FOREFLIGHT CONNECT

23.5.3 Use As GPS Setting

When connected to a device, GPS data from the device is enabled by default.

To block GPS data from an external device (for troubleshooting purposes or to **prioritize a different GPS source**) follow the steps below:

1. Tap **More > Devices**.
2. Tap the external **Device Tile** to access its settings.
3. Scroll to the Settings section.
4. Tap the **Use As GPS** toggle switch to enable or disable the GPS data flow between the external device and ForeFlight Mobile.



23. FOREFLIGHT CONNECT

23.5.4 iOS Location Services

To display your position on the map, using the built-in GPS, ForeFlight needs permission to access your location data. These settings are configured when ForeFlight is used for the first time.

To adjust Location Services permission settings after the initial launch:

1. Open the iPad or iPhone's Settings app.
2. Select **Privacy > Location Services**.
3. Enable Location Services at the top of the page.
4. Locate and tap **ForeFlight** from your list of installed apps.
5. Verify the ForeFlight Location Services setting is set to **Always** or **While Using the App**.
6. Enable **Precise Location**.

Selecting a setting other than Always may result in ForeFlight not being able to perform as designed. Displaying your position on the map also requires ForeFlight's Enable Ownship setting to be set to Always (or Limited). You can access the Enable Ownship setting by selecting **More > Settings** and scrolling to the bottom of the view.

If using an external GPS, the Location Services permission settings do not apply.

23. FOREFLIGHT CONNECT

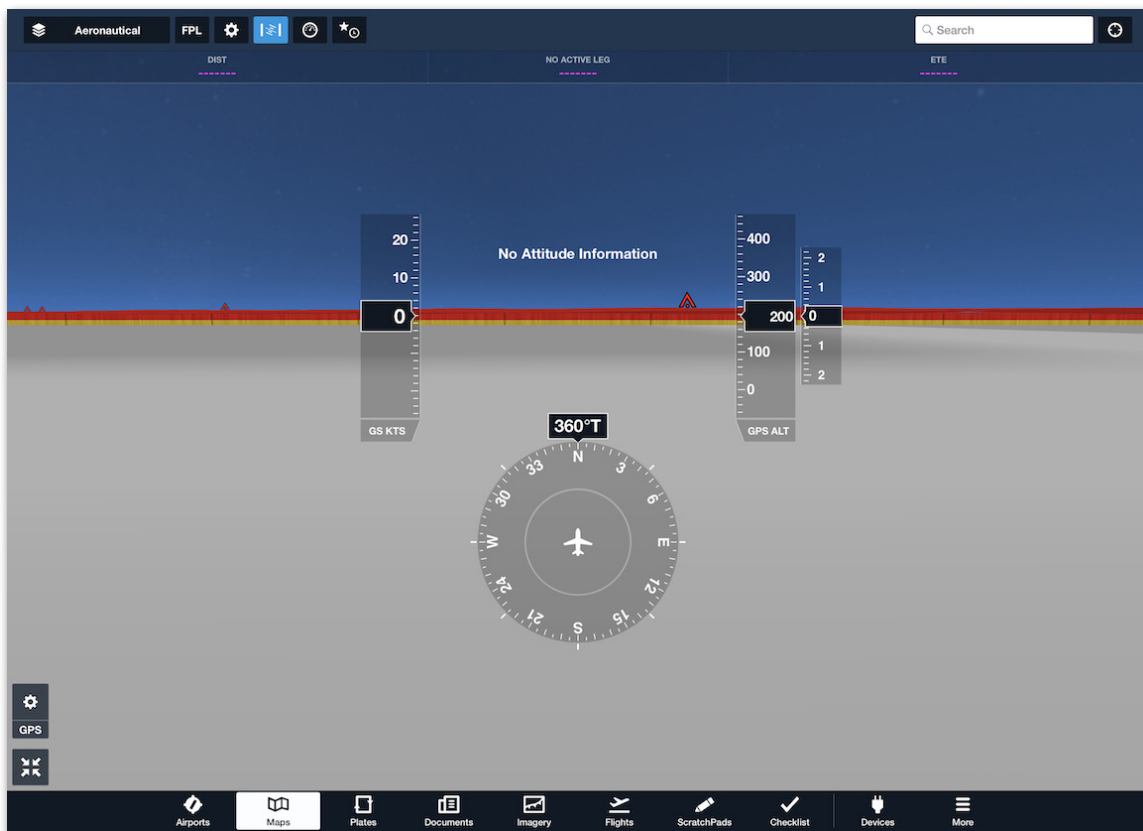
23.6 Attitude Indicator (AHRS)

iPad and iPhone are not equipped with an attitude and heading reference sensor (AHRS). As a result, when ForeFlight is *not* connected to an external device, or the **Use As AHRS** setting is disabled, the Attitude Indicator is inoperative and displays wings level with a *No Attitude Information* label.

All ForeFlight Mobile subscriptions can display attitude information when connected to a supported AHRS device. It's important to note, the Attitude Indicator only displays pitch and bank data provided by the source.

If the Attitude Indicator is inaccurate, the erroneous information originates at the source. As a preliminary troubleshooting step, AHRS should be calibrated as discussed on the following pages.

WARNING: Attitude information in ForeFlight is an aid to situational awareness and shall not be used as a primary source of attitude information during IFR flight.



Attitude Indicator - No External Devices

23. FOREFLIGHT CONNECT

23.6.1 Calibrating AHRS

Calibrating AHRS establishes the reference point from which changes to pitch and bank are reflected. For example, an aircraft with a 3 degree nose high calibration will indicate 8 degrees nose up when the aircraft is pitched up 5 degrees.

The process for calibrating AHRS varies by device type and can be done as often as necessary. There are three unique calibration methods:

- **(Source)** AHRS can be calibrated at the source using the device's interface. This method is used by most installed avionics and should be the first step when calibrating AHRS. See [Calibrating the Source](#) for additional information.
- **(ForeFlight)** AHRS can be calibrated after being received by ForeFlight. This method is supported by all portable devices and some installed avionics. See [Calibrating with ForeFlight](#) for additional information.
- **(Reset) ARHS** - The Flight Stream 210 supports a remote Reset AHRS message. See [Resetting AHRS with ForeFlight](#) for additional information.

The table on the next page list supported AHRS calibration methods per device.

IMPORTANT: AHRS should be calibrated on the ground or in unaccelerated flight when the aircraft is straight and level. AHRS calibration should begin at the source if applicable.

23. FOREFLIGHT CONNECT

Supported AHRS Calibration Methods

The table below lists the calibration methods supported per device.

uAvionix	Source	ForeFlight	Supports Auto Zero Pitch & Bank	Supports Reset AHRS message
Sentry		✓	✓	
Sentry Plus		✓	✓	
Garmin				
GDL 39 3D		✓		
GDL 50		✓		
GDL 52		✓		
GTX 345	✓	✓		
GNX 375	✓	✓		
GPS 175	✓	✓		
G3X Touch	✓	✓		
Flight Stream 210		✓		✓
Flight Stream 510	✓	✓		
Appareo				
Stratus		✓		
Dual				
XGPS 190		✓		
Avidyne				
IFD 550	✓			
Dynon				
Skyview	✓			
Golze				
ADL 180/190/200	✓	✓		

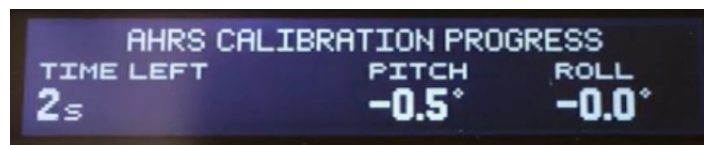
Supported AHRS Calibration Methods

23. FOREFLIGHT CONNECT

23.6.2 Calibrating the Source (Installed Devices)

Most installed avionics are calibrated using their own interface. Installed avionics should be calibrated by a certified avionics shop during installation. If calibration was not completed, AHRS data may not be broadcast by the device.

If using a device for the first time or troubleshooting an AHRS issue, the first step should be to ensure the device is accurately calibrated. Pilots may be able to calibrate an installed device's AHRS using the device interface. This generally involves setting the aircraft's current pitch and bank through the use of various menus. Refer to your device's documentation for additional information.



Example Garmin AHRS Calibration Interface

IMPORTANT: AHRS must be calibrated at the source before pitch and bank data can be broadcast to ForeFlight.

NOTE: The Avidyne IFD 500 and Dynon SkyView can only be calibrated with their interface. The Garmin GTX345 will only transmit AHRS data after the unit has been calibrated using the device interface.

23.6.3 Calibrating with ForeFlight

Portable AHRS devices can *only* be calibrated using ForeFlight. Once a portable device is calibrated, it should not be moved. If moved, the device should be recalibrated.

Certain installed avionics can also be calibrated using ForeFlight. Calibrating an installed device with ForeFlight should not take the place of calibrating the device at the source. Additional information is located later in this section. See [Calibrating AHRS with ForeFlight](#) for additional instructions.

23. FOREFLIGHT CONNECT

23.6.4 Resetting AHRS with ForeFlight

The Flight Stream 210 can accept a Reset AHRS message from portable devices. Unlike using an interface that permits pitch and bank to be manually specified, this method sends a Reset AHRS message which resets the device's pitch and bank to zero degrees.

The reset message is delivered with the **Reset AHRS** button found at the bottom of the **Device Information** page. When this message is received, the device's pitch and bank are reset to zero and reflected on any integrated or portable display that uses the AHRS data.

CAUTION: Do not press the **Reset AHRS** button unless the aircraft's pitch and bank is level.

23.6.5 Auto Zero Pitch and Bank

Sentry provides an Auto Zero Pitch & Bank setting. When Auto Zero Pitch & Bank is enabled, ForeFlight evaluates your pitch, bank, and acceleration. When it is determined that your aircraft has been straight and level with no acceleration for more than ten seconds, the AHRS is reset to display zero degrees of pitch and bank.

To access the Auto Zero Pitch & Bank setting, select the Maps view and display the Attitude Indicator. Tap the AHRS settings (gear) button in the lower-left corner of the display. Toggle the **Auto Zero Pitch & Bank** setting on or off as needed.

23.6.6 Multiple AHRS Sources

If connected to multiple AHRS devices, ForeFlight uses the AHRS data according to its **multiple-device connection logic**. Higher priority AHRS signals can be ignored with the **Use As AHRS** setting found on the **Device Information** page.

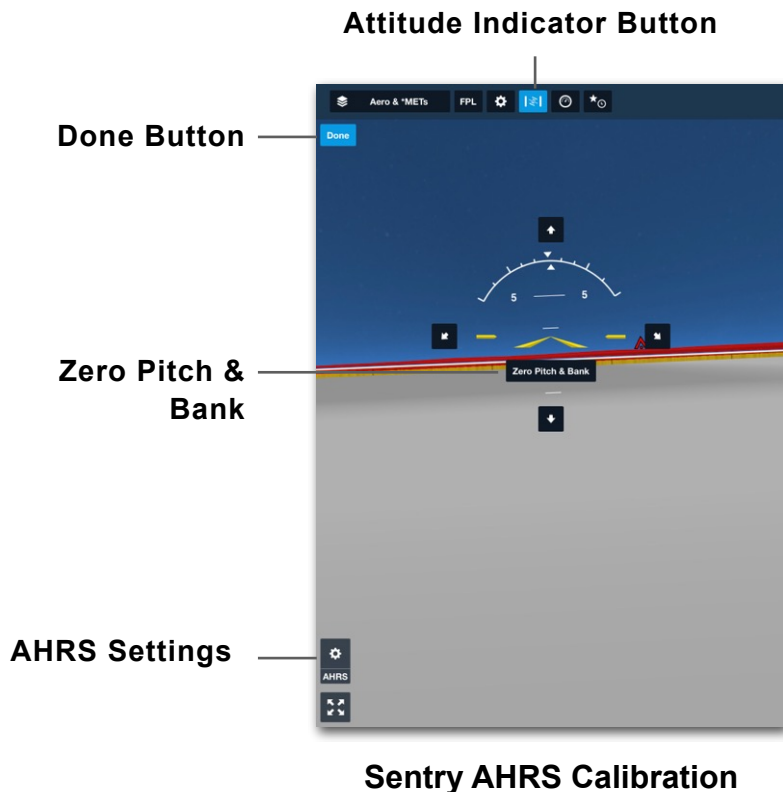
23. FOREFLIGHT CONNECT

Calibrating AHRS with ForeFlight

Portable and certain installed AHRS devices can be calibrated using ForeFlight. Calibrating devices with ForeFlight using the steps below applies pitch and bank correction values to the AHRS data after it has been received by ForeFlight.

To calibrate AHRS with ForeFlight:

1. Ensure *installed* avionics are calibrated **using their interface** (if applicable).
2. In ForeFlight Mobile, open the **Maps** view.
3. Tap the **Attitude Indicator** button to display its view.
4. Tap the **AHRS (gear) Settings** button to reveal calibration options.
 - a. If the **Zero Pitch & Bank** button is displayed, tap it to set the reference point.
 - b. If an AHRS setup menu is displayed, tap **Calibrate AHRS**, then tap **Zero Pitch & Bank**. If applicable, tap the arrows to make minor adjustments to the device's pitch and bank wings level reference point.
5. Tap **Done** (or **Save**).



23. FOREFLIGHT CONNECT

23.7 ADS-B Traffic

ForeFlight displays ADS-B traffic on the map when connected to an ADS-B receiver and the **Traffic** layer is selected. It is not possible to display traffic from the internet when connected to an ADS-B device.

ADS-B traffic consists of two components:

- **Air-to-Air traffic** is ADS-B Out equipped aircraft whose broadcast can be directly received by an ADS-B receiver.
- **TIS-B traffic** is non ADS-B Out equipped air traffic whose information is received via the **TIS-B broadcast**.

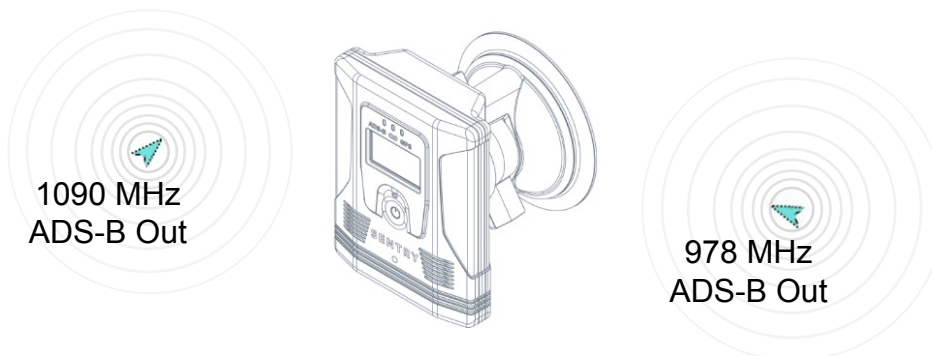


All ADS-B traffic is transmitted on either the 978 MHz or 1090 MHz frequency (1090 MHz is required internationally and above FL180). Most ADS-B receivers are dual-band and capable of receiving traffic from both frequencies.

The aircraft you fly does not need to be ADS-B Out equipped to receive traffic information. However, if you're not equipped, ForeFlight may show fewer traffic targets and significant relative altitude discrepancies. See **ADS-B Ownership** and **Traffic Information Service Broadcast (TIS-B)** for additional information.

WARNING: ADS-B traffic data from ForeFlight is an aid to situational awareness. Traffic from ForeFlight should not be used as the sole means of traffic avoidance. Always follow see and avoid techniques or direct instructions from ATC.

CAUTION: You should consider any ADS-B traffic target within 500' vertically as potentially being at the same altitude as your aircraft.



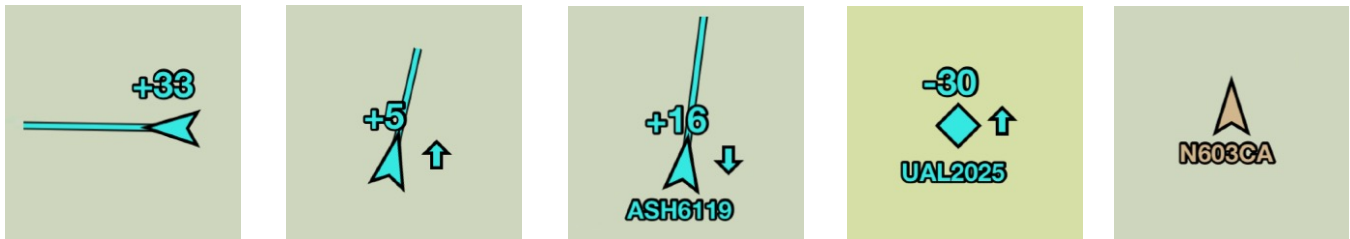
Sentry Plus Detecting ADS-B Traffic

23. FOREFLIGHT CONNECT

23.7.1 ADS-B Traffic Symbols

A traffic target's color and symbol depend on its location, proximity, and movement.

- **Moving targets** are displayed as arrowheads pointing in their direction of travel. A TrafficTrend™ vector is displayed in front of the arrowhead to indicate the target's expected position in the next 60 seconds (longer vector = faster speed).
- **Stationary targets** and targets with no direction or speed information are depicted as diamonds.
- **Airborne targets** are cyan.
- **Surface targets** are brown.



Traffic Targets

Relative Altitude Symbols

A traffic target's relative altitude is depicted with a plus [+] (height above you) or minus [-] symbol (height below you). Relative altitude is given in hundreds of feet. For example, a traffic target with a +9 relative altitude is 900' above you.

Up and down arrows next to a traffic target indicate that the traffic is climbing or descending greater than 500 feet per minute (relative to your altitude).

23. FOREFLIGHT CONNECT

Traffic Cautions and Warnings

Cautions and warnings are issued for traffic targets that pose a risk. Multiple cautions and warnings can be issued simultaneously. Your groundspeed and the groundspeed of the traffic target must be greater than 40 knots for a caution or warning to be issued.

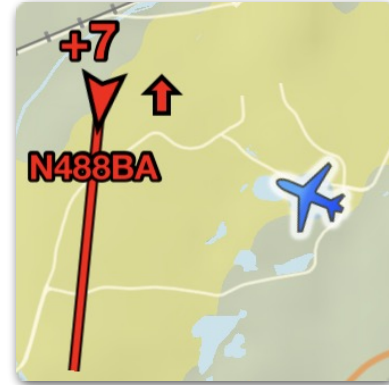
Traffic Cautions are issued for targets that are less than 45 seconds from being within 2.0 nm and +/- 1,200' of your position. When a caution is issued, the target's icon is highlighted **YELLOW**.

Traffic Warnings are issued for targets that are less than 25 seconds from being within 1.3 nm and +/- 1,200' of your position. When a warning is issued, the target's icon is highlighted **RED**, and a **Traffic Alert** is activated if the setting is enabled.

Traffic targets remain highlighted for 15 seconds after they no longer exceed the thresholds.



Traffic Caution
within 2.0 nm and
+/- 1,200' or will be
within 45 seconds



Traffic Warning
within 1.3 nm and
+/- 1,200' or will be
within 25 seconds

23. FOREFLIGHT CONNECT

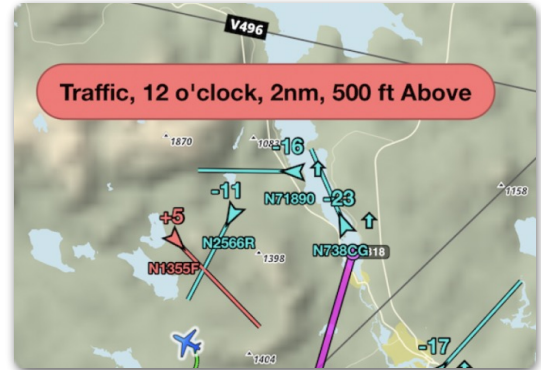
23.7.2 Traffic Alerts

Traffic alerts are enabled by default and appear regardless of the selected view. Tap **More > Settings > Alerts** to disable traffic alerts.

A simultaneous audible alert is issued if the **Speak All Alerts** setting is enabled. Alerts include the target's relative (clock) direction, distance, and altitude.

Traffic alerts are activated when:

- You and the traffic target have a groundspeed greater than 40 knots.
- The traffic target is less than 25 seconds from the warning range (closer than 1.3 nm and +/- 1,200').

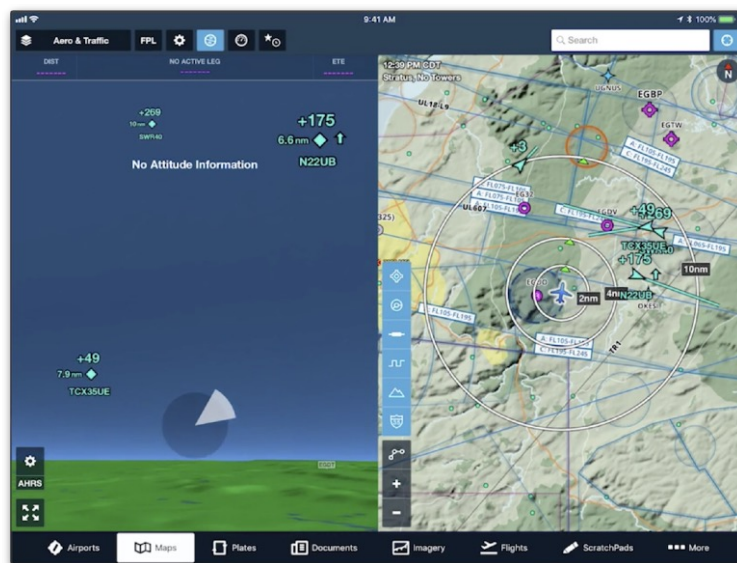


Traffic Alert

23.7.3 Traffic in Synthetic Vision

Traffic within 11 nm of your current position is depicted in the Attitude Indicator, also referred to as Synthetic Vision.

As traffic moves more than 11 nm away from you, the traffic target fades out of view. Traffic moving closer to you grows in size. Tapping on a traffic target in Synthetic Vision does *not* display a traffic information pop-up.



Traffic in Synthetic Vision

23. FOREFLIGHT CONNECT

23.7.4 Hiding Distant Traffic

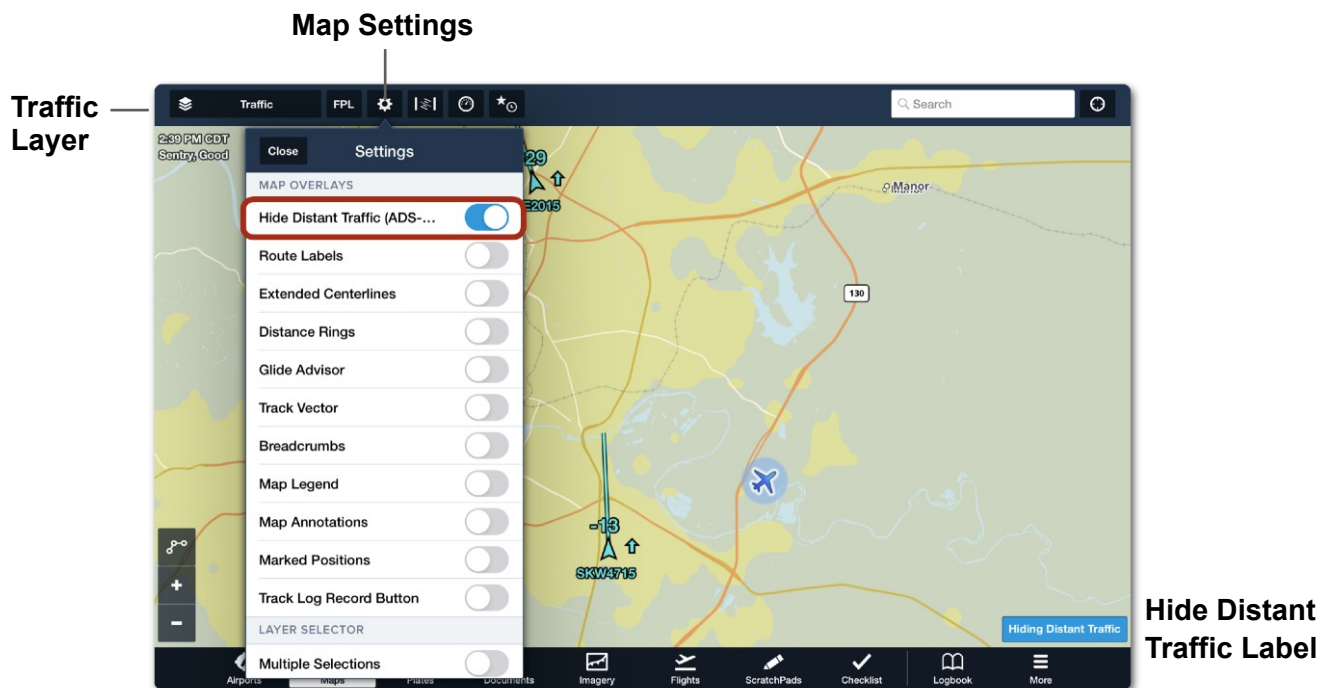
All ADS-B traffic that is detected by the receiver is displayed on the map when the **Traffic** layer is selected. To reduce the amount of traffic displayed on the map, enable the **Hide Distant Traffic** setting.

The Hide Distant Traffic setting is only available when connected to an ADS-B receiver and hides traffic that is more than 15 nm or more than 3,500 feet above or below your position. To enable this setting:

1. Open the Map setting menu.
2. Enable **Hide Distant Traffic (ADS-B)**.

When Hide Distant Traffic is enabled, a label appears in the lower right corner of the map, indicating that distant traffic is hidden.

To remove all traffic from the map, deselect the Traffic layer from the map layer menu.



Hide Distant Traffic (ADS-B) Enabled

NOTE: The Hide Distant Traffic setting does not affect traffic alerts.

23. FOREFLIGHT CONNECT

23.7.5 Traffic Information Service Broadcast (TIS-B)

The Traffic Information Service Broadcast (TIS-B) is a component of **ADS-B traffic**. It is continuously broadcast on the 978 MHz frequency by **ADS-B towers** and exclusively contains information about air traffic not equipped with ADS-B Out.

Client aircraft

The TIS-B broadcast provides a more complete picture of the traffic around you. ADS-B Out equipped aircraft (also referred to as client aircraft) benefit the most from the TIS-B broadcast.

What traffic is included in the broadcast

To be included in the TIS-B broadcast, air traffic must meet the following requirements:

- Within 15 nm and 3,500 feet (vertically) of any client aircraft.
- Equipped with an altitude encoding (Mode C) transponder (Not ADS-B Out equipped).
- Operating within the service volume of surveillance radar.

What Traffic is excluded

The following aircraft are *excluded* from the TIS-B broadcast:

- Aircraft operating outside 15 nm and 3,500 feet (vertically) of any client aircraft.
- Aircraft without transponders.
- Aircraft operating outside of surveillance radar.
- ADS-B Out equipped aircraft.

How TIS-B is received

Pilots can receive the TIS-B broadcast by operating within the ADS-B service volume while connected to an ADS-B (978 MHz) receiver. All traffic targets that are included in the TIS-B broadcast can be received by aircraft equipped with an ADS-B receiver for display in ForeFlight.

In other words, the aircraft you fly does not need to be ADS-B Out equipped to receive TIS-B traffic. However, TIS-B traffic will only be included in the broadcast and thus displayed in ForeFlight if the traffic target operates within 15 nm and 3,500 feet of an ADS-B Out equipped client aircraft.

23. FOREFLIGHT CONNECT

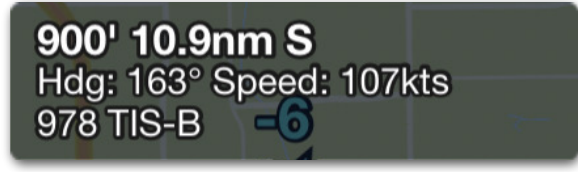
23.7.6 ADS-B and TIS-B Differences

The **icons** used to depict air-to-air (ADS-B) and TIS-B traffic targets are the same. Differences exist when the traffic target is tapped. Unlike ADS-B traffic targets, TIS-B targets often lack identifying information (e.g., tail number or call sign).

When a traffic target is tapped, a pop-up displays information about the target to include whether the target originated from an air-to-air or TIS-B broadcast.



1090 MHz ADS-B Traffic Pop-up



978 MHz TIS-B Traffic Pop-up

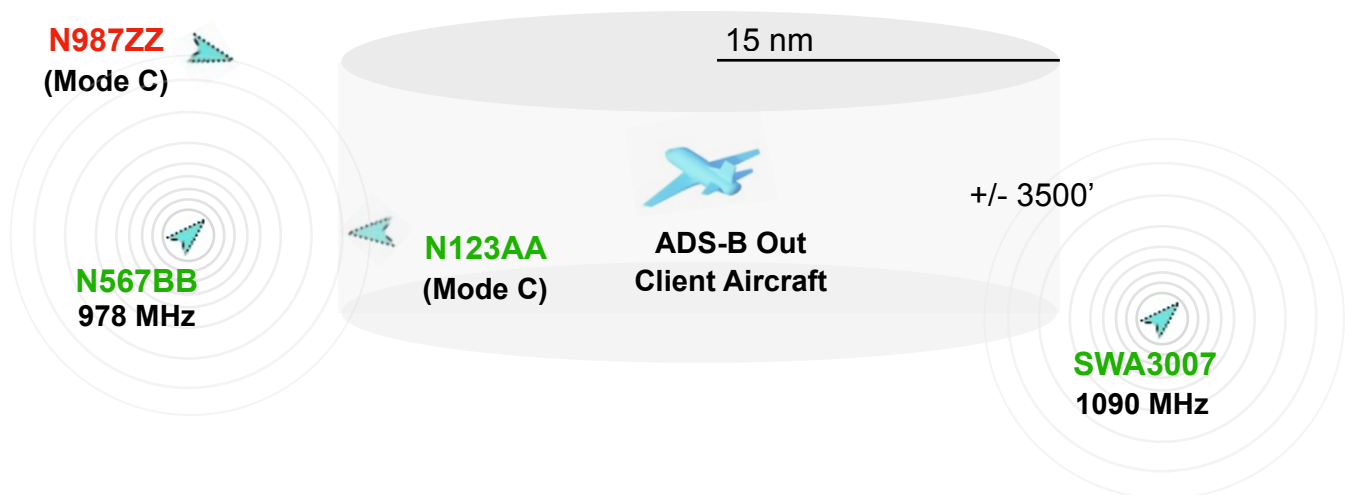
NOTE: Garmin receivers do not indicate which frequency traffic was detected on.

23. FOREFLIGHT CONNECT

ADS-B and TIS-B Traffic Examples

The image below depicts four traffic targets and an ADS-B (In and Out) equipped airplane in the center of a grey ring. The ring represents the proximity requirements discussed in the **TIS-B section**. Traffic that can be displayed in ForeFlight is depicted in green. Traffic not able to be displayed is red.

- **N123AA** is a Mode C (non-ADS-B Out equipped) traffic target. This traffic target is included in the TIS-B broadcast because it is within 15 nm and 3,500' of a client aircraft. Any aircraft receiving the TIS-B broadcast (including non ADS-B Out equipped aircraft) will receive the N123AA target for display in ForeFlight.
- **N987ZZ** is a Mode C (non-ADS-B Out equipped) traffic target. This traffic target is not available for display in ForeFlight because it is outside the TIS-B client proximity requirement. This traffic target will not be displayed in ForeFlight unless it were to enter the proximity requirements of *any* client aircraft.
- **N567BB** and **SWA3007** are air-to-air ADS-B traffic targets that can be received directly and are available for display in ForeFlight. These traffic targets are not included in the TIS-B broadcast because they are ADS-B Out equipped aircraft.



23. FOREFLIGHT CONNECT

23.7.7 ADS-B Ownship

ADS-B Ownship is an automated process that identifies a traffic target as belonging to your aircraft.

Determining Ownship

To determine ownship, ForeFlight compares the location and movement of nearby traffic targets to your location and movement. If a traffic target's movement closely matches yours, ForeFlight recognizes the signal is coming from your aircraft and assigns Ownship status.

NOTE: To determine ownship, your ADS-B receiver must be able to detect your aircraft's traffic broadcast (transponder).

Benefits of Ownship

There are a number of benefits to a successful Ownship assignment:

- Your traffic target is removed from the map (eliminating **false traffic targets**).
- Information from your aircraft's transponder is automatically incorporated into other aspects of ForeFlight (e.g., your tail number is automatically assigned in Track Logs).
- Pressure altitude from the transponder is used for altitude comparison. When ownship is not detected and pressure altitude data is unavailable, ForeFlight compares your GPS altitude with the pressure altitude of nearby traffic.

Checking Ownship Status

To determine if Ownship status has been assigned:

1. Select **More > Devices** and tap the ADS-B **Device Tile**.
2. Scroll to the Traffic section and reference the **Ownship** field.
3. If an aircraft is listed, ownship status is assigned. Tap the aircraft to display the **information** from your aircraft's transponder.

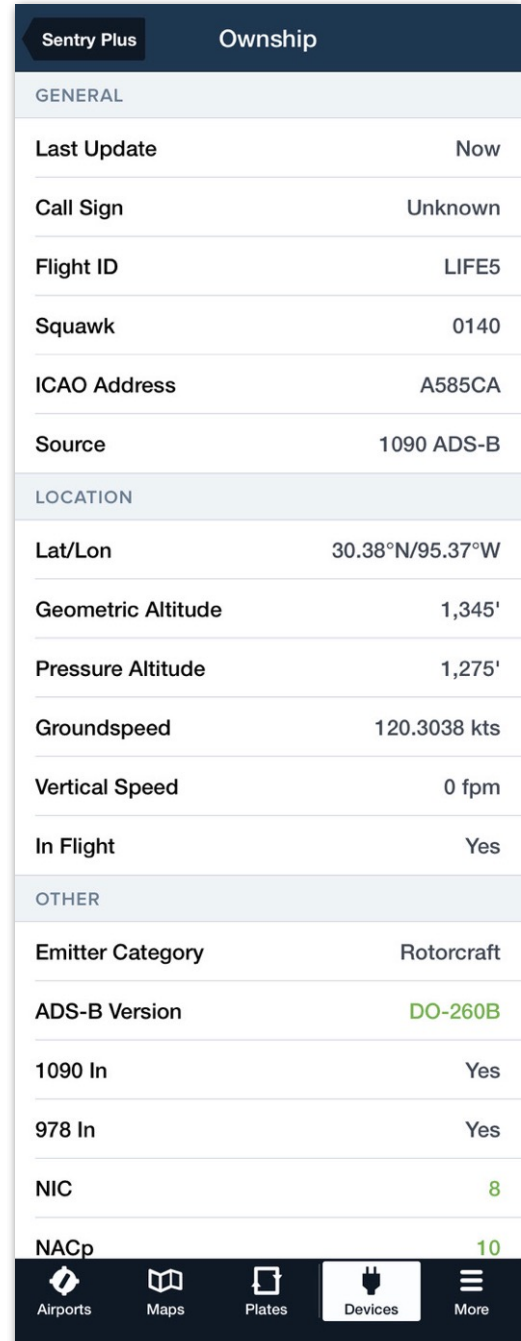
TRAFFIC	
Traffic Update (978/UAT)	Now
Traffic Update (1090)	Now
Traffic Update (TIS-B)	Now
Ownship	Detected: LIFE3 >

23. FOREFLIGHT CONNECT

Ownship Information

The Ownship Information view displays information as reported by your aircraft's transponder. Descriptions of each field can be found below.

- **Last Update** indicates the last time data was received from your aircraft's transponder.
- **Call Sign** is an optional alphanumeric value used to identify the aircraft (e.g., UAL123).
- **Flight ID** is the identifier for the aircraft and should match the aircraft ID (or call sign) entered on the flight plan.
- **Squawk** displays the current squawk code entered into the transponder.
- **ICAO Address** is a 24-bit code unique to the aircraft assigned by ICAO.
- **Source** displays the frequency of the transponder (978 or 1090 MHz).
- **Lat/Lon** displays the last reported latitude and longitude.
- **Geometric Altitude** displays the last reported GPS altitude.
- **Pressure Altitude** displays the last reported pressure altitude from the transponder. This data is used for altitude comparisons to nearby traffic targets.
- **Groundspeed** displays the last reported groundspeed.
- **Vertical Speed** displays the last reported vertical speed.
- **In Flight** indicates whether the aircraft has been determined to be in flight. When in flight, certain features are disabled (e.g., account changes).



Sentry Plus Ownship	
GENERAL	
Last Update	Now
Call Sign	Unknown
Flight ID	LIFE5
Squawk	0140
ICAO Address	A585CA
Source	1090 ADS-B
LOCATION	
Lat/Lon	30.38°N/95.37°W
Geometric Altitude	1,345'
Pressure Altitude	1,275'
Groundspeed	120.3038 kts
Vertical Speed	0 fpm
In Flight	Yes
OTHER	
Emitter Category	Rotorcraft
ADS-B Version	DO-260B
1090 In	Yes
978 In	Yes
NIC	8
NACp	10

Ownship Information

23. FOREFLIGHT CONNECT

- **Emitter Category** indicates the aircraft category (e.g., light airplane, small airplane, large airplane, rotorcraft, glider).
- **ADS-B Version** displays the applicable TSO minimum operational performance standard. This value is established when the ADS-B equipment is manufactured.
- **1090 In** specifies if the aircraft is capable of receiving the 1090 MHz frequency.
- **978 In** specifies if the aircraft is capable of receiving the 978 MHz frequency.
- **NIC** (Navigation Integrity Category) specifies an integrity containment radius around an aircraft's reported position, as defined in TSO-C166b and TSO-C154c.
- **NACp** (Navigation Accuracy Category for Position) specifies the accuracy of a reported aircraft's position, as defined in TSO-C166b and TSO-C154c.

23. FOREFLIGHT CONNECT

23.7.8 False Traffic Targets

A false traffic target is a traffic icon or traffic alert for the aircraft you're flying. Two scenarios can result in false traffic targets. The error depends on your aircraft's transponder type.

ADS-B Out Equipped False Traffic Targets

If your ADS-B receiver detects your ADS-B Out transponder and the position data does not match between the two, ownship cannot be assigned. If ownship is not assigned to your aircraft, your aircraft may be displayed on the map if detected and can generate false **traffic alerts**.

False traffic alerts are most likely to occur with rapid maneuvering or poor GPS accuracy. Once position data matches, ownship can be established and false traffic targets will cease.

If ownship is not assigned over the course of an entire flight, this may indicate airframe interference, an issue with the aircraft's configuration, or an issue with the transponder's position reporting.

TIS-B False Traffic Targets (non ADS-B Out equipped)

If your Mode C aircraft's traffic information is broadcast via the **TIS-B** broadcast and your ADS-B receiver detects the traffic target, your aircraft may appear as a traffic target slightly behind and +/- 200' your actual position.

After a short period of time, ForeFlight will recognize the TIS-B target is your aircraft and will assign it ownship status. Once assigned, the TIS-B target will be suppressed.

If ForeFlight is unable to determine ownship and your TIS-B target is detected, there is no way to remove your TIS-B target from the map other than by turning off the **Traffic** layer.

23. FOREFLIGHT CONNECT

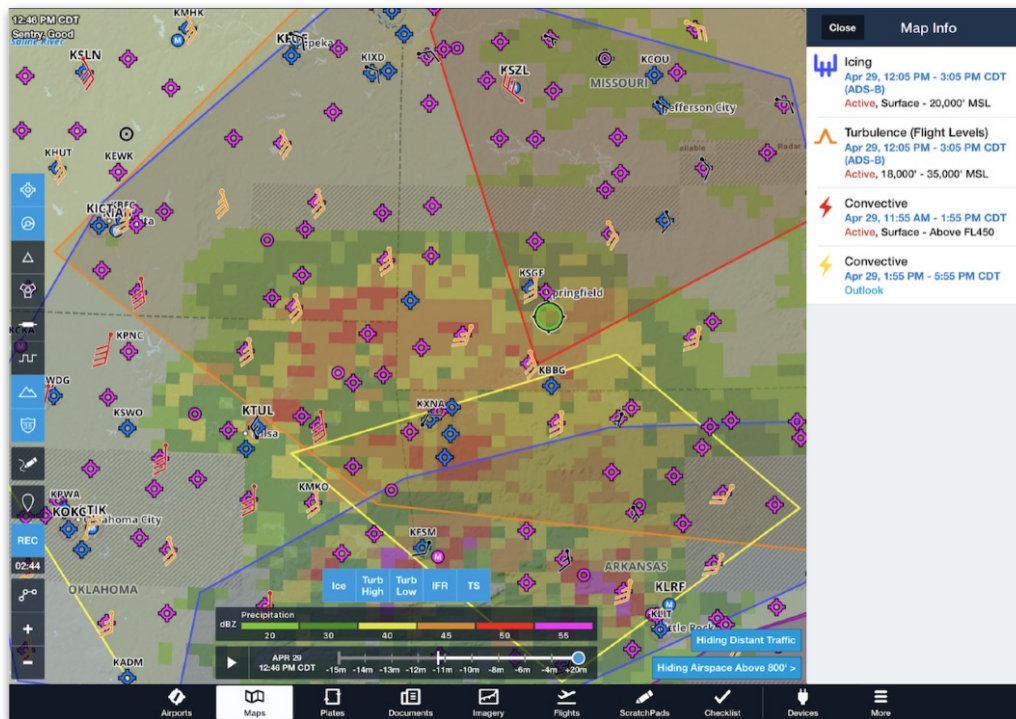
23.8 ADS-B Weather (FIS-B)

The Flight Information Service Broadcast (FIS-B), commonly referred to as ADS-B weather, is a subscription-free, continuous weather and NOTAM broadcast. ADS-B weather is primarily only available in the United States and includes the following products:

- **Regional NEXRAD**
- **Center Weather Advisories**
- **Icing**
- **CONUS NEXRAD**
- **PIREPs**
- **Lightning**
- **METARs**
- **Special Use Airspace**
- **Turbulence**
- **TAFs**
- **NOTAMs**
- **Winds/Temps Aloft**
- **AIR/SIGMETS**
- **Cloud Tops**
- **Freezing Levels**

To display ADS-B weather, the following criteria must be met:

- Connected to a **supported ADS-B receiver**.
- Operating within the FIS-B broadcast service area.
- In line-of-sight communication with at least one **ADS-B tower**.
- A minimum of one ADS-B weather product or map layer selected.



ADS-B AIRMETs and NEXRAD Map Layers

23. FOREFLIGHT CONNECT

23.8.1 ADS-B Towers

There are hundreds of ADS-B towers throughout the United States. Towers are classified into tiers and are subject to line-of-sight restrictions.

Each type of tower tier (surface, low, medium, and high altitude) offer a range of products with varying coverage areas (see the [table](#) in this chapter for additional details). Approximately two-thirds of towers in the United States are low-altitude tier towers.

Each tower type has a defined **look-ahead range** for the products it broadcasts. The look-ahead range specifies the coverage area for the broadcasted data. For example, a low-altitude tower broadcasts METARs for airports within 250 nm of the tower. Thus, the METAR look-ahead range for low-altitude towers is 250 nm.

ADS-B receivers are capable of receiving data from multiple towers simultaneously. What is shown in ForeFlight is a combination of data from all the towers being received.



ADS-B Towers on the map

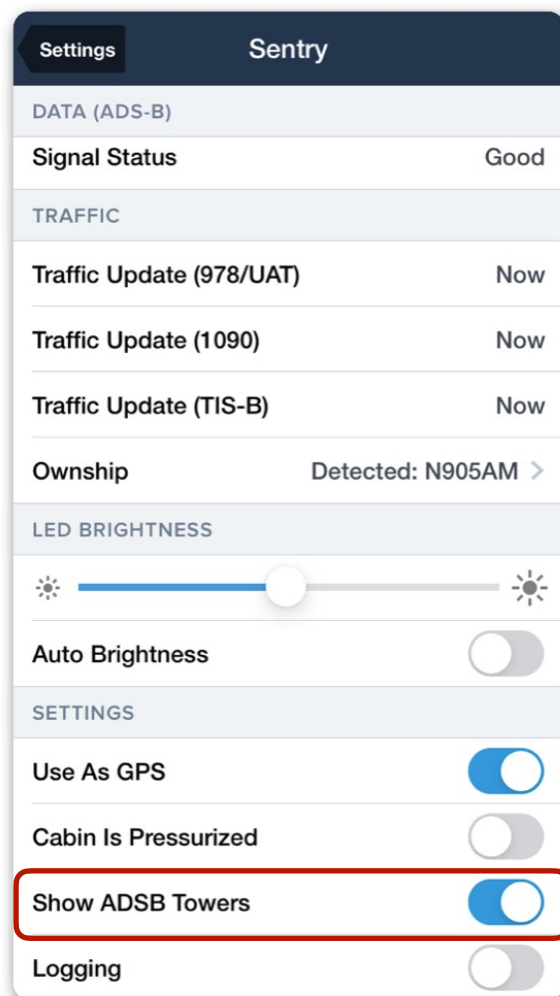
23. FOREFLIGHT CONNECT

Tower Location on Map

ForeFlight can display the towers it receives data from on the map. When any data is received from a tower, including station data (location, type, and status) the tower is displayed on the map when the **Show ADS-B Towers** setting is enabled. To display ADS-B towers on the map:

1. Select **More > Devices**.
2. Tap the **Device Tile**.
3. Enable the **Show ADSB Towers** setting.

Towers are depicted on the map near their exact location. Tower latitude, longitude, and type are shown next to the tower icon. Tapping an ADS-B tower icon does not provide any additional information.



Show ADSB Towers Setting

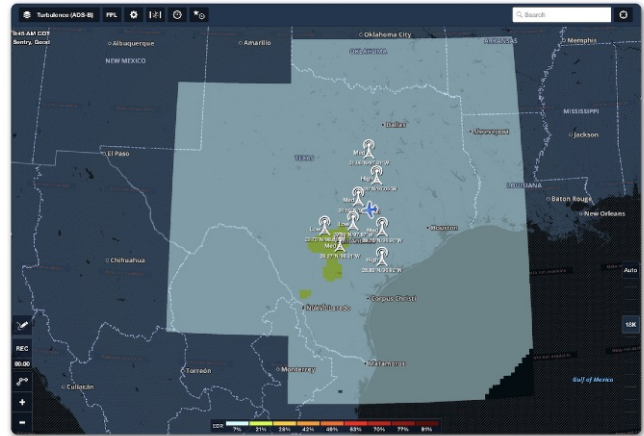
23. FOREFLIGHT CONNECT

23.8.2 FIS-B Look-Ahead Range

When viewing an ADS-B map layer, (e.g., radar, turbulence, icing) ForeFlight combines the data from multiple towers (if applicable) into a single map layer.

The image to the right is an example of ADS-B turbulence, the corresponding look ahead ranges, and multiple ADS-B towers.

Areas beyond the look-ahead range do not contain weather data and depict a hashed map layer and “Data not available” labels.



ADS-B Turbulence Look-Ahead Range

Refer to the table below to determine weather product availability and broadcast range.

Weather Product	Surface Towers	Low Altitude Tier	Medium Altitude Tier	High Altitude Tier
CONUS NEXRAD	Not Provided		Entire CONUS	
REGIONAL NEXRAD	150 nm		200 nm	250 nm
METAR	100 nm	250 nm	375 nm	CONUS B & C Airports
TAF	100 nm	250 nm	375 nm	
AIRMET/SIGMET	100 nm	250 nm	375 nm	500 nm
Graphical AIRMETs	Not Provided	250 nm	375 nm	
CWA				
PIREPs				
SUA				
NOTAM	100 nm			
Cloud Tops	Not Provided	150 nm	200 nm	250 nm
Icing				
Lightning				
Turbulence				
Winds & Temp Aloft	500 nm		750 nm	1000 nm

FIS-B Look-Ahead Range by Tower Tier and Weather Product

23. FOREFLIGHT CONNECT

23.8.3 Dynamic Map Layer Source and Status

When a dynamic map layer is selected (e.g., Traffic or ADS-B Radar), the data source (Sentry), its status (Good), and the last time the data was updated is displayed in the upper left corner of the map. When no map layers are selected, the label is removed.

Timestamp

A color-coded timestamp depicts the age of the oldest active map layer. The timestamp's color changes based on when the map layer was updated and how often the data is refreshed.

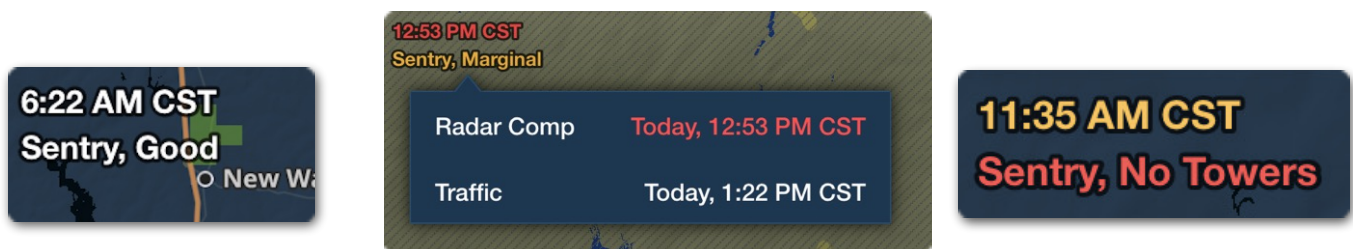
- **White** indicates the latest data is displayed.
- **Orange** indicates the data is nearing expiration.
- **Red** indicates the data is expired and newer data should be available.

When multiple map layers are selected, the timestamp reflects the oldest data. Tap the timestamp to display a popup with the update times of each selected layer.

Signal Source and Status

Below the timestamp is a label that reflects the source of data (e.g., Sentry, Connex, Stratus, etc.). Next to the data source is a status indicator. Signal status represents the *number of towers* the device is receiving data from. Signal status does *not* represent the quality of the signal. There are four potential ADS-B receiver statuses:

- **No Towers** indicates the device is not receiving any tower data.
- **No Data** indicates the device is receiving tower data (tower type or location), but not weather or NOTAM data.
- **Marginal** indicates the device is receiving FIS-B data from one tower.
- **Good** indicates the device is receiving FIS-B data from more than one tower.



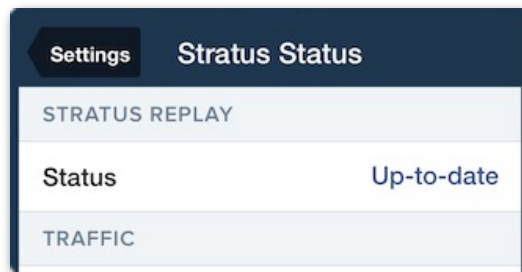
Good, Marginal, and No Towers Map Labels

23. FOREFLIGHT CONNECT

ADS-B Replay

Sentry and Stratus ADS-B receivers save the last 30 minutes of ASD-B weather information received by the device, including NEXRAD Radar, METARs, TAFs, etc.

ADS-B Replay automatically sends saved data to ForeFlight when you reopen the app after sleeping the device or switching from another app. ADS-B Replay reduces the amount of time required to view ADS-B weather information. You can check Replay status on the [Device Information](#) page.



ADS-B Replay

23. FOREFLIGHT CONNECT

23.8.4 ADS-B Radar

Next-generation radar data (NEXRAD) is available over ADS-B for the continental United States (CONUS). To display ADS-B NEXRAD data, select the **Radar (ADS-B)** map layer when connected to an ADS-B receiver and within the FIS-B service volume.

NOTE: Radar and Radar (ADS-B) are two separate map layers. **Radar** is available with an internet connection and is not available when connected to a Wi-Fi ADS-B receiver.

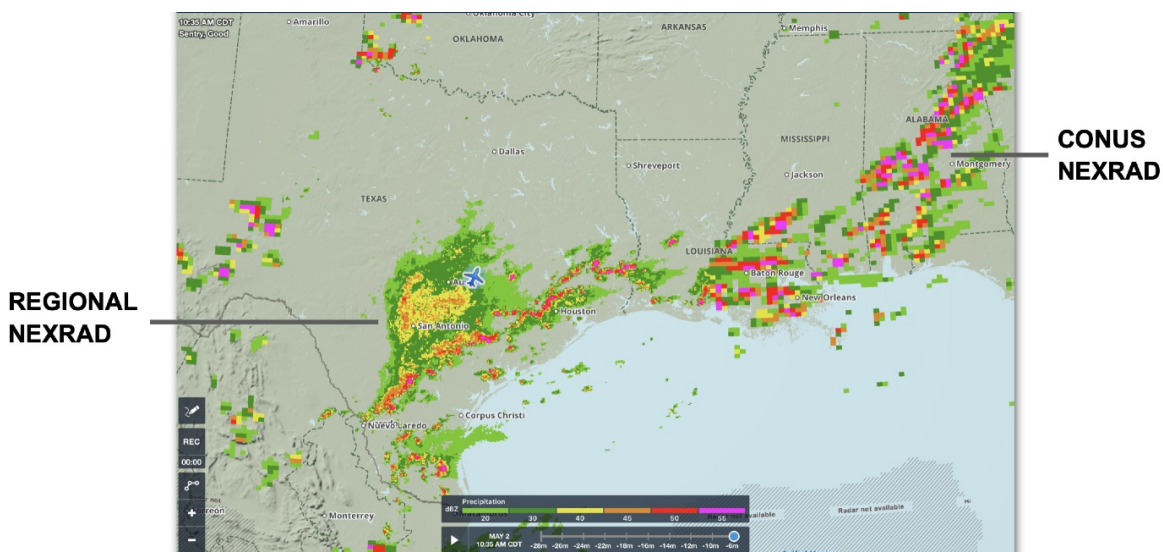
ADS-B Radar consists of two types of data (CONUS and Regional). Both types automatically display when the **Radar (ADS-B)** map layer is selected.

CONUS NEXRAD

CONUS radar is a low-resolution composite radar picture for the continental United States. This data is available from medium and high-altitude FIS-B towers. CONUS NEXRAD data is updated every 15 minutes. ForeFlight checks for new data every 5 minutes.

Regional NEXRAD

Regional radar is a higher-resolution composite radar picture broadcast by all tower tiers. Regional NEXRAD data is only available for the areas within 150 - 250 nm from the towers you're receiving data from. On clear days when there are no radar returns, Regional NEXRAD is updated every 10 minutes. Otherwise, Regional NEXRAD is updated every 2 minutes.

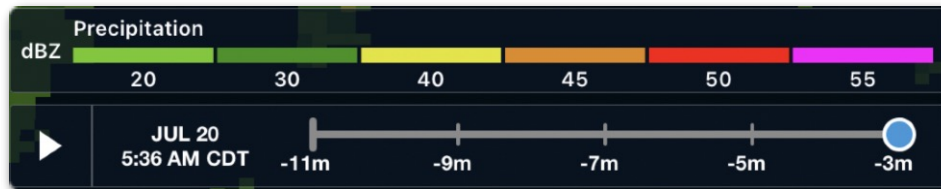


Regional and CONUS ADS-B Radar

23. FOREFLIGHT CONNECT

Animated ADS-B Radar

When **Radar (ADS-B)** is selected, radar returns can be animated with the play button left of the time slider at the bottom of the Maps view. The time slider and play button are removed when less than two radar frames are available. ForeFlight can animate (loop) up to 15 frames of ADS-B NEXRAD data.

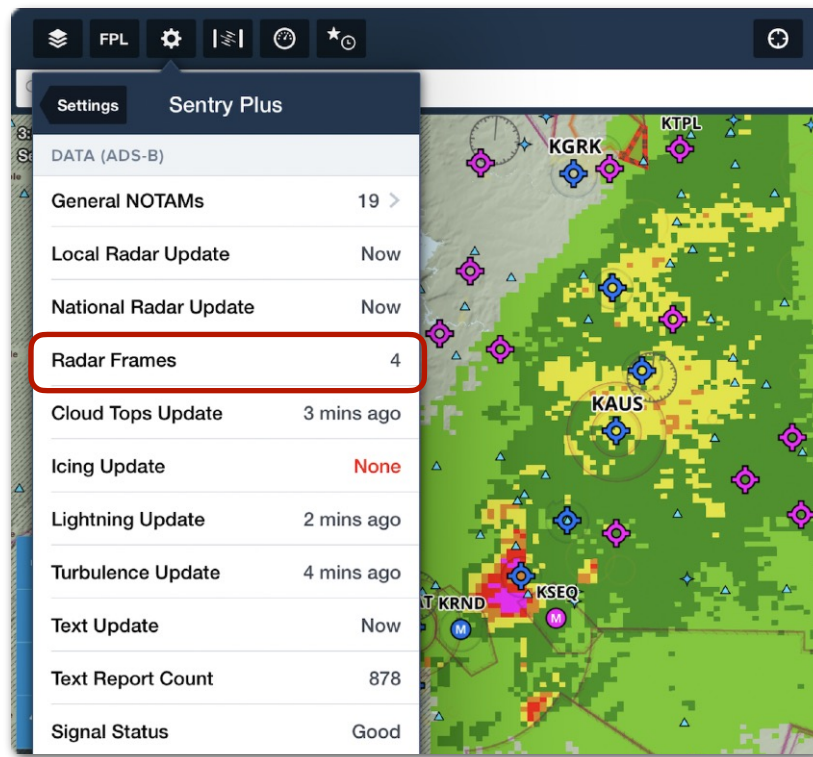


NEXRAD Animation Time Slider with Play Button

Radar Frame Information

To check the number of available radar frames:

1. Open the **Map Settings** (gear button in the Maps upper toolbar).
2. Select your ADS-B receiver (near the bottom of the menu).
3. Reference the Radar Frames field.



ADS-B Radar Frames

23. FOREFLIGHT CONNECT

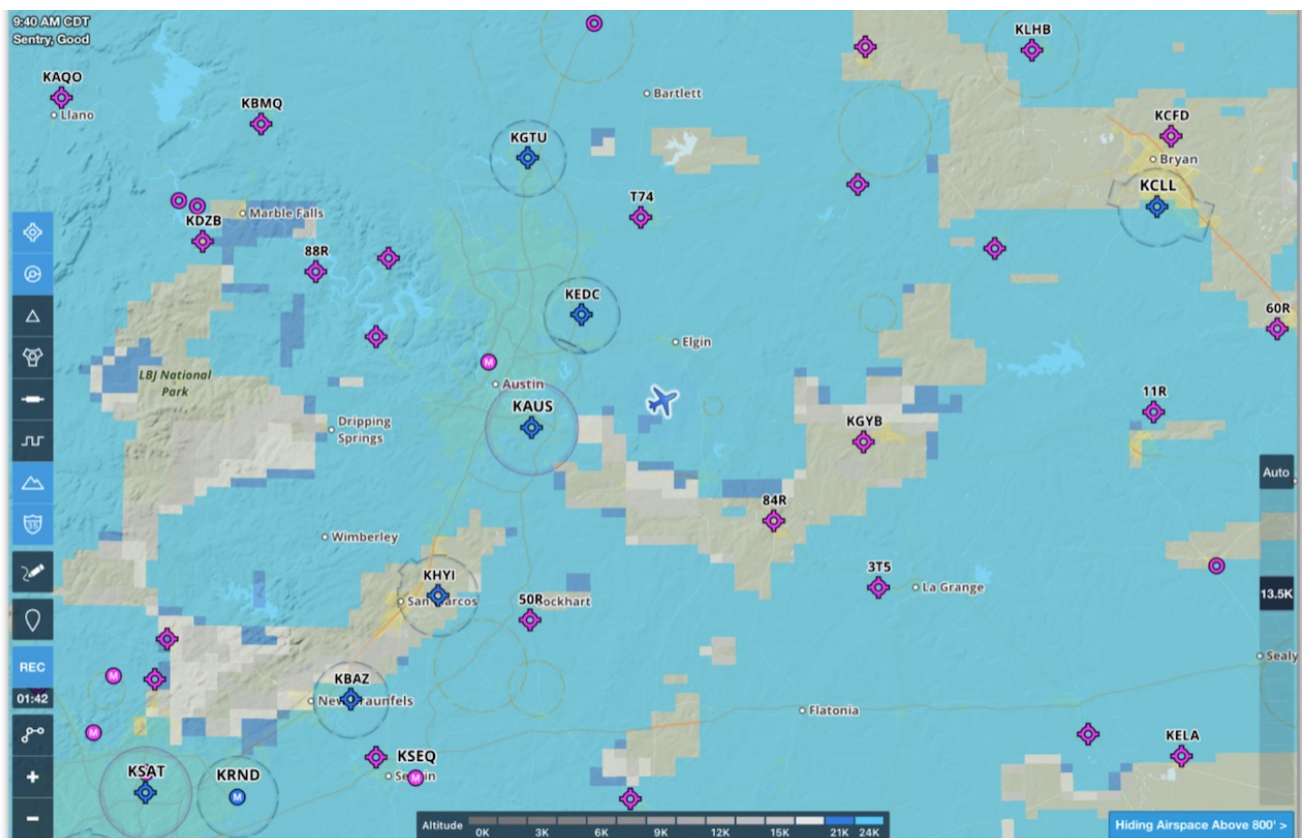
23.8.5 ADS-B Cloud Tops

ADS-B Cloud Tops are available for the continental United States and are a useful tool for determining if flight can be conducted in visual conditions above the clouds.

Cloud tops are a forecast map layer from the National Weather Service (NWS) and is derived from satellite temperature sensors using the High-Resolution Rapid Refresh (HRRR) model. The Cloud Tops forecast is generated every hour and transmitted over ADS-B every 15 minutes.

To view Cloud Tops, select **Cloud Tops (ADS-B)** from the map layer menu and use the **altitude slider** on the right side of the map to filter clouds with tops below the selected altitude.

Forecast Cloud Tops that exist at or above the selected altitude are depicted on the map according to the color-coded scale. Each color represents an MSL altitude in 3,000-foot increments. Tap **Auto** at the top of the altitude slider to automatically display cloud tops at and above your current GPS altitude.



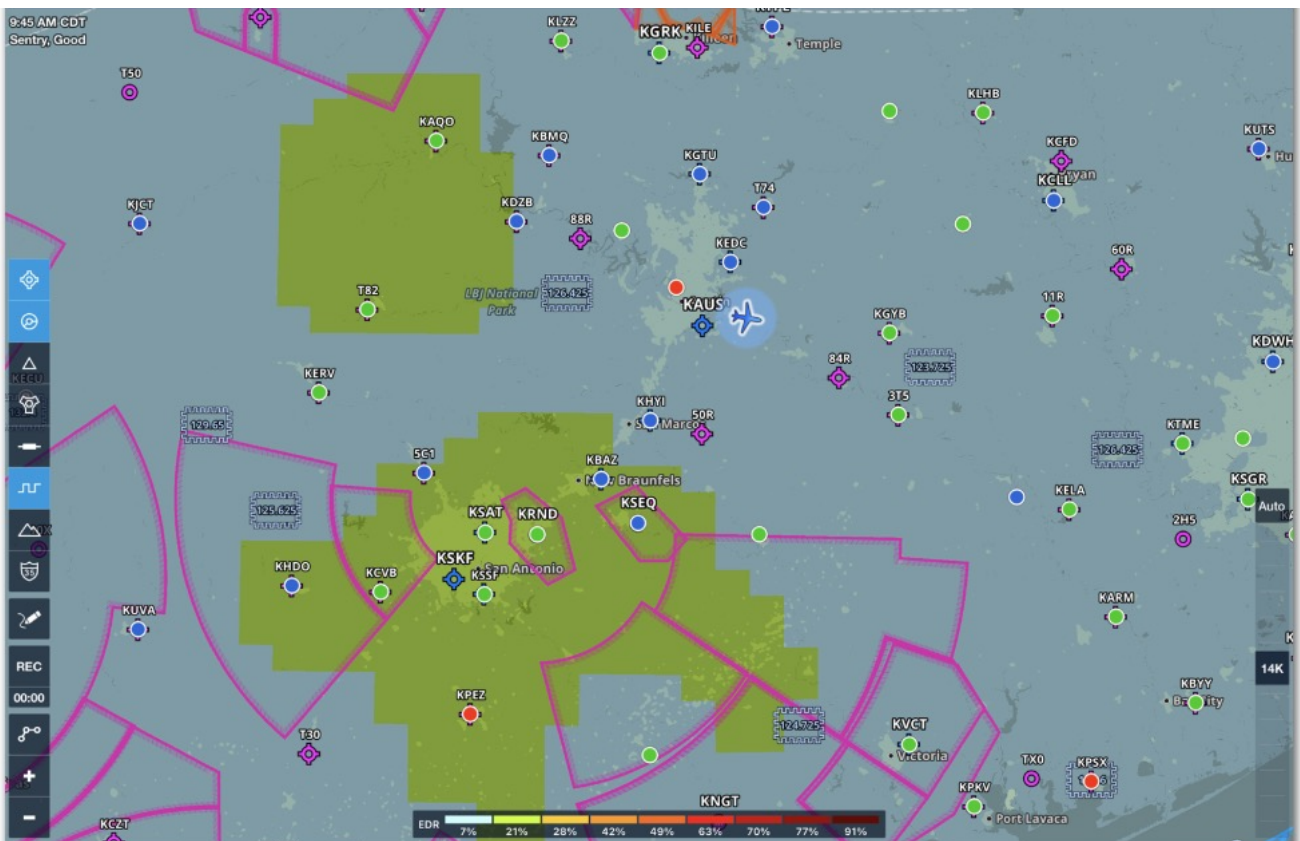
ADS-B Cloud Tops

23. FOREFLIGHT CONNECT

23.8.7 ADS-B Turbulence

The ADS-B Turbulence map layer displays the NWS forecast covering the continental United States with a look-ahead range of 150 to 250 nm. ADS-B Turbulence displays the forecast eddy dissipation rate (EDR) (i.e., turbulence intensity) based on a medium aircraft weight category.

Turbulence data is available from the surface up to 24,000 ft MSL in 2,000 ft increments using the altitude slider on the right side of the map. Tap **Auto** above the altitude slider to automatically display forecast turbulence intensity at your GPS altitude.



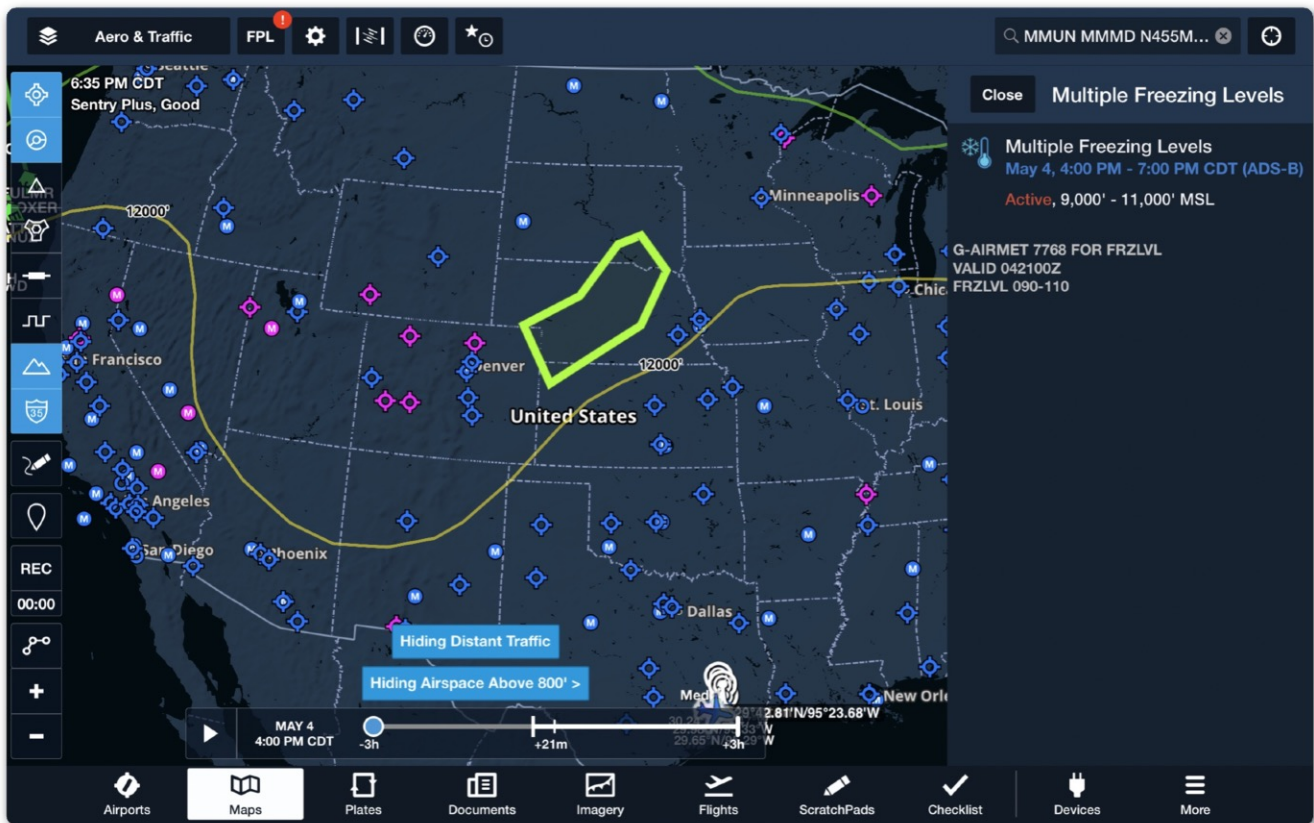
ADS-B Turbulence

23. FOREFLIGHT CONNECT

23.8.8 ADS-B Freezing Levels

The ADS-B Freezing Level map layer provides a graphical representation of freezing levels across North America. Freezing levels are delineated with color-coded lines at 4,000-foot intervals up to 24,000 feet (MSL).

If there are multiple freezing levels for a region, a shaded polygon is displayed on the map. Tap the polygon to display additional details. Freezing level forecasts are generated every three hours and automatically updated in ForeFlight.



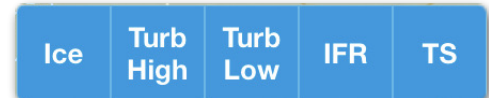
Freezing Lvl's (ADS-B)

23. FOREFLIGHT CONNECT

23.8.9 ADS-B AIRMETs, SIGMETs, CWAs

AIRMETs, SIGMETs, and Center Weather Advisories (CWAs) are issued by meteorological watch offices for weather that is potentially hazardous to low-level aircraft with limited capability. AIRMETs consist of less severe weather than SIGMETs: moderate turbulence & icing, surface winds of 30 knots, or widespread restricted visibility. AIRMETs, SIGMETs, and CWAs are combined into a single map layer.

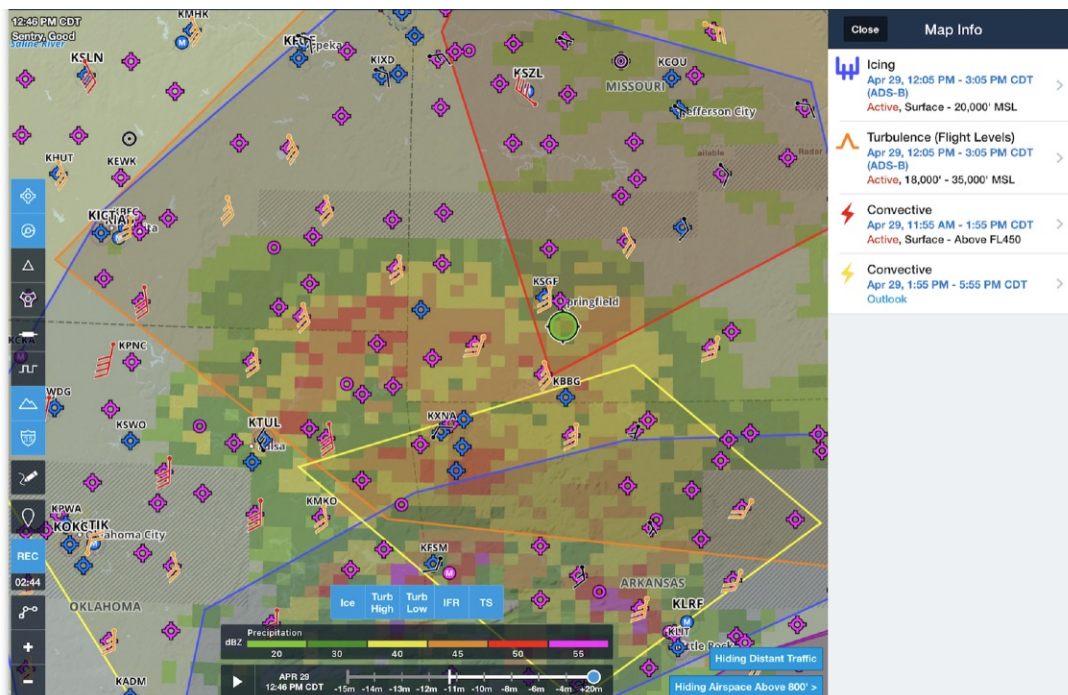
When the **AIR/SIGMET/CWAs** map layer is selected, the individual weather products can be filtered with the buttons near the bottom of the map. Selected types are highlighted blue and the relevant advisories are displayed graphically on the map during their active time.



AIR/SIGMET/CWA Filters

AIRMETs, SIGMETs, and CWA forecasts are generated every six hours. ForeFlight checks for updated data every five minutes. The time slider at the bottom of the map can be used to view future forecast periods.

Tap an AIRMET, SIGMET, or CWA to display additional information in the sidebar. If there is more than one active layer where you tapped, the advisories are depicted in a list view. Tap an individual advisory to display the advisory's text.



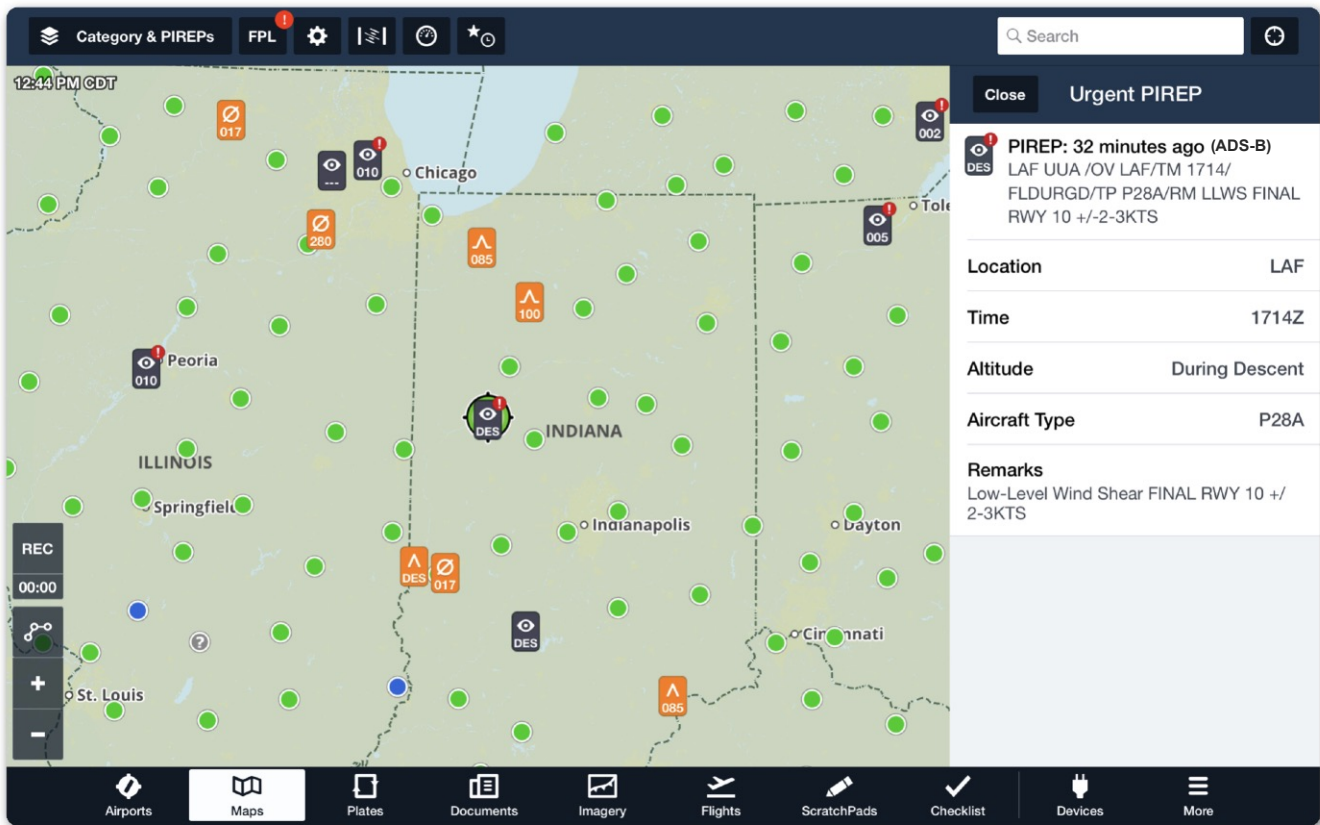
ADS-B AIRMETs, SIGMETs, and CWAs

23. FOREFLIGHT CONNECT

23.8.10 ADS-B PIREPs

Pilot reports (PIREPs) are broadcast over ADS-B with a range of 250 nm, 375 nm, and 500 nm for low, medium, and high altitude towers respectively. PIREPs are issued by pilots as needed and are automatically refreshed in ForeFlight every ten minutes.

PIREPs are displayed graphically on the map when the **PIREPs** layer is active. Tap a PIREP to display the coded and decoded PIREP text. The age of the PIREP is displayed at the top of the PIREP menu alongside the source (ADS-B).



ADS-B PIREPs

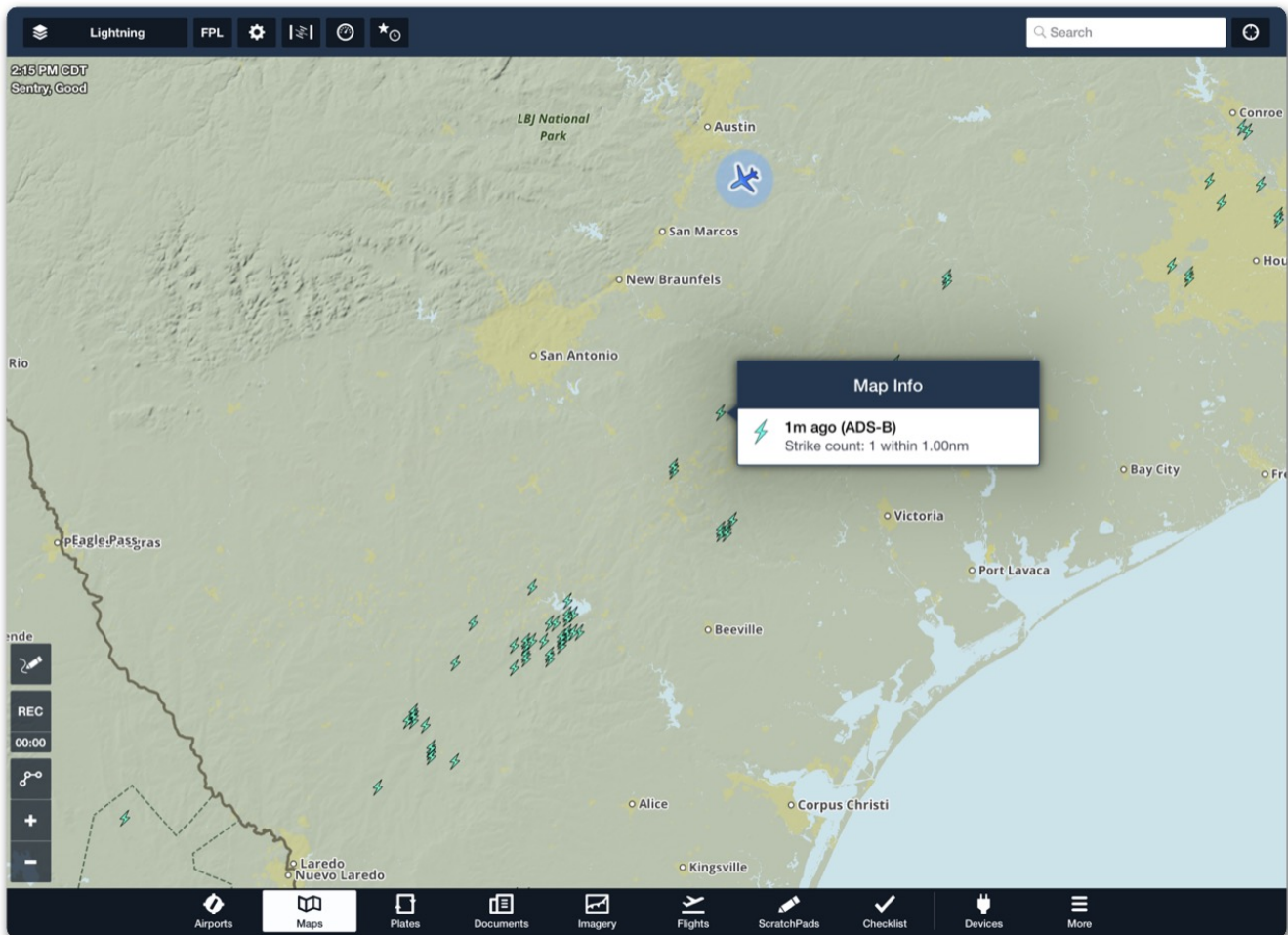
Icon	Meaning
	Icing (increasing severity)
	Turbulence (increasing severity)
	Obscuration or other weather

23. FOREFLIGHT CONNECT

23.8.11 ADS-B Lightning

ADS-B Lightning provides a graphical representation of the observed cloud-to-ground lightning strike density and polarity every five minutes from the U.S. National Lightning Detection Network (NLDN).

Lightning data is transmitted over FIS-B with a 150 to 250 nm look-ahead range. Tap a lightning icon to reveal the number of strikes within the given radius.



ADS-B Lightning

NOTE: Baron Mobile Link ADS-B Lightning requires firmware version 2.0 or higher.

23. FOREFLIGHT CONNECT

23.8.12 ADS-B METARs

METARs received via ADS-B are nearly identical to METARs received over the internet and can be viewed using the same techniques as when connected to the internet.

ADS-B METARs differ from internet-based METARs in two ways:

- An (ADS-B) source label is displayed to the right of the METAR's timestamp.
- METARs are only available for the airports within the **look-ahead range** of the towers you're receiving data from.

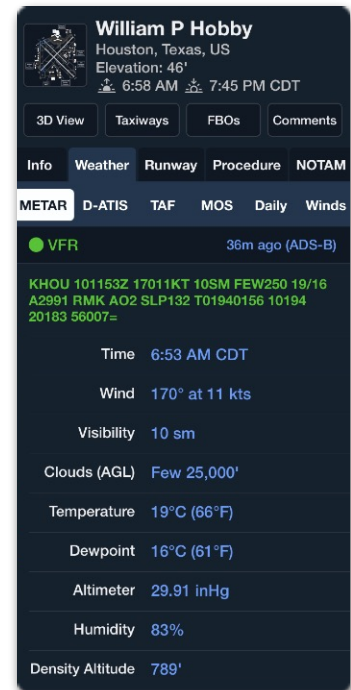
METARs contain temperature, dew point, wind speed, wind direction, precipitation, cloud cover, cloud heights, visibility, and barometric pressure data. METARs are updated every hour unless changing weather conditions dictate more frequent updates. ForeFlight checks for updated ADS-B METARs when the data is first displayed and automatically every five minutes after that.

Graphical METAR Map Layers

Selecting a map layer that uses METAR data (e.g., Flight Category, Surface Winds, Dewpoint Spread, Temperature, Visibility, Ceiling, Sky Coverage) displays the relevant ADS-B METAR data graphically on the map. Tap the weather icon on the map to display the METAR in the sidebar.

23.8.13 ADS-B TAFs

ADS-B TAFs are broadcast with the same functionality and look-ahead specifications as METARs. TAFs are updated by the National Weather Service every six hours or as unexpected weather occurs. ForeFlight checks for updated TAFs when the layer is first selected and automatically every ten minutes after that. Due to TAF update frequency, it's not uncommon to see TAF update times up to six hours old.



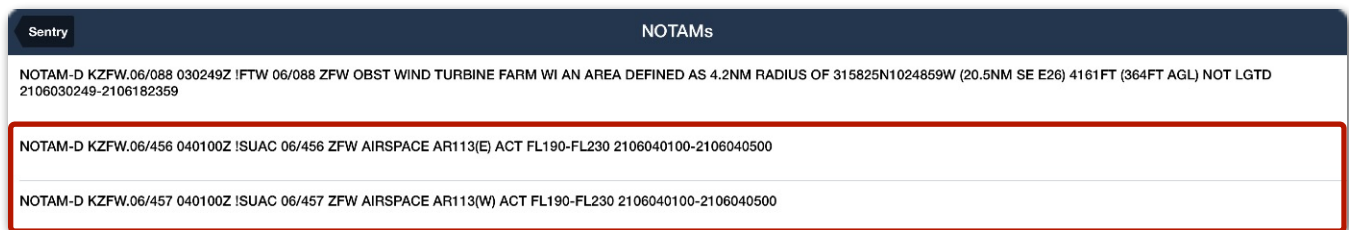
ADS-B METAR

23. FOREFLIGHT CONNECT

23.8.14 ADS-B Special Use Airspace

Special Use Airspace (SUA) is an area designated for operations that may impose limitations on non-participating aircraft. Examples include Alert Areas, Controlled Firing Areas, Military Operations Areas, Prohibited Areas, Restricted Areas, and Warning Areas.

SUA status is broadcast over the ADS-B NOTAM-D feed and displayed *textually* in ForeFlight. SUA status delivered via ADS-B is only available by selecting **More > Devices > Device Tile > General NOTAMs**. SUA NOTAMs have a 100 nm **look ahead** and are refreshed automatically in ForeFlight every ten minutes.



The screenshot shows a mobile application interface with a dark header bar. On the left, there is a 'Sentry' button. On the right, the title 'NOTAMs' is displayed. Below the header, there is a list of NOTAMs. The first entry is partially visible: 'NOTAM-D KZFW.06/088 030249Z !FTW 06/088 ZFW OBST WIND TURBINE FARM WI AN AREA DEFINED AS 4.2NM RADIUS OF 315825N1024859W (20.5NM SE E26) 4161FT (364FT AGL) NOT LGTD 2106030249-2106182359'. The next two entries are highlighted with a red border: 'NOTAM-D KZFW.06/456 040100Z !SUAC 06/456 ZFW AIRSPACE AR113(E) ACT FL190-FL230 2106040100-2106040500' and 'NOTAM-D KZFW.06/457 040100Z !SUAC 06/457 ZFW AIRSPACE AR113(W) ACT FL190-FL230 2106040100-2106040500'.

Special Use Airspace (SUA) Status NOTAMs

NOTE: NOTAMs delivered over ADS-B are not depicted graphically on the map. If NOTAMs are viewed prior to flight, they may be saved to your device's temporary (cache) storage and be visible on the map during the flight. For best results, ForeFlight recommends Packing before flight.

23. FOREFLIGHT CONNECT

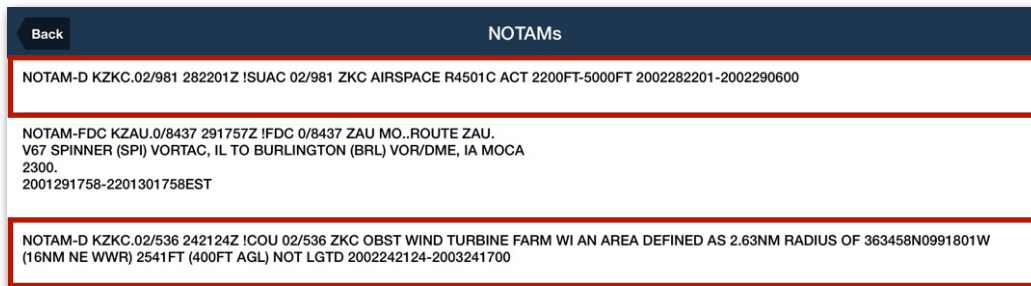
23.8.15 ADS-B NOTAMs

The ADS-B NOTAMs broadcast does not provide all NOTAMs or NOTAM types that a standard preflight briefing would include. Only NOTAMs from the preceding 30 days are broadcast over ADS-B. With the exception of Temporary Flight Restrictions (TFRs), NOTAMs delivered over ADS-B are not depicted graphically on the map.

ADS-B NOTAMs have a 100 nm **look-ahead range** and are updated every ten minutes. The ADS-B NOTAM feed includes two NOTAM types:

Distant (D) NOTAMs

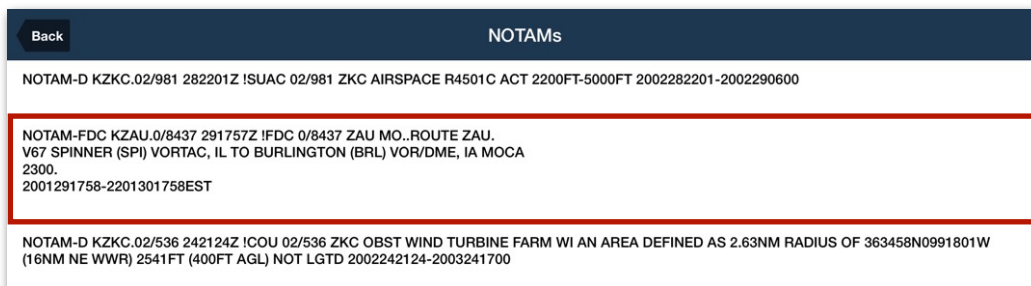
Distant NOTAMs are NOTAMs that are primarily distributed within the United States in the U.S. Domestic NOTAM format. Distant NOTAMs are NOTAMs that require wide dissemination: en route navigational aids, civil public use landing areas and aeronautical data. To view Distant NOTAMs, select **More > Devices > Device Tile > General NOTAMs**.



ADS-B Domestic NOTAMs

Flight Data Center (FDC) NOTAMs

FDC NOTAMs are regulatory in nature. Temporary Flight Restrictions (TFRs) and amendments to published instrument approach procedures are broadcast as FDC NOTAMs over ADS-B. To view FDC NOTAMs, select **More > Devices > Device Tile > General NOTAMs**.



ADS-B FDC NOTAM

23. FOREFLIGHT CONNECT

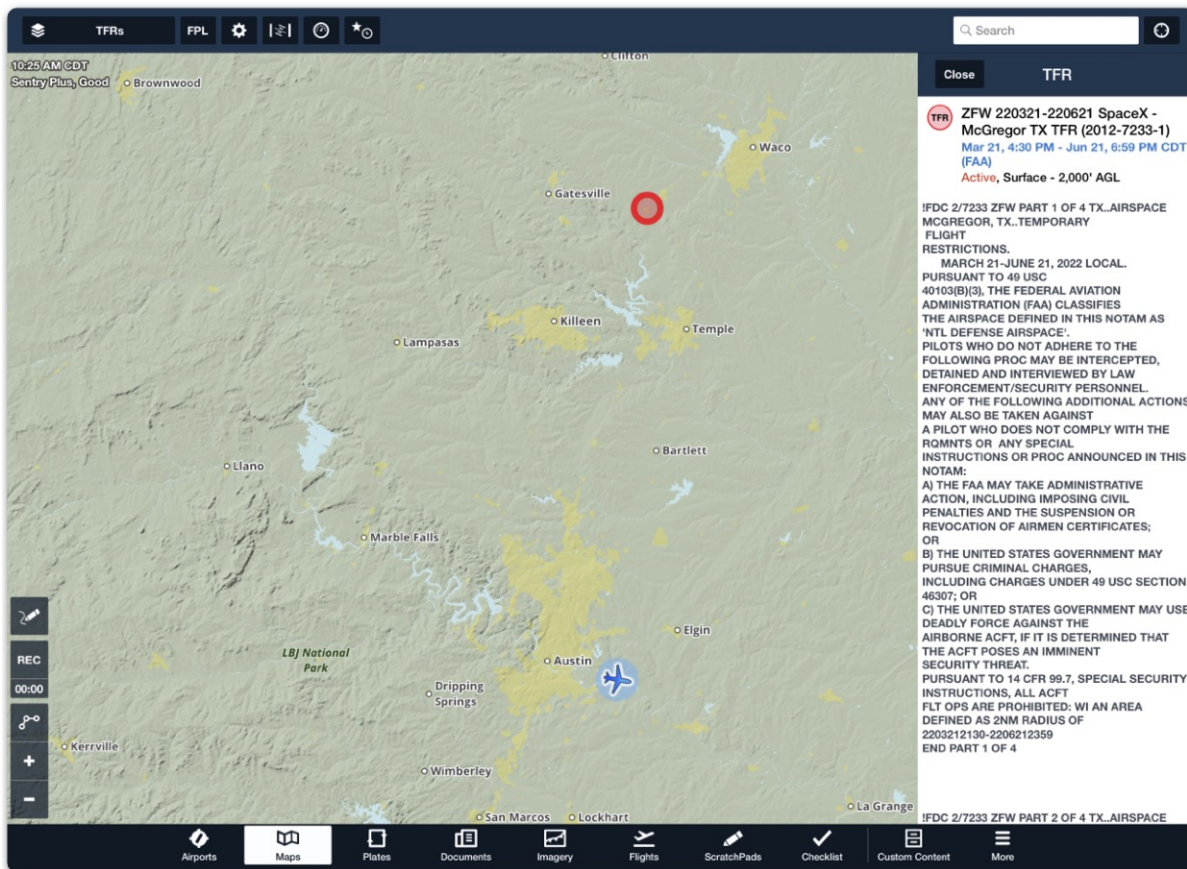
Temporary Flight Restrictions (TFRs)

ADS-B TFRs that contain properly formatted graphical information can be displayed on the map when the **TFRs** map layer selected.

TFRs within 8 hours of becoming active are red. Published TFRs that are more than 8 hours from becoming active are yellow. Tap the TFR shape to reveal the raw text associated with the FDC NOTAM.

Stadium TFRs

Individual sporting event TFRs (FDC NOTAM 0/0367) are not broadcast over ADS-B. As a result, stadium TFRs must be Packed to be displayed in flight.



ADS-B Temporary Flight Restriction - NOTAM (FDC)

WARNING: Information obtained *solely* via ADS-B should not be regarded as a thorough preflight briefing. NOTAMs that are not TFRs are not displayed graphically when the only data source is ADS-B.

23. FOREFLIGHT CONNECT

23.8.16 ADS-B Winds & Temperatures Aloft

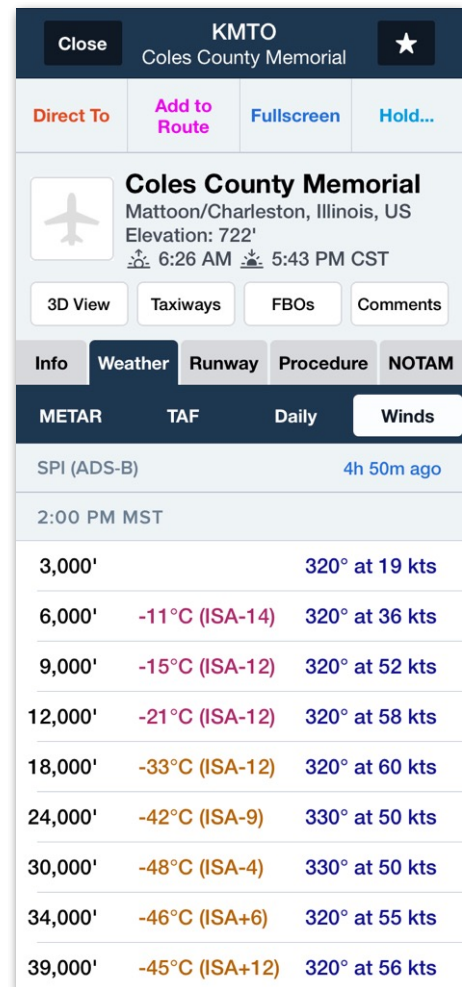
Winds & Temperatures Aloft forecasts are broadcast over ADS-B with various **look-ahead ranges**.

To view Winds & Temperatures Aloft, tap an airport icon on the map or display an airport in the Airports view, and then tap **Weather > Winds**.

Wind data is available from the surface up to FL 390 in 3,000 ft increments.

Temperature data is available in 3,000 ft increments up to FL 390 beginning at 6,000 ft MSL. Scroll the Winds Table to view additional forecast periods. Temperature values are color-coded based on temperature range:

- **Grey** above +2° C
- **Magenta** between +2° C to -25° C
- **Tan** below -26° C



ADS-B Winds and Temps Aloft

23. FOREFLIGHT CONNECT

23.9 SiriusXM Weather

ForeFlight can display SiriusXM weather when connected to a compatible device with an active SiriusXM subscription. To verify that your SiriusXM subscription is active, visit www.siriusxm.com/refresh to send your device a refresh signal.

23.9.1 Supported Receivers

The following three receivers are the only supported SiriusXM receivers.

- **Garmin GDL 51 and GDL 52** (recommended) are portable **Bluetooth** SiriusXM receivers capable of delivering SiriusXM weather to ForeFlight. ForeFlight does not support SiriusXM Radio with the Garmin GDL 51/52.
- The **WXWorx SiriusXM** weather receiver can deliver SiriusXM weather to ForeFlight via the **Baron Mobile link**. The Baron Mobile link creates a **Wi-Fi** network that supports up to four simultaneous device connections. ForeFlight does not support SiriusXM Radio with the Baron Mobile Link.
- **SXAR1** (discontinued) supports SiriusXM weather and radio. The SXAR1 receiver supports a single **Bluetooth** connection.

NOTE: ForeFlight does not support SiriusXM weather via a Garmin Flight Stream.

23.9.2 SiriusXM Supported Weather Products

SiriusXM weather products are accessed with the same techniques as when connected to the internet. No additional configuration is required beyond ensuring the external device is connected. When connected to a supported SiriusXM weather receiver with an active subscription, the following weather products are available.

- **Composite Radar**
- **Lowest Tilt (Base) Radar**
- **Storm Cell Attributes**
- **METARs**
- **TAFs**
- **TFRs**
- **AIR/SIGMETs**
- **Lightning**
- **Turbulence**
- **Icing**
- **Freezing Levels**
- **PIREPs**
- **Surface Analysis**
- **Winds/Temps Aloft**
- **Cloud Tops**
- **Surface Wind Analysis**
- **Surface Visibility Forecast**

NOTE: ForeFlight Mobile does not support SiriusXM Satellite Imagery.

23. FOREFLIGHT CONNECT

23.9.3 SiriusXM Radar

Radar (XM Comp) and Radar (XM Base) map layers are available for the United States, southern Canada, and northern Mexico. SiriusXM radar provides a higher resolution radar picture than ADS-B, but a lower resolution than internet radar. SiriusXM composite and base radar include storm track, hail, echo top, and mesocyclonic indicators.

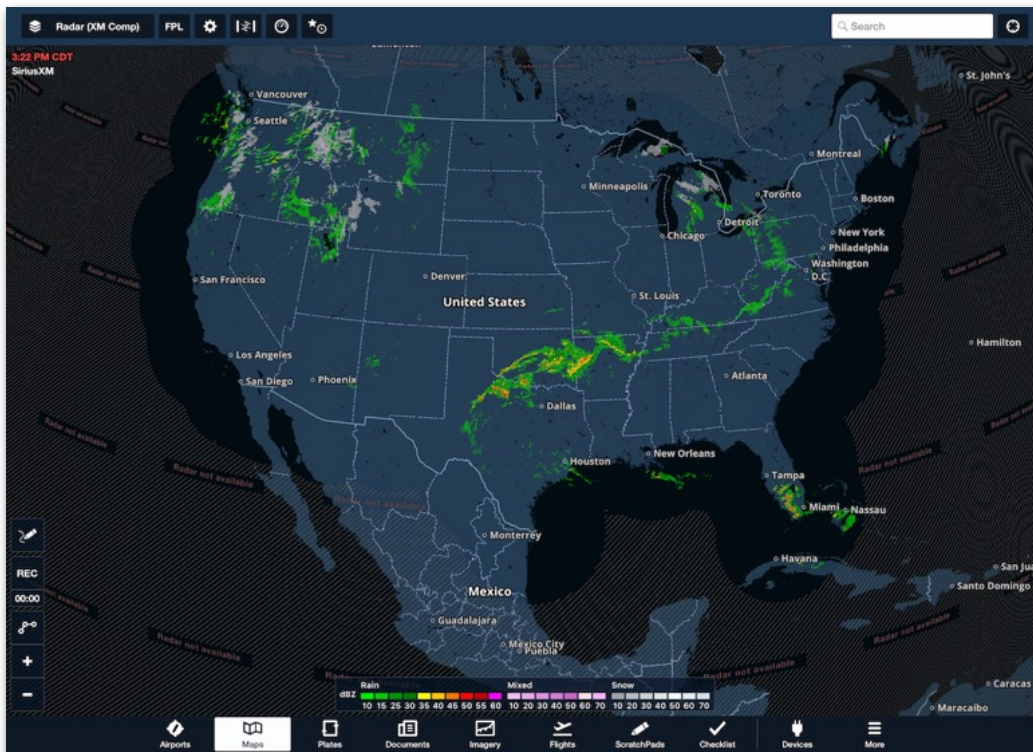
NOTE: The XM Base layer, storm cell attributes, echo tops, and storm track are not supported with the WxWorx Baron Mobile Link.

Radar (XM Comp)

The SiriusXM composite map layer displays the maximum echo reflectivity from *all* radar tilt angles. The Composite layers can reveal important storm structure features and the intensity trends of storms.

Radar (XM Base)

The SiriusXM base radar layer displays the maximum echo reflectivity from only the radar's *lowest tilt* angle. The Lowest Tilt (Base) radar layer reveals where precipitation is likely reaching the ground.



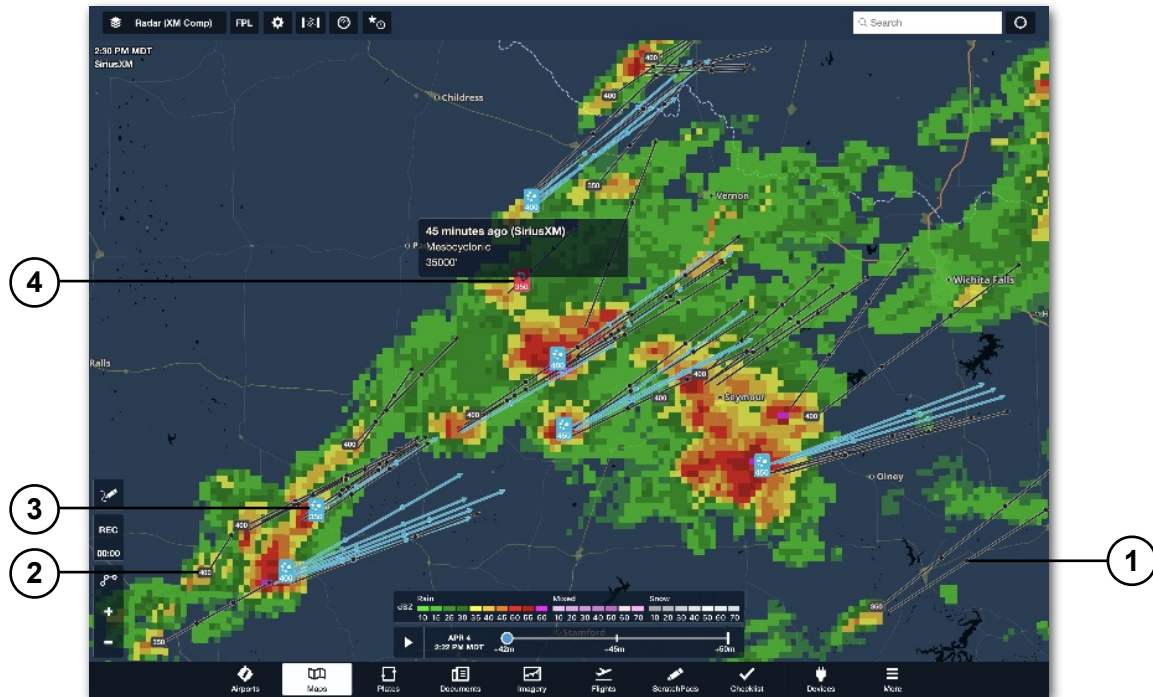
Radar (XM Comp) Coverage Area

23. FOREFLIGHT CONNECT

SiriusXM Storm Cell Attributes

Storm cell attributes are embedded in the SiriusXM base and composite radar layers. Storm cell attributes include icons that represent the characteristics of a storm. With the exception of storm tracks, each icon can be tapped to reveal additional information.

Storm Cell attributes automatically update with the latest radar frame and cannot be animated. See the image below for additional information.



Radar (XM Comp) Storm Cell Attributes

1. **Storm Tracks** - A thin black line representing the projected 60-minute path of a storm. Dots are depicted at 20 and 40-minute intervals. If a storm cell also contains hazardous weather (e.g., hail), the track is colored to match the hazard.
2. **Echo Tops** - A small grey box with a three-digit value representing the height of a storm (in hundreds of feet). For example, a storm with an echo top of 400 equates to 40,000 ft or FL400.
3. **Hail** - A blue box indicative of a storm containing hail (co-located with the storm's echo top).
4. **Mesocyclonic** - A red box indicative of a storm consisting of rising, rotating air (co-located with the storm's echo top).

23. FOREFLIGHT CONNECT

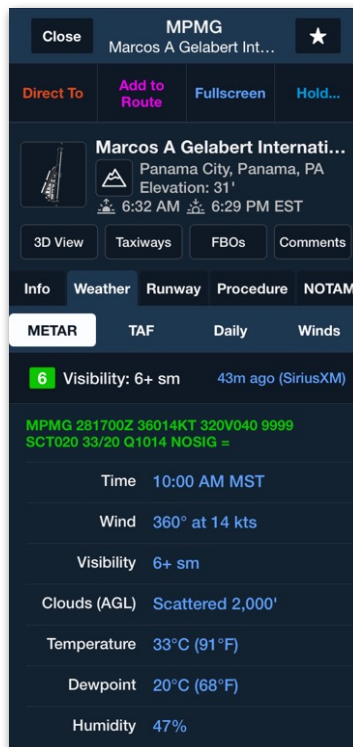
23.9.4 SiriusXM METARs

METARs contain temperature, dew point, wind speed, wind direction, precipitation, cloud cover, cloud heights, visibility, and barometric pressure data. METAR reports are generated every hour unless changing weather conditions dictate more frequent updates. METARs are broadcast by SiriusXM every ten minutes. ForeFlight checks for updated SiriusXM METARs when the data is first displayed and automatically every five minutes after that.

SiriusXM METARs can be viewed using the same techniques as when connected to the internet. When viewing a SiriusXM METAR, a SiriusXM label is displayed next to the METAR's timestamp.

SiriusXM METAR Coverage Area

SiriusXM METARs are available for North America, Central America, and the northern portions of South America.



SiriusXM METAR

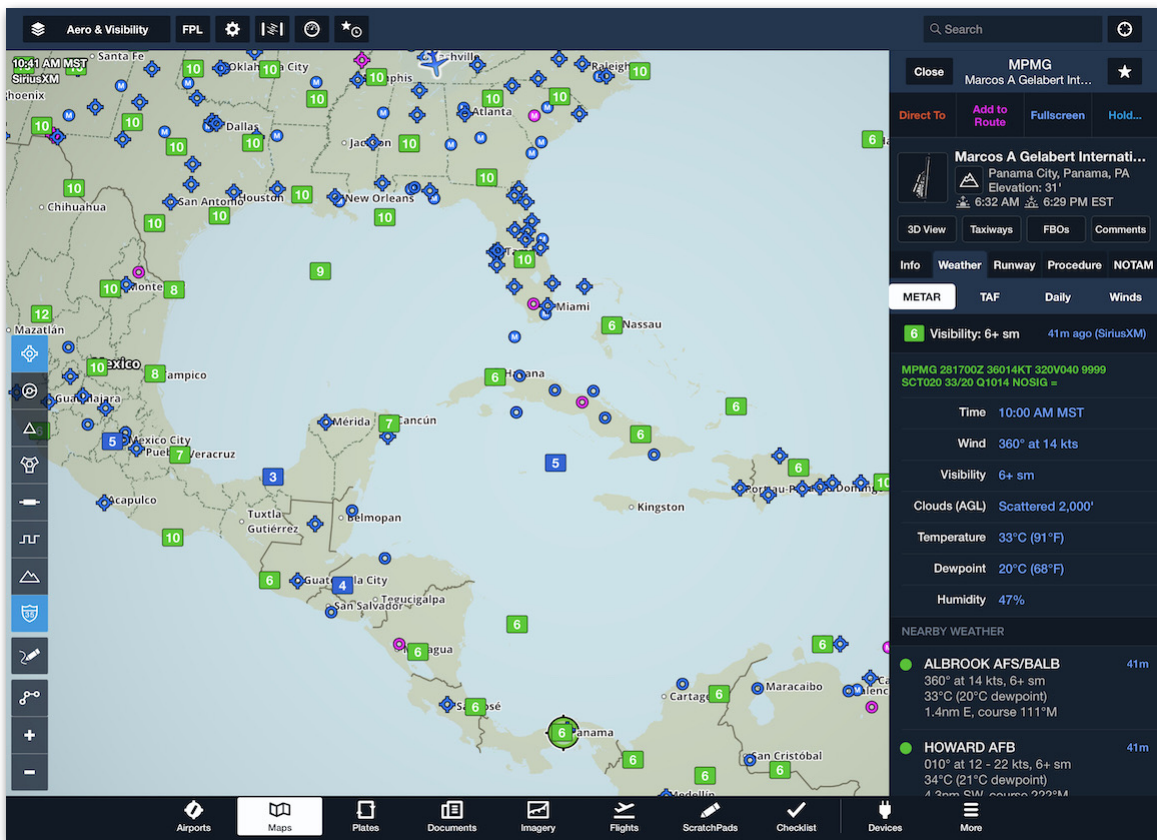
NOTE: If receiving SiriusXM and ADS-B METAR data, the latest METAR data will be displayed regardless of source.

23. FOREFLIGHT CONNECT

SiriusXM Graphical METAR Map Layers

The weather information contained in a METAR can be displayed graphically on the map. To graphically display SiriusXM METARs, select one of the following map layers from the map layer menu.

- Flight Category
- Surface Wind
- Winds Aloft
- Dewpoint Spread
- Temperature
- Visibility
- Ceiling
- Sky Coverage



SiriusXM Visibility Layer (METAR Data)

23. FOREFLIGHT CONNECT

23.9.5 SiriusXM TAFs

SiriusXM TAFs contain wind speed, wind direction, precipitation, cloud cover, cloud heights and visibility. TAFs are updated by the National Weather Service every six hours or as unexpected weather occurs.

ForeFlight checks for updated TAFs when the information is first displayed and automatically every five minutes after that. Due to the TAF update frequency, it's not uncommon to see TAF timestamps that are six hours old.

SiriusXM TAFs can be viewed using the same techniques as when connected to the internet. When viewing a SiriusXM TAF, a SiriusXM label is displayed next to the timestamp.

Coverage Area

SiriusXM TAFs are available for North America, Central America, and the northern portions of South America.

The screenshot shows the ForeFlight mobile app interface for KBJC Rocky Mountain Metro. At the top, there are buttons for 'Close', 'Add to Route', 'Fullscreen', and 'Hold...'. Below this is the airport information: 'Rocky Mountain Metro', 'Denver, Colorado, US', 'Elevation: 5,673'', and '6:34 AM' to '5:50 PM MST'. There are also buttons for '3D View', 'Taxiways', 'FBOs', and 'Comments'. A navigation bar at the bottom of the airport info section includes 'Info', 'Weather', 'Runway', 'Procedure', and 'NOTAM'. Under 'Weather', there are sub-tabs for 'METAR', 'TAF', 'Daily', and 'Winds'. The 'TAF' tab is selected, showing the text: 'KBJC TAF 35m ago (SiriusXM)', 'KBJC 281730Z 2818/2918 VRB04KT P6SM SKC', 'FM282200 29010KT P6SM SKC', 'FM290200 19008KT P6SM FEW220', and 'FM291100 22006KT P6SM BKN220'. Below the TAF text, it shows '11:00 AM MST (CURRENT)', a green dot indicating 'VFR' conditions, and details for 'Wind Variable at 4 kts', 'Visibility 6+ sm', 'Clouds Sky clear', and 'Expires 3:00 PM MST'.

SiriusXM TAF

NOTE: If receiving SiriusXM and ADS-B TAF data, the latest TAF will be displayed regardless of source.

23. FOREFLIGHT CONNECT

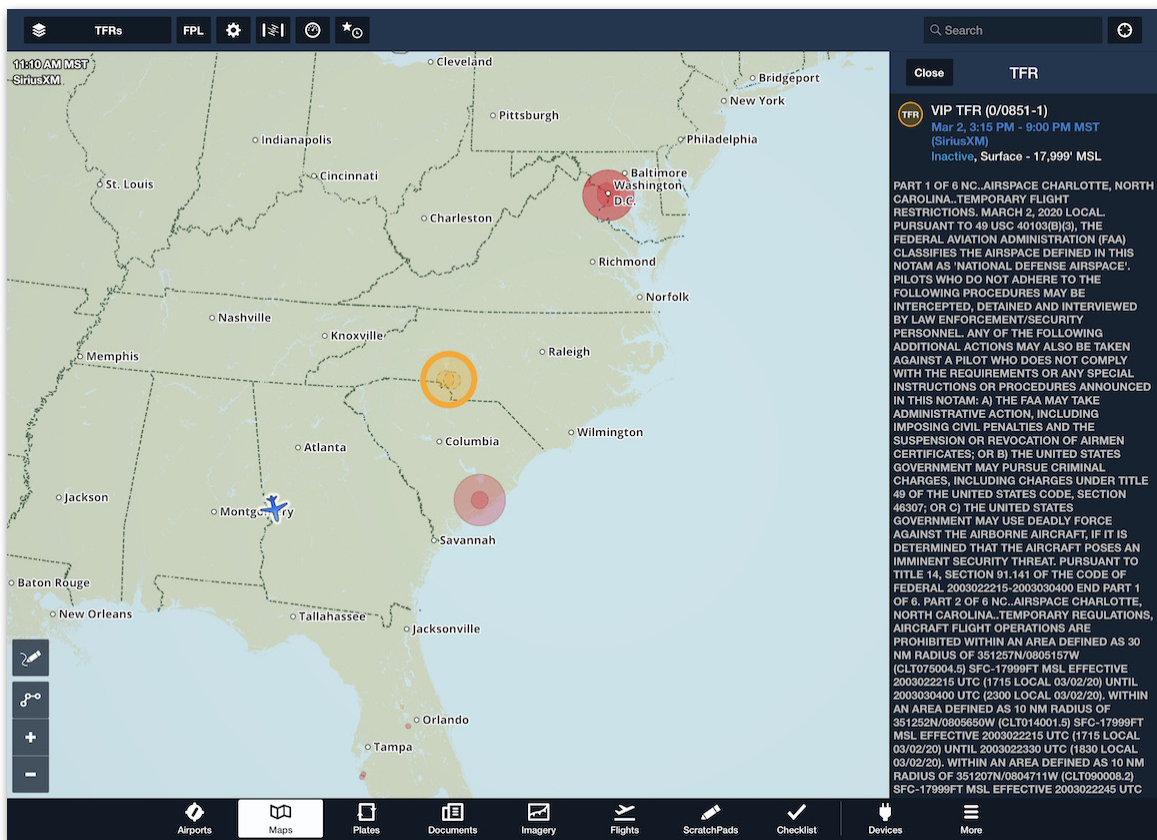
23.9.6 SiriusXM TFRs

SiriusXM TFR data is displayed on the map when the **TFRs** map layer is selected. Tap a TFR on the map to display its details in the sidebar.

TFRs are yellow until 8 hours before their scheduled start time. Within 8 hours of a TFR being active, it is shown in **Red** until the end of the TFR.

SiriusXM TFR Coverage Area

SiriusXM TAFs are available for the continental United States.



SiriusXM TFRs

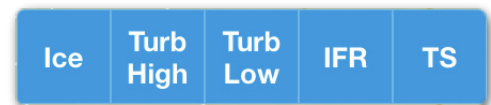
23. FOREFLIGHT CONNECT

23.9.7 SiriusXM AIR/SIGMET/CWA

SiriusXM AIRMETS, SIGMETs, and Center Weather Advisories are viewed the same way as when connected to the internet.

AIRMETS, SIGMETs, and Center Weather Advisories (CWA) are issued by meteorological watch offices for weather that is potentially hazardous to low-level aircraft with limited capability. AIRMETS consist of less severe weather than SIGMETs: moderate turbulence and icing, surface winds of 30 knots, or widespread restricted visibility.

AIRMETS, SIGMETs, and CWAs are combined into a single map layer. When the **AIR/SIGMET/CWAs** map layer is selected, the individual weather products can be filtered with the buttons near the bottom of the map. Selected types are highlighted in blue and the relevant advisories are displayed graphically on the map during their active time.



AIR/SIGMET/CWA Filters

AIRMET, SIGMET, and CWA forecasts are generated every six hours. ForeFlight checks for updated data every five minutes. The time slider at the bottom of the map can be used to view future forecast periods.

Tap an AIRMET, SIGMET, or CWA to display additional information in the sidebar. If there is more than one active layer where you tapped, the advisories are depicted in a list view. Tap an individual advisory to display the advisory's text.

23. FOREFLIGHT CONNECT

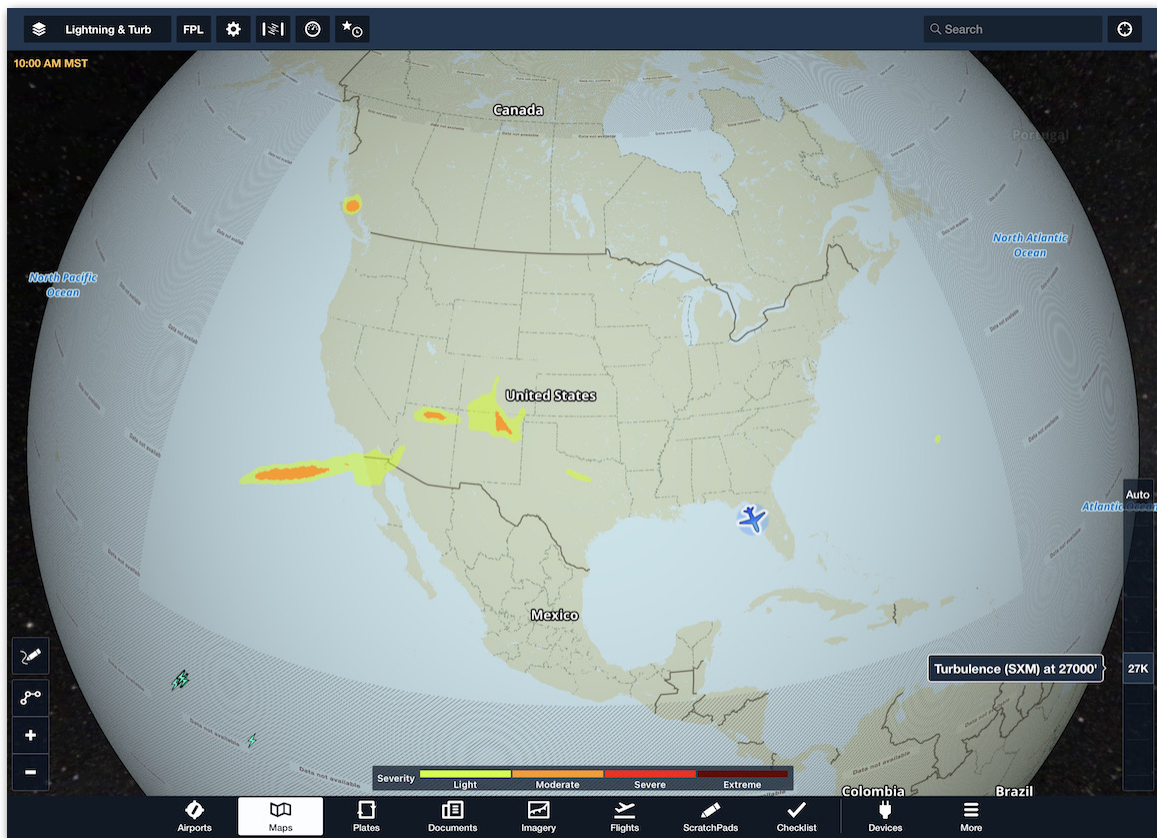
23.9.8 SiriusXM Lightning

SiriusXM provides both cloud-to-cloud and cloud-to-ground lightning and is updated every 2.5 minutes. Display SiriusXM Lightning data by selecting the **Lightning** map layer.

23.9.9 SiriusXM Turbulence

SiriusXM Turbulence is displayed when the **Turbulence (SXM)** map layer is selected. The graphical turbulence product provides forecasted turbulence severity from FL180 to FL390 in 3,000 foot increments. Use the slider on the right side of the screen to display forecasted turbulence at a specific flight level.

Turbulence severity is displayed using a four-color scale representing light, moderate, severe, and extreme turbulence. The turbulence forecast is conducted hourly and updated in ForeFlight when first selected and automatically every 30 minutes after that. Turbulence data is available from 15 degrees north latitude to 59 degrees north and 138 degrees west to 58 degrees west.



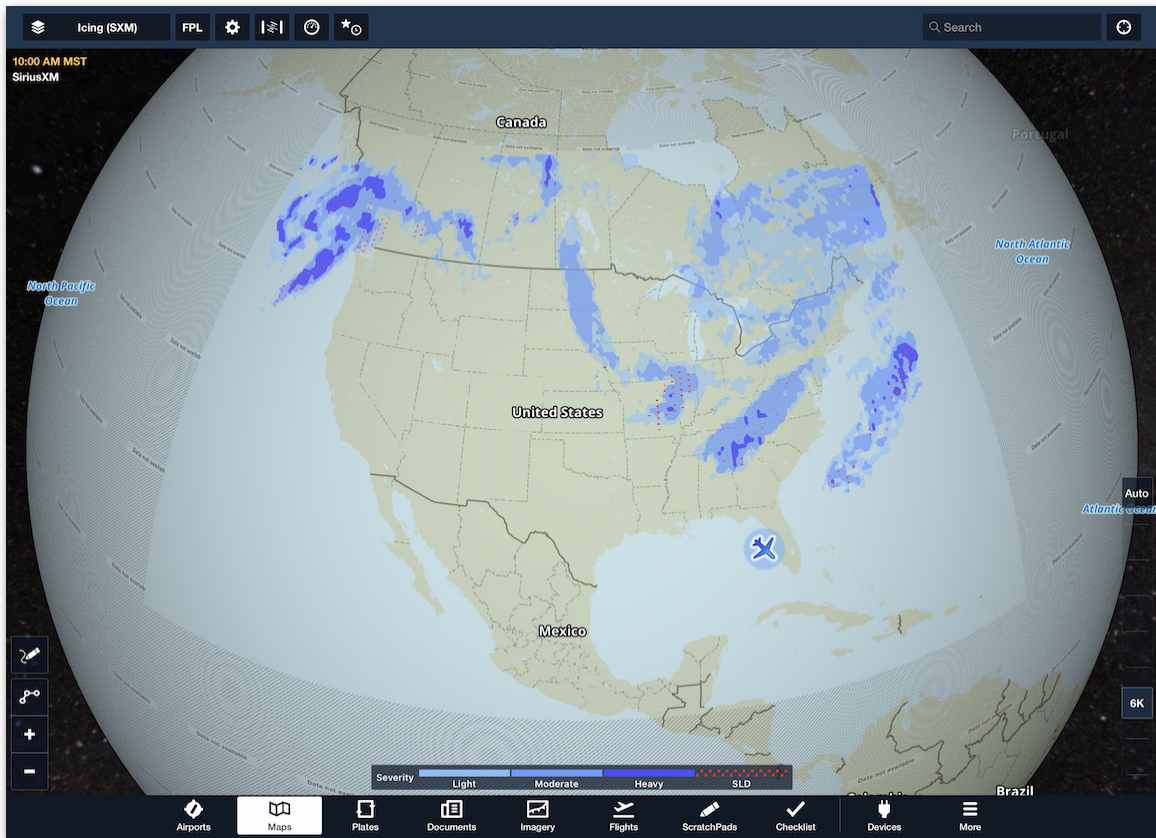
SiriusXM Turbulence

23. FOREFLIGHT CONNECT

23.9.10 SiriusXM Icing

SiriusXM Icing data is graphically displayed when the **Icing (SXM)** map layer is selected. The map layer provides icing potential, severity, and the probability of Supercooled Large Droplets (SLD) from the surface to FL240 in 3,000 foot increments. Use the slider on the right side of the screen to display icing data at specific altitudes.

Icing severity is displayed using a three-color scale representing light, moderate, and heavy icing. Supercooled Large Droplets are depicted with red dots. SiriusXM Icing data is updated every fifteen minutes and covers from 16 degrees north latitude to 54 degrees north and 139 degrees west to 58 degrees west.

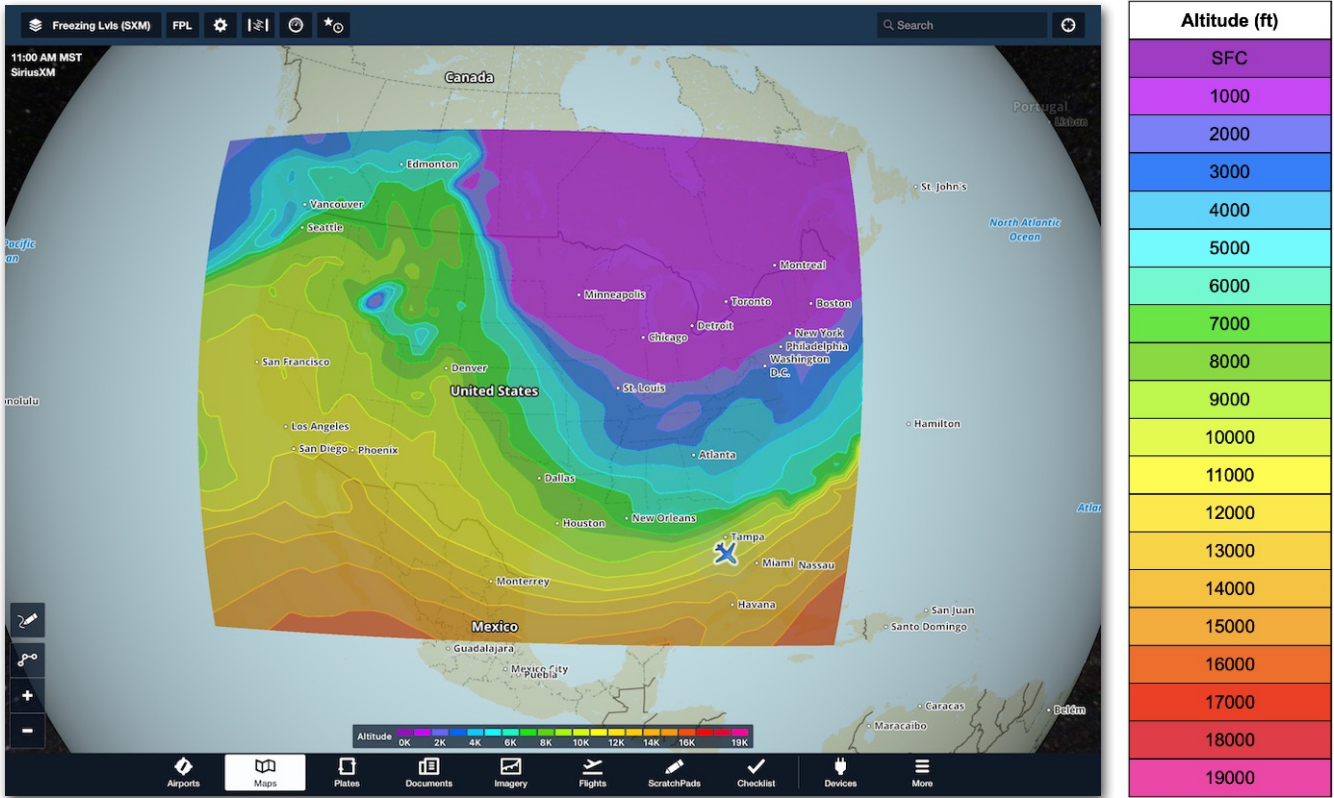


SiriusXM Icing

23. FOREFLIGHT CONNECT

23.9.11 SiriusXM Freezing Levels

The **Freezing Lvl (SXM)** map layer uses colored gradient to indicate the altitude at which the air temperature is at or below the freezing level. Freezing levels are delineated with color-coded lines in 1,000 foot intervals up to 20,000 feet and are updated every 30 minutes.



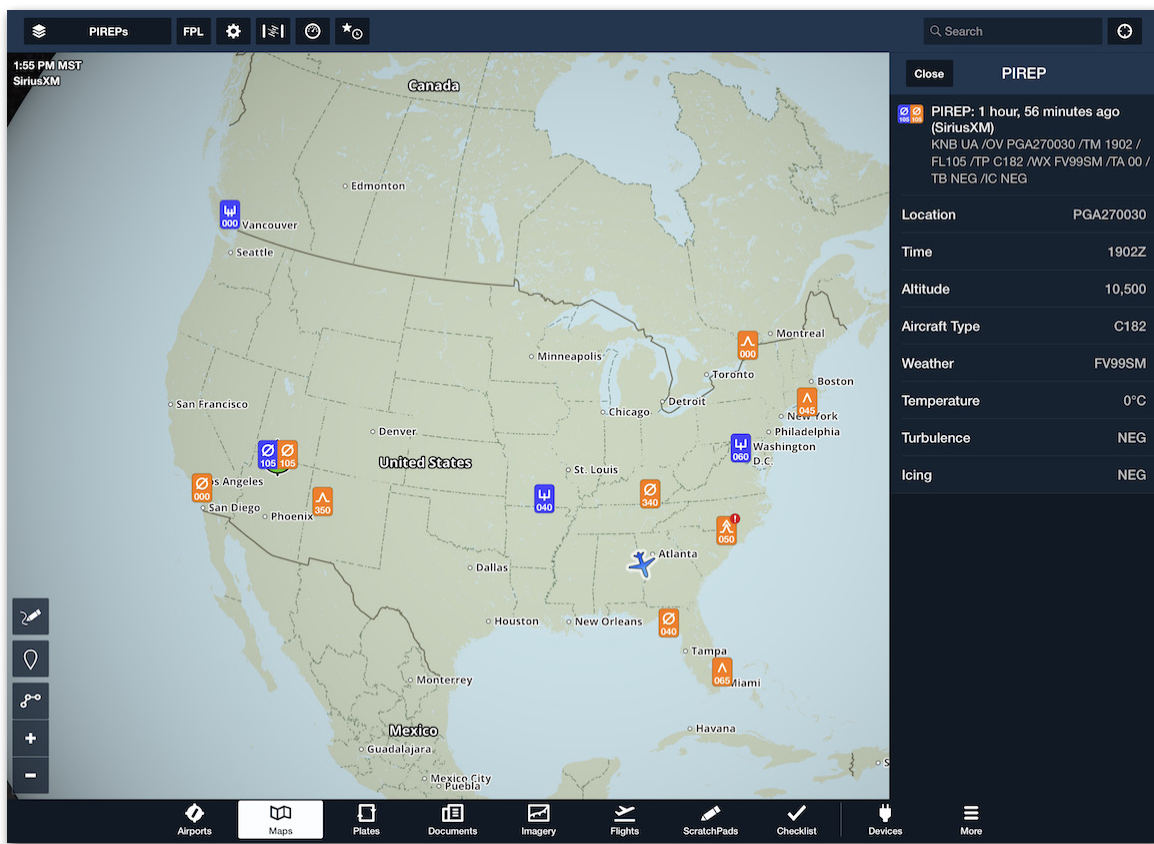
SiriusXM Freezing Levels

23. FOREFLIGHT CONNECT

23.9.12 SiriusXM PIREPs

SiriusXM PIREPs are displayed on the map by selecting **PIREPs** from the map layer menu. Icons represent the PIREP type, severity, and altitude. Tap an icon to display the coded and decoded PIREP in the sidebar.

PIREPs are issued by pilots as needed and are automatically refreshed in ForeFlight every fifteen minutes. The age of the PIREP is displayed at the top of the PIREP menu alongside the source (SiriusXM). SiriusXM PIREPs cover 5° north latitude to 62° north and 50° west longitude to 160° west.



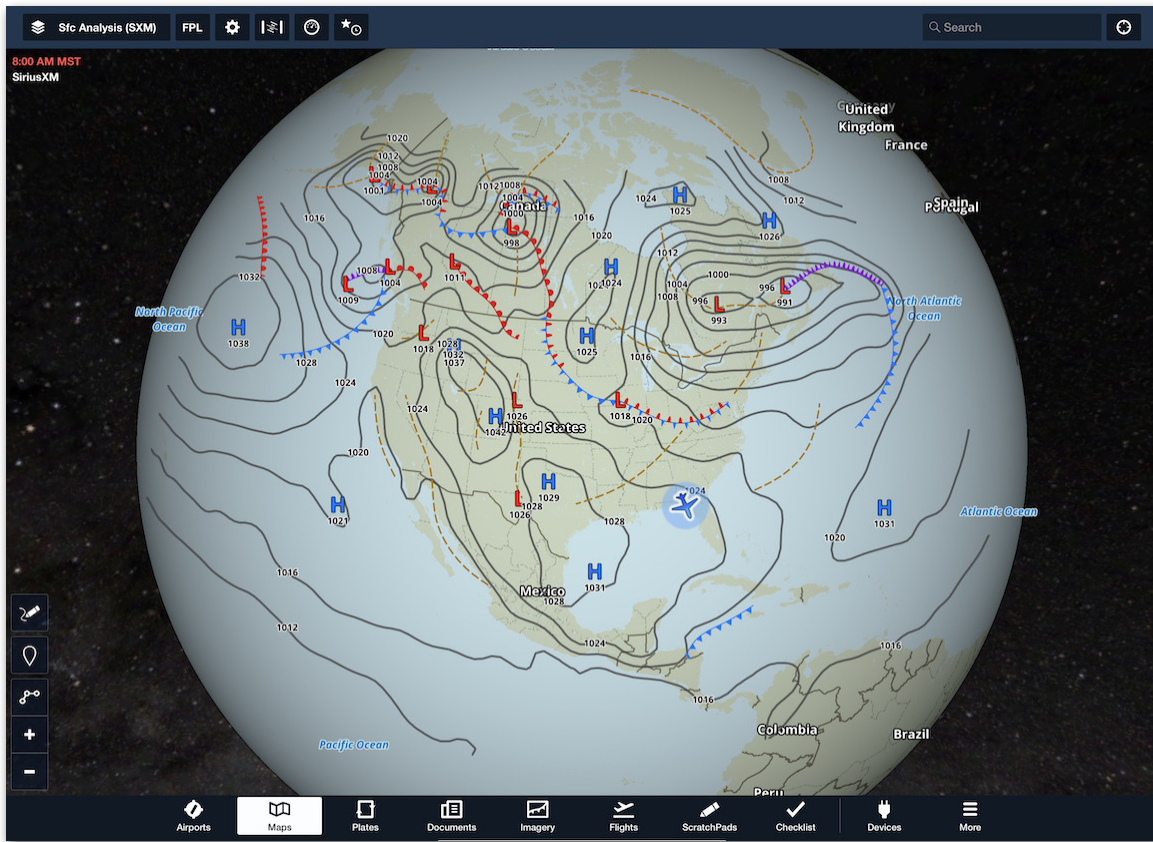
SiriusXM PIREPs

Icon	Meaning
	Icing (increasing severity)
	Turbulence (increasing severity)
	Obscuration or other weather

23. FOREFLIGHT CONNECT

23.9.13 SiriusXM Surface Analysis

The **Sfc Analysis (SXM)** map layer dynamically displays pressure systems (measured in millibars), frontal boundaries, and isobars (lines of equal pressure). The layer can show current or forecast conditions up to 48 hours in the future. The SiriusXM Surface Analysis map layer covers from 5 degrees north to 62 degrees north and 65 degrees west to 130 degrees west and is updated every twenty minutes.



SiriusXM Surface Analysis

23. FOREFLIGHT CONNECT

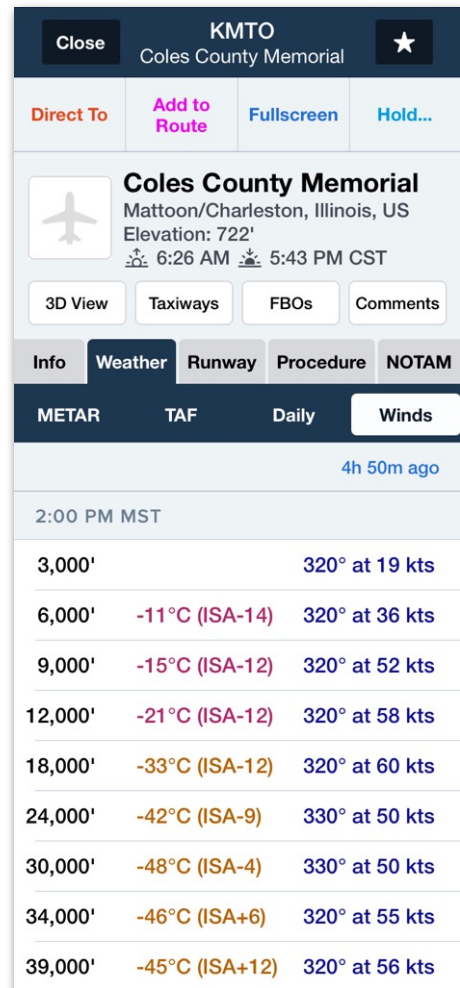
23.9.14 SiriusXM Winds/Temps Aloft

To view Winds & Temperatures Aloft, tap an airport icon on the map or display an airport in the Airports view, and then tap **Weather > Winds**.

Wind data is available from the surface up to FL 540 in 3,000 ft increments.

Temperature data is available in 3,000 ft increments up to FL 540 beginning at 6,000 ft MSL. Scroll the Winds Table to view additional forecast periods. Temperature values are color-coded based on temperature range:

- **Grey** above +2° C
- **Magenta** between +2° C to -25° C
- **Tan** below -26° C



ADS-B Winds and Temps Aloft

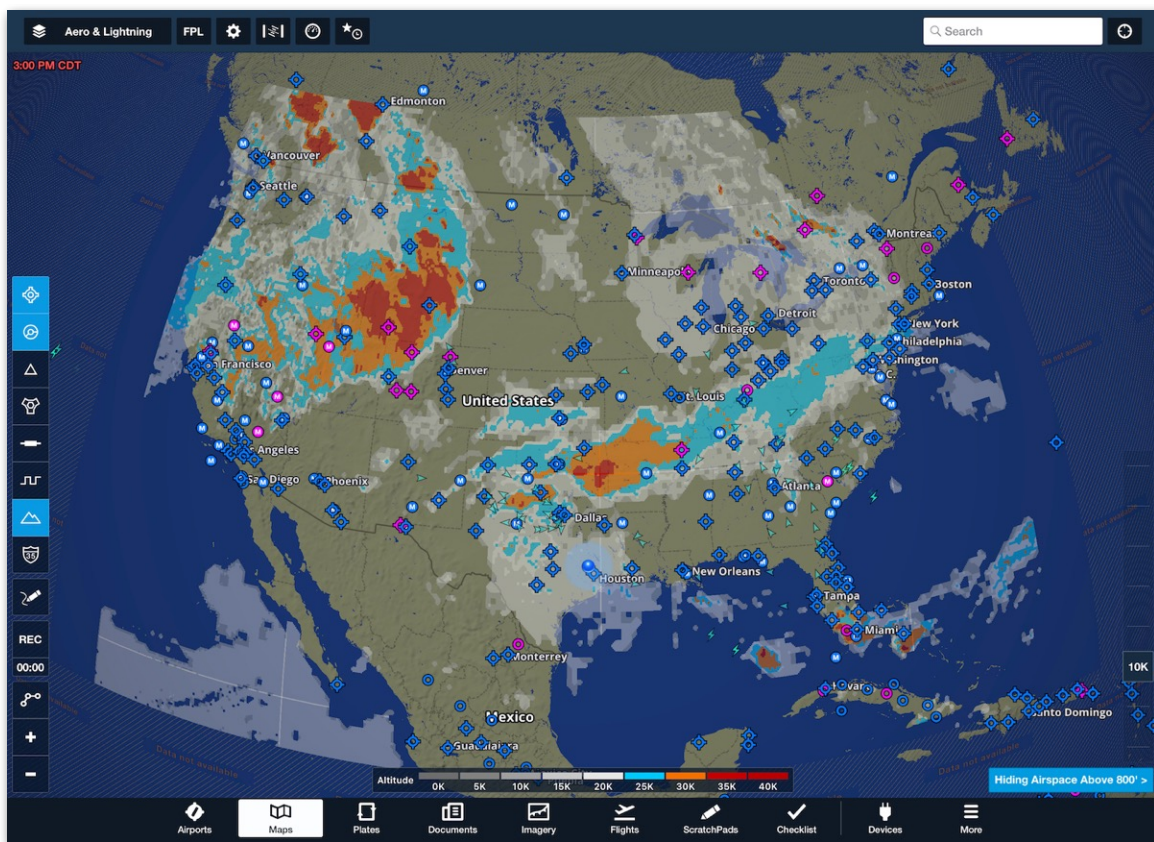
23. FOREFLIGHT CONNECT

23.9.15 SiriusXM Cloud Tops

SiriusXM Cloud Tops are available for the continental United States, southern Canada, and northern Mexico. This map layer is a useful tool for determining if flight can be conducted in visual conditions above the clouds.

Select **Cloud Tops** from the map layer menu and use the **altitude slider** on the right side of the map to filter clouds with tops below the selected altitude.

Forecast Cloud Tops that exist at or above the selected altitude are depicted on the map according to the color-coded scale. Each color represents an MSL altitude in 5,000-foot increments. Tap **Auto** at the top of the altitude slider to automatically display cloud tops at and above your current GPS altitude. SiriusXM Cloud Tops are available from the surface to FL400 in 5,000 foot increments (excluding FL350).



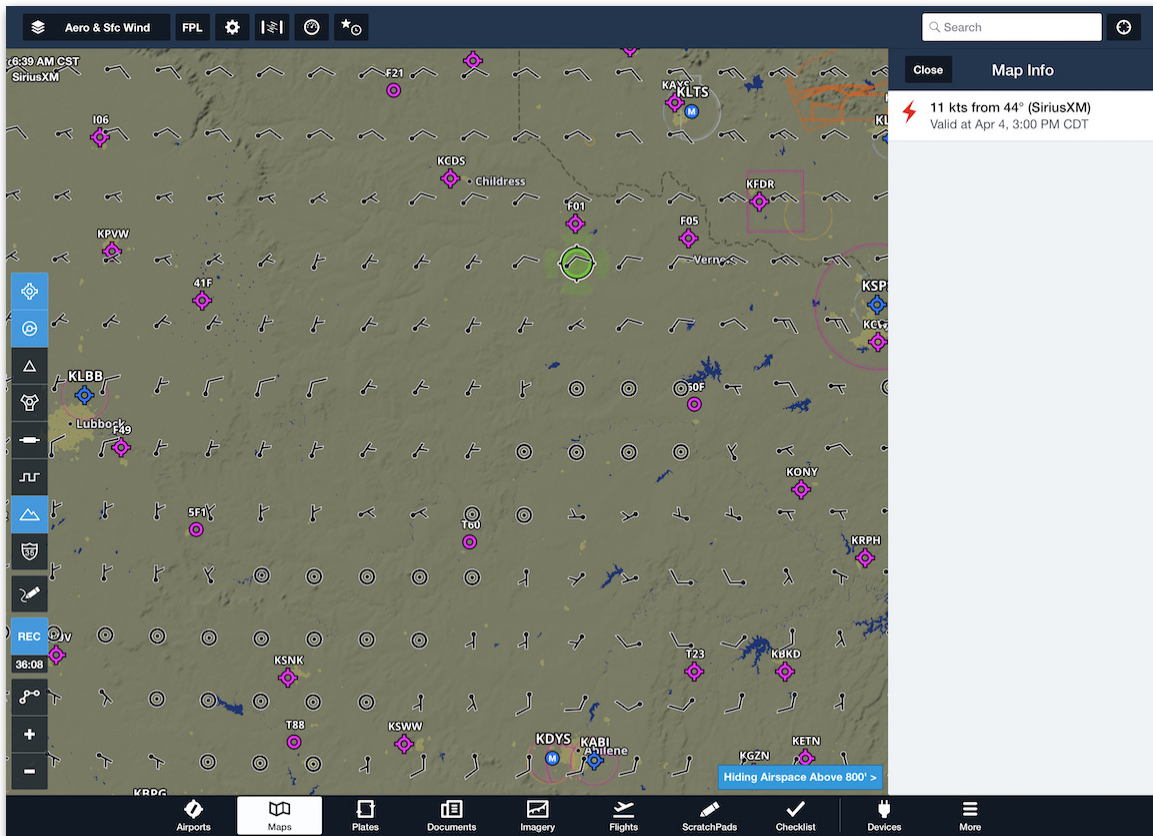
SiriusXM Cloud Tops

23. FOREFLIGHT CONNECT

23.9.16 SiriusXM Surface Wind Analysis

The Surface Wind Analysis map layer is displayed by selecting **Sfc Wind Analysis** from the map layer selector. This map layer graphically displays current wind data using standard aviation symbology.

The wind data is generated from weather models that predict surface winds and is not tied to specific weather stations. The map layer dynamically adjusts and filters weaker winds as the map is zoomed out. As the map is zoomed in, wind information is included for approximately every 10 miles. Tap a wind icon to display its details in the sidebar.



SiriusXM Surface Wind Analysis

23. FOREFLIGHT CONNECT

23.9.17 SiriusXM Surface Visibility Forecast

The XM Surface Visibility layer shows a near-term forecast of surface visibility using colors to indicate forecast surface visibilities ranging from 10 to 0 statute miles.



Visibility (mi)



23. FOREFLIGHT CONNECT

23.10 SiriusXM Radio

SiriusXM radio is only supported with the SiriusXM SXAR1 receiver. For more information, visit www.siriusxm.com/aviation. With a SiriusXM radio subscription (an add-on to the SiriusXM weather subscription), you can listen to SiriusXM radio in flight via Bluetooth with a single headset or an intercom with a Bluetooth audio interface. The status of the radio subscription is displayed on the SXAR1 **Device Information** page.

DEVICE INFORMATION	
Radio ID	GTL7747B
Subscription	ForeFlight
Audio	Active >

SXAR1 Active Audio Subscription

IMPORTANT: SiriusXM satellite radio does not play directly through the iPad or iPhone speaker (or headphone jack). You must connect a Bluetooth audio device.

23.10.1 Setting up SiriusXM Radio

To configure your iOS device to listen to SiriusXM radio:

1. Connect your iPad (or iPhone) to the SXAR1 via **Bluetooth**.
2. Power the Bluetooth headset (or audio interface) on.
3. Ensure the headset (or audio device) is in Bluetooth pairing mode.
4. Do not pair the headset (or audio device) to your iPad (or iPhone).

In ForeFlight Mobile:

1. Select **More > Devices**.
2. Tap the **SXAR1 tile**.
3. Tap the **Audio** row.
4. Tap **Bluetooth Audio** to see a list of available Bluetooth devices.
5. Tap your **headset** (or audio interface) to pair it to the SXAR1.

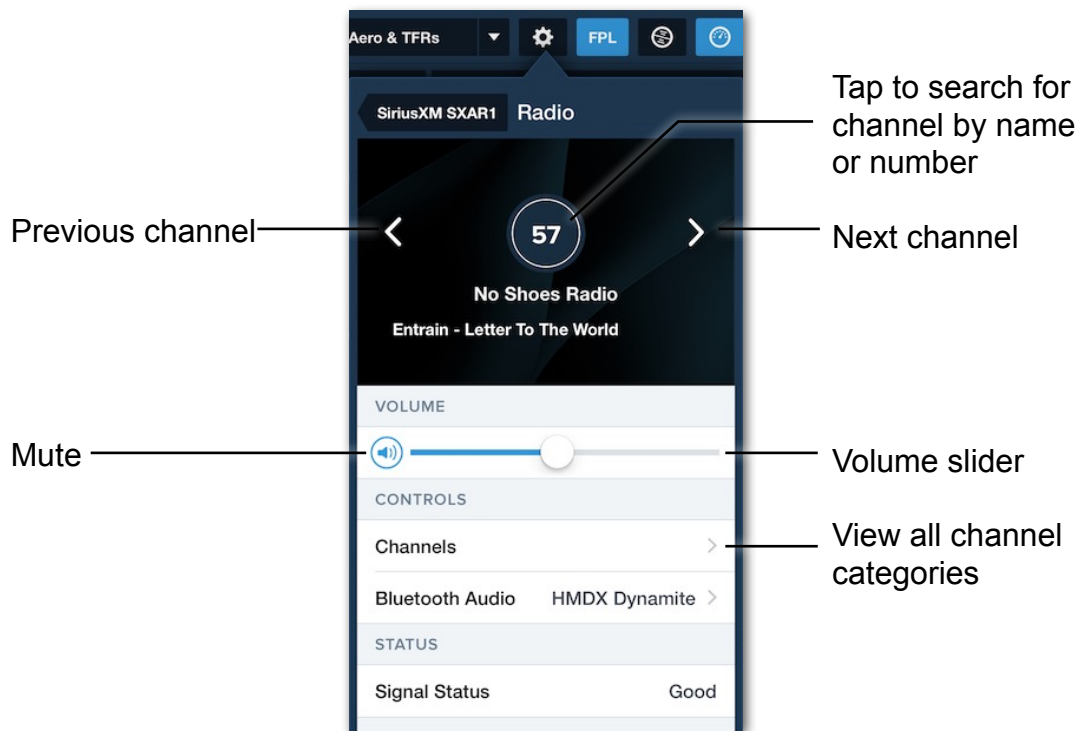
When pairing is complete, the connected device will show in the My Devices section and audio will begin playing.

23. FOREFLIGHT CONNECT

23.10.2 Controlling SiriusXM Radio

SiriusXM radio is controlled with ForeFlight Mobile. Audio is sent directly from the SXAR1 to the Bluetooth audio device. See [this video](#) for additional information.

To change the channel, tap **Category** > **Channel**. Alternatively, type the Channel number or name (full or partial) in the Tune or Search box. A vertical scroll bar shows when there are more Channels or Categories than can be shown, and a blue speaker icon shows in the currently-playing Category and Channel.



SXAR1 Audio Controls

23. FOREFLIGHT CONNECT

23.11 Flight Plan Transfer

ForeFlight Mobile includes two-way flight plan transfer with supported navigators. See the tables in [Supported Devices](#) for additional information.

23.11.1 Route Elements

Flight Plan Transfer supports various types of route elements for most navigators. Altitude and speed changes are not included in flight plan transfer.

Supported Route Elements

- Airports
- Runways
- Departure and Arrival Procedures
- Navaids
- Waypoints
- Airways
- Approach Procedures
- User Waypoints

NOTE: If an unrecognized route element is transferred, it will be converted to latitude and longitude.

NOTE: Honeywell devices does not support departure, arrival, or approach procedure transfers. Airways are broken into their individual route elements when transferred. Performance data (winds, temps, weight, and fuel) can be transferred to Honeywell devices from the Flights view.

23. FOREFLIGHT CONNECT

23.11.2 Maximum Route Elements

The number of elements that can be included in a single transfer varies by navigator. If a route exceeds the navigator's maximum supported route elements, the transfer will be rejected. To reduce the number of elements included in a route transfer:

1. Select **More > Settings**.
2. Tap **Airway Decoding** and select **Bends Only**.

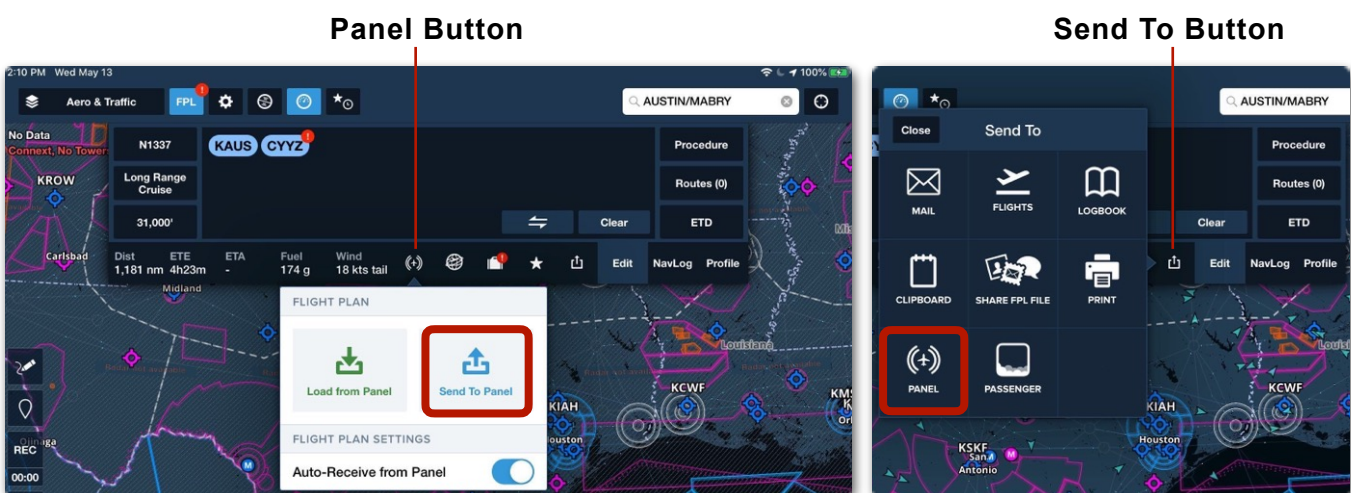
When enabled, the **Bends Only** setting removes waypoints along an airway that do not cause a course change.

23.11.3 Sending Routes

When connected to a supported navigator, buttons for sending routes are added to the bottom of the FPL Editor and the Maps and Flights Send To menus.

To send a route to your navigator, follow the steps below:

1. Plan a route in ForeFlight Mobile.
2. Follow one of the steps below.
 - Tap the **Panel** button at the bottom of the FPL Editor. Tap **Send To Panel**.
 - Tap the **Send To** button. Tap **Panel**.
3. Tap **OK** to dismiss the route transfer confirmation popup.



Sending a route to the panel

23. FOREFLIGHT CONNECT

Flight Plan Transfer Troubleshooting

If routes are unable to be transferred but can be received, check the following items:

- Verify Flight Plan Import is enabled in the navigator's settings.
- Ensure the navigator's flight plan catalog is not full. Delete unnecessary flights from the catalog if applicable.

NOTE: After sending a route, it may be necessary to manually load the route into the navigator. Refer to your navigator's manual for additional information.

23. FOREFLIGHT CONNECT

23.11.4 Loading Routes

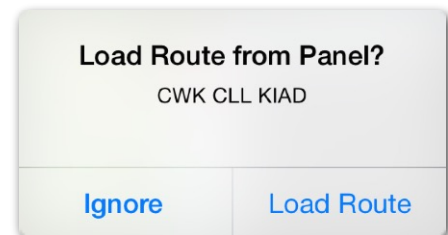
Flight Plans can be loaded from supported navigators automatically and manually.

Automatically Receiving Routes

To automatically receive the new routes that are planned in your GPS navigator, select **More > Settings** and enable **Auto-Receive Panel Flight Plans**. This setting is also available at the bottom of the Panel menu (see image below).

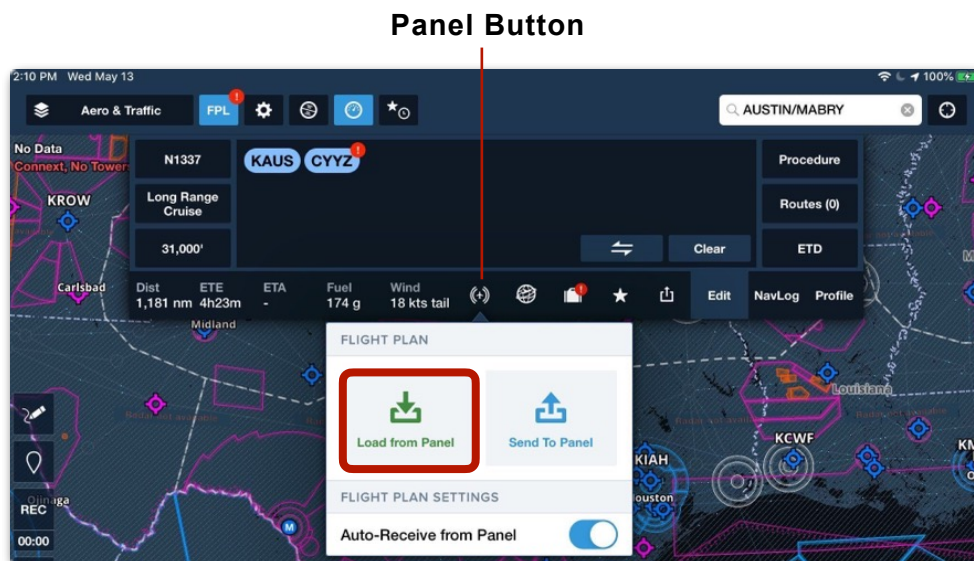
When Auto-Receive Panel Flight Plans is enabled, planning a new route with your navigator results in a ForeFlight Mobile prompt. The Prompt allows you to ignore or load the new route into ForeFlight.

- **Ignore** dismisses the prompt. The existing route on the ForeFlight Maps view is retained.
- **Load Route** dismisses the prompt and loads the route from the navigator into the ForeFlight Mobile FPL Editor.



Manually Loading Routes

If the **Auto-Receive Panel Flight Plan** setting is disabled or if **Ignore** is selected when prompted, the navigator's active route can be manually loaded into ForeFlight by tapping the **Panel** button at the bottom of the FPL Editor and selecting **Load from Panel**.



Manually Loading Flight Plans

23. FOREFLIGHT CONNECT

23.12 FLARM

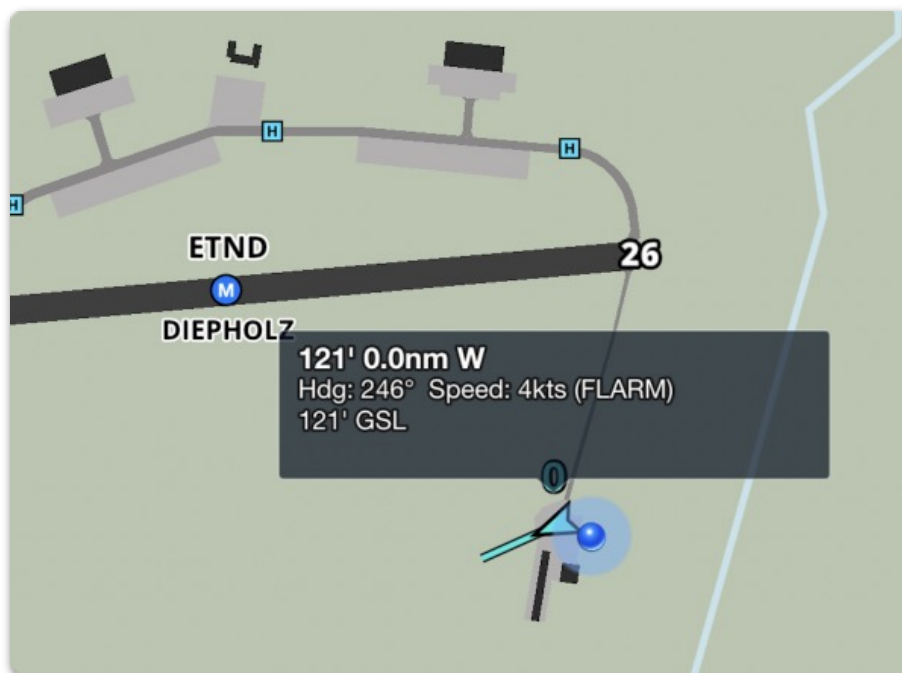
FLARM is a collision avoidance technology popular in the glider pilot community (particularly in Europe). FLARM operates on different frequencies in different regions of the world.

To enable FLARM traffic in ForeFlight Mobile, you must purchase a FLARM decoding license. A FLARM decoding license is associated with your ForeFlight account and can be purchased at www.foreflight.com/buy.

FLARM traffic targets can be viewed on the map with the **Traffic** layer enabled while connected to a supported device. If the connected FLARM receiver is also capable of detecting ADS-B traffic, ForeFlight will simultaneously display both types of traffic.

There are no indications that you're receiving FLARM traffic other than the traffic pop-up which displays (FLARM) as the traffic source when applicable.

ForeFlight recommends the Sentry Plus to receive FLARM traffic. Visit www.flywithsentry.com for additional information.



FLARM Traffic in ForeFlight

23. FOREFLIGHT CONNECT

23.12.1 SkyEcho 2 FLARM

If you connect to a SkyEcho 2 and activate FLARM mode via the SkyEcho 2 Web UI but do not yet have a ForeFlight Mobile FLARM decoding license, you'll see the "License required..." tile on the Device Information page.

The next time your iPad connects to the Internet after this tile is displayed, your ForeFlight Mobile app will notify the ForeFlight servers and you'll receive a personalized email with instructions for adding the FLARM decoding license to your ForeFlight subscription.

After you've added the FLARM decoding license to your ForeFlight subscription, the next time you open the app while connected to the SkyEcho 2 you'll see the updated tile. Tap the SkyEcho 2 Device Tile to see details about the SkyEcho 2 device and the data being received.

FLARM via NMEA (Europe-only)

ForeFlight can display FLARM traffic information delivered via the NMEA protocol. An adapter (typically Wi-Fi) is required to convert NMEA data into a format that can be received by the iPad.

ALERTS

ForeFlight Mobile alerts notify pilots of potential hazards and improves situational awareness. Most alerts are available by default to all ForeFlight users, but some require a Pro Plus or Performance tier subscription. This chapter describes the three types of alerts, explains how to set them up, and describes each alert in detail.

24.1 Alert Types

Alerts can be issued using visual text, audio messages, and tactile vibrations.

Visual Alerts

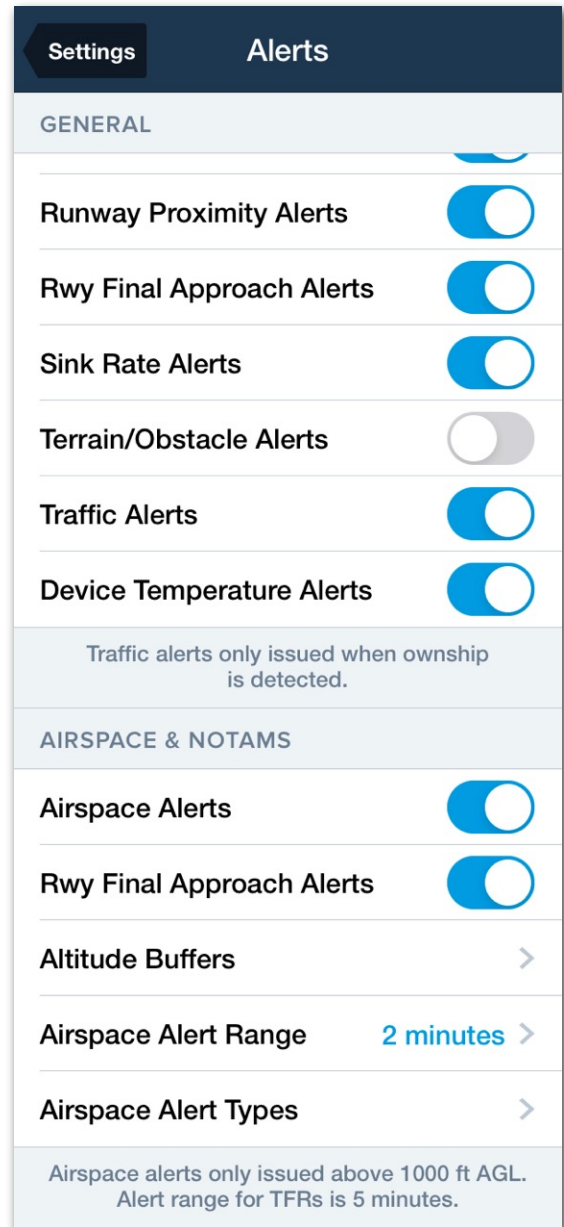
By default, alerts display as a banner near the top of the device screen. Tap the banner to dismiss it immediately. Most alert banners disappear on their own after a short time.

Audible Alerts

Audible alerts are optional messages that play alongside a visual alert and convey the same information. Once enabled, they play through your device speakers or a paired Bluetooth headset.

Tactile Alerts

If you enable audible alerts, ForeFlight also triggers tactile vibrations in any device with that capability (like most iPhones) as soon as an alert is triggered.

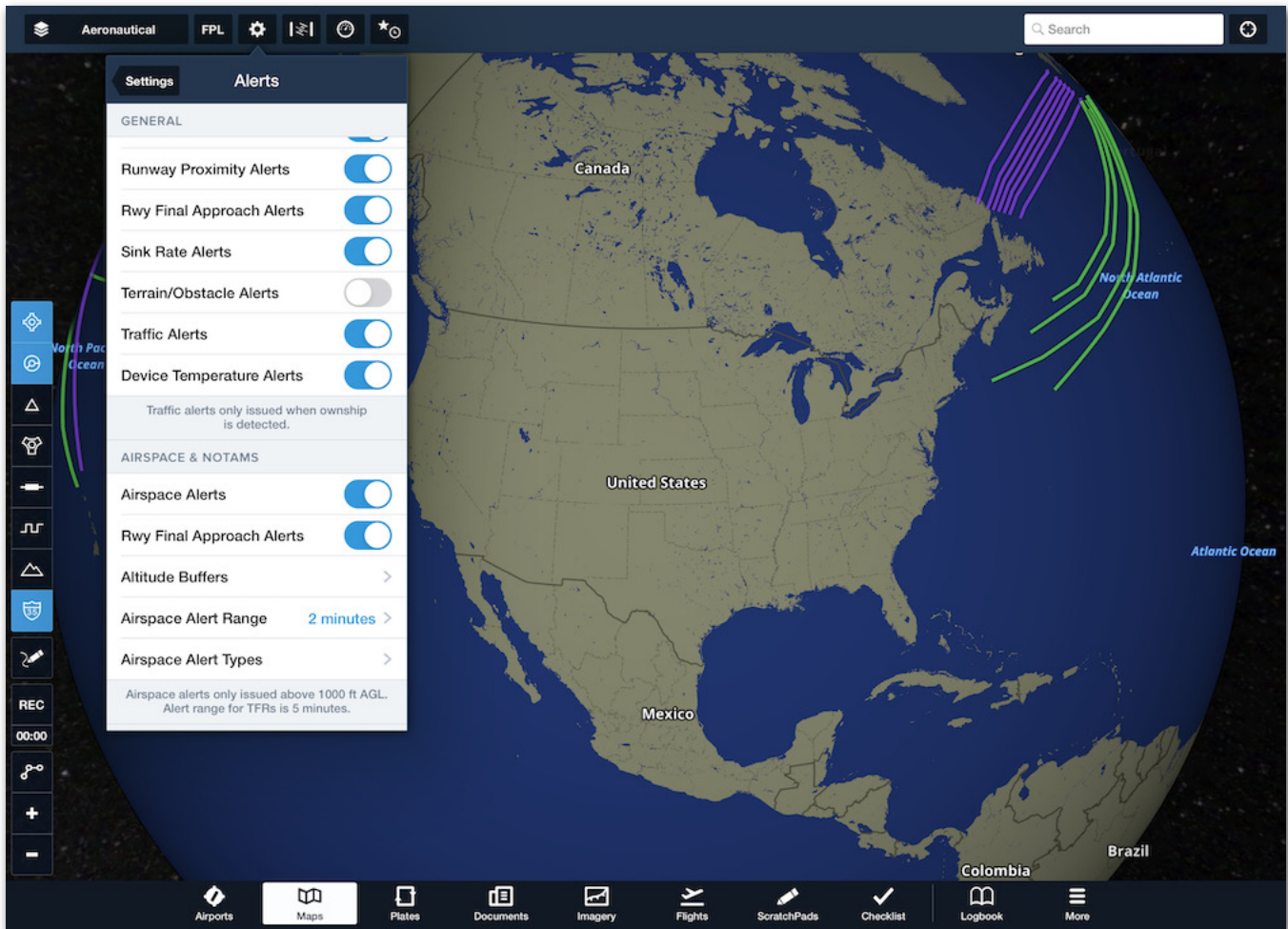


Alerts Menu

24. ALERTS

24.2 Setting Up Alerts

Alerts can be configured with **Map Settings > Alerts** or by tapping **More > Settings > Alerts**. The Alerts menu lets you enable or disable individual alerts and audible alerts, as well as customize how airspace alerts are triggered.



Map Settings - Alerts

24. ALERTS

24.2.1 Enabling Audible Alerts

To enable *audible* alerts (and tactile vibrations if your device uses them), tap **More > Settings > Alerts** and enable **Speak All Alerts**.

NOTE: When setting the volume of audible alerts, it's helpful to toggle **Speak All Alerts** on and off repeatedly. This plays audio messages that you can use to fine-tune the volume on your device.

24.2.2 Enabling Headset Alerts

With audible alerts enabled, you can optionally have them play through a Bluetooth headset. To set this up, pair the headset to your device and set the device volume to an appropriate and safe level.

24.2.3 Disabling Individual Alerts

Most alerts are enabled by default. However, you can disable individual alerts on your device by selecting **More > Settings > Alerts** and disabling the appropriate toggle.

24.2.4 Customizing Airspace Alerts

Unlike other alerts, you can customize when Airspace Alerts are triggered. This functionality is described in the [Airspace Alerts](#) description.

24.3 Available Alerts

The following sections describe each alert's trigger(s), requirements, and default behavior, along with any conditions that change its behavior. Unless specifically noted, each alert is supported under all ForeFlight subscription plans.

24.3.1 500' AGL Alerts

500' AGL Alerts are activated when you descend through 500 ft AGL after having been above 1,000 ft AGL.

500' AGL

Requirements

500' AGL Alerts will only trigger once every 60 seconds and are automatically disabled if your groundspeed is less than 40 knots.

24. ALERTS

24.3.2 Cabin Altitude Alerts

Cabin Altitude Alerts notify you when your aircraft reaches certain cabin pressure altitudes pertinent to supplemental oxygen requirements (12,000 ft and 25,000 ft MSL).

Caution, cabin altitude above 12,000'

Alert, cabin altitude above 25,000'

Requirements

For this alert to trigger, your iPad/iPhone must be equipped with a barometric pressure sensor or be connected to an external device that provides that capability (such as a Sentry or Garmin Flight Stream 210).

Default Behavior

This alert triggers when cabin pressure altitude exceeds 12,000 ft MSL, and again when it exceeds 25,000 ft MSL. The alert triggers no more than once every 30 minutes for each cabin pressure altitude.

24.3.3 Transition Altitude Alert

Transition Altitude Alerts trigger when you climb or descend through 18,000 feet MSL in the U.S. or Canada (or local transition altitude in Europe).

Transition altitude

Nearest Altimeter: 29.90 (KAUS)

Tap to Hide

Requirements and Behavior

If up-to-date weather data is being received in-flight via ADS-B or SiriusXM, the alert also includes the nearest altimeter setting on descent.

24. ALERTS

24.3.4 Runway Proximity Alerts

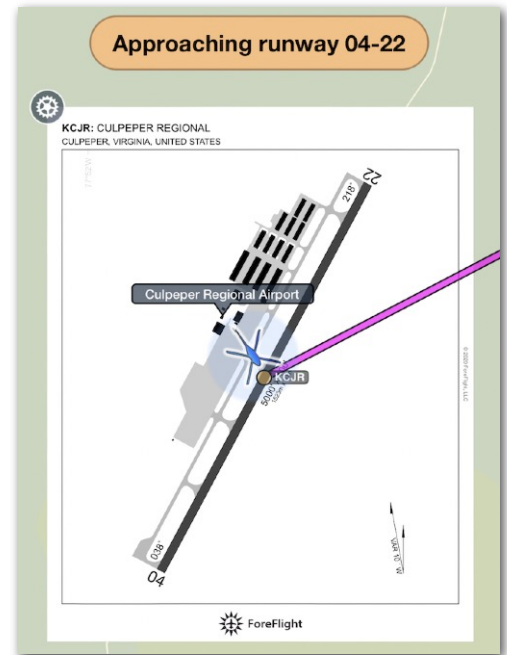
Runway Proximity Alerts use GPS and geographic runway safety areas to alert pilots as they approach or enter a runway environment.

Requirements

For this alert to function, ForeFlight Mobile must be active on the device screen, the aircraft must be moving at less than 40 knots, and runway data must be available for the airport.

Default Behavior

Runway Proximity Alerts can convey one of four message types depending on your proximity to the runway. The following examples are written using a hypothetical runway 04-22:



Runway Proximity Alert

- **Approaching runway 22:** Notifies you when you are nearing one end of the runway and expected to enter the runway environment.
- **Entered runway 22, 4,500' remaining:** Notifies you when you have crossed onto one end of the runway. ForeFlight predicts which end of the runway you will use to take off and provides runway distance remaining rounded to the nearest hundreds of feet.
- **Approaching runway 04-22:** Notifies you when you are nearing the midpoint of a runway and expected to enter the runway environment.
- **Entered runway 04-22:** Notifies you when you have crossed onto the runway near its midpoint. Runway length remaining is omitted because it's unclear which runway you will use to take off.

NOTE: You may receive an alert on takeoff if you cross a different runway before reaching 40 knots during the takeoff roll, or on landing if you cross a different runway while rolling out.

Runway Proximity Alerts are not provided for your landing runway when landing; you have to *taxi* onto or near a runway to get an alert.

24. ALERTS

24.3.5 Runway Final Approach Alerts

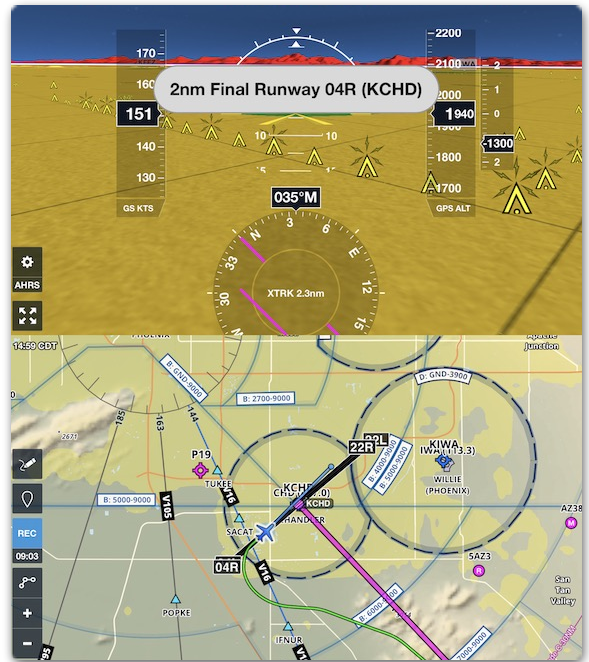
Runway Final Approach Alerts trigger when you are descending toward a runway.

Requirements

For this alert to trigger, you must be descending toward a runway and your track must be within 15 degrees of the runway heading. The destination airport does not need to be included in your route for the runway final approach alert to play.

Default Behavior

This alert is only activated once every 10 minutes.



Runway Final Approach Alert

24.3.6 Sink Rate Alerts

Sink Rate Alerts trigger when your descent rate exceeds a predetermined limit.

Requirements

To trigger this alert, your groundspeed must be above 40 knots and you must maintain a given sink rate (see below) for at least five seconds. Once triggered, this alert will not trigger again for 30 seconds.

Default Behavior

The descent rate necessary to trigger this alert varies according to your height above the ground. Sink Rate Alerts trigger sooner at lower altitudes.

- Above 2,500 ft AGL (or when AGL is not known), the alert is triggered if your descent rate exceeds 3,500 ft per minute.
- Between 2,500 ft AGL and 500 ft AGL the descent rate required to trigger the alert decreases linearly along with altitude, down to a threshold of 1,500 ft per minute.
- At 500 ft AGL, the alert is triggered if your descent rate exceeds 1,500 ft per minute.

Sink Rate, Sink Rate

24. ALERTS

24.3.7 Terrain/Obstacle Alerts

Terrain/Obstacle Alerts trigger an app-wide pop-up window when it detects hazardous terrain or obstacles along your flight path. Unlike other alerts, Terrain/Obstacle Alerts are disabled by default.

Requirements

To use Terrain/Obstacle Alerts, you must meet the following requirements:

- You must have a subscription plan other than Basic Plus.
- You must have downloaded obstacle data.
- You must enable them in **More > Settings > Alerts**.

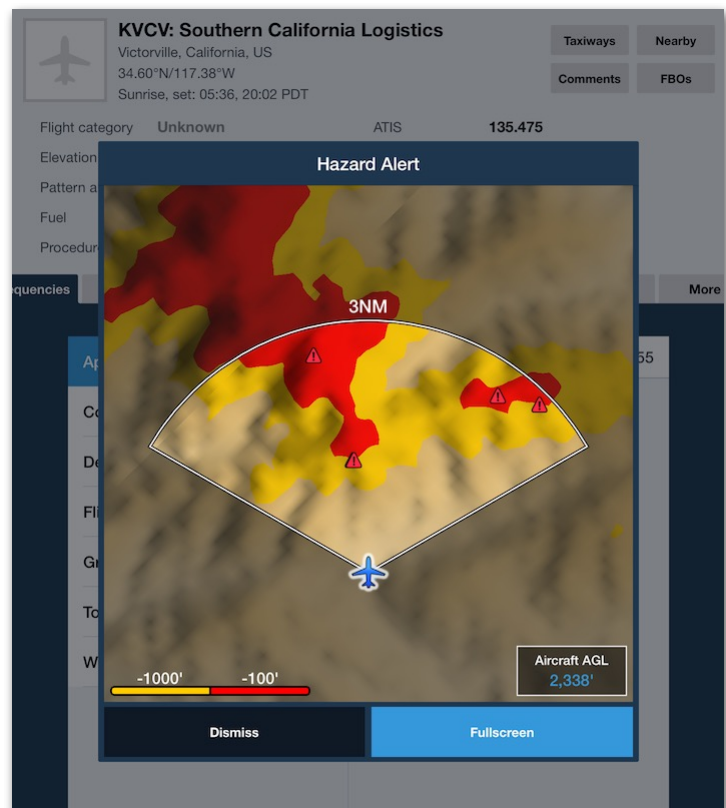
Default Behavior

ForeFlight monitors the area within 60 seconds and 60 degrees of your flight track. When within two miles of a final approach path, alert sensitivity automatically adjusts to reduce nuisance alerts.

If hazardous terrain or obstacles are detected, a Hazard Alert pop-up window opens over the active screen and displays the following information on a moving map:

- Aircraft location
- Aircraft altitude AGL
- Hazard detection range
- Color-coded terrain elevation
- Nearby obstacles

Tap **Fullscreen** to switch to the Map view with the Hazard Advisor map layer enabled, or tap **Dismiss** to close the Hazard Alert window. The window closes automatically 10 seconds after the terrain/obstacle is no longer a threat.



Hazard Alert Pop-Up Window

24. ALERTS

24.3.8 Traffic Alerts

Traffic Alerts notify you when ForeFlight detects traffic that may intersect your flight path or will be in close proximity.

Requirements

To receive *visual* Traffic Alerts:

- Your aircraft must be flying at or above 250 ft AGL.
- ForeFlight must be connected to an external device (such as a Sentry) that provides ADS-B In traffic data.

To receive *audible* Traffic Alerts:

- You must meet the above requirements.
- Your external device must also be able to receive ADS-B Out data and assign ADS-B ownship to your aircraft. ADS-B Ownship is the process of identifying a traffic target as being your aircraft. For more information, see [Ownship ADS-B Out Information](#).

Default Behavior

When the above requirements are met, this alert triggers when another aircraft passes within 1.3 nm horizontally and +/- 1,200' vertically of your aircraft's position (or will do so within 25 seconds).



Traffic Alert

24. ALERTS

24.3.9 Device Temperature Alerts

If you receive this alert, your iPad or iPhone is in danger of overheating and potentially shutting down during a flight.

iPad is too hot.
Cool it down immediately to avoid shutdown.
Tap to Hide

Recommended Actions

ForeFlight recommends taking the following steps to cool down your device:

- Position the device so it is out of direct sunlight.
- Lower the screen brightness.
- Remove the device from any case.
- Direct a vent or other cooling airflow onto the device.
- Remove the device from a charging source.
- Consider turning off the device.

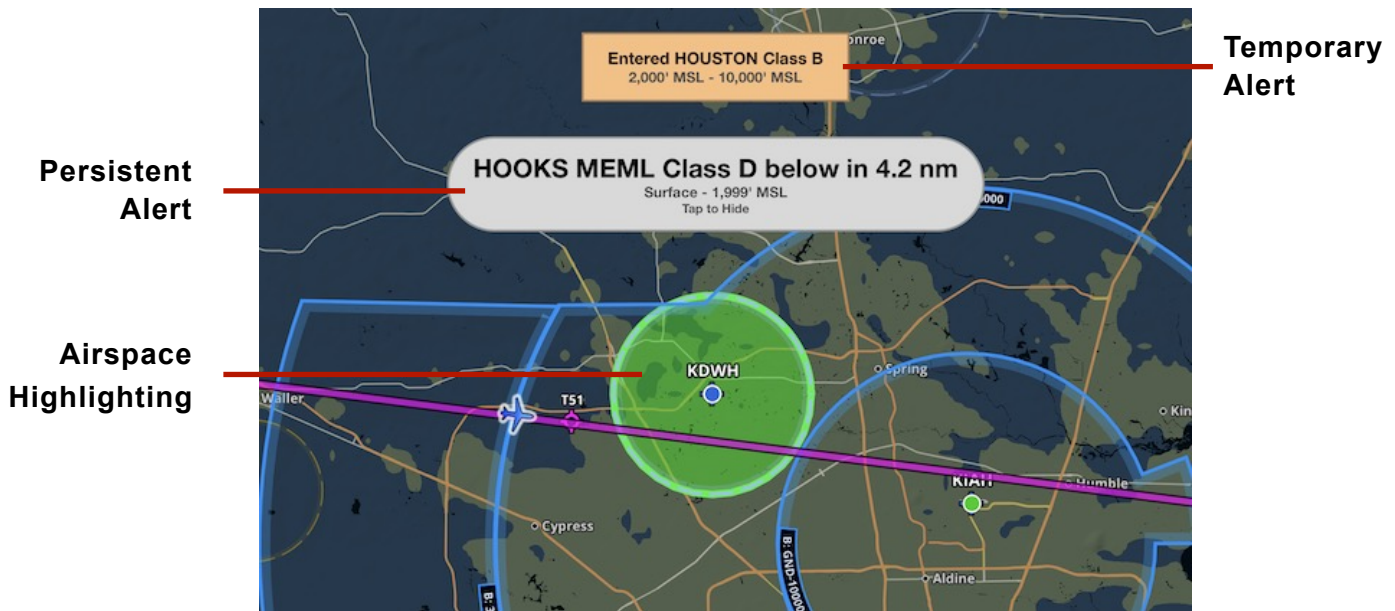
CAUTION: This alert is not guaranteed to display in time to prevent overheating and shutdown, as it relies on device temperature data supplied by iOS. Additionally, this alert only displays once per hour even if your device returns to a high temperature after initially cooling down.

24. ALERTS

24.3.10 Airspace Alerts

Airspace Alerts are an optional feature that provide app-wide airspace-related alerts. Airspace Alerts are enabled by default and are only issued when above 1,000 ft AGL. Airspace Alerts are triggered by user-defined parameters (see [Airspace Alert Settings](#) for additional information).

As depicted below, there are two types of Airspace Alerts: Persistent and Temporary. These two alert types can be displayed simultaneously.



Airspace Alert Types

Persistent Alerts

Persistent alerts are displayed until they're no longer applicable, the alert is hidden, or another alert replaces it (see next page for additional information). These alerts are issued for approaching airspace and airspace above or below you. When an alert is triggered, the corresponding airspace is highlighted (green) and the alert banner displays the airspace name, class, distance to airspace, and vertical limits. The distance to airspace in the alert banner is dynamic and adjusts to reflect your position.

As depicted in the image above, if approaching airspace above or below its vertical limits but within the user-defined Altitude Buffer setting, the alert indicates the airspace is above or below you. Once within the lateral boundaries of the airspace, the banner updates to reflect that you are above or below the airspace.

24. ALERTS

Persistent Alerts remain visible until one of the following actions occurs:

- The alert is no longer applicable.
- The alert is tapped and hidden.
- Another alert replaces it.

NOTE: Airspace Alerts are issued one at a time based on proximity, meaning that if an active persistent alert is displayed and another alert is triggered, the next alert will automatically replace the existing one. Alerts other than Airspace Alerts (e.g., Traffic, Terrain, etc.) automatically replace active Airspace Alerts should they be issued.

Only one alert is issued per airspace class (e.g., B, C, or D). For example, if flying across the shelves of class B airspace, only one alert is issued.

If you depart and return to the same airspace, the alert will not trigger if an alert for that airspace was issued within the past minute.

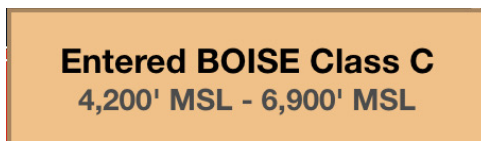
Audio alerts are available in conjunction with persistent alerts, however, they do not contain the airspace name.

Temporary Alerts

Temporary Alerts are issued when entering and exiting the lateral and vertical boundaries of airspace. Temporary alerts are issued one at a time and do not contain an audible portion. Temporary alerts are automatically hidden after a few seconds.

If entering airspace sectors with different altitude limits, such as when flying across class B shelves, the Entered Airspace alert is issued for each airspace sector.

When exiting the vertical or lateral airspace boundary, a single temporary alert is depicted.



Entered Airspace Alert



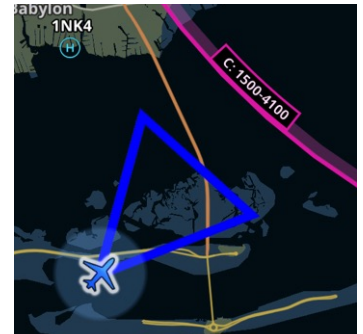
Exited Airspace Alert

24. ALERTS

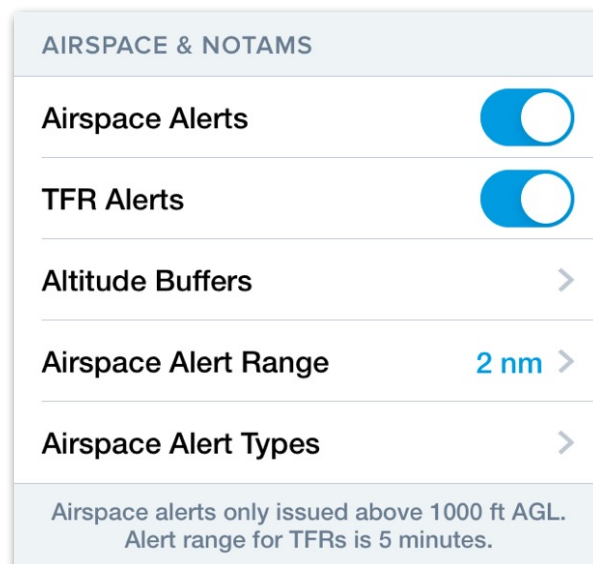
Airspace Alert Settings

There are four settings that control the behavior of Airspace Alerts.

- **Airspace Alerts** toggles the feature on and off. Approaching, Entering, and Exiting airspace alerts are enabled and disabled with the Airspace Alerts toggle.
- **Altitude Buffer** specifies the altitude proximity above or below the airspace required to trigger an alert. The default buffer is 500'. Additional options exist for 1000', 2000', and 5000'.
- **Airspace Alert Range** specifies how far in advance an Approaching Airspace Alert is triggered. The alert trigger evaluates airspace 1 nm on either side of the selected time or distance setting. The image to the right is representative of a 2 nm Airspace Alert Range and the 1 nm buffer on either side of the aircraft's track. The triangle is not a feature that can be enabled. The default Alert Range setting is 3 nm. Additional distance (in nautical mile) and time-based options exist. Time-based settings use your current groundspeed to determine when to trigger alerts.
- **Airspace Alert Types** specifies the type of airspace for which to issue alerts. All airspace types are enabled by default. If an airspace type is not listed, an alert will not be issued for it.



Airspace Alert Range



Airspace Alert Settings

24. ALERTS

24.3.11 Device Disconnect

Device Disconnect alerts are triggered if the Bluetooth or Wi-Fi connection to a portable or panel-mounted device that ForeFlight supports is lost. This allows you to take appropriate action to restore the connection, to switch to a backup device (if available), or to continue the flight knowing that the previously connected device is no longer available.

Sentry has disconnected

Requirements

The alert is only triggered if your groundspeed is above 40 knots or if your device does not have a GPS fix.

24.3.12 Flight Plan Auto Update

Flight Plan Auto Update alerts trigger when ForeFlight receives a flight plan from a supported navigator.

New Flight Plan Loaded From Panel

Requirements

For this alert to trigger, you must **connect** ForeFlight to supported installed (or panel) avionics (such as Garmin Connect devices) that can send flight plans.

Default Behavior

Whenever ForeFlight receives and loads a new flight plan from the panel, it displays a “New Flight Plan Loaded From Panel” message.

24. ALERTS

24.3.13 Connected Portable Device Low Battery

Connected Portable Device Low Battery alerts display a low-battery message when the portable device's battery level is reduced to 20%.



Sentry Battery low: 20%

Requirements

For this alert to trigger, ForeFlight must be connected to a supported portable device such as the Sentry, Stratus, or Garmin GDL 50/51/52.

NOTE: This alert does not trigger when the mobile device running ForeFlight (iPad or iPhone) is running low on battery level.

24.3.14 Destination WX Frequency Alerts

Destination WX Frequency Alerts provide you with your destination airport's weather frequency (ATIS, AWOS, or ASOS) as you near the airport.



KCHO ATIS is 118.425

Tap to Hide

Requirements

For Destination WX Frequency Alerts to trigger, you must have more than one waypoint in your route, the last item in your route must be an airport, and that airport must have a published weather frequency.

Default Behavior

The Destination WX Frequency Alert occurs at a certain distance from the airport, which is greater at higher altitudes. (At 5,000 feet or below, the alert triggers at 20 nm from the airport.)

This alert does not disappear on its own. It remains on screen until you dismiss it by tapping on it or until it is replaced by another alert.

The alert will not occur more than once every 20 minutes for the same airport. However, if you change the destination airport, the alert can occur again in less time for the new airport.

24. ALERTS

24.3.15 TFR Alerts

TFR Alerts display app-wide if you will pass inside, over, or under a TFR within the next five minutes. This alert pertains specifically to TFRs issued in the United States.

Requirements

For this alert to work, you must be flying at or above 500 ft AGL. Also, you must be able to receive inflight TFR data, or you must have downloaded that data recently with the **Pack** feature (see below).

Preflight Data Download

Before your flight, connect to the internet and use the Pack feature to download all relevant TFRs and weather data.

CAUTION: The Pack feature does not provide updated TFR Alerts in flight. ForeFlight can only display TFRs issued *after* you Pack if you are using an ADS-B or SiriusXM inflight weather receiver.

Setting the Altitude Buffer

To configure the sensitivity of TFR Alerts, tap **More > Alerts > Altitude Buffer** and set the TFR buffer to 500', 1000', 2000', or 5000'. This determines how far above or below you ForeFlight searches for TFRs.

Disabling DC SFRA/FRZ Alerts

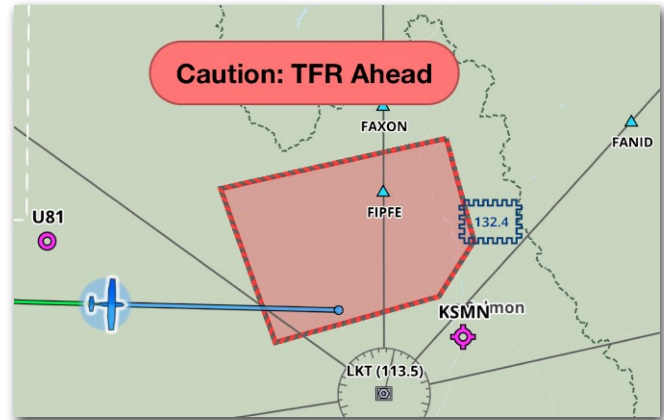
If you regularly fly in and out of the Washington, D.C. SFRA, you can disable alerts specific to that TFR by tapping **More > Settings > Alerts > Airspace Alert Types** and toggling off **Include DC SFRA/FRZ**.

24. ALERTS

Default Behavior

TFR Alerts display app-wide even if you don't have the TFRs layer enabled on the Maps View. TFR Alerts are disabled if you are flying below 500 ft AGL. There are five possible TFR alert messages depending on your position relative to the TFR and its active status:

- **Caution: Upcoming TFR Ahead:** Within five minutes, you will pass within 3 nm of a soon-to-be-active TFR.
- **Caution: TFR Ahead:** Within five minutes, you will pass within 3 nm of an active TFR.
- **Caution: Inside TFR:** You have entered the lateral and vertical boundaries of an active TFR.
- **Caution: TFR Below:** You are above an active TFR by a number of feet set by the Altitude Buffer (see below).
- **Caution: TFR Above:** You are below an active TFR by a number of feet set by the Altitude Buffer.



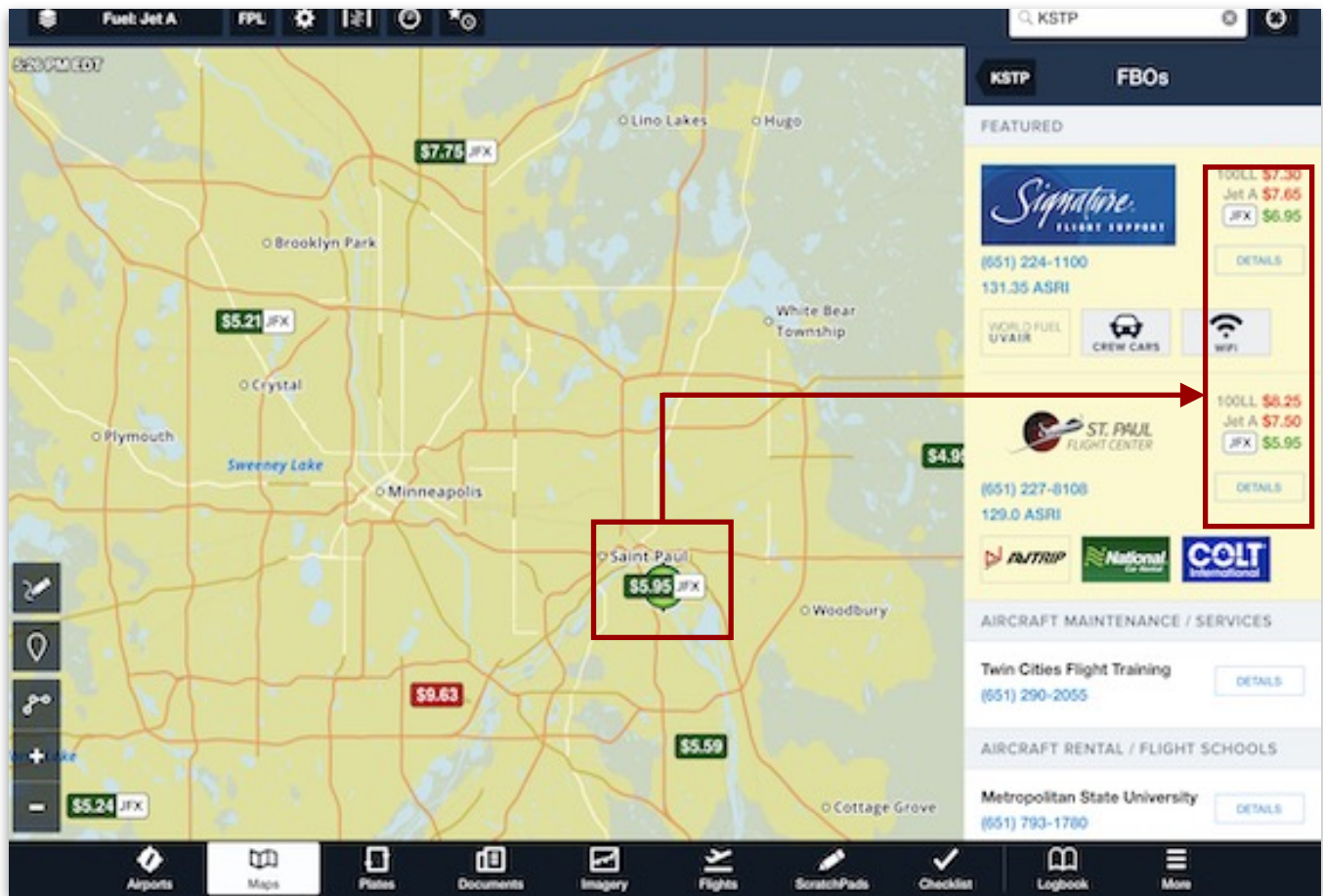
TFR Ahead Alert

CAUTION: TFR Alerts are provided as a supplementary tool for increasing situational awareness and should not replace conventional tools and methods for avoiding TFRs. Failure to use the Pack feature to download relevant weather and TFR data before a flight (see above) can impede ForeFlight's ability to display accurate TFR Alerts. The Pack feature downloads a snapshot of the airspace taken at that specific time. You will only receive alerts for TFRs issued **after** you Pack if you are using an ADS-B or SiriusXM inflight weather receiver.

JETFUELX

JetFuelX is a feature in ForeFlight that helps operators of turbine aircraft view and compare contract **Jet A** fuel prices at airports by FBO. Fuel card information is uploaded into a “wallet” and linked to aircraft on the account. JetFuelX is available to Performance Plus and Business Performance subscribers.

Performance-tier ForeFlight subscribers can link contract Jet-A fuel cards and sign up for new accounts with participating fuel vendors from ForeFlight Web, linking them to the user’s ForeFlight account. ForeFlight Mobile then displays contract Jet-A fuel prices on its Maps, Airports, Plates, and Flights views and lets users request fuel releases from within its Flights view. ForeFlight Web also displays contract Jet-A fuel prices in its My Flights and Maps views.

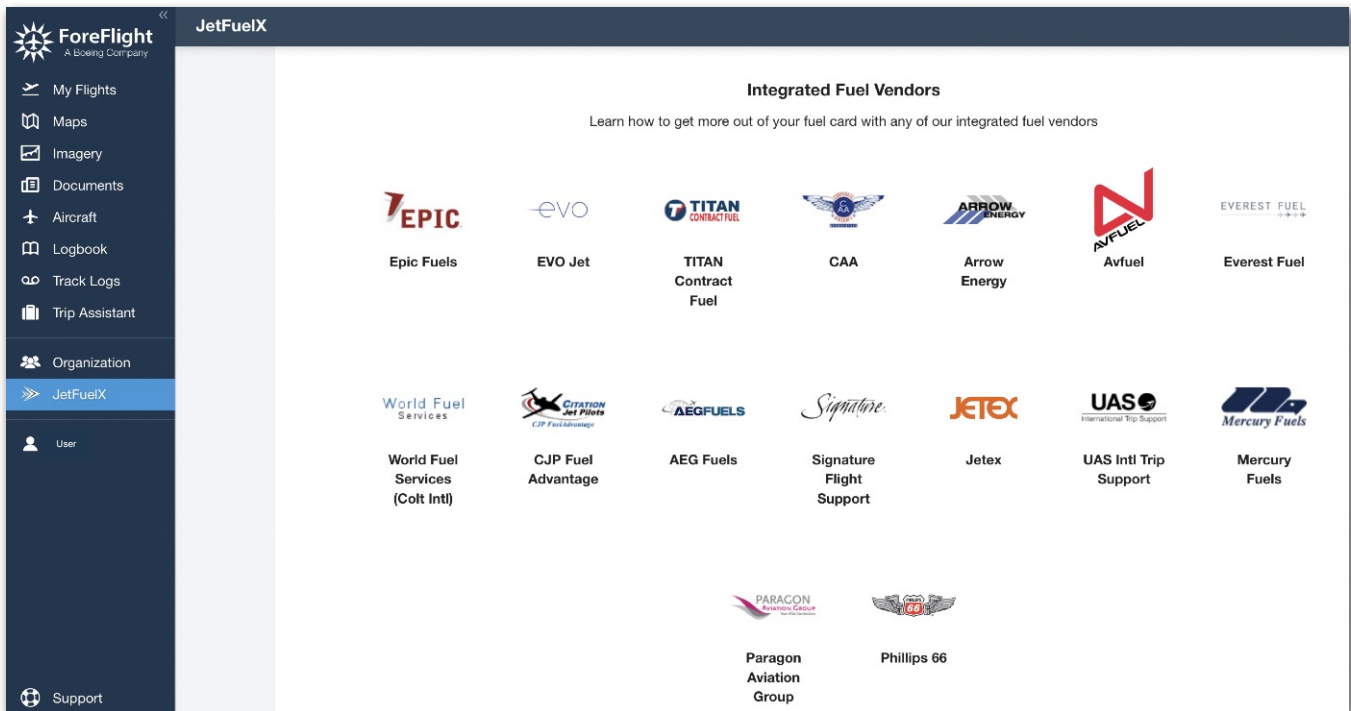


Contract Fuel Prices on ForeFlight Mobile

25. JETFUELX

25.1 Supported Fuel Vendors

To see the list of participating vendors, log into plan.foreflight.com, select **JetFuelX** from the sidebar on the left side of the page, and scroll to the bottom of the page to the Integrated Fuel Vendors list. The fuel vendor icons are clickable links to each vendor’s website. This is useful when [applying for a contract fuel account](#).



Participating Contract Fuel Vendors

25.2 Fuel Card Setup and Management

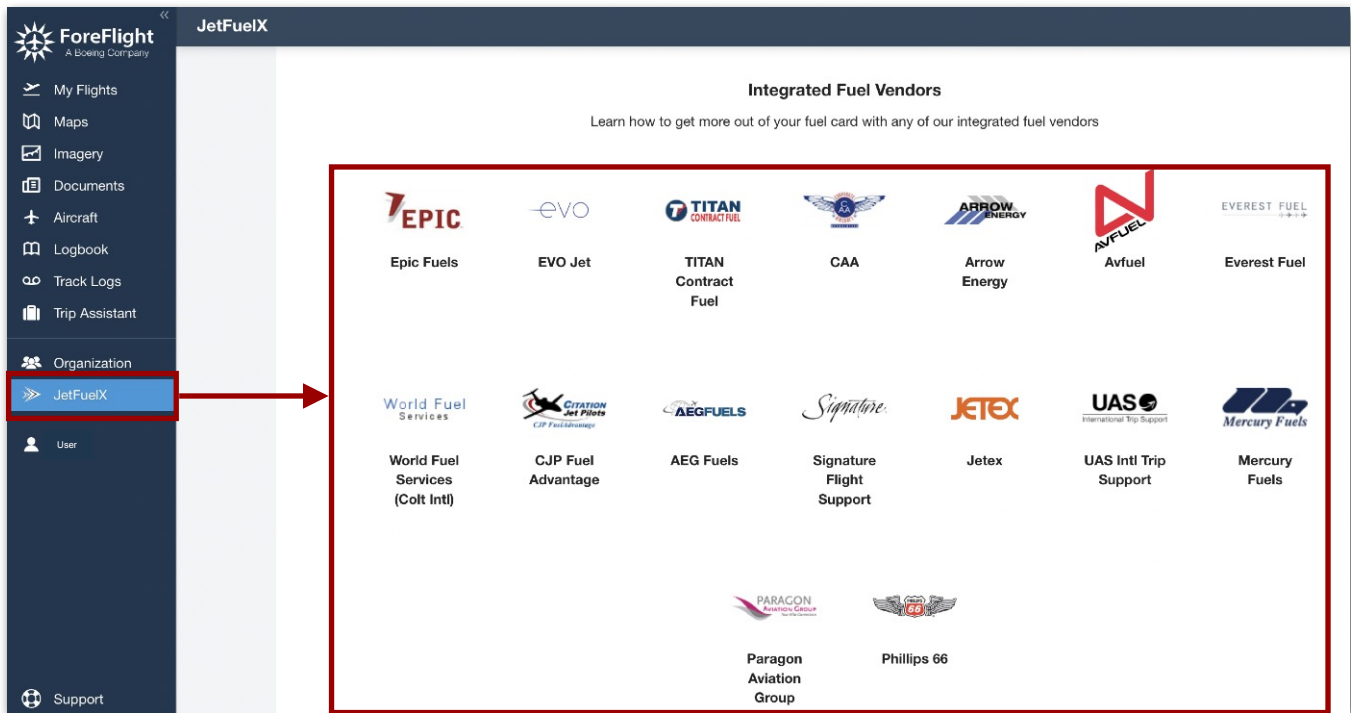
Contract fuel accounts are managed on [ForeFlight Web’s JetFuelX page](#). Each vendor sends fuel price data directly to the user’s ForeFlight account. Fuel cards can be added, edited, and removed. Aircraft profiles can be linked to fuel cards. Status indicators on each fuel card show if an account has current or outdated prices or cannot connect to the fuel vendor, indicating which cards require attention. A vendor’s CSV price files can also be manually imported.

25. JETFUELX

25.2.1 Applying for Contract Fuel Accounts

Before using JetFuelX (including adding fuel cards), users must have already signed up with one or more participating contract fuel providers. The application process varies by vendor and is outside the scope of ForeFlight. However, users can access participating fuel vendors' websites from within ForeFlight Web. To do so, follow these steps:

1. Log into plan.foreflight.com and select **JetFuelX** from the sidebar on the left side of the page.
2. Scroll down to the Integrated Fuel Vendors list.
3. Click one of the vendor icons to navigate to their website.
4. Complete the vendor's application process.



Participating Contract Fuel Vendors

25. JETFUELX

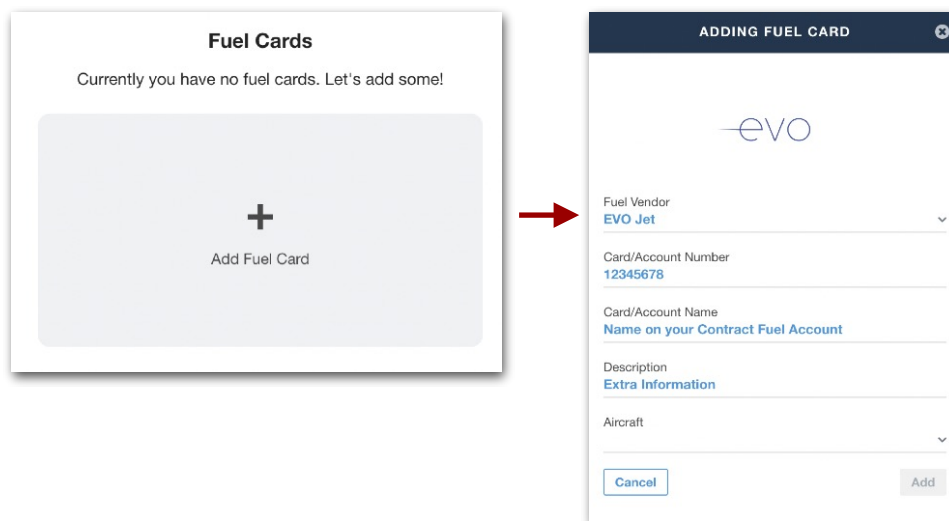
25.2.2 Adding Fuel Cards

The process to add fuel cards is similar for all users, but there is one main difference depending on the type of ForeFlight account:

- Individual account holders can assign fuel cards to any aircraft profile.
- Business account holders can assign fuel cards only to aircraft profiles set up as organization aircraft and **published** by their organization.

To add a fuel card, follow these steps:

1. Log into plan.foreflight.com and select **JetFuelX** from the sidebar on the left side of the page.
2. On the JetFuelX page, click **Add Card** to open the Adding Fuel Card window.
3. In the **Fuel Vendor** field, select a vendor.
4. In the **Card/Account Number** field, enter a card or account number if one is listed in your contract fuel account.
5. In the **Card/Account Name** field, enter the name on your contract fuel account.
6. In the **Description** field, enter any other useful info about the card.
7. In the **Aircraft** field, select one or more aircraft profiles.
8. When finished, click **Add**.



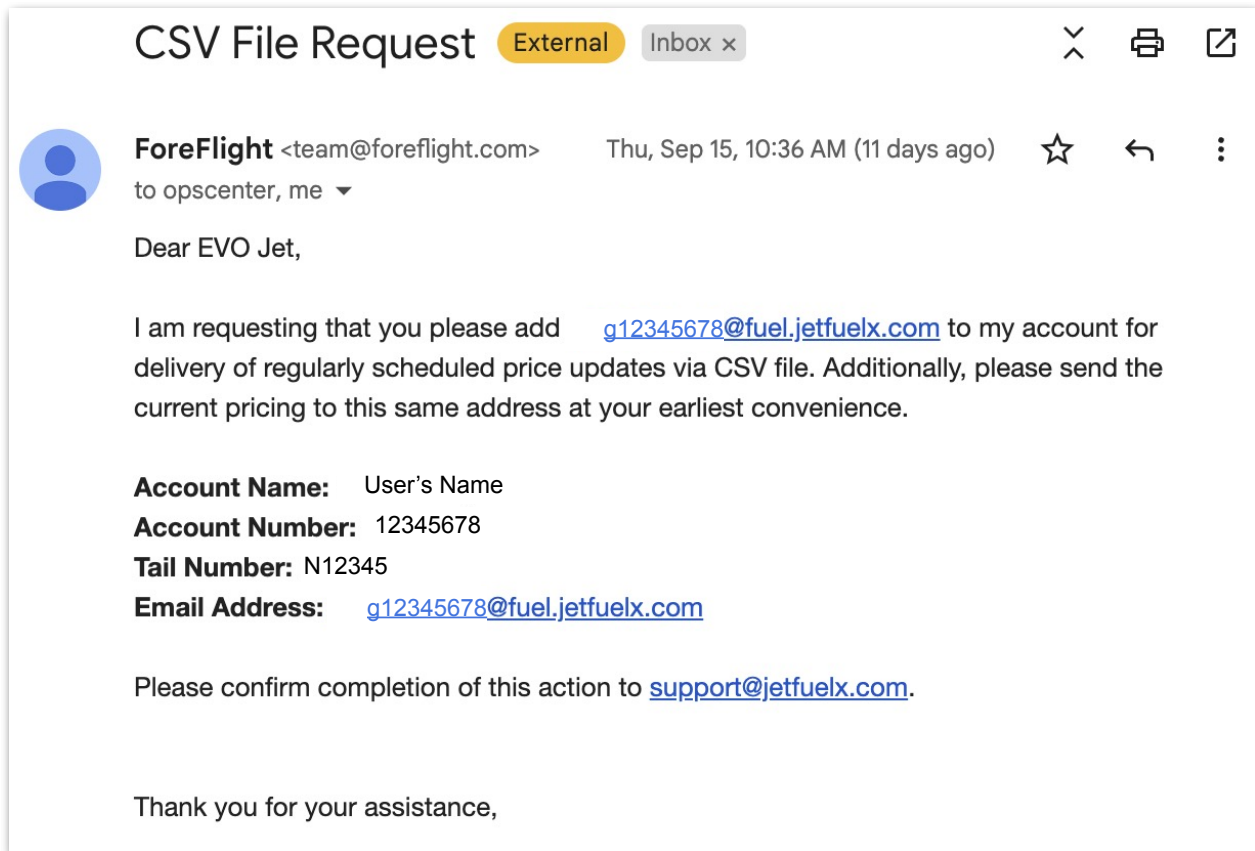
Adding a Fuel Card

After adding a fuel card, it may take up to a week for some vendors to begin sending fuel price data. The following section describes what happens in the meantime, including ForeFlight's message to the vendor and the steps the user must take based on how the vendor decides to send its price data.

25. JETFUELX

25.2.3 Automatic Price Updates

Adding a contract fuel card triggers an automated email to the fuel vendor requesting that they provide regularly scheduled fuel price data to the user's ForeFlight account. This email includes all of the information the vendor needs to send price updates to that account.



Example of ForeFlight's Email to Fuel Vendors

Within one week, the vendor should start sending contract fuel prices to the user's ForeFlight account, and the user's fuel card should display a **status message**. If prices update successfully, this message will be green and include the date of the most recent update.

25. JETFUELX

25.2.4 Manual Price Updates

A red status message displays on the fuel card if a technical issue prevents a vendor's automatic updates. In that case, the user may update prices by auto-forwarding the vendor's fuel price emails or manually importing the vendor's CSV file into ForeFlight Web. Both of these methods are described below.

Price Updating by Forwarding Emails

To set up auto-forwarding, follow these steps:

1. Log into plan.foreflight.com and select **JetFuelX** from the sidebar on the left side of the page.
2. On the JetFuelX page, at the bottom-right corner of the fuel card, click **Import Prices**.
3. At the bottom right corner of the Import Prices page, **Copy** the email address ending in `@fuel.jetfuelx.com`. This is the unique JetFuelX import email address to be used to forward emails from the contract fuel provider.
4. Locate the vendor's email containing the CSV file. This email will most likely be sent to the address listed on your contract fuel membership account. Forward the email to the `@fuel.jetfuelx.com` account you copied in the previous step.
5. Set up auto-forwarding of all future emails from the email address the vendor used above to your `@fuel.jetfuelx.com` email address using the process dictated by your email provider.

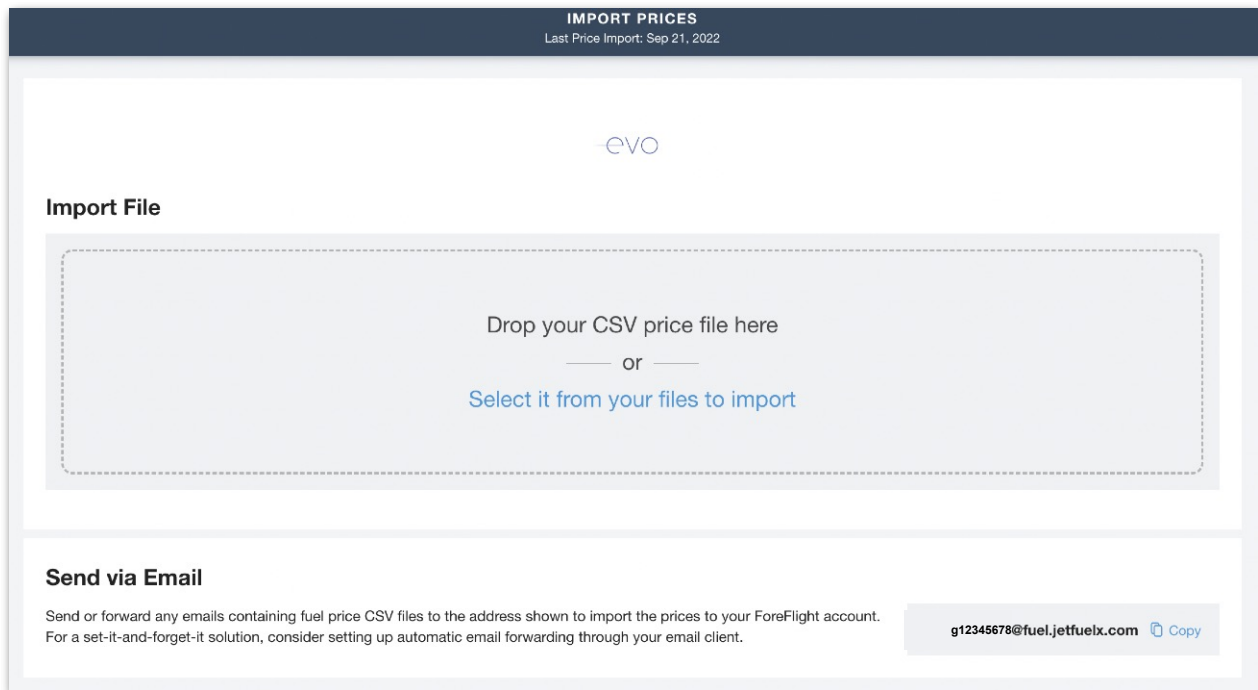
NOTE: `@fuel.jetfuelx.com` addresses are receive-only and cannot respond to any messages. If an email provider requires a confirmation reply to its request for auto-forwarding, it will be necessary instead to manually import CSV files. This is described below.

25. JETFUELX

Price Updating by Manually Importing CSV Files

Users can manually import price updates to a JetFuelX account using the fuel vendor's CSV file by following these steps:

1. Locate the vendor's CSV file (either on the vendor's website or in an email from the vendor). Download the CSV file to your computer.
2. Log into plan.foreflight.com and select **JetFuelX** from the sidebar on the left side of the page.
3. On the JetFuelX page, at the bottom right corner of the fuel card, click **Import Prices**.
4. At the top of the Import Prices page, drag and drop the CSV file from your computer to the gray box, or click **Select it from your files to import** and use the next window to locate and import the CSV file.



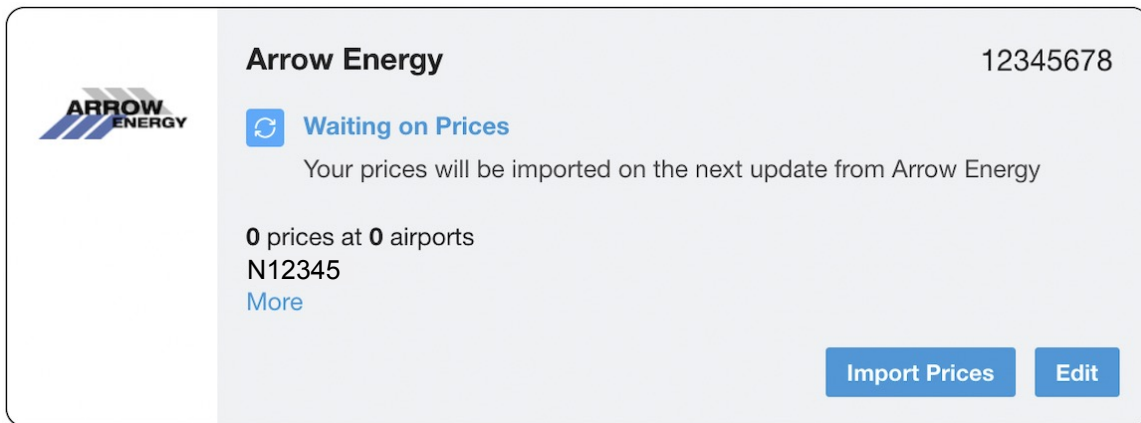
Import Contract Fuel Prices Webpage

25. JETFUELX

25.2.5 Fuel Card Status Messages

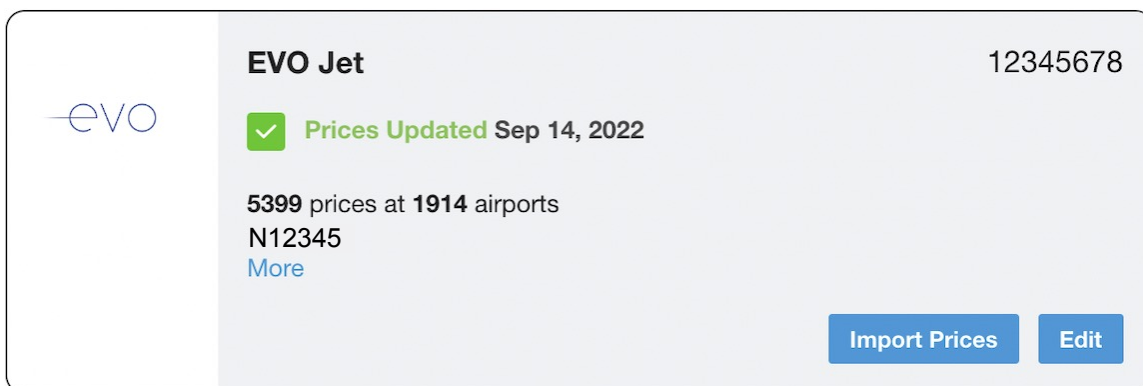
A color-coded message is displayed on each fuel card, indicating the status of the vendor's prices or the state of the connection to the vendor. These messages are described below:

- **Waiting on Prices:** This message displays after a fuel card is first added. It indicates that ForeFlight is waiting on the first price data import. Allow vendors up to one week to begin sending prices. The status will change after the vendor's prices are imported into the user's ForeFlight account.



The screenshot shows a fuel card for Arrow Energy with ID 12345678. The status is 'Waiting on Prices', indicated by a blue circular arrow icon. Below the status, it says 'Your prices will be imported on the next update from Arrow Energy'. It also displays '0 prices at 0 airports' for N12345, with a 'More' link. At the bottom right, there are 'Import Prices' and 'Edit' buttons.

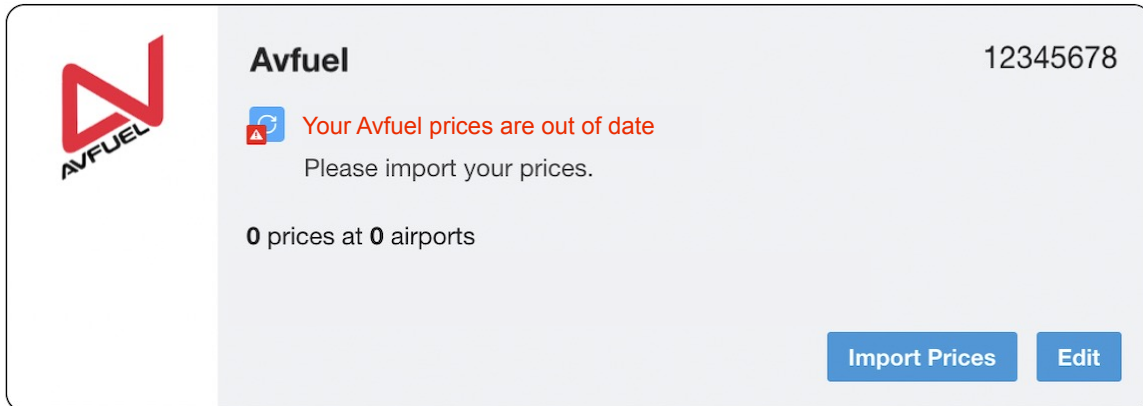
- **Prices Updated:** This message displays after a user's account has received the vendor's latest fuel prices. Look below the message on the fuel card to see the total number of price points available from this vendor and the number of airports at which the vendor displays contract fuel prices. Also, remember to check the date of the most recent import. Prices more than a few days old may change by the time of your next flight.



The screenshot shows a fuel card for EVO Jet with ID 12345678. The status is 'Prices Updated', indicated by a green checkmark icon, with the date 'Sep 14, 2022'. It displays '5399 prices at 1914 airports' for N12345, with a 'More' link. At the bottom right, there are 'Import Prices' and 'Edit' buttons.

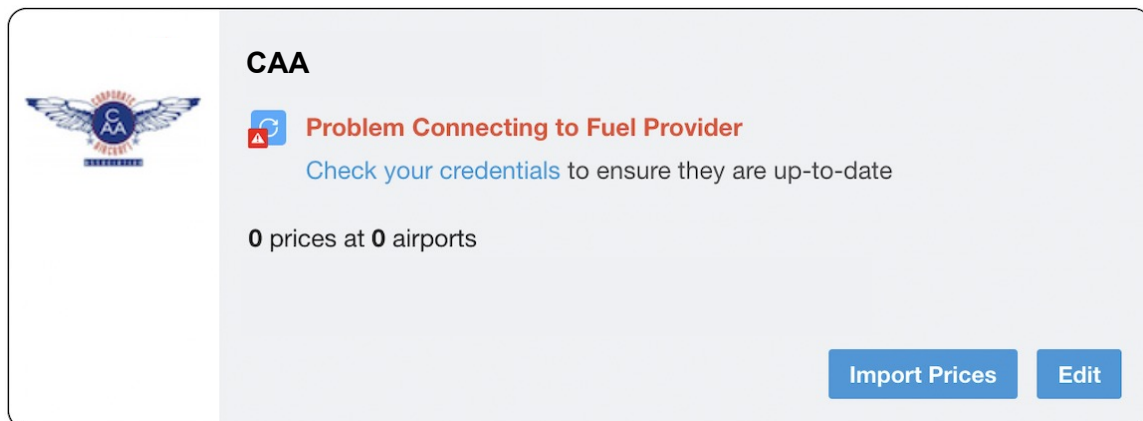
25. JETFUELX

- **Your Prices are Out of Date:** This message displays when contract fuel price data from this vendor is more than 14 days old. If that happens, ForeFlight also emails an automated notification to the user's ForeFlight subscription address. After seeing this status message, contact support to determine why prices are not being updated.



The screenshot shows a vendor card for Avfuel. On the left is the Avfuel logo, a red stylized 'A' with 'AVFUEL' written below it. To the right of the logo, the vendor name 'Avfuel' is displayed in bold, and the ID '12345678' is in the top right corner. Below the name is a red warning icon with a blue refresh symbol, followed by the text 'Your Avfuel prices are out of date' in red, and 'Please import your prices.' in black. Underneath, it says '0 prices at 0 airports'. At the bottom right, there are two blue buttons: 'Import Prices' and 'Edit'.

- **Problem Connecting to Fuel Provider:** This message displays when an issue prevents the vendor's contract fuel price data from importing to ForeFlight. If this message is displayed, check to see if the credentials entered for your fuel card are correct and match your contract fuel membership credentials. For example, CAA passwords are case-sensitive.



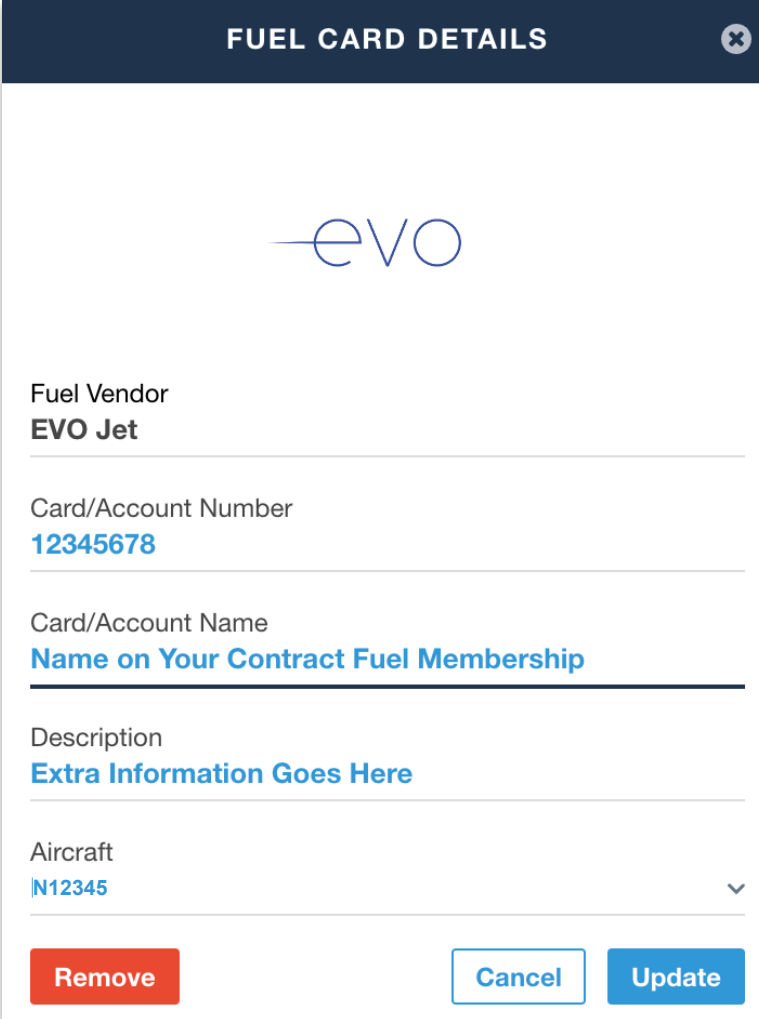
The screenshot shows a vendor card for CAA. On the left is the CAA logo, featuring a blue eagle with wings spread, a 'C' and 'A' in a circle, and 'CAA' below it. To the right of the logo, the vendor name 'CAA' is displayed in bold. Below the name is a red warning icon with a blue refresh symbol, followed by the text 'Problem Connecting to Fuel Provider' in red, and 'Check your credentials to ensure they are up-to-date' in blue. Underneath, it says '0 prices at 0 airports'. At the bottom right, there are two blue buttons: 'Import Prices' and 'Edit'.

25. JETFUELX

25.2.6 Editing Fuel Cards

To edit the account information for a fuel card, follow these steps:

1. Log into plan.foreflight.com and select **JetFuelX** from the sidebar on the left side of the page.
2. On the JetFuelX page, click **Edit** at the bottom-right corner of the fuel card
3. In the Fuel Card Details window, edit the account information as necessary. Editable values are indicated by **blue** font.
4. When finished, click **Update**.



The screenshot shows a modal window titled "FUEL CARD DETAILS" with a close button in the top right corner. The window contains the following information:

- Fuel Vendor:** EVO Jet
- Card/Account Number:** 12345678
- Card/Account Name:** Name on Your Contract Fuel Membership
- Description:** Extra Information Goes Here
- Aircraft:** N12345

At the bottom of the window, there are three buttons: a red "Remove" button, a white "Cancel" button, and a blue "Update" button.

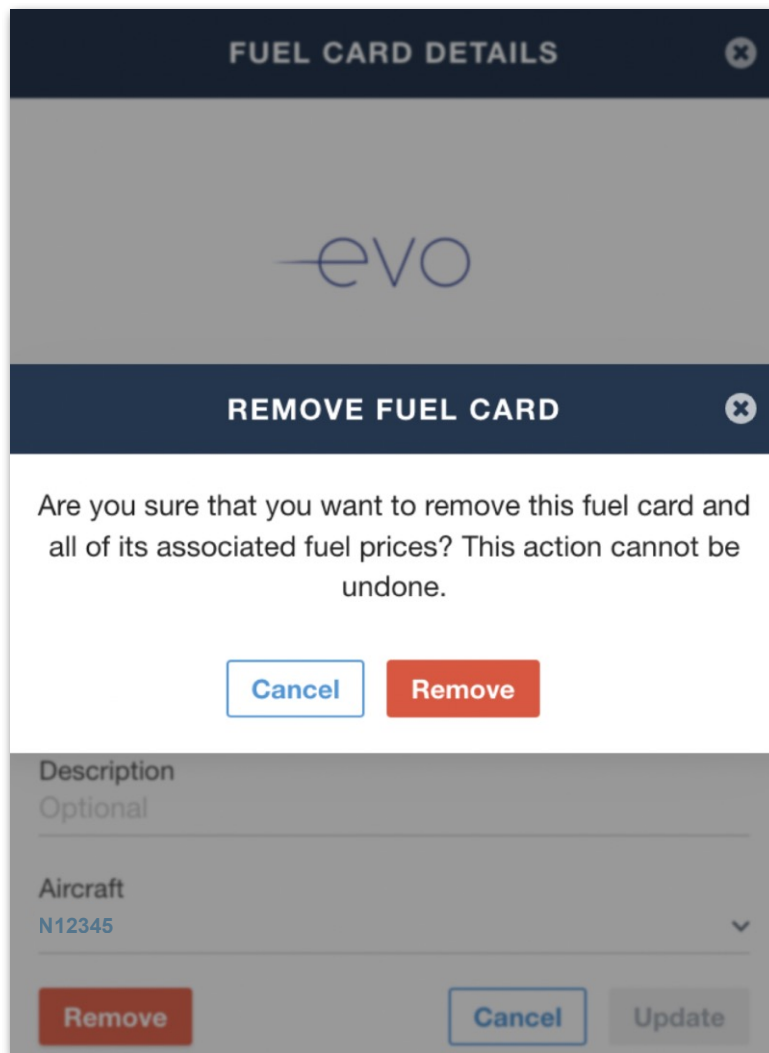
Updating a Fuel Card

25. JETFUELX

25.2.7 Removing Fuel Cards

To remove a fuel card, follow these steps. This will delete existing contract fuel prices from ForeFlight and notify the vendor to stop sending prices to the associated ForeFlight account:

1. Log into plan.foreflight.com and select **JetFuelX** from the sidebar on the left side of the page.
2. On the JetFuelX page, click **Edit** at the bottom-right corner of the fuel card.
3. In the Fuel Card Details window, click **Remove**.
4. In the Remove Fuel Card window, click **Remove** to confirm.



Removing a Fuel Card

25. JETFUELX

25.3 Contract Fuel Prices at Each Airport

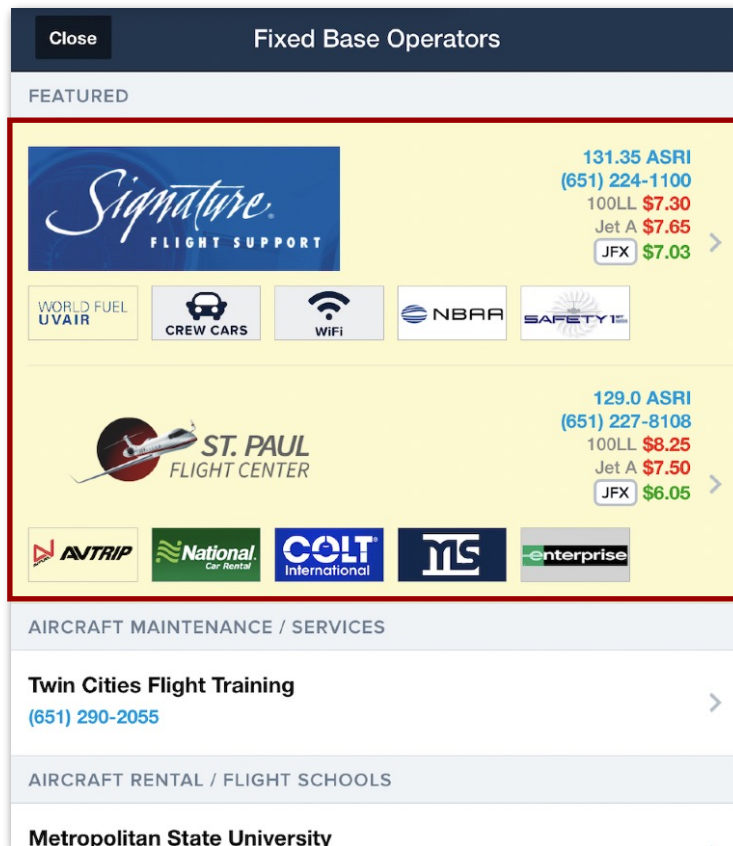
After a fuel card has been added, and its status message shows **Prices Updated** in ForeFlight Web, users can find their supported contract fuel prices from within several places in ForeFlight Mobile: the Maps, Airports, Plates, and Flights views.

Each of the above locations displays contract fuel price information in two views. These are described below.

25.3.1 The FBO List View

The FBO List view lists each FBO located at that airport. If one or more contract fuel vendors are associated with the FBO, a white “JFX” label indicates their lowest contract fuel price.

Tapping one of the listed FBOs opens its **FBO Details** view, displaying each contract fuel vendor associated with that FBO. Note that some vendors offer a breakdown of price tiers.



FBO List View

25. JETFUELX

25.3.2 FBO Details View

The FBO Details view provides information about the selected FBO. Tapping the Info tab provides a breakdown of its associated contract fuel vendors and their prices. The sections below describe all of the functionality in this view.

JetFuelX Section

The JetFuelX section includes two selectable rows that affect the fuel vendors and price points that display in the rest of the view.

NOTE: The **Aircraft** and **Fuel (Gallons)** fields described below make the information on the FBO Details view more accurate for planning purposes. Interacting with these fields does not **initiate a fuel order or a request for fuel release**.

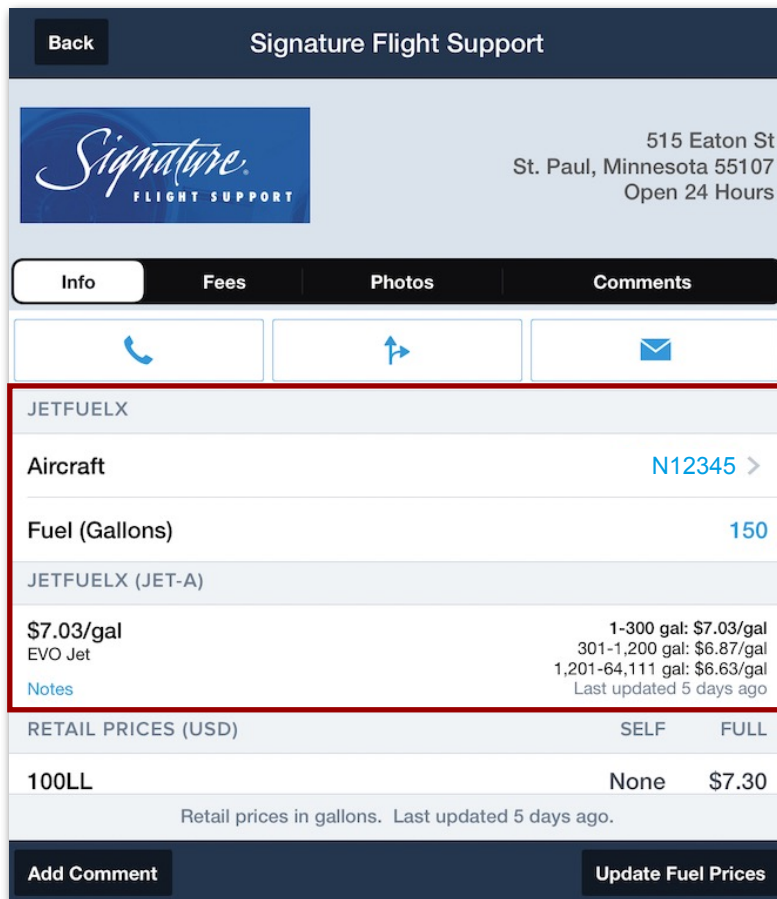
- Tap the **Aircraft** row to select the profile for the aircraft to be used in the flight. This will cause the FBO Details view to display only those fuel vendors (and their prices) that apply to fuel cards tied to that aircraft.
- Tap the **Fuel (Gallons)** row and enter the amount of fuel that will be ordered at the FBO. The value entered changes which JetFuelX price tier is highlighted for each fuel vendor.

25. JETFUELX

JetFuelX (Jet-A, Jet-A+) Section

The JetFuelX (Jet-A and Jet-A+) section displays contract fuel prices offered by each vendor associated with the FBO. A contract fuel vendor's prices are only displayed if the user's aircraft profile is tied to that vendor's fuel card. This section includes the following functionality:

- **Vendor Price Tiers:** Some vendors offer several price tiers. Whichever price tier is highlighted in bold font is the price per gallon based on the amount entered in the Fuel (Gallons) field above.
- **Vendor Notes:** Tap **Notes** next to any fuel vendor to view additional information that the fuel vendor provided regarding purchasing contract fuel at that FBO. Examples include additional fees for handling, hookup, and infrastructure.



FBO Details View

25. JETFUELX

25.4 Locating Contract Fuel Vendors in ForeFlight

Once a fuel card has been added, and it displays a status message of **Prices Updated** in ForeFlight Web, users can find their supported contract fuel vendors from within several places in ForeFlight Mobile: the **Maps**, **Airports**, **Plates**, and **Flights** views. Further detail is provided in the sections below.

25.4.1 Vendors on the Maps View

On the Map view, display the **Fuel: Jet A** map layer to find contract fuel. If a standard Jet-A fuel price marker has a white “JFX” label, there is at least one FBO associated with that airport that accepts one or more contract fuel cards.

To see more information about the FBOs located at a given airport, follow these steps:

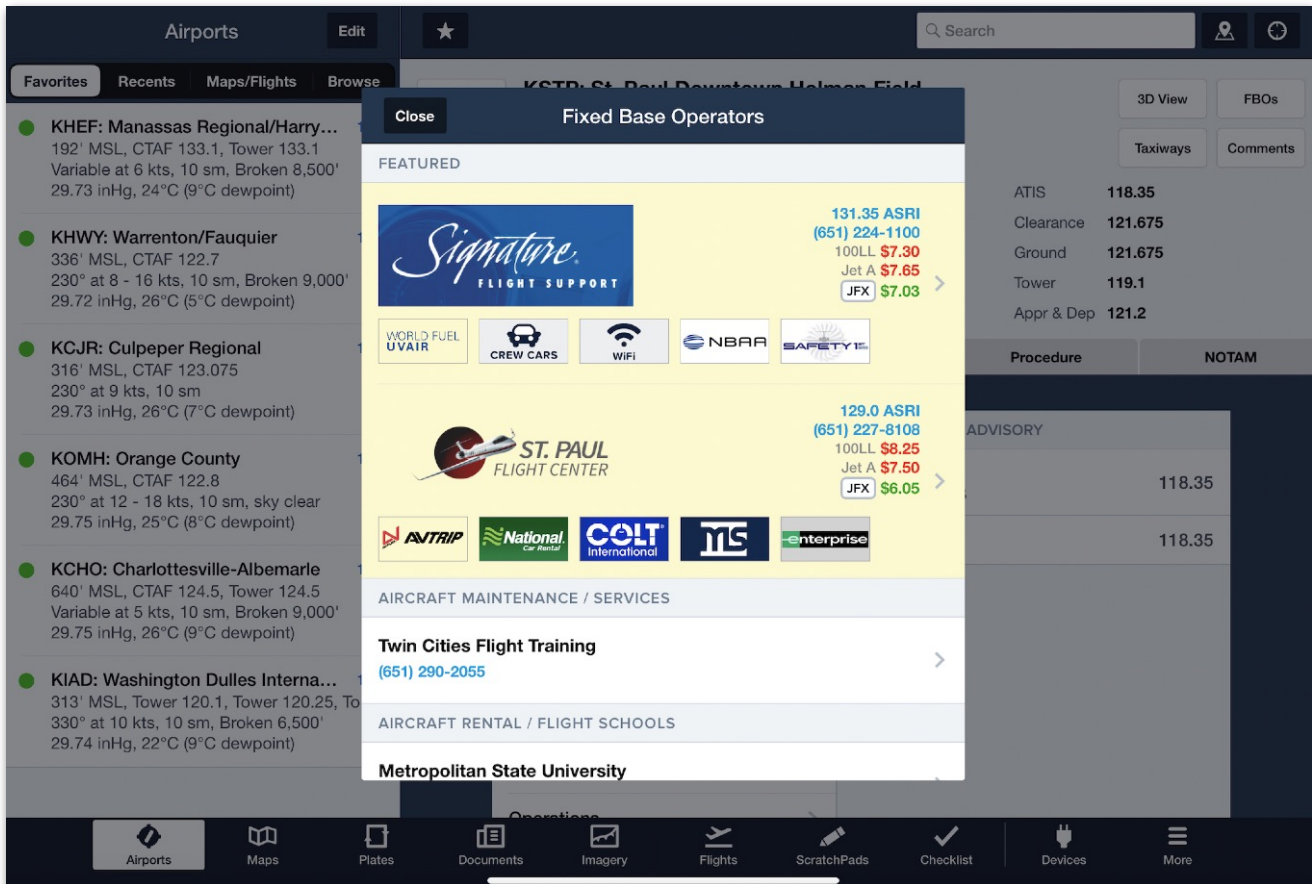
1. On the Maps view, with the **Fuel: Jet A** map layer displayed, tap a price marker with the “JFX” label.
2. The Maps sidebar opens on the right side of the device screen and automatically displays the FBO List view, including a list of fuel prices. If the airport details view is displayed instead, tap **FBOs** to open the **FBO List view**.

25. JETFUELX

25.4.2 Vendors on the Airports View

On the Airports view, find out if an airport is associated with supported contract fuel vendors by following these steps:

1. On the Airports view, display the desired airport.
2. In the top-right corner of the airport summary pane, tap **FBOs** to open the **FBO List view**. Any contract fuel vendors will be displayed, and their contract fuel prices will have a white “JFX” label.



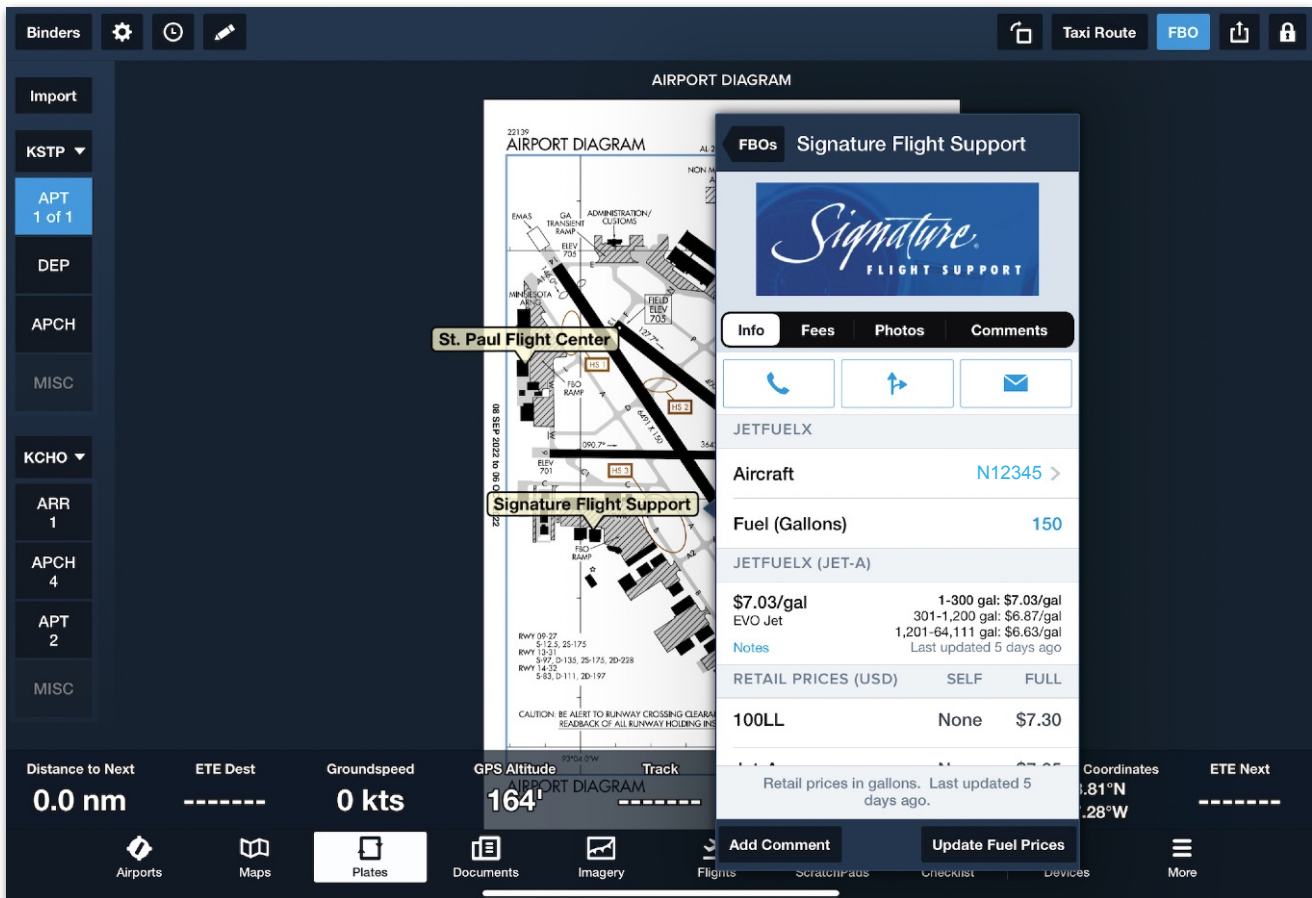
Contract Fuel Vendors on the Airports View Under FBOs

25. JETFUELX

25.4.3 Vendors on the Plates View

On the Plates view, find out if an airport is associated with supported contract fuel vendors by following these steps:

1. Open an airport diagram on the Plates view.
2. At the top of the Plates menu, tap **FBO** to show any FBOs located at that airport.
3. Tap an FBO label to open the **FBO Details view** by default, displaying supported contract fuel vendors and their prices.



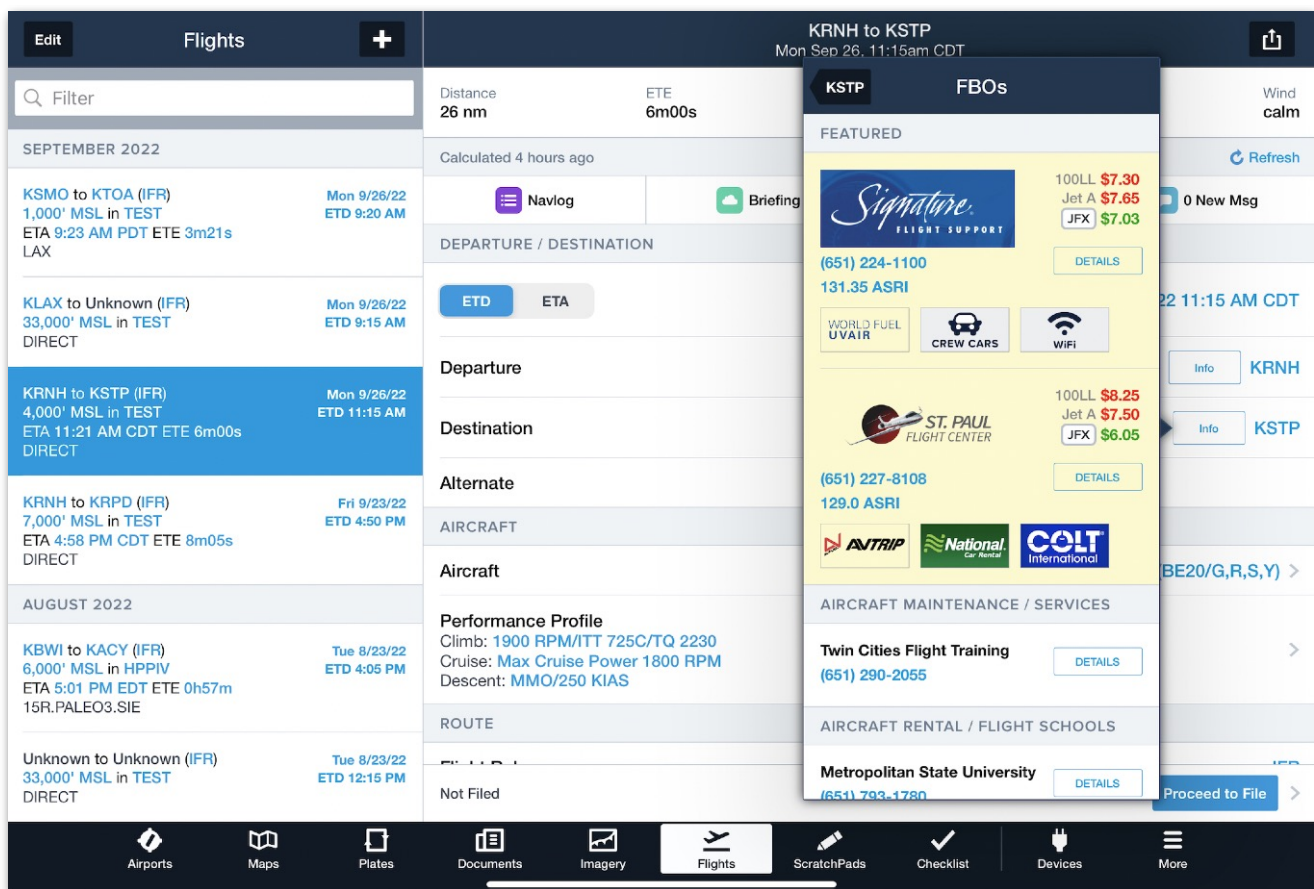
Finding Contract Fuel Vendors on the Plates View

25. JETFUELX

25.4.4 Vendors on the Flights View

The Flights view can be used to find out if a departure, destination, or alternate airport along a route is associated with supported contract fuel vendors. To do so, follow these steps:

1. On the Flights view, open a new or existing flight plan.
2. In the Destination section, enter an airport identifier.
3. Tap **Info** next to the Destination airport to open the airport details view.
4. Tap FBOs to open the **FBO List view**. Contract fuel vendors will be displayed, and their contract fuel prices will have a white “JFX” label.



Finding Contract Fuel Vendors on the Flights View

25.5 Fuel Release Requests

Requests for fuel releases are made on the Flights view. This functionality is described in **Fuel Orders**.

ANNOTATIONS

ForeFlight annotations allow you to add your own full-color annotations to approach plates, SIDs, STARs, airport diagrams and documents. This can be useful for highlighting important elements such as crossing altitudes or taxi instructions, or adding notes to your PDF documents.

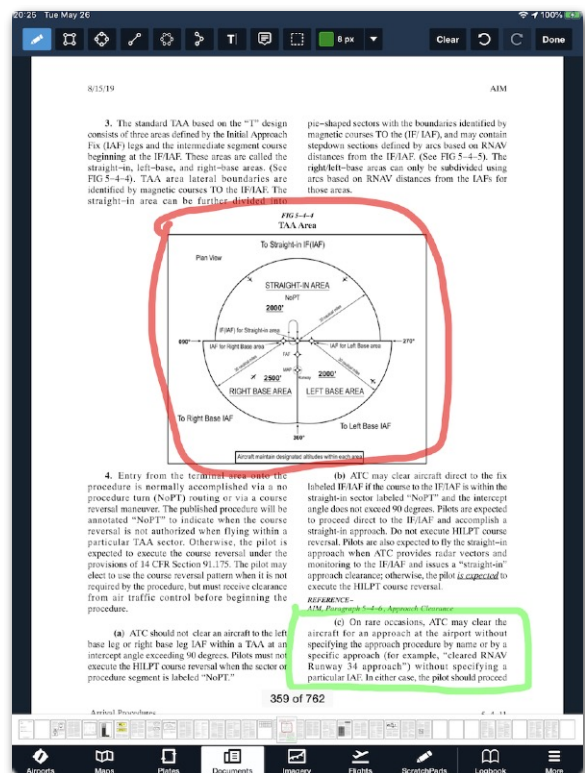
NOTE: Document annotations are not currently supported on ForeFlight Web.

26.1 About the Design

Annotations are available in all subscriptions. If you have a ForeFlight Pro Plus, Performance Plus, Business Pro, or Business Performance subscription, annotations you make on an approach plate are displayed when you show the annotated plate on the map.

Annotations you add to a Plate, SID, STAR or Airport Diagram are saved at the data cycle change-over, unless the SID, STAR or Plate name changes in the new data cycle (e.g., if the TEXN5 STAR becomes TEXN6, or RWY03 ILS becomes RWY04 ILS due to updated magnetic variation).

Annotations you add to a PDF Document are synchronized between all signed-in devices, and are saved if the document is updated provided the document title stays the same during the update.



26. ANNOTATIONS




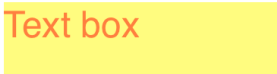


26.2 Annotation Types

There are 8 kinds of annotations available on the iPad:

Drawing 		Text Box 	
Rectangle 		Ellipse 	
Line 		Polygon 	
Polyline 		Sticky-note 	


26.2.1 iPhone Annotations

All annotations made on an iPad are visible on an iPhone. However there are only 3 kinds of annotations available to be created on the iPhone:

Drawing 		Text Box 	
Rectangle 			

26. ANNOTATIONS

26.3 Adding and Editing Annotations

When you open a plate or PDF Document, tap the Annotation button  in the menu at the top of the page to display the annotation toolbar:

26.3.1 iPad



Or simply touch-hold on the plate or PDF Document until the magnifying glass appears, then release your finger to display the popup Annotation menu:



Tap the button to choose the type of annotation you want to add (Text, Sticky note, or Ink drawing), then adjust the formatting and color of the annotation (if needed) by tapping the colored Annotation setting button (the colored dot) at the top of the page.

26.3.2 iPhone

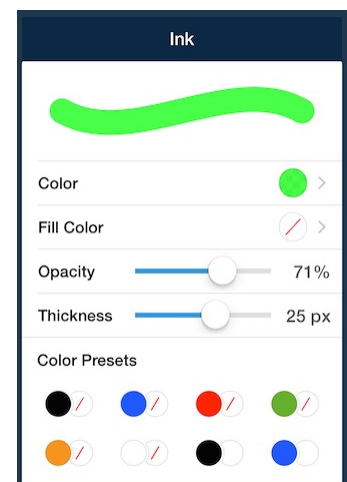
The iPhone allows you create freehand drawings, rectangles, and text-box annotations, but you can view all annotations created on an iPad.

You can reposition an annotation by touch-dragging inside of the selection box. and you can resize the annotation by touch-dragging one of the blue “handles” around the annotation.

Choosing Annotation Color

Tap the Color drop-down in the top menu bar to display the line Color, Opacity, and Thickness picker. You can choose from 8 presets: six with transparent “fill” colors (with the red /) and two with white fill.

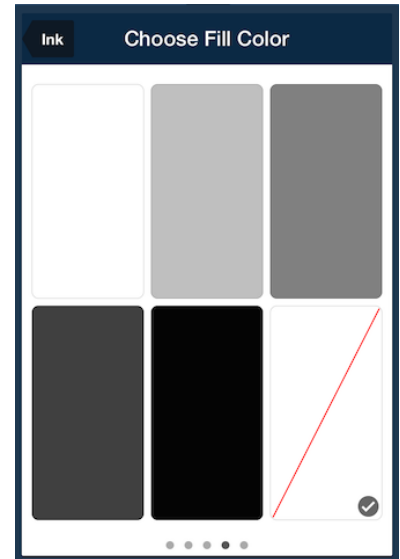
Or tap the Color button to display the color picker. Change between the 5 color selection pages by swiping from left to right. When using the color “circle”, touch in the circle to choose the color you want, then slide the horizontal slider below the circle to adjust the brightness of the color.



26. ANNOTATIONS

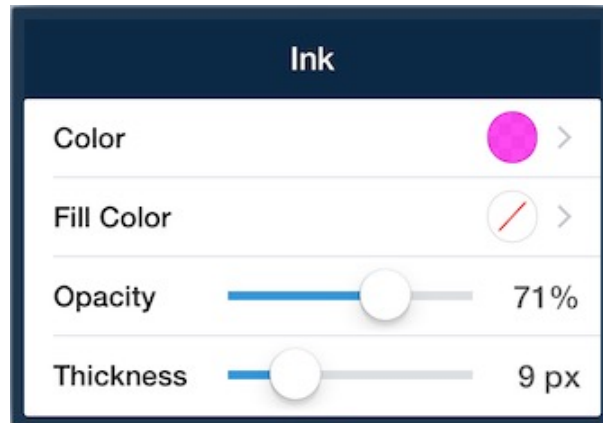
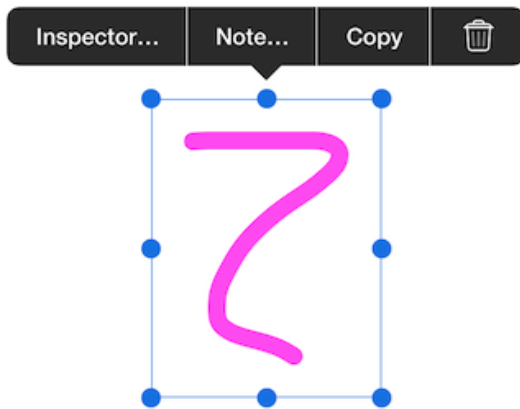
Fill Color: Transparent or “No Fill”

To choose a transparent or “no fill” color, select the Fill Color box with the red diagonal line.



Drawing/Ink

The freehand Drawing/Ink tool allows you to choose the line Color, Opacity and Thickness. To edit a previously drawn line, tap it, then choose the “Inspector” menu.

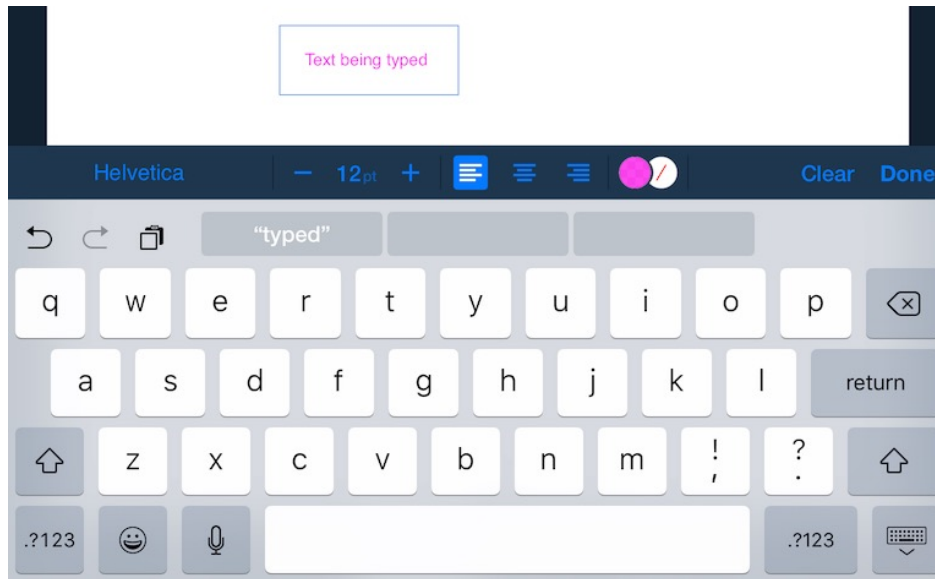


26. ANNOTATIONS

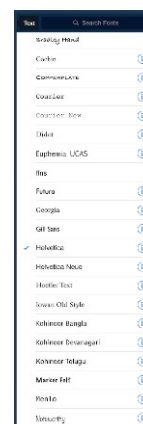
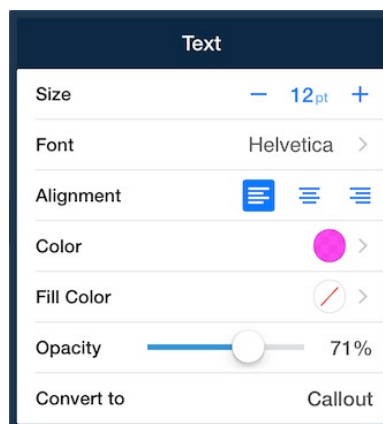
Text Box

The Text Box tool lets you pick the Text Color, the Text Box fill Color, the Opacity, the Font (Font style in a sub-menu), Font Size, text alignment, and whether a Callout line + arrow are automatically attached to the text box.

To create a text box, select the Text Box tool, tap on the Plate or Document where you want the text to appear, then type the desired text. When typing into a text box, several formatting options are available at the top of the on-screen keyboard:

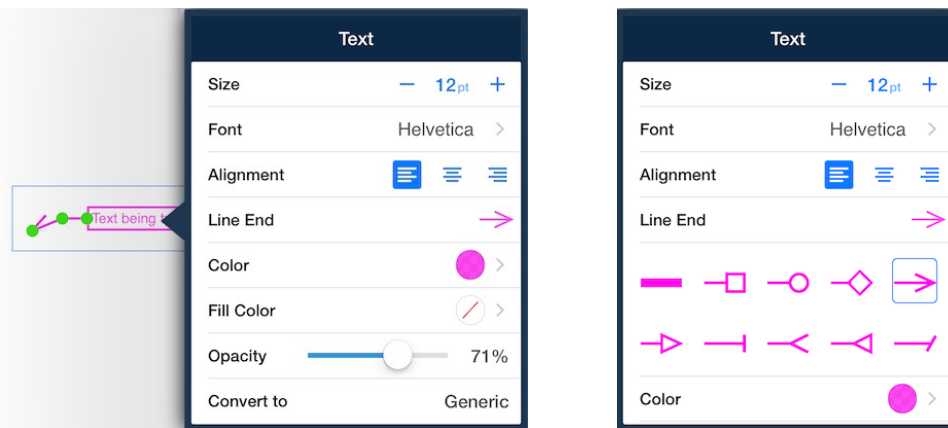


To edit a previously drawn text box, tap it, then choose the "Inspector" menu, then tap the attribute you want to change.



26. ANNOTATIONS

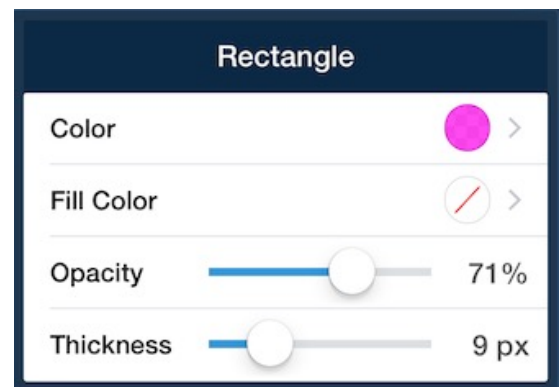
If converting the Text Box to include a Callout line + arrow, tap “Callout” in the Convert to line, then choose the Line End type.



You can reposition the callout line by touch-dragging on the green “corner” points.

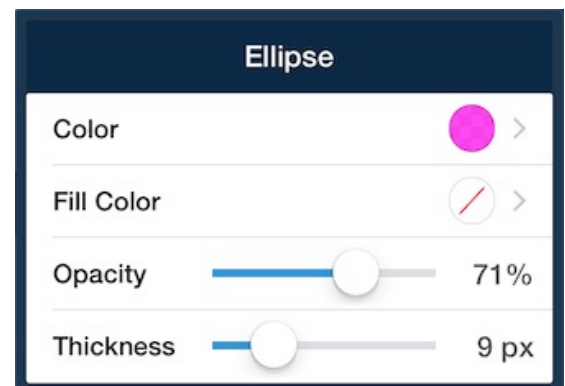
Rectangle

The Rectangle tool allows you to choose the line and Fill Color, rectangle Opacity and line Thickness. To draw a rectangle, touch-hold then drag your finger to make the rectangle. Lift your finger to complete the drawing. To edit a previously drawn rectangle, tap it, then choose the “Inspector” menu.



Ellipse (Circle)

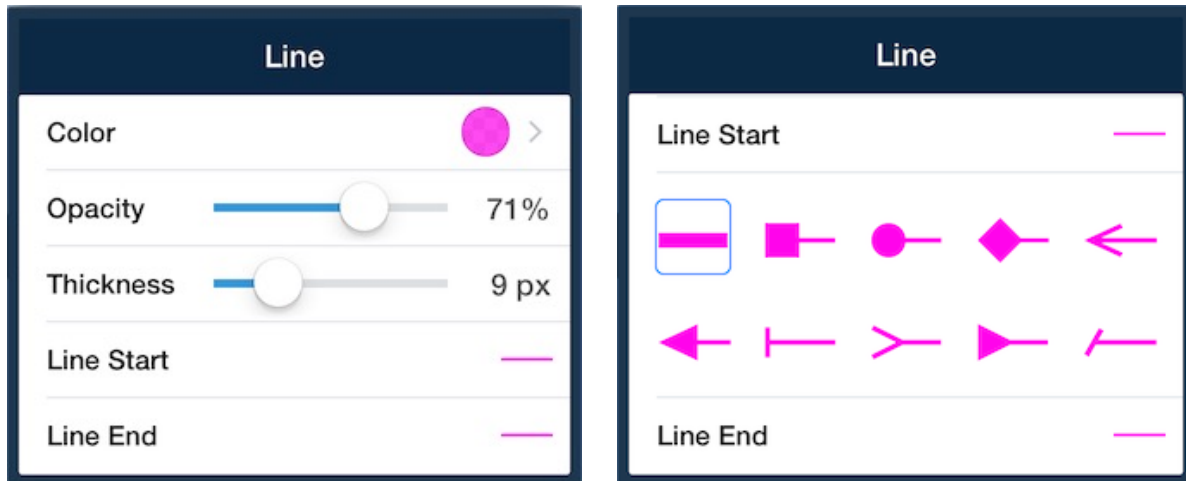
The Ellipse tool allows you to choose the line and Fill Color, ellipse Opacity and line Thickness. To draw an ellipse, touch-hold then drag your finger to make the ellipse. Lift your finger to complete the drawing. To edit a previously drawn ellipse, tap it, then choose the “Inspector” menu.



26. ANNOTATIONS

Line

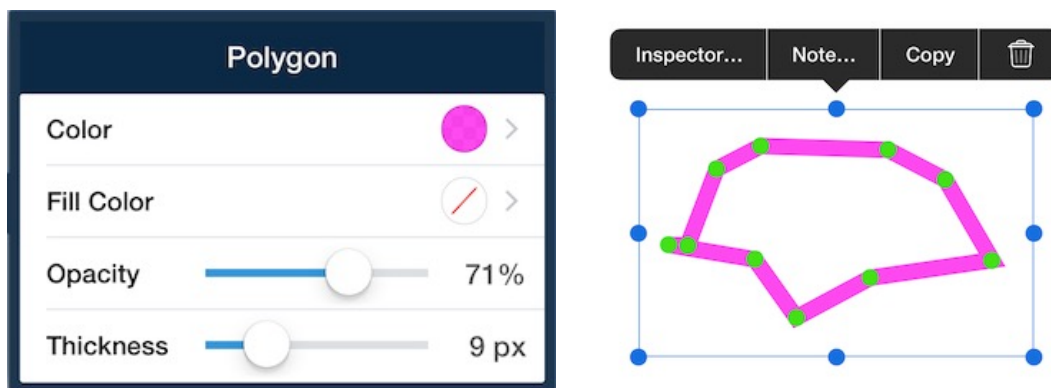
The Line tool allows you to choose the line Color, Opacity, Thickness as well as start and end-point type (e.g., arrow, dot, diamond, etc...). To draw a line, touch-hold then drag your finger to make the line. Lift your finger to complete the drawing. To edit a previously drawn line, tap it, then choose the “Inspector” menu.



Polygon

The Polygon tool lets you choose the line and Fill Color, polygon Opacity and line Thickness. To draw a polygon, tap your finger to each desired “corner” of the polygon. Each additional tap will extend a line segment from the previous corner to the new tap. When you tap “Done” in the menu bar, a final line segment will automatically be added to “close” the polygon.

To edit a previously drawn polygon, tap it, then choose the “Inspector” menu.

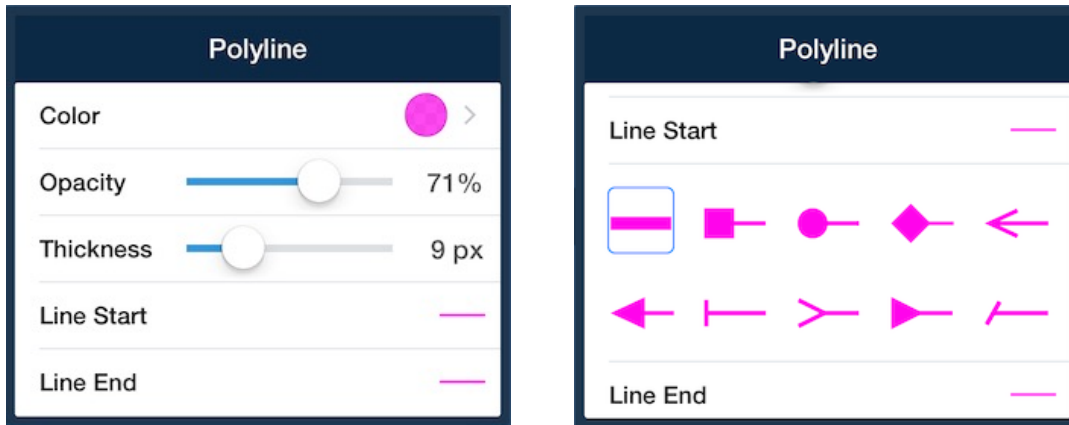


26. ANNOTATIONS

You can edit the corners of the polygon by touch-dragging the green “corner” point handle to the desired corner position.

Polyline

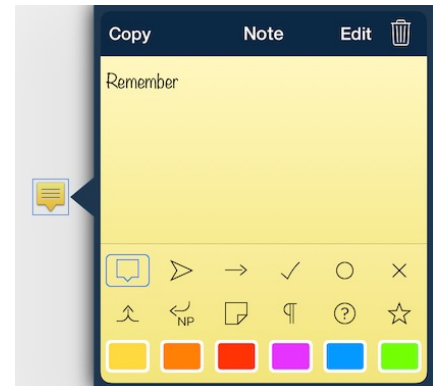
The Polyline tool is similar to the Polygon tool, except that the shape is not automatically “closed” when you tap “Done”, and like the Line tool you can choose the start and end-point types (e.g., arrow, dot, diamond, etc...).



To edit a previously drawn polyline, tap it, then choose the “Inspector” menu.

Sticky-note

Tap the note icon, then tap the “Edit” button to choose the note background color and icon type. Tap anywhere not on the Sticky-note to close the Edit menu.




Undo/Redo

While adding annotations to a Plate or Document, tap the Undo (left) arrow button to remove recent annotation elements, and tap the Redo (right) arrow button to restore removed annotation elements.



26. ANNOTATIONS

26.4 Selecting Multiple Annotations

Tap the Selection button  then touch-drag across multiple annotations to select several at once, then tap Group to group the items together, Copy to copy all items, or the Trash can to delete the selected annotations.

26.5 Copying and Pasting an Annotation

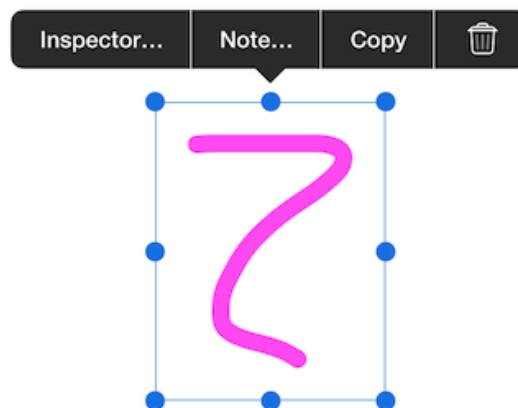
Tap a previously added annotation to select the annotation and display the edit popup menu, then tap the Copy button.




Paste the copied annotation in a different location or onto a different page (or document) by touch-holding on the Plate or Document until the magnifying glass appears. Lift your finger, then tap the Paste button in the popup Annotation menu.

26.6 Deleting Annotations

Tap the annotation to select it, then tap the Trash-can button in the edit popup menu.



To remove all annotations from a page, tap the Annotation button , then tap Clear.

SUPPLEMENTAL GUIDES

Supplemental guides for various ForeFlight features are available in-app by selecting **Documents > ForeFlight**.

Checklist Guide

ForeFlight Checklist lets you complete a checklist with a series of taps, and also includes easy access to Abnormal and Emergency checklists. The app includes checklist templates for various fixed-wing and select rotorcraft models, all derived from pilot operating handbooks.

For complete details, refer to the ForeFlight Checklist Guide available in-app by selecting **Documents > ForeFlight** or online at www.foreflight.com/checklist-guide.

Logbook Guide

Logbook lets you track your hours, currency, ratings, endorsements, medical certificates, and more across all your devices. It is included in the Basic Plus, Pro Plus, and Performance Plus subscription plans. For complete details, see the ForeFlight Logbook Guide in **Documents > ForeFlight** or at www.foreflight.com/logbook-guide.

Logbook is part of the ForeFlight Cloud, allowing you to make new entries and track your currency from any device signed into your account.

SUPPLEMENTAL GUIDES

Weight & Balance Guide

Weight & Balance is a dedicated view for determining if your aircraft is loaded within limits. In addition to the dedicated Weight & Balance view, Integrated Weight & Balance is available for all Performance subscribers beginning with ForeFlight Mobile version 14.2. Integrated Weight & Balance allows users to view Weight & Balance information on the Flights view.

Once your aircraft's Weight & Balance profile is set up, you can quickly create a Loading Summary for each flight, and you can share the profile and a PDF copy of the Loading Summary via email.

Weight & Balance profiles are automatically synced between your devices when **Sync Data To/From Device** is enabled in **More > Settings**.

For full details, see the ForeFlight Weight & Balance Guide in **Documents > ForeFlight** or at www.foreflight.com/wb-guide.

Passenger Guide

ForeFlight Passenger is a free companion app to ForeFlight Mobile that helps answer your passengers' age old question, "Are we there yet?". The Passenger app is downloaded separately from the Apple App Store.

Passenger mode is available in ForeFlight Mobile version 11.2 and later. To activate Passenger mode, first make sure that your iPad's or iPhone's Wi-Fi is ON, and that Wi-Fi is ON in the device(s) being used for Passenger. **NOTE:** Your device does not need to be connected to the same Wi-Fi network as the Passenger device(s). And the link from ForeFlight Mobile to Passenger will work even if neither device is connected to a specific Wi-Fi network, as long as Wi-Fi is ON in each device. For more information, refer to the **Passenger Guide** located in ForeFlight Mobile > **Documents > ForeFlight**.

Filing Guide

ForeFlight Mobile can be used to file most VFR, IFR, DVFR, and composite flight plans. For complete details, refer to the ForeFlight Filing Guide available in-app by selecting **Documents > ForeFlight** or online at www.foreflight.com/filing-guide.

CHANGE HISTORY

Version	Date	Change Summary
15.4	April 2023	<ul style="list-style-type: none"> • Filter airports by runway length. • Profile Corridor added to the route line. • Australian Weather Imagery added. • Standard Deviation setting added. • Data changeover times respect device location. • CASA fuel reserve policies added.
15.3	March 2023	<ul style="list-style-type: none"> • Added airports without codes (AWOC). • Added visual reporting points and VFR waypoints. • Added VFR Aeronautical Details toggle. • Added additional ownship icon color options. • Added option to disable content pack sharing.
15.2	February 2023	<ul style="list-style-type: none"> • Australia added as a fourth region. • All plates and terminal procedures can be viewed without first downloading the region. • Ballast Fuel support added for certain aircraft. • Imagery chapter miscellaneous styling and content updates. • Track Logs chapter miscellaneous styling and content updates.
15.1	January 2023	<ul style="list-style-type: none"> • Added Airspace Alerts. • Alerts added to Map Settings. • Added Aircraft Rescue and Firefighting (ARFF) details to the Airports view. • Added NOTAM search filter. • Added Plate Binder print option. • Added Honeywell ADG Integration. • Improved overlapping leg interface. • Updated Navlog chapter.

CHANGE HISTORY

Version	Date	Change Summary
14.10	December 2022	<ul style="list-style-type: none"> • Added EUROCONTROL ATC Sector Boundaries. • Aircraft profile filing remarks added. • Added the ability to enter filing remarks for specific route waypoints (MFB only). • Radar data provider changed. • Radar (lowest tilt) removed. • Plates chapter miscellaneous styling and content updates. • Airports chapter miscellaneous styling and content updates. • Connect chapter miscellaneous styling and content updates. • Device name added for iOS 16 and later devices.
14.9	October 2022	<ul style="list-style-type: none"> • Added Operational Note Flags. • Internet, ADS-B, and SiriusXM-based radar selectable as individual map layers. • Added support for UL91/96 fuel. • Sign-in user interface changed. • Added JetFuelX (new Chapter 24).
14.8	September 2022	<ul style="list-style-type: none"> • Runway Analysis Summary Documented added for single-engine aircraft. • Takeoff & Landing Performance Summary Document added. • Mogas fuel included in FBO view (if available). • Added ability to search recent/favorite routes. • Flights chapter miscellaneous styling and content updates. • Added Runway Analysis. • Added Takeoff & Landing Performance.
14.7	August 2022	<ul style="list-style-type: none"> • ForeFlight version 14.7 requires iOS 15.0 or later.

CHANGE HISTORY

Version	Date	Change Summary
14.6	July 2022	<ul style="list-style-type: none"> • Reorganization of chapters. • New Download setup User Interface. • Aircraft chapter miscellaneous styling and content updates. • Maps chapter miscellaneous styling and content updates. • Custom Content miscellaneous styling and content updates.
14.5	June 2022	<ul style="list-style-type: none"> • Updates to the Downloads view. • Added Bearing and Track Instrument setting. • Added content pack subscriptions. • Added user waypoint elevation support. • Updates to the FBO view.
14.4	May 2022	<ul style="list-style-type: none"> • Profile View displays en route altitude changes. • Global graphical NOTAM support added. • Metric unit settings added. • Distance rings add kilometer support. • Unleaded 94 octane fuel (UL94) included in FBO view (if available).
14.3	April 2022	<ul style="list-style-type: none"> • Add a delay or stay to your route using the Flight Plan Editor (Performance Plus accounts only).
14.2	March 2022	<ul style="list-style-type: none"> • Enhanced Weight & Balance is added via ForeFlight Labs. • Hazard Advisor adds preflight terrain analysis.
14.0	January 2022	<ul style="list-style-type: none"> • Individual navaid, waypoint, and airway filters added to Aeronautical Map Quick Filters. • Takeoff and alternate minimums document opens to the correct page for the airport. • Custom Content GeoTiff support added for MFB customers only.
13.10	November 2021	<ul style="list-style-type: none"> • Airport markers in 3D Preview and 3D Review.
13.9	October 2021	<ul style="list-style-type: none"> • Direction-specific MEA, MOCA, and MAA altitudes, bearing, and other available details for airways on the Aeronautical Map.

CHANGE HISTORY

Version	Date	Change Summary
13.8	October 2021	<ul style="list-style-type: none"> • Profile View on the iPhone. • Graphical Track Log review user interface updates. • Support for Honeywell Apex FMS and Aspen Connected Gateway GPS position, ground speed, and track in ForeFlight. • ForeFlight version 13.8 requires iOS 14.0 or later.
13.7	August 2021	<ul style="list-style-type: none"> • Biasing Climb & Descent profiles by a fixed amount of time or fuel in ForeFlight Performance Profiles.
13.6	August 2021	<ul style="list-style-type: none"> • Toggleable Obstacle layer depicting buildings, towers, and windmills in Airport 3D View, 3D View Anywhere, 3D Preview, and 3D Review. • Added information about editing track logs by trimming the beginning or end. • Added a setting to display the chart index number Jeppesen Terminal Charts under chart's names in certain views. • Added a switch for Marketing Push Notifications.
13.5	June 2021	<ul style="list-style-type: none"> • Added ability to insert a hold in the route using the Hold Advisor. • Added Augmented Procedures to quickly find, select, and display minimums for an approach. • Runway Analysis includes graphical visualizations of the ground tracks for many EOPs.
13.4	May 2021	<ul style="list-style-type: none"> • Aeronautical Map layer features magenta markers for glider and balloon fields in the U.S.A. • TACAN nav aids shown with a specific icon that resembles the VORTAC symbol. • Define Effective and Expiration dates and times in the manifest.json file for content packs. • The European section of the Imagery view includes standard and low-level SIGWX charts.

CHANGE HISTORY

Version	Date	Change Summary
13.3	April 2021	<ul style="list-style-type: none"> • Added Animated Winds layers that show global forecast wind speed, direction, and temperatures at multiple altitudes and times using colored heat maps. • Added Weather layer legends on the Maps page. • Added ForeFlight Labs. Version 13.3 features a Taxi Route keyboard and bubble editor with Performance subscription plans. • Added option that allows Downloading charts and data in the background, while using another app or while the iPad screen is off. • Airport 3D View includes Day/Night modes and realistic Runway Lights. • Added option to import documents into ForeFlight Mobile from the iOS Files app, the Photo library, or Camera. • Support to link Multiple Jeppesen accounts to a single ForeFlight Mobile account.
13.2	March 2021	<ul style="list-style-type: none"> • Added ability to organize Plates Flight Binders by category in a vertical column grouped together and accessible with a single button. • A Flight's NavLog, Briefing, Flight Plan form, and Runway Analysis Summary, can be saved to a Flight's Files menu. • Added ability to wirelessly share flight details with Honeywell's Primus Apex FMS via an Aspen Connected Gateway. • Runway Analysis calculations are available for a certain jets.

CHANGE HISTORY

Version	Date	Change Summary
13.1	February 2021	<ul style="list-style-type: none">• Changed the Maps pop-up to a Maps Sidebar that stays open while interacting with the map.• Added ability to rename Documents in the Imported drive that you have directly imported into ForeFlight Mobile.• Weather Imagery for locations outside the U.S.A is now consolidated into separate regions: Canada; Europe; South America; Caribbean, Mexico, and Central America; Americas; Atlantic; and Pacific.
13.0	January 2021	<ul style="list-style-type: none">• Added 2-stage ADS-B Traffic Alerting with yellow or red traffic targets.• Procedure Advisor allows you specify a minimum altitude label on the for an IFR approach.• Daily/Hourly weather show the forecast quantity of precipitation per hour (if greater than 0.1”) next to the probability of precipitation.• Internet Traffic pop-up information for targets include an auto-center button to keep it centered on the Maps page.• ForeFlight Version 13.0 and later requires iOS 13.0 or later



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