Performance Planning in **FOREFLIGHT MOBILE**

ForeFlight
Intelligent Apps for Pilots™

5th Edition
Covers ForeFlight Mobile v10.0 on iPad

Introduction

This pilot's guide provides an overview of the Performance Planning features in ForeFlight Mobile. Performance Planning is available with the Performance Plus subscription plan for individuals, and the Business Performance plan for multi-pilot accounts. Visit www.foreflight.com/pricing to upgrade your subscription.

This guide mainly covers features that are unique to the Performance Plus plan, while touching on features that are available with other plans but are involved in the performance planning workflow. For information about other features in ForeFlight Mobile, please refer to the "Pilot's Guide to ForeFlight Mobile" available in the app in **Documents** > **Catalog** > **ForeFlight** or at www.foreflight.com/support/pilots-guide/.

About Performance Planning

ForeFlight Performance Planning is a set of related features that provides advanced flight planning capabilities suitable to high-performance aircraft. Although designed with turboprop and jet aircraft in mind, pilots of any type of aircraft can benefit from the accuracy and speed of these capabilities, which drastically simplify the flight planning process while presenting the pilot with detailed performance calculations about all available routes.

Performance Planning includes a large selection of advanced aircraft performance profiles derived from manufacturer data and covering the full operational range of each aircraft, allowing for extremely accurate speed and fuel flow calculations. These calculations are done by ForeFlight's AviationCloud engine, a next-generation flight planning technology that pulls-in current and forecast wind and temperature data as it computes route performance. AviationCloud also provides an "Autoroute" between any two airports anywhere in the world, including airport pairs with no recently-cleared ATC routes. The AviationCloud Autoroute is wind-optimized and computed in seconds, often delivering the best performance results for any city pair.

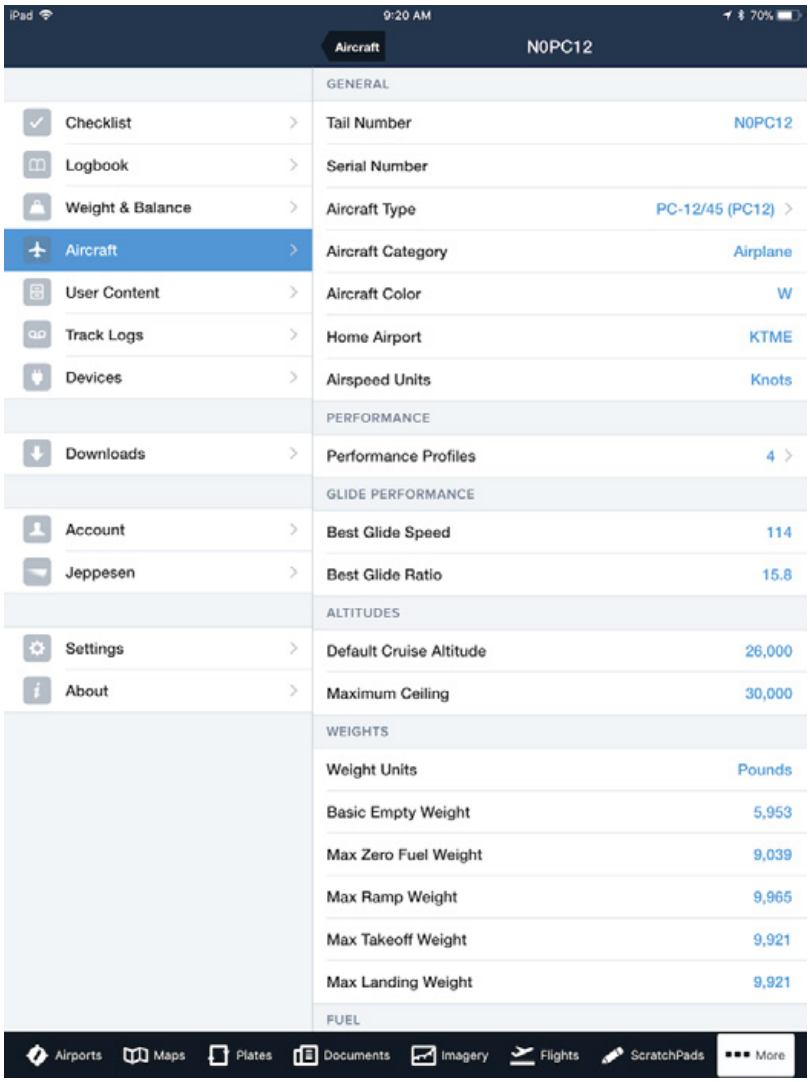
Contributing to the accuracy of these calculations are capabilities for payload and fuel management, allowing you to specify weights and fuel amounts that affect the performance characteristics of a given flight. These Performance-exclusive capabilities are available in the "Flights" view, which provides a form-based planning workflow for fast route entry, briefing, and filing. An advanced and printable Navlog can also be generated from the Flights view, providing detailed time, fuel, weight, and altitude information to assist inflight decision making.

Finally, Performance Planning allows ForeFlight users flying planes that use jet fuel to view their JetFuelX contract fuel prices within ForeFlight. JetFuelX is a free

online service that allows pilots to manage all of their fuel card memberships and compare contract fuel prices from multiple vendors, and request fuel releases from FBOs. As a standalone service JetFuelX is free for anyone to use, but with Performance Planning it is integrated with ForeFlight so pilots can plan their flights and find the best fuel prices in the same place.

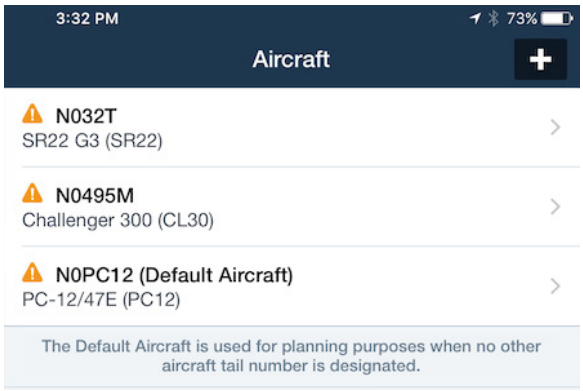
Aircraft Performance Profiles

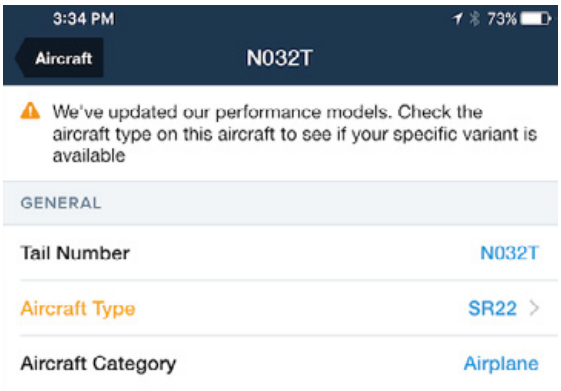
The advanced capabilities of ForeFlight Performance Planning begin with the aircraft. ForeFlight's dedicated Performance team has assembled a library of advanced profiles for hundreds of aircraft models and variants. Each of these aircraft includes one or more ForeFlight Performance Profiles, which combine high-fidelity climb, cruise, and descent data for a given cruise model, such as "Max Speed" or "Max Range." Using these performance profiles for flight planning will result in extremely accurate time and fuel flow calculations for any flight.



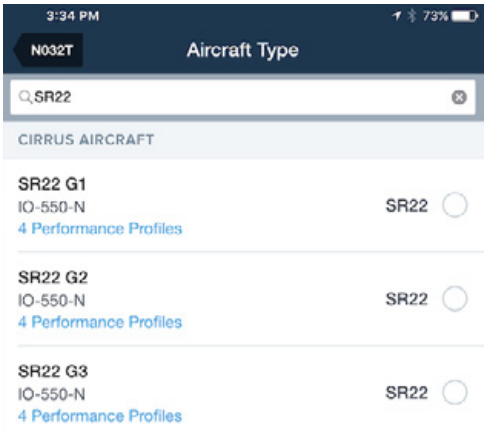
Updating Existing Aircraft After Purchasing Performance Plus

If you're upgrading to the Performance Plus plan from another subscription plan, orange alert markers may appear next to some or all of your existing aircraft. These indicate that you need to select an aircraft type from our aircraft type database for those aircraft, since some of them might have ForeFlight Performance Profiles and other information associated with them.

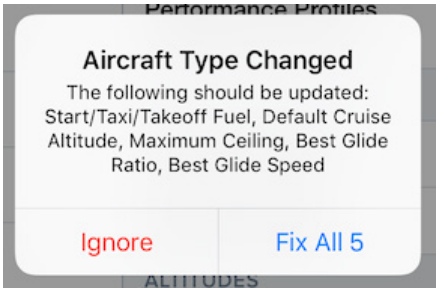




Tap on an aircraft to enter the Aircraft Edit page, then tap Aircraft Type near the top to search for your aircraft type. Whatever type code you previously entered for that aircraft will autofill in the search field, so finding and selecting the correct model and variant should be easy. If your aircraft doesn't appear in the list, you can also search by make and model.

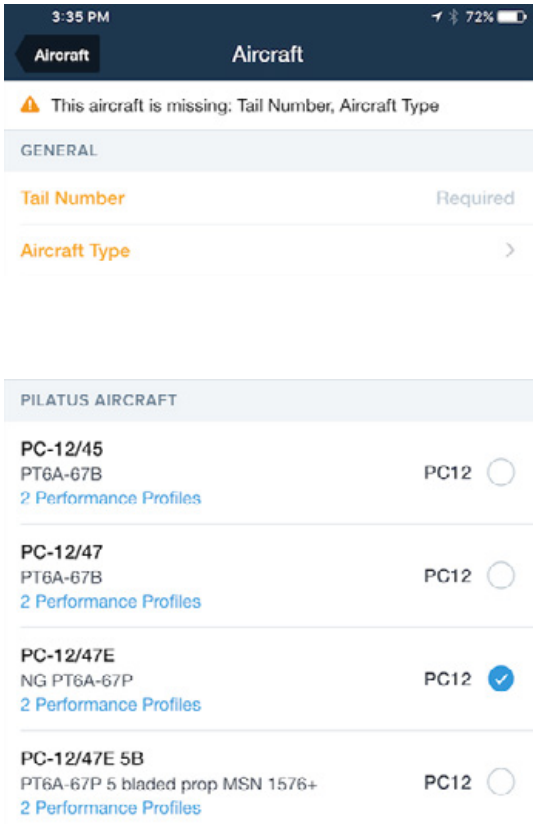


If your aircraft type has ForeFlight Performance Profiles associated with it, the number of such profiles is indicated in blue text below the model and variant information. Tap on one of the aircraft type options to select it. If your aircraft has ForeFlight Performance Profiles, ForeFlight may prompt you to update certain data fields with new information. Tap "Fix" to accept the changes.



Adding New Aircraft

To add a new aircraft, tap the Plus button in the upper-right corner of **More** > **Aircraft** to enter the Aircraft Edit page. ForeFlight will immediately prompt you to enter a tail number and select an aircraft type by highlighting these fields in orange. After entering the tail number, tap Aircraft Type to search ForeFlight's library of aircraft models. Use the search bar at the top to search by make, model, or type code.



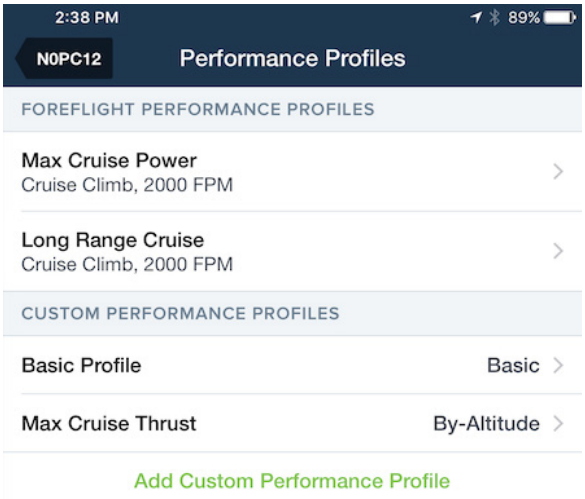
Aircraft models that have ForeFlight Performance Profiles associated with them include two lines beneath the model indicating the specific variant and the number of preconfigured performance profiles available with that model and variant. Tap on an aircraft model to select it.

Aircraft models with preconfigured performance profiles also have preconfigured values for a number of fields in the Aircraft Edit page, including Glide Performance (typically only piston aircraft will have values for both Best Glide Speed and Best Glide Ratio), Altitudes, Weights, and Fuel information. These fields are auto-filled when you select an aircraft model that provides these data.

IMPORTANT: You should always carefully review any auto-filled values to ensure they match those of your own aircraft, especially the values for Basic Empty Weight, Total Useable Fuel, and Default Reserve Fuel. Default Reserve Fuel is not calculated for each flight, so you should set the value here according to your preference. Reserve fuel can be modified for individual flights without changing the default value while planning in the Flights view.

Before filing a flight plan with a new aircraft you will also need to input ICAO equipment codes in the Filing section and fill in applicable fields in the Dingy and Emergency sections. Information about these fields and what filing codes to select can be found the in the "Filing with ForeFlight Mobile" guide, available for download in the app in **Documents** > **Catalog** > **ForeFlight**, or online at https://www.foreflight.com/support/filing/pdf.

Performance Profiles



Aircraft Performance Profiles provide the data to power ForeFlight's performance calculations. There are three kinds of performance profiles that you can use in ForeFlight:

- ForeFlight Performance Profiles, which are provided by ForeFlight for hundreds of aircraft models
- By-altitude profiles, which allow you to input detailed performance data for all altitudes in any aircraft's operational range.
- Basic profiles, which allow you to input only a single cruise speed and fuel flow to be used for all altitudes.

ForeFlight customers who purchase the Performance Plus plan have access to all three types of profiles; customers on other subscription plans can only use basic profiles.

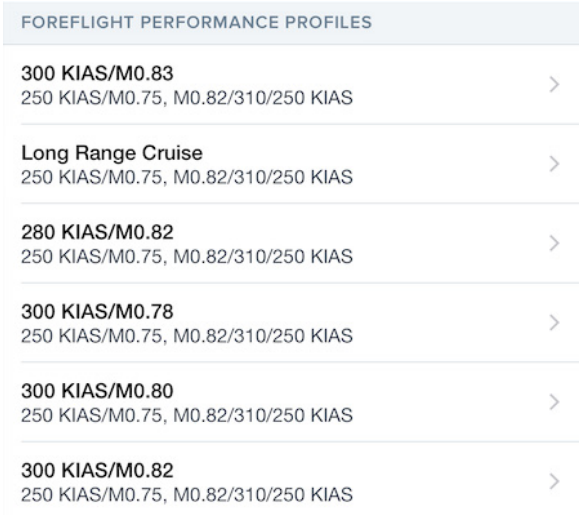
Tap "Performance Profiles" while viewing an Aircraft's details to view all the performance profiles for that aircraft, whether provided by ForeFlight or built by the user.

ForeFlight Performance Profiles

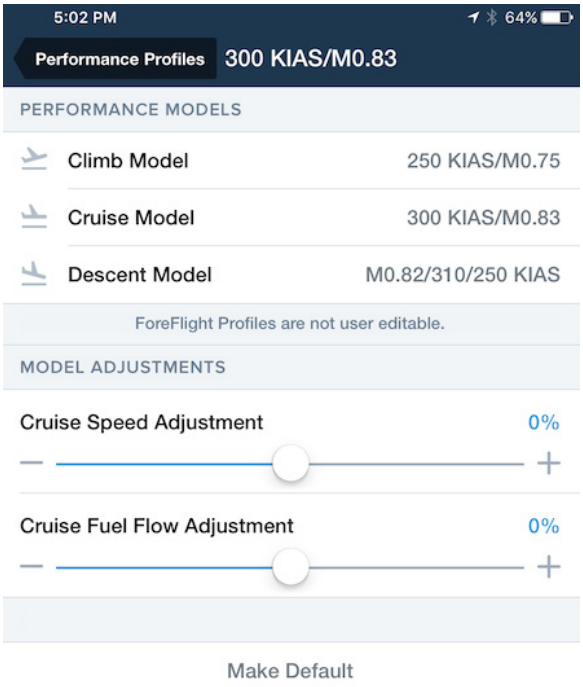
Performance Plus customers have access to ForeFlight Performance Profiles for hundreds of different piston, turboprop, and turbofan aircraft models. These performance profiles contain high-fidelity performance data and are built by ForeFlight's dedicated Performance team, using manufacturer-sourced data to ensure the most accurate performance calculations for every flight. The climb, cruise, and descent models contained in each profile are defined for multiple weights, altitudes, and temperatures, providing accurate speed and fuel flow data for all conditions.

For most of the aircraft models that come with ForeFlight Performance Profiles, multiple profiles are available, corresponding to different cruise speed/power settings. The names of the profiles reflect these settings (e.g. Max Cruise Power, Long Range Cruise, M0.83, 55% Best Econ, etc.). The smaller lines below each profile name

indicate the climb and descent models used for the profile. Currently, all ForeFlight Performance Profiles for a given aircraft use the same climb and descent models, with only the cruise models varying between different performance profiles.



Tap on a ForeFlight Performance Profile to see an illustrated breakdown of the climb, cruise, and descent models for that performance profile. Although these models are not editable by the user, it is possible to adjust the cruise model to better fit your aircraft's actual performance using the Cruise Speed and Cruise Fuel Flow adjustment sliders.



NOTE: The model adjustment sliders should only be used after you have identified consistent deviations between the performance results predicted by ForeFlight and your aircraft's actual results. We recommend flying at least ten flights with the same performance profile while closely tracking actual fuel burn and flight times. After each flight, compare actuals to the time and fuel burn predicted by ForeFlight. If the actuals differ from the predicted values in a consistent and predictable fashion (such as actual fuel burn is always ~3% greater than predicted), use the model adjustment sliders for that cruise profile to adjust the ForeFlight model closer to your aircraft's actuals (in the previous example, you would move the Cruise Fuel Flow Adjustment slider to +3%). Repeat this process on subsequent flights until the performance results predicted by ForeFlight align with your aircraft's actual results.

Tap "Make Default" to set that performance profile as the default for flight planning with that aircraft.

Custom Performance Profiles

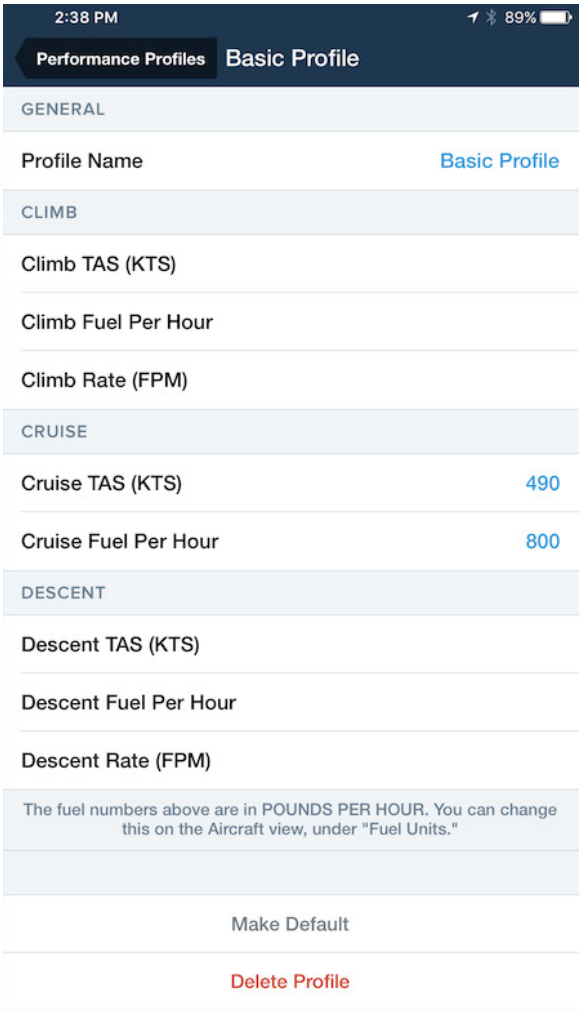
If your aircraft type does not have any ForeFlight Performance Profiles associated with it, you can create custom performance profiles to use instead.

By-Altitude Profiles

By-altitude profiles allow you to enter performance data for every altitude in your aircraft's operational range, and can be set up on ForeFlight's web application (plan.foreflight.com). Once built, you can use by-altitude profiles for flight planning in the mobile app just as you would ForeFlight Performance Profiles. See By-Altitude Profiles for detailed instructions on setting up by-altitude profiles.

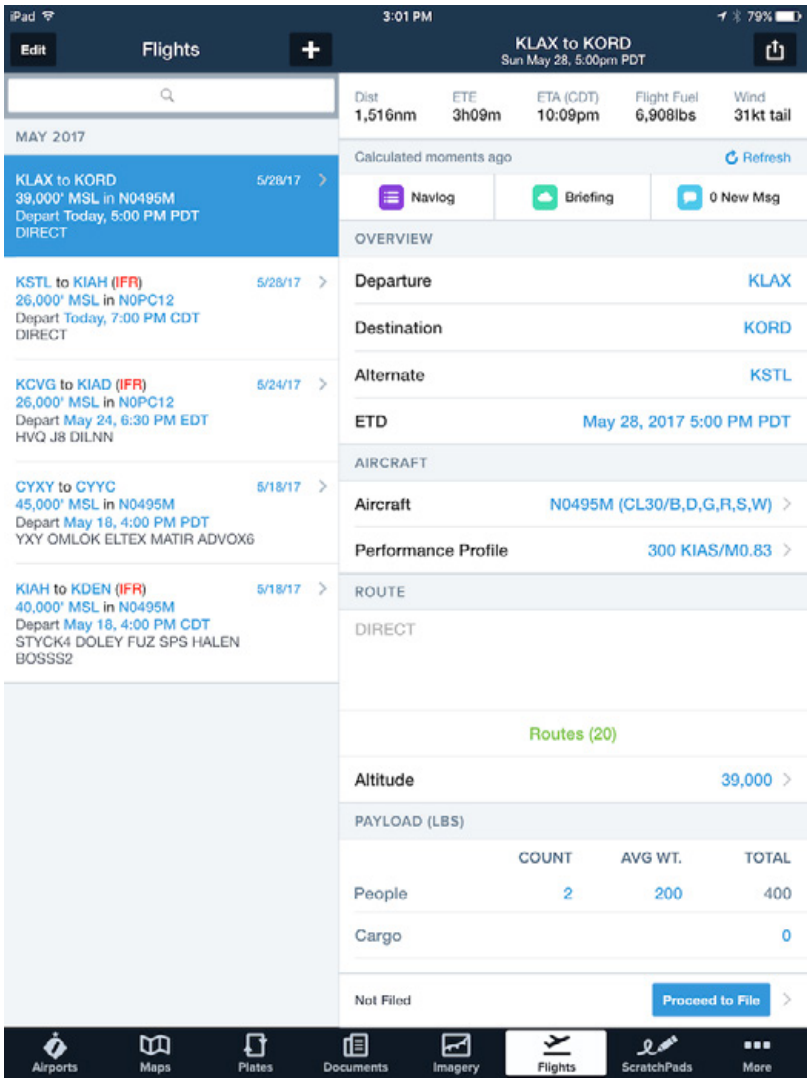
Basic Performance Profiles

The third and simplest type of performance profiles are basic profiles. These allow you to specify only one value for cruise speed and one value for cruise fuel flow to be used at all cruise altitudes. These basic profiles result in less accurate performance calculations compared to the previous types of performance profiles. Customers who purchase the Performance Plus plan are **strongly encouraged** to set up and use by-altitude profiles instead of basic performance profiles if ForeFlight Performance Profiles are not available for their aircraft type.



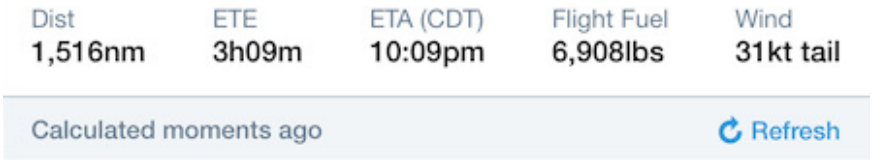
Performance Planning with Flights

The Flights view brings together the most important planning tools in ForeFlight in a sleek, form-based layout that allows for fast and efficient flight planning, briefing, and filing. The top-to-bottom workflow follows a logical progression from inputting airports, selecting an aircraft and performance profile, defining a route and altitude, entering payload and fuel details, reviewing weight checks, then filing the flight plan. Only ForeFlight customers who have purchased the Performance Plus plan can access the Payload, Fuel, and Weight Verification sections.



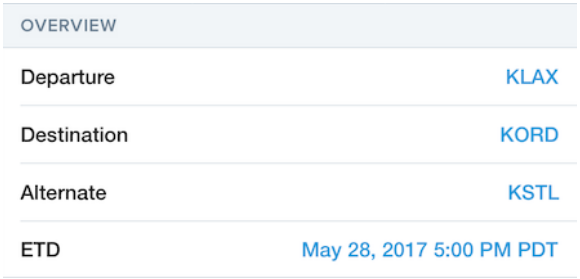
About the Flights View

You can send a route to the Flights view from the Maps view using the Send To button in the lower-right corner of the Maps view's Flight Plan Editor. This will auto-fill all fields with the information you entered on the Maps view other than payload and fuel details, which can only be entered on the Flights view. You can send a route from the Flights view to the Maps view using the Send To button in the upper-right corner of the Flights view. Tap the Plus button above the Flights list on the left to create a new flight .



At the top of the Flights view is the Route Performance Summary. This is where performance calculations for the flight are displayed, showing route distance (Dist), estimated time enroute (ETE), estimated time of arrival (ETA, in the destination airport's timezone), inflight fuel consumption (Flight Fuel), and the average head/tailwind component over the entire route of flight (Wind). These performance results are recalculated every time a change is made to any part of the Flights view, but you can also manually refresh the performance summary by tapping the "Refresh" button just below the Wind value - this is useful for incorporating the most recent wind and temperature forecasts if the performance results have not been recalculated in a while. The time since the most recent recalculation is shown on the left below the Distance and ETE values.

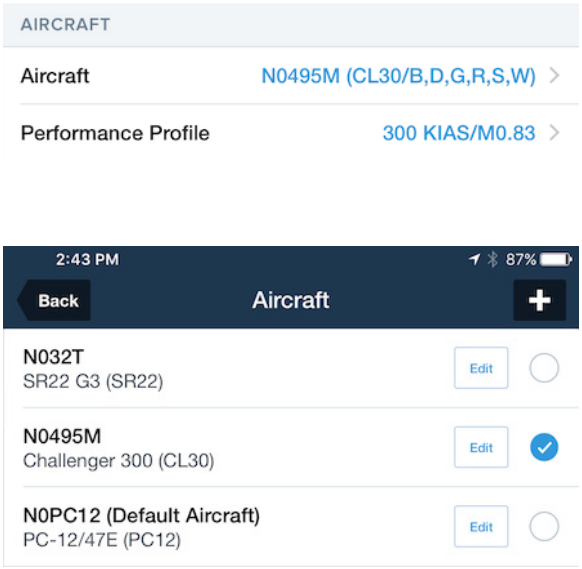
Overview Section



Planning a flight in the Flights view begins with the Overview section. This is where you can input your departure, destination, and alternate airports for the flight, and set your estimated time of departure. When you add an alternate airport, ForeFlight calculates the fuel required to reach the alternate and adds it to your total fuel for the flight. This calculation is 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.

Aircraft Section

The Aircraft section allows you to select an aircraft and performance profile for the flight. If you've designated an aircraft and performance profile as defaults then they will be automatically selected when you create a new flight. All your aircraft and performance profiles are fully editable from the Flights view by tapping the Edit/View buttons next to each. You can also create new aircraft from the Flights view by tapping the Plus button when viewing the aircraft list, and create new performance profiles by tapping "Add Custom Performance Profile".

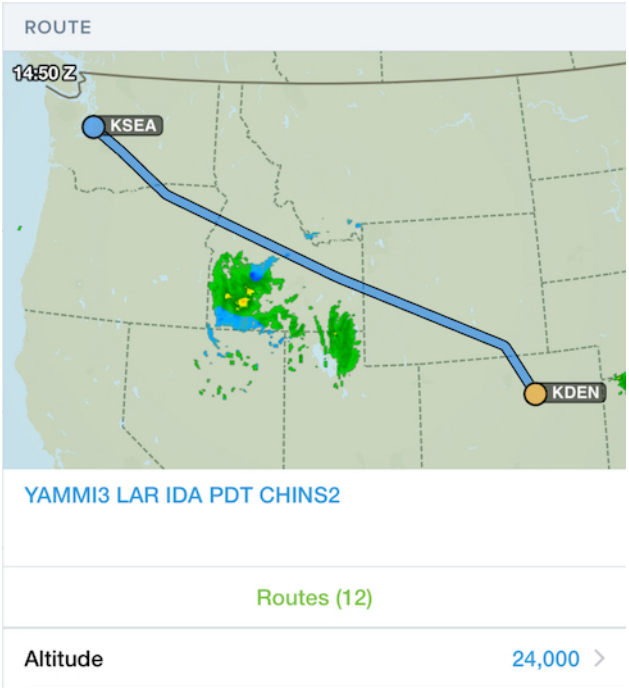


NOTE: only basic performance profiles can be created on the mobile app - use ForeFlight on the web to build by-altitude profiles that you can then use in ForeFlight Mobile.

Route Section

The Route section is where you enter a route and altitude for a flight. You can tap in the text field to enter a route manually, or tap "Routes" in green to open ForeFlight's Route Advisor. The number of routes identified by Route Advisor is shown in parentheses next to Routes.

A "Route Preview" built into the Route section allows you to see your route on a map with radar. Tap on the map to enter an interactive split-screen view where you can pan and zoom the map, then tap the Back button at the top to return to the planning form.



Route Advisor

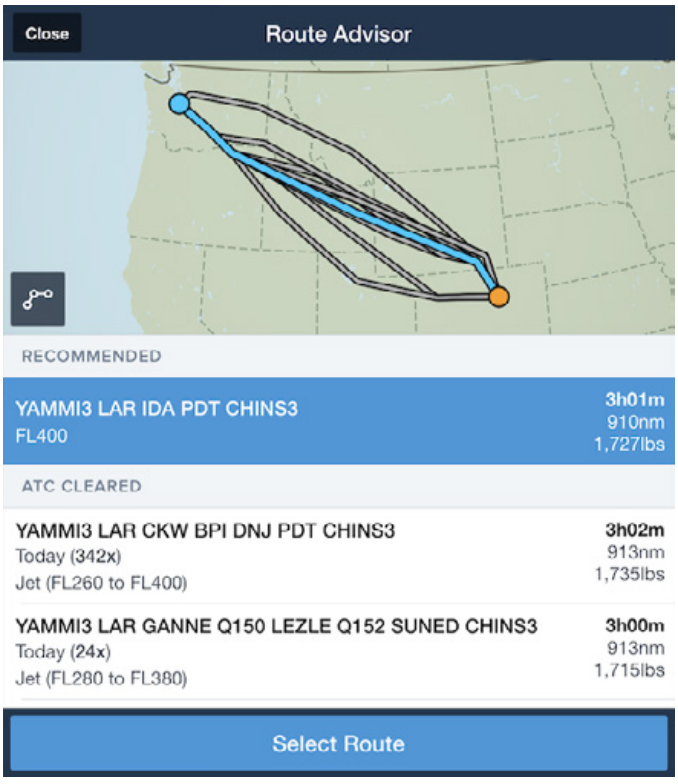
Route Advisor groups routes under section headers based on what kind of route they are or their source. Routes shown include the Recommended Route, Preferred routes, ATC Cleared routes, TEC routes, and Airway routes. ForeFlight calculates performance results for every route shown (including flight time, distance, and flight fuel) and displays them on the right, allowing for quick comparisons between routes.

Route Advisor also includes a Route Preview showing the paths of every route on an interactive map. Tap on a route in the list to highlight it on the map. This Route Preview is also interactive using two-finger pan and zoom.

Recommended Route

ForeFlight's Recommended Route (formerly AviationCloud Autoroute) gives you the best route based on your detailed aircraft performance profile and time/fuel savings, while also accounting for preferred routes, recent ATC cleared routes, and how frequently a given route is assigned. ForeFlight evaluates all available route options and picks the one that provides the best balance between time/fuel savings and likelihood of being "cleared as filed" by ATC. If no previously cleared routes are available for an airport pair, ForeFlight will generate a wind- and temperature-optimized route based on your selected aircraft and performance profile.

If the Recommended Route's altitude is different from your aircraft's default altitude, a popup will prompt you to update the flight's altitude when you select the Recommended Route.



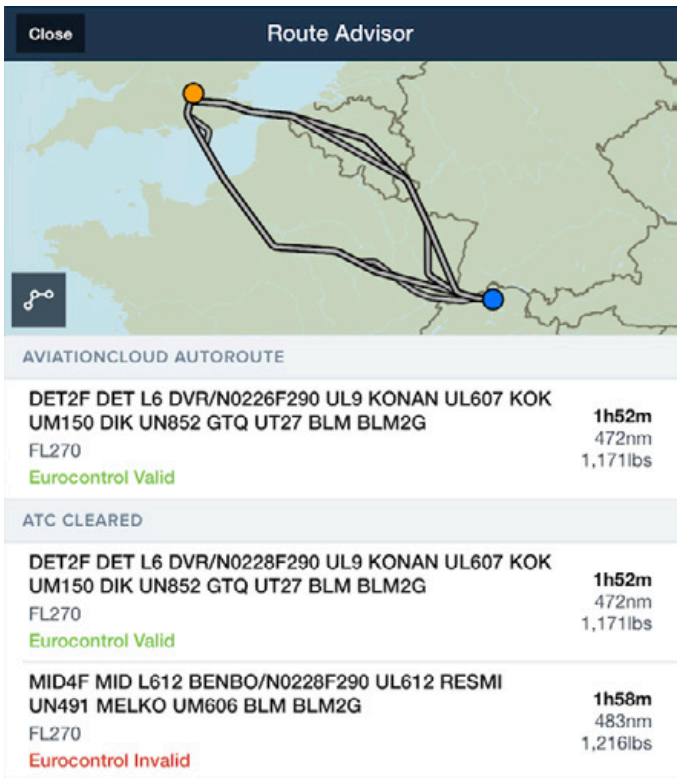
ATC Cleared Routes

Following the Recommended Route is the list of ATC cleared routes (if the airport pair has any cleared routes), in reverse-chronological order based on which route was most recently cleared by ATC. These routes provide two additional lines of information below the route string. The first line shows the departure time of the most recent flight cleared for that route, followed

in parentheses by the number of times that route has been cleared by ATC in the past year. Frequently filed routes will often say "Tomorrow", indicating that the most recent clearance for that route was given for a flight departing tomorrow. The second line includes information about the type(s) of aircraft cleared to fly that route (such as piston, turboprop, or jet), and the altitude or range of altitudes for which the clearance was given.

Eurocontrol Route Validity

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. A second validity check is also performed when you file the route to catch any validation issues that may have been raised by changes you made to the flight after selecting the route.

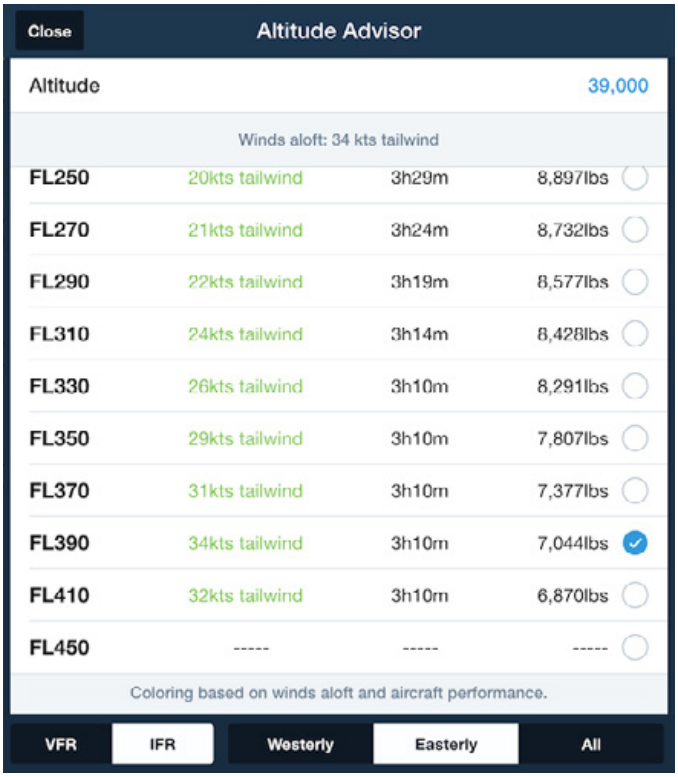


Note: Although Route Advisor will evaluate the validity of *any* route that intersects Eurocontrol airspace, only intra-European flights may be filed from within ForeFlight. **Do not attempt to file intercontinental flights through ForeFlight**.

Altitude Advisor

Altitude Advisor makes it easy to compare altitude options for your flight. 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, which is color-coded red or green; total flight time; and inflight fuel usage. 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.

Payload Section

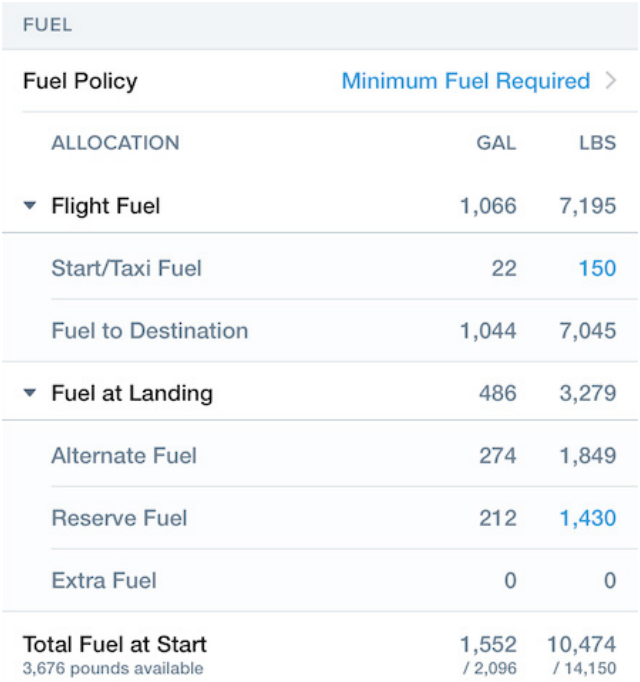
The Payload section allows you to input basic weight information for people and cargo, used by ForeFlight to evaluate fuel requirements and perform weight checks against your aircraft's structural weight limits. Tap on the blue numbers to adjust

the values for number of people, the average weight of each person, and the total weight of cargo. The default value for the number of people is either one or two, based on the minimum crew requirement for your aircraft model. The starting default value for average person weight is 200 pounds, but changing this value for any flight will update the default to the new value.

NOTE: The Payload section is not tied to ForeFlight's Weight & Balance tool, although both of them involve inputting people and cargo weights.

Fuel Section

The Fuel section provides some of the most powerful flight planning capabilities available with Performance Planning by allowing for detailed fuel management and automated fuel calculation using the Fuel Policy selector.



Fuel Policies

The Fuel Policy selector at the top of the Fuel section provides a number of options for calculating total ("block") fuel that will be in the aircraft's fuel tanks at engine start. Some policies require no additional input, and some allow you to specify certain values that will factor into the calculation.

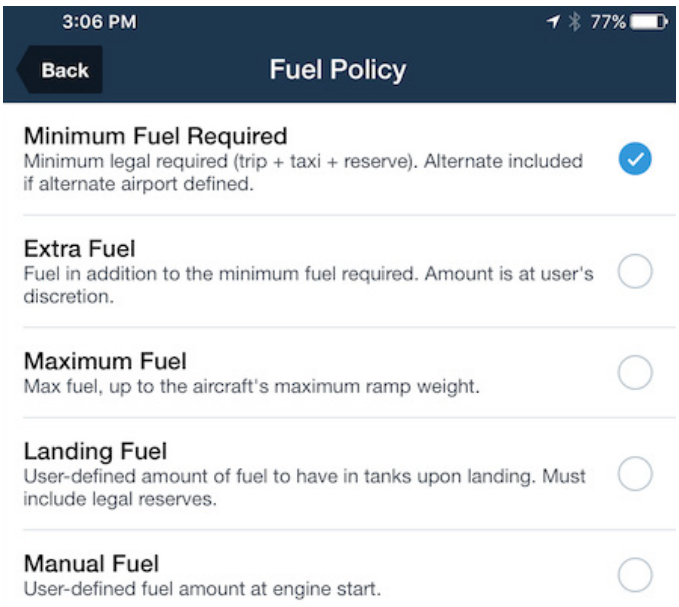
- Minimum Fuel Required - calculates the minimum amount of fuel needed to land at the destination with legal reserves and alternate fuel (if an alternate airport is specified for the flight). Requires no additional input from user.

✤ Extra Fuel - adds a new field below the Fuel Policy selector where you can specify a fuel amount in addition to the minimum fuel required for the flight.

✤ Maximum Fuel - calculates the maximum amount of fuel that can be loaded before exceeding any structural weight limit or the limit for total useable fuel configured for the aircraft. Requires no additional input from user.

✤ Landing Fuel - adds a field below the Fuel Policy selector where you can specify a fuel amount to have in the tanks upon landing at your destination; ForeFlight will then calculate the total fuel required at engine start to achieve that value. The fuel amount entered must be greater than the sum of reserve and alternate fuel (if an alternate airport is specified).

✤ Manual Fuel - adds a field below the Fuel Policy selector where you can specify the total amount of fuel in the tanks at engine start. The fuel amount entered must be greater than the minimum amount of fuel required to land at the destination with legal reserves and alternate fuel (if an alternate airport is specified).



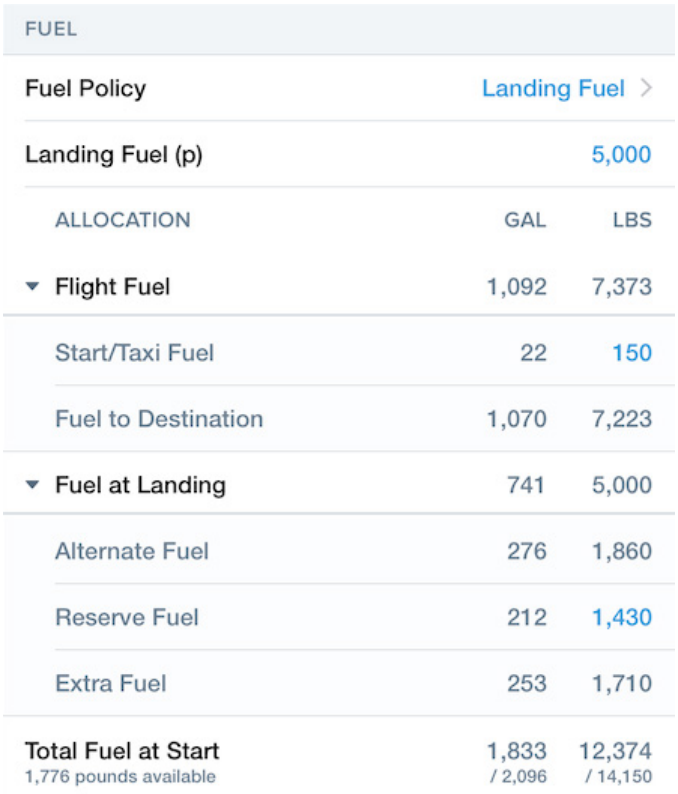
Fuel Allocation

The Fuel Allocation table below the Fuel Policy selector shows how the total amount of fuel is allocated during the flight, in both gallons and pounds of fuel. The primary fuel unit (gallons or pounds) configured for the aircraft appears in the far-right column, and the secondary unit in the column next to it.

Fuel Allocation is divided between Flight Fuel, which is the total amount of fuel burned to reach the destination, composed of Start/Taxi Fuel and Fuel to Destination; and Fuel at Landing, which is the total amount of fuel remaining in the tanks upon landing at the destination, composed of Alternate Fuel, Reserve Fuel, and Extra Fuel. You can collapse and expand these categories by tapping the carets to the left of each category row.

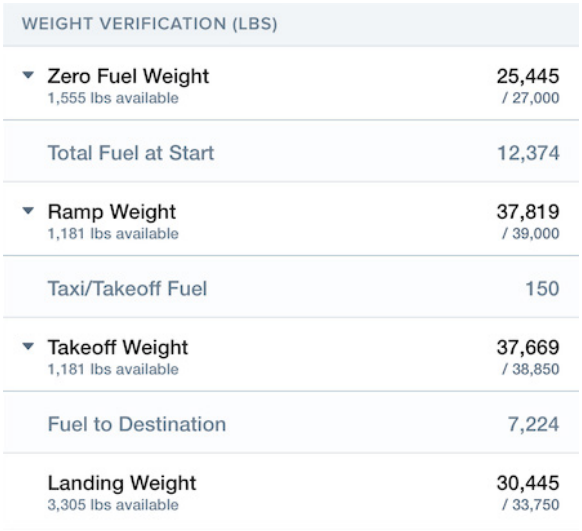
The default values for Start/Taxi Fuel and Reserve Fuel come from the values set in the Aircraft Edit page, but you can change either value for a single flight by tapping the blue numbers in the far-right column. Changing these numbers will not affect the default values, which can only be changed from the Aircraft Edit page.

At the bottom right of the Fuel Allocation table is the value for Total Fuel at Start, as calculated from the sum of Flight Fuel and Fuel at Landing, beneath which is the value for total usable fuel configured for the aircraft. The amount of additional fuel available before reaching the limit of total usable fuel is shown on the left, beneath "Total Fuel at Start". If you exceed the value for total usable fuel during planning, the numbers for Total Fuel at Start turn red, and the amount of fuel that is over the limit replaces the value for additional fuel available beneath "Total Fuel at Start".

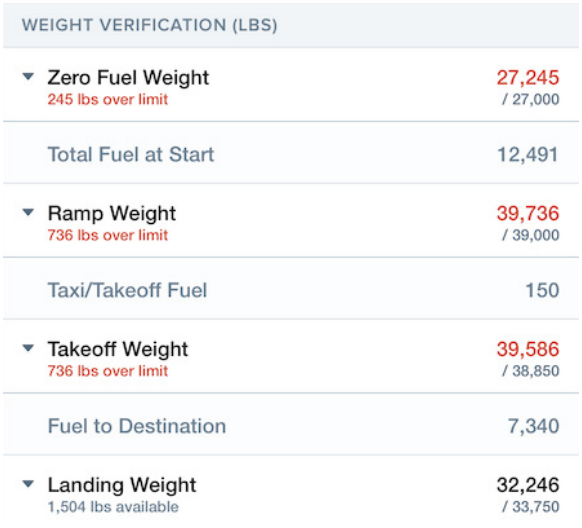


Weight Verification Section

The last section of the Flights view planning form is Weight Verification. This allows you to review the total weight of the aircraft and compare it to important structural weight limits to see how much additional weight capacity is available for the flight. The structural weight limits come from the values configured in the Aircraft Edit page, and are shown in a smaller font directly below the actual weight value based on what you've configured for payload and fuel. The amount of fuel available before reaching each limit is shown on the left below the name of each limit.



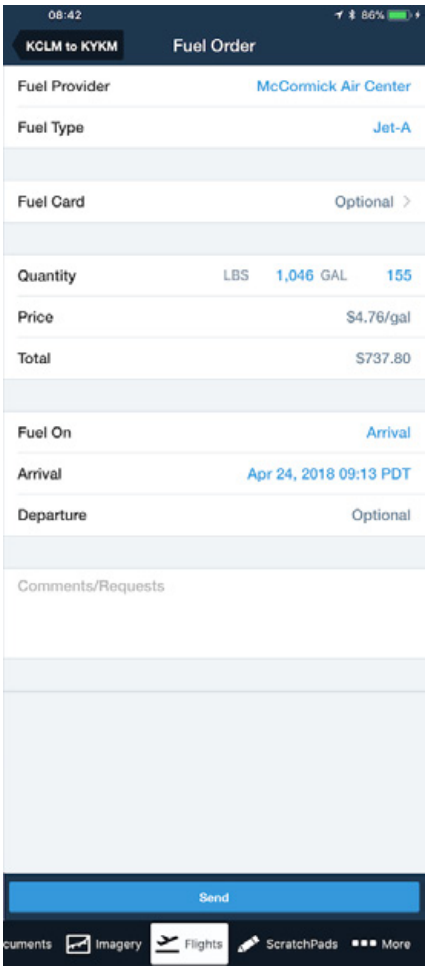
Between the rows showing weight limits are rows of lighter text indicating how the aircraft's total actual weight changes between each limit, either from adding fuel before engine start, or burning fuel during taxi/takeoff and during the flight itself. You can collapse these rows by tapping the carets to the left of each weight limit name.



If any weight limit is exceeded while planning your flight, the values for total actual weight turn red, and the amount of weight that is over the limit replaces the value for additional weight available at each limit.

Fuel Orders

When enabled in More > Settings, a Fuel Order field is displayed in the Destination Services section of the Flights view, allowing you to create and send a fuel order to your destination FBO before the flight (Internet connection required).



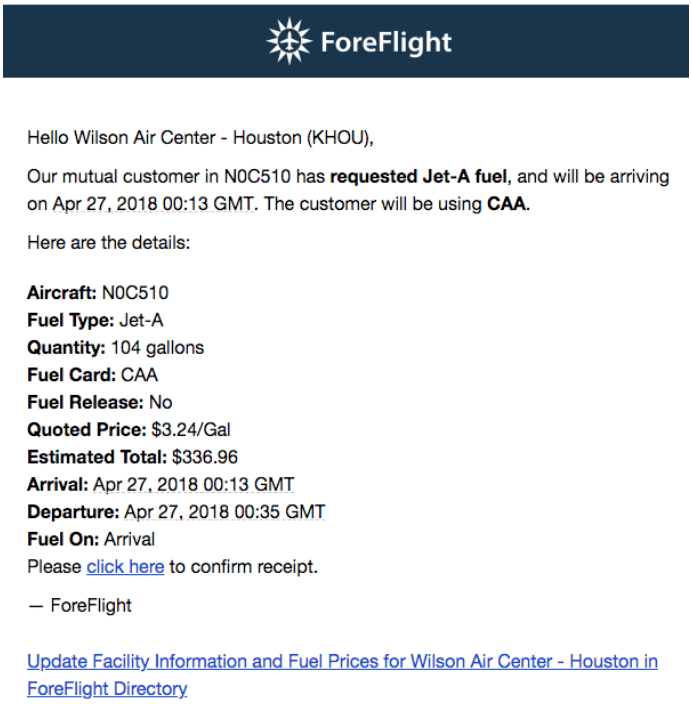
To create a fuel order, first tap the Fuel Provider box and select the FBO from the available FBOs at the destination airport. If you have a linked JetFuelX account, you can select a Fuel Card to receive discounted prices at that FBO. Each fuel card listed includes the discounted price, the fuel card provider, a link to view any notes for the fuel card, and the price tiers, if 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.

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. 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 Departure. If you want to add any special comments or request to your fuel order you can do so at the bottom.

Tap "Send" to transmit your fuel order to the FBO via 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."


ForeFlight

Hello Wilson Air Center - Houston (KHOU),

Our mutual customer in N0C510 has **requested Jet-A fuel**, and will be arriving on Apr 27, 2018 00:13 GMT. The customer will be using **CAA**.

Here are the details:

Aircraft: N0C510
Fuel Type: Jet-A
Quantity: 104 gallons
Fuel Card: CAA
Fuel Release: No
Quoted Price: $3.24/Gal
Estimated Total: $336.96
Arrival: Apr 27, 2018 00:13 GMT
Departure: Apr 27, 2018 00:35 GMT
Fuel On: Arrival
Please click here to confirm receipt.

— ForeFlight

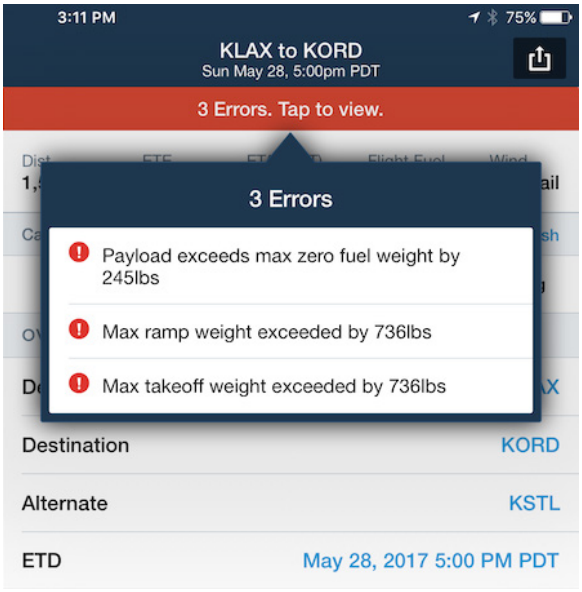
Update Facility Information and Fuel Prices for Wilson Air Center - Houston in ForeFlight Directory

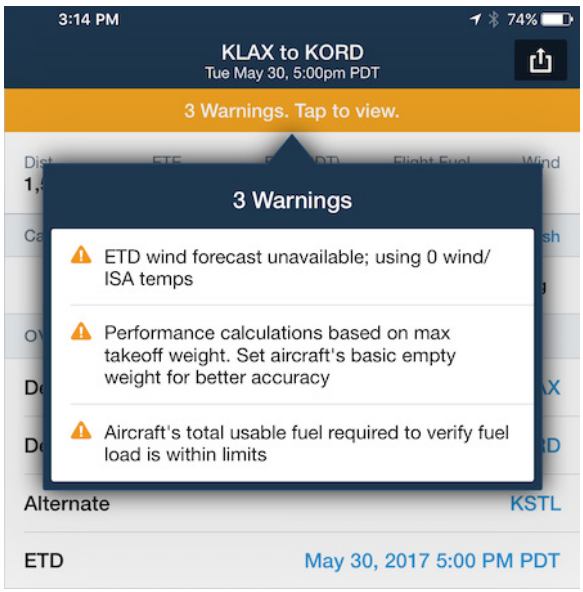
After sending a fuel order the Send button changes to Cancel. Clicking this will send another email to the FBO information them that you cancelled the order. If the fuel order email is not successfully delivered to the FBO, such as if the FBO's firewall rejects it or the FBO's email account no longer exists, the fuel order status will show "Not Delivered." However, other circumstances may prevent the email from reaching the FBO without triggering the "Not Delivered" message, such as if the email is automatically placed in the FBO's spam folder by the email client.

Errors and Warnings

The Flights view will display a number of errors and warnings to alert you of problems that might come up while planning a flight. These appear as a red or orange banner above the Route Performance Summary - you can tap on the banner to view details for the errors or warnings. Errors are critical problems that may prevent ForeFlight from calculating performance results for a flight (such as not providing a

valid performance profile for the aircraft), or may prevent the flight from being carried out safely (such as exceeding structural weight or fuel limits). Warnings represent less severe problems that may result in less accurate performance calculations (such as the ETD being too far in the future to incorporate wind effects for the flight), or that may prevent ForeFlight from verifying that weight and fuel amounts are within limits (such as not entering a basic empty weight for the aircraft).





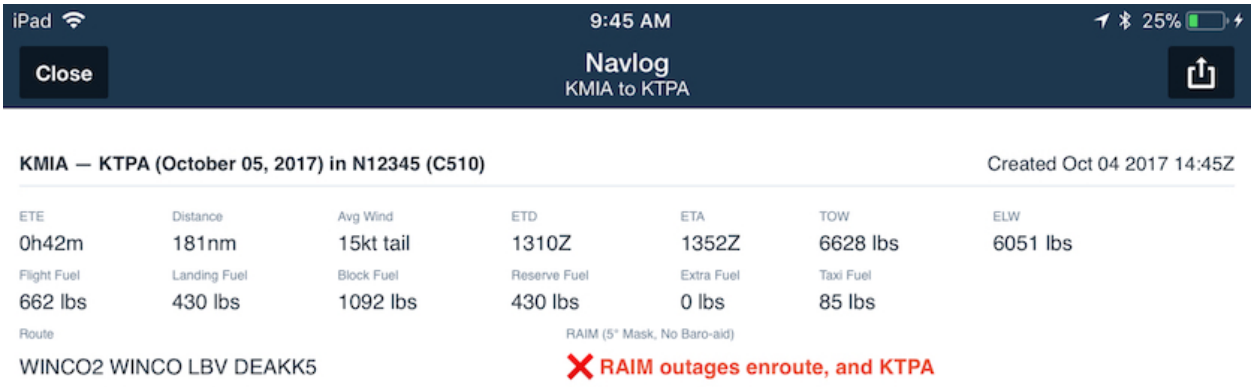
Add Next Flight

If planning a multi-leg trip, use the "Add Next Flight" button at the bottom of the planning form to create a new flight that retains the most important details from the previous one, making it easy to plan consecutive trip segments. 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 Manuel Fuel) then the previous value will not be preserved when adding a next flight.

Navlog

The Flights view Navlog provides a detailed overview of your flight that can be printed out and referenced to aid inflight decision-making. You can view the Navlog by tapping the Navlog button in the top left of the Flights view.

The top of the Navlog provides quick reference to key information like ETE, block fuel, the full route string, and more. The Navlog will also provide RAIM outage prediction for routes within the continental U.S., Alaska, and Hawaii; for routes outside of these supported areas, no message will be shown. If no outage is predicted, the message will say "No outages predicted" in green. If an outage is predicted, the message will be red, and will specify where in the route the outage is predicted - at the departure, destination, or alternate airports, or enroute.



ForeFlight's RAIM prediction capability is based directly on the FAA's RAIM prediction service and its open API.

Beneath the top of the page are tables providing helpful information about each leg of the trip. The first table shows expected performance results for each leg, such as fuel remaining, leg time, distance remaining, and winds aloft information, including forecasted deviations from standard temperature. If you specified an alternate airport for the flight the same details appear for it in a short table below.

ForeFlight's Navlog will also incorporate step climbs into your route if hot/high/heavy conditions prevent climbing direct to your final cruise altitude. Step climbs will appear in the altitude table as shown below.

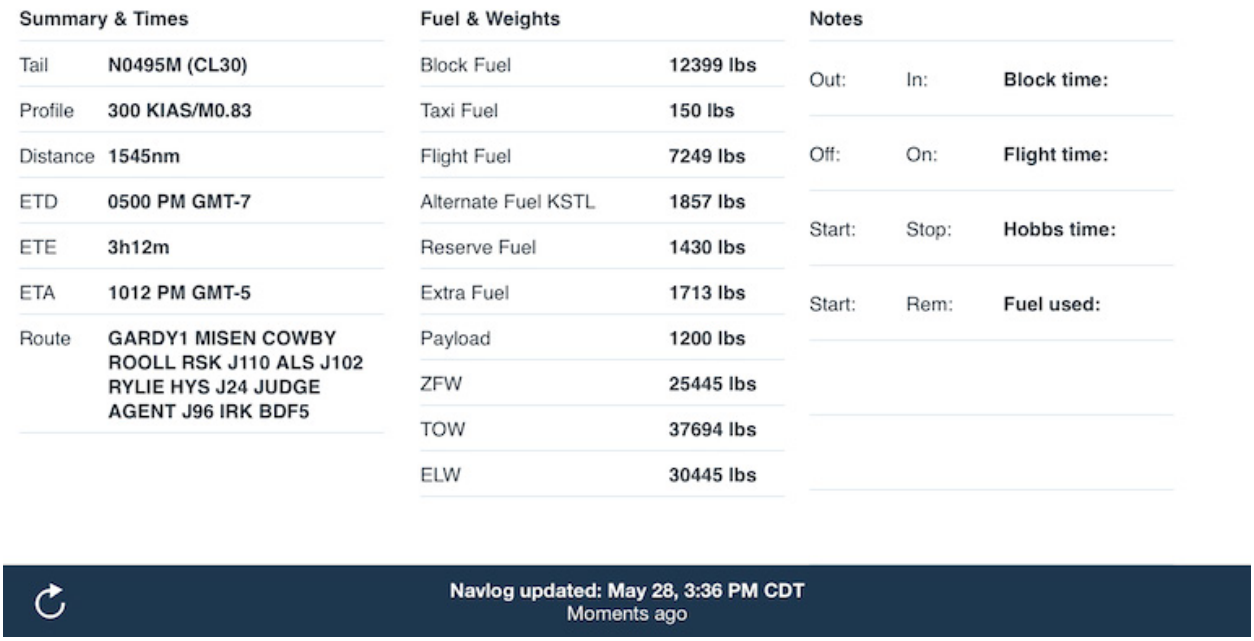
Waypoint	VIA	BRG	ALTITUDE	CUM TIME	FUEL REM	TAS	GS	WIND	ISA	LEG DIST	DIST REM	LEG TIME	TIME REM
KLAX		-	128	-	14000	0kt	0kt	199/009	+6	-	1539	-	3h00m
-TOC-	GARDY2	027	FL370	0h16m	13010	362kt	410kt	233/073 (T70)	+6	111	1428	0h16m	2h44m
MISEN	GARDY2	027	FL370	0h17m	12955	482kt	552kt	233/073 (T70)	+6	13	1415	0h01m	2h43m
100-DUZIT	DCT	049	FL370	0h25m	12681	481kt	557kt	232/079 (T76)	+5	66	1349	0h08m	2h35m
DUZIT	DCT	050	FL390	0h35m	12268	476kt	556kt	229/083 (T80)	+3	100	1249	0h10m	2h25m
EEEZY	DCT	057	FL390	0h41m	12049	479kt	558kt	229/085 (T80)	+3	54	1195	0h06m	2h19m
100-DVC	DCT	057	FL390	0h49m	11745	479kt	559kt	229/086 (T80)	+3	77	1118	0h08m	2h11m
DVC 114.6	DCT	058	FL390	1h00m	11350	478kt	560kt	232/086 (T82)	+2	100	1018	0h11m	2h00m
HBU 114.9	DCT	056	FL390	1h11m	10968	479kt	561kt	235/085 (T83)	+3	97	921	0h11m	1h49m
200-BELKE	DCT	058	FL390	1h16m	10763	478kt	561kt	239/083 (T83)	+2	53	868	0h05m	1h44m
100-BELKE	DCT	058	FL390	1h27m	10371	479kt	556kt	239/079 (T77)	+3	100	768	0h11m	1h33m
BELKE	DCT	061	FL390	1h38m	9984	477kt	557kt	243/080 (T79)	+1	100	668	0h11m	1h22m
100-DRABS	DCT	067	FL390	1h46m	9704	478kt	556kt	246/079 (T78)	+2	72	596	0h08m	1h14m
DRABS	DCT	069	FL390	1h56m	9318	478kt	553kt	249/076 (T76)	+2	100	496	0h10m	1h04m
200-OGALE	DCT	074	FL390	1h59m	9220	477kt	551kt	250/074 (T73)	+1	25	471	0h03m	1h01m
100-OGALE	DCT	075	FL390	2h10m	8835	478kt	549kt	249/073 (T71)	+2	100	371	0h11m	0h50m
OGALE	DCT	078	FL390	2h21m	8449	477kt	545kt	251/068 (T67)	+1	100	271	0h11m	0h39m
100-TRIDE	DCT	087	FL390	2h32m	8085	477kt	534kt	255/059 (T57)	+1	94	177	0h11m	0h28m
-TOD-	DCT	090	FL390	2h40m	7808	476kt	527kt	252/047 (T51)	+4	70	107	0h08m	0h20m
TRIDE	DCT	090	FL287	2h44m	7637	356kt	395kt	257/053 (T39)	+1	30	77	0h04m	0h16m
KORD	SHAIN1	093	680	3h00m	7035	265kt	282kt	247/027 (T19)	+12	77	-	0h16m	-
Alternate Route: DCT													
-TOC-	DCT	215	FL200	-	6670	313kt	293kt	241/024	+11	-	201	-	0h37m
-TOD-	DCT	215	FL200	0h24m	5679	412kt	400kt	261/016 (H12)	+11	157	44	0h24m	0h13m
KSTL	DCT	215	618	0h37m	5145	203kt	194kt	225/016 (H10)	+11	44	-	0h13m	-

The next table compares winds aloft and performance results for the selected cruise altitude as well as bracketing nearby altitudes. Each altitude column provides total trip time and fuel burn in bold at the bottom, making it easy to evaluate multiple altitudes at a glance. Following that is a smaller table with important frequency and runway information for your departure, destination, and alternate airports.

	FL 350 (ISA: -54°C)		FL 370 (ISA: -56°C)		FL 390 (ISA: -56°C)		FL 410 (ISA: -56°C)	
Perf Aloft	WIND (COMP)	ISA	WIND (COMP)	ISA	WIND (COMP)	ISA	WIND (COMP)	ISA
-TOC-	234/072 (T69)	+5	234/072 (T69)	+7	232/075 (T72)	+3	232/072 (T69)	-1
MISEN	233/074 (T71)	+5	233/074 (T71)	+7	232/077 (T75)	+2	231/074 (T72)	-2
100-DUZIT	230/080 (T78)	+5	230/080 (T78)	+8	229/081 (T79)	+3	229/077 (T75)	-1
DUZIT	229/082 (T80)	+5	229/082 (T80)	+8	229/085 (T83)	+2	229/080 (T78)	-2
EEEZY	227/084 (T77)	+5	227/084 (T77)	+8	229/085 (T80)	+3	230/076 (T72)	-1
100-DVC	229/082 (T76)	+5	229/082 (T76)	+7	230/086 (T81)	+2	230/081 (T76)	-2
DVC	235/080 (T78)	+5	235/080 (T78)	+8	235/084 (T82)	+2	234/079 (T76)	-2
HBU	238/076 (T75)	+5	238/076 (T75)	+7	239/084 (T84)	+2	239/081 (T81)	-2
200-BELKE	240/078 (T77)	+5	240/078 (T77)	+8	239/082 (T81)	+3	238/075 (T74)	-1
100-BELKE	239/070 (T70)	+5	239/070 (T70)	+7	242/077 (T77)	+1	242/080 (T80)	-4
BELKE	244/075 (T75)	+5	244/075 (T75)	+7	246/079 (T79)	+2	245/077 (T77)	-2
100-DRABS	246/071 (T70)	+5	246/071 (T70)	+7	248/077 (T76)	+2	248/077 (T77)	-3
DRABS	247/069 (T68)	+5	247/069 (T68)	+7	250/074 (T74)	+1	250/074 (T74)	-3
200-OGALE	247/069 (T67)	+5	247/069 (T67)	+7	250/074 (T73)	+1	250/074 (T73)	-3
100-OGALE	249/064 (T63)	+5	249/064 (T63)	+7	252/069 (T69)	+1	252/070 (T70)	-3
OGALE	251/058 (T57)	+5	251/058 (T57)	+7	255/061 (T61)	+1	257/063 (T63)	-4
100-TRIDE	251/050 (T47)	+5	251/050 (T47)	+7	257/053 (T52)	+1	260/057 (T56)	-5
-TOD-	251/048 (T46)	+5	251/048 (T46)	+7	255/050 (T49)	0	261/056 (T55)	-5
TRIDE	251/047 (T45)	+4	251/047 (T45)	+6	257/053 (T51)	0	265/057 (T57)	-5
	3h00m (0:00), 7545 lbs Avg wind comp: T61		**3h00m (0:00), 7188 lbs Avg wind comp: T64**		**3h00m (0:00), 6965 lbs Avg wind comp: T66**		**3h00m (0:00), 6915 lbs Avg wind comp: T66**	

Airport	WX	TWR/CTAF	CLR	GND	ELEV		LONGEST RWY
KLAX	133.8	119.8	120.35	120.35	128	07L / 25R	12923 ft
KORD	135.4	119.625	121.6	118.05	680	10L / 28R	13000 ft
KSTL	125.025	118.5	119.5	118.925	618	12R / 30L	11019 ft

The bottom of the Navlog contains additional summaries of times, fuel, and weights, and also includes a section to record actual performance results for the flight. You can email the Navlog using the Send To button in the top right of the Flights view, and you can print it using a compatible AirPrint printer. Changing any details of your flight will automatically update the Navlog for the next time you view it, but you can also manually refresh it by tapping the refresh button in the bottom left.



Summary & Times	
Tail	N0495M (CL30)
Profile	300 KIAS/M0.83
Distance	1545nm
ETD	0500 PM GMT-7
ETE	3h12m
ETA	1012 PM GMT-5
Route	GARDY1 MISEN COWBY ROOLL RSK J110 ALS J102 RYLIE HYS J24 JUDGE AGENT J96 IRK BDF5

Fuel & Weights	
Block Fuel	12399 lbs
Taxi Fuel	150 lbs
Flight Fuel	7249 lbs
Alternate Fuel KSTL	1857 lbs
Reserve Fuel	1430 lbs
Extra Fuel	1713 lbs
Payload	1200 lbs
ZFW	25445 lbs
TOW	37694 lbs
ELW	30445 lbs

Notes		
Out:	In:	Block time:
Off:	On:	Flight time:
Start:	Stop:	Hobbs time:
Start:	Rem:	Fuel used:

Navlogs generated on the web will automatically become available on mobile as part of ForeFlight's Sync system, and vice versa.

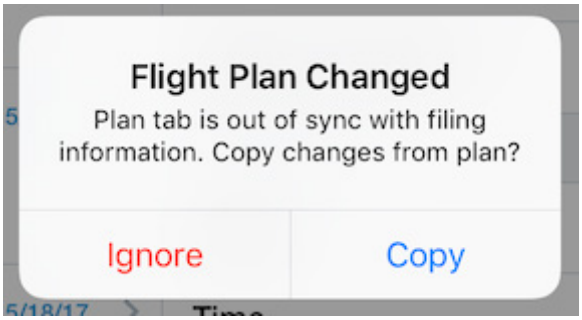
Briefing

You can request a pre-flight weather briefing by tapping the Briefing button next to the Navlog button. By default this will retrieve ForeFlight's Graphical Briefing, which presents weather and NOTAM information in a page-based, graphical format that allows you to translate the coded text into a "plain text" form.

An in-depth description of the contents of the Graphical Briefing can be found in the "Pilot's Guide to ForeFlight Mobile", available in the app in **Documents** > **Catalog** > **ForeFlight** or at www.foreflight.com/support/pilots-guide/.

Filing a Flight Plan

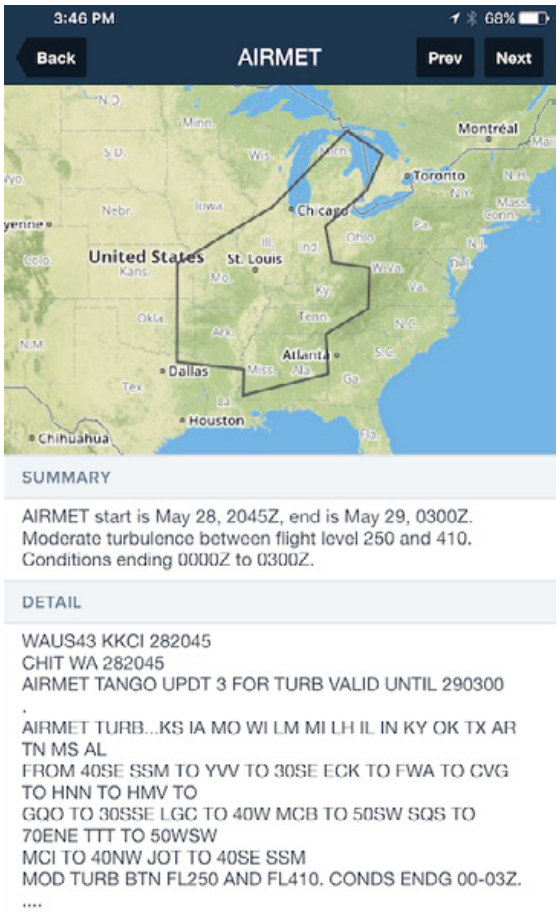
Tap "Proceed to File" at the bottom of the screen to move to the Flights view filing form. Information is automatically copied over from the planning form into the relevant fields of the filing form, allowing you to simply review the information before filing. If you return to the planning form and make changes, a popup will prompt you to copy the updated information into the filing form next time you view it.



Refer to the "Pilot's Guide to ForeFlight Mobile" for more information about filing a flight plan, or the supplemental guide "Filing with ForeFlight Mobile" for in-depth information about filing ICAO flight plans and configuring aircraft with the proper ICAO codes. Both guides are available in the app in **Documents** > **Catalog** > **ForeFlight** or at www.foreflight.com/support/faqs/guides-supplements/

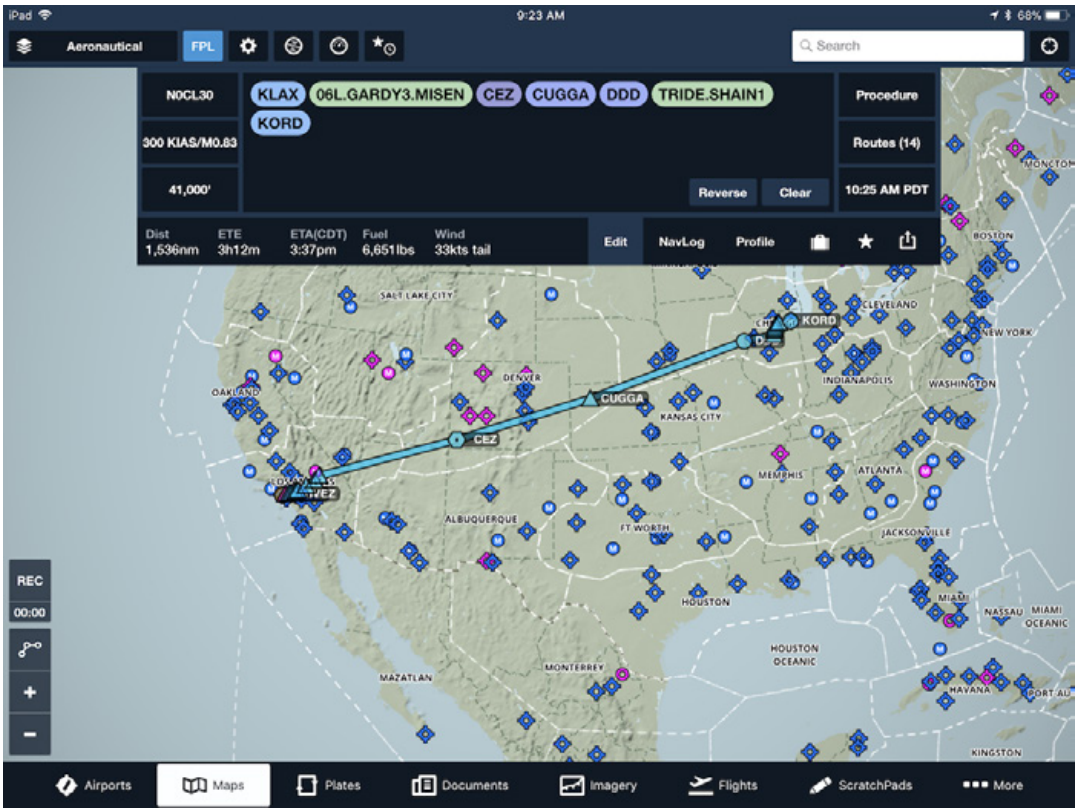
Messages

If you enabled Flight Notifications before filing, ForeFlight will check for important flight alerts along your route, such as AIRMETs and SIGMETs, TFRs, and runway closure notices. ForeFlight will start searching for and displaying these alerts two hours before before your estimated time of departure, while connected to the internet. The alerts will appear in the Messages tab in the top right of the Flights view, and a notification bubble showing the number of new alerts will appear on the Flights view tab at the bottom of the screen. Tap on Messages to view a summary of all the alerts, and tap on an alert to see details about it. Use the Next and Previous buttons to move between the alerts.



Performance Planning with Maps

The Maps view includes many, though not all of the Performance-based planning tools found in the Flights view, and also includes unique capabilities such as Procedure Advisor that make it ideal for visual flight planning.



The capabilities for selecting an aircraft, selecting a performance profile, setting an ETD, and using the Route and Altitude Advisors can all be found as buttons on the Maps view Flight Plan Editor (shown above). However, the Maps view lacks the additional planning features that Performance Plus customers can access in the Flights view, including the Payload, Fuel, and Weight Verification sections, as well as other features like the printable Navlog and Graphical Briefing. Tap the Send To button in the bottom-right corner of the Flight Plan Editor and tap Flights to send the currently-entered route to the Flights view. All details about the flight that have been entered on the Maps view will be copied over to the Flights view.

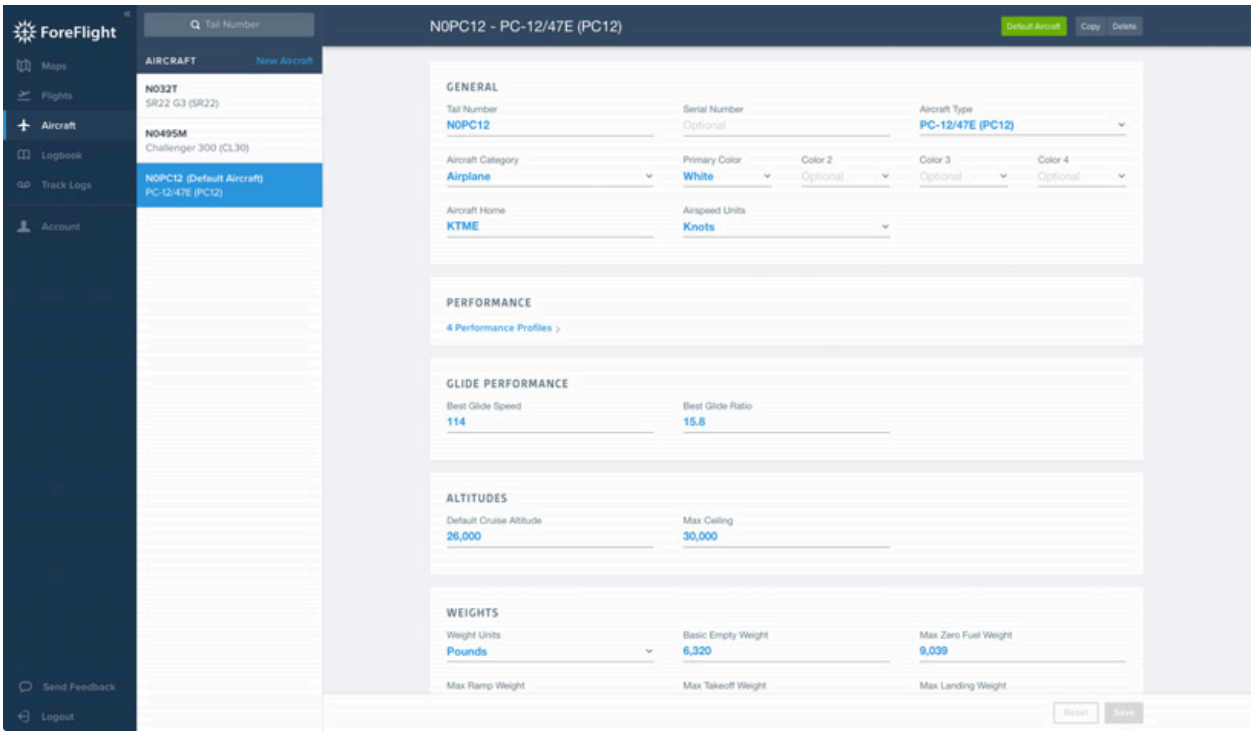
You find more details about planning with the Maps view in the "Pilot's Guide to ForeFlight Mobile", available in the app in **Documents** > **Catalog** > **ForeFlight** or at www.foreflight.com/support/pilots-guide/.

Performance on the Web

ForeFlight on the web includes almost all of the advanced flight planning capabilities that ForeFlight Performance brings to the mobile app, plus some features that are web-exclusive. Login to the web application from ForeFlight's home page, or at plan.foreflight.com.

Aircraft on the Web

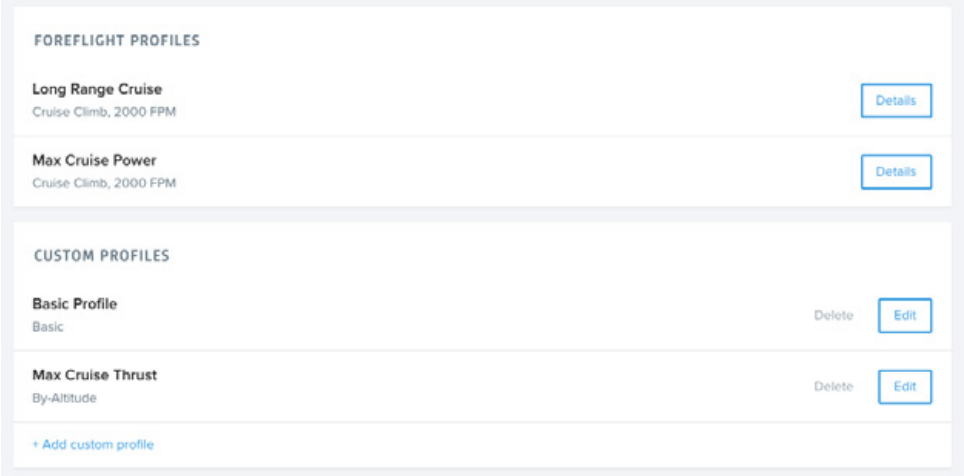
ForeFlight on the web allows you to view, edit, and create new aircraft using ForeFlight's aircraft type database and advanced performance profiles. Although the interface is different, every data field that you can access on the mobile app can also be accessed on the web.



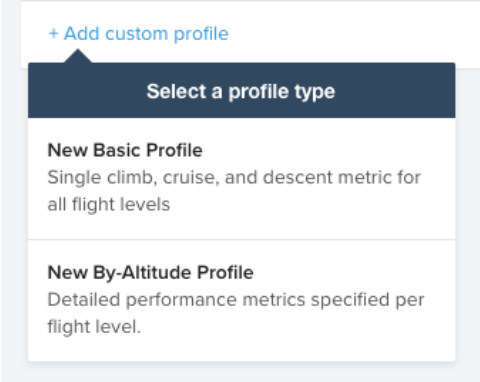
The aircraft type field on the right allows you to search for your aircraft by make, model, or type code, and just like in the mobile app, aircraft models with ForeFlight Performance Profiles include variant information beneath the model name and the number of preconfigured profiles below that. Selecting a model with performance profiles will auto-fill the fields for weight, fuel, altitudes, and glide performance. As with the mobile app, be sure to carefully review these data to confirm their accuracy with regard to your own aircraft. You can also enter filing, dinghy, and emergency

information below that. Click Save in the bottom right after making any changes to save them.

Click Performance Profiles to view the performance profiles configured for that aircraft, and click Details next to any ForeFlight Performance Profile to view the climb, cruise, and descent models, and to access the model adjustment sliders for cruise speed and cruise fuel flow.



By-Altitude Profiles

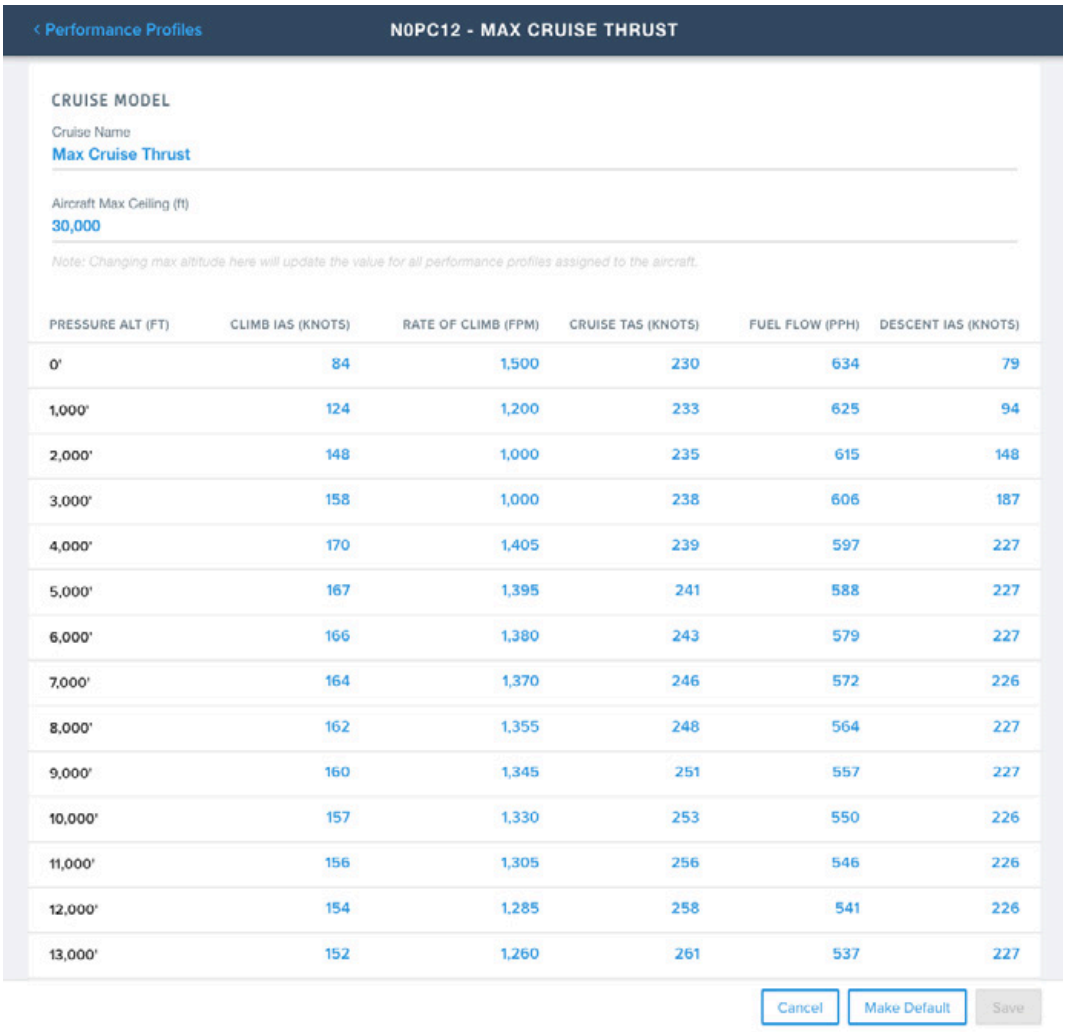


Click "Add Custom Profile" to see the one major difference between Performance Planning on the mobile app and on the web. In addition to basic profiles, the web interface allows you to create by-altitude profiles for your aircraft. These are useful if a preconfigured performance profile is not available for your aircraft model, as they allow you to input detailed performance data for every altitude in your aircraft's operational range, offering far greater accuracy than basic profiles.

The performance data you enter here should be available in your aircraft's POH, but you can also use actual performance data collected from real flights if there is a significant difference from the book values.

Enter low- and high-altitude fuel flow data for the climb and descent models, then scroll down to the cruise model table. The minimum requirement is to enter data for the lowest and highest altitudes in the table, the latter being defined by the aircraft's maximum ceiling. Beyond that you can enter data for whatever intermediate altitudes you want. ForeFlight uses a linear scale to calculate performance data for altitudes

that you don't fill in, so filling in more altitudes will result in more accurate calculations. For each altitude that you fill in, you must enter values for all five fields; entering partial data for any altitude will result in errors while using that profile for flight planning.



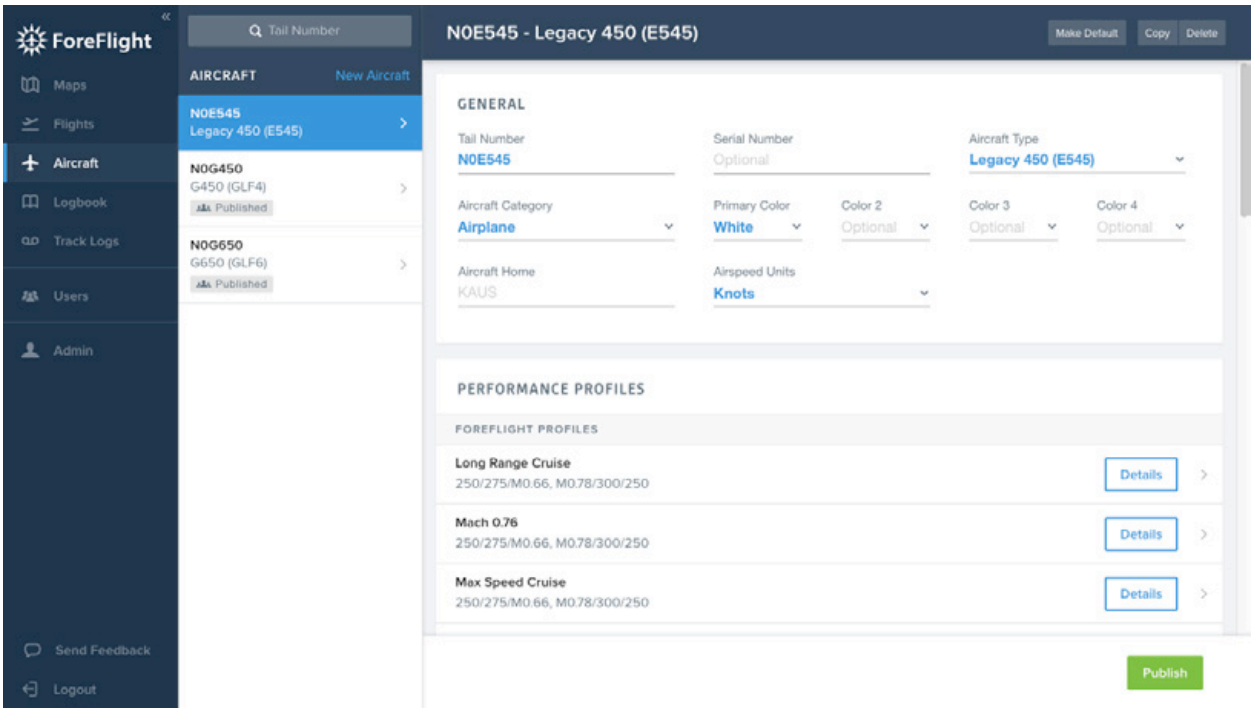
PRESSURE ALT (FT)	CLIMB IAS (KNOTS)	RATE OF CLIMB (FPM)	CRUISE TAS (KNOTS)	FUEL FLOW (PPH)	DESCENT IAS (KNOTS)
0'	84	1,500	230	634	79
1,000'	124	1,200	233	625	94
2,000'	148	1,000	235	615	148
3,000'	158	1,000	238	606	187
4,000'	170	1,405	239	597	227
5,000'	167	1,395	241	588	227
6,000'	166	1,380	243	579	227
7,000'	164	1,370	246	572	226
8,000'	162	1,355	248	564	227
9,000'	160	1,345	251	557	227
10,000'	157	1,330	253	550	226
11,000'	156	1,305	256	546	226
12,000'	154	1,285	258	541	226
13,000'	152	1,260	261	537	227

NOTE: Some aircraft POHs provide different types of performance data in staggered altitude intervals, such as providing cruise TAS and fuel flow for every 2,000', but providing climb and descent IAS and rate of climb for every 5,000'. Since all data fields (columns) for a given altitude (row) must be filled in for it to be valid, the best solution for cases like these is to use a spreadsheet program to manually interpolate the data sets so you can get complete data for each altitude you wish to enter. You can then simply copy the values from the spreadsheet into the by-altitude table.

Click Save in the bottom right to save the by-altitude profile. You can then access it during flight planning like any other performance profile.

Manage Aircraft for Multi-Pilot Accounts

Multi-pilot account administrators can manage and distribute company aircraft profiles to all the pilots on an account, allowing for easier aircraft management and reduced setup time for large accounts.



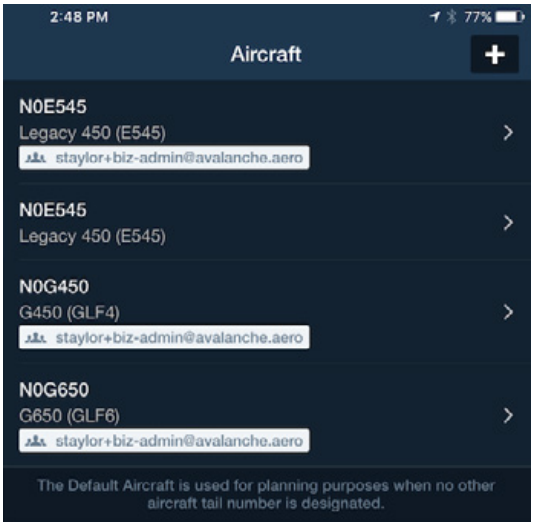
To set up company managed aircraft profiles as the administrator of a multi-pilot account, sign in to ForeFlight's web application using you username and password, then click the Aircraft tab on the left-hand nav bar. Select an aircraft that you want to share or set up a new one with the necessary details. At the bottom-right of the page is a green "Publish" button. Click this button to share the aircraft with all users on the account. Once shared, a "Published" tag will appear under the aircraft in the list view on the left, and the bottom of the page will show the date and time when you published the aircraft.

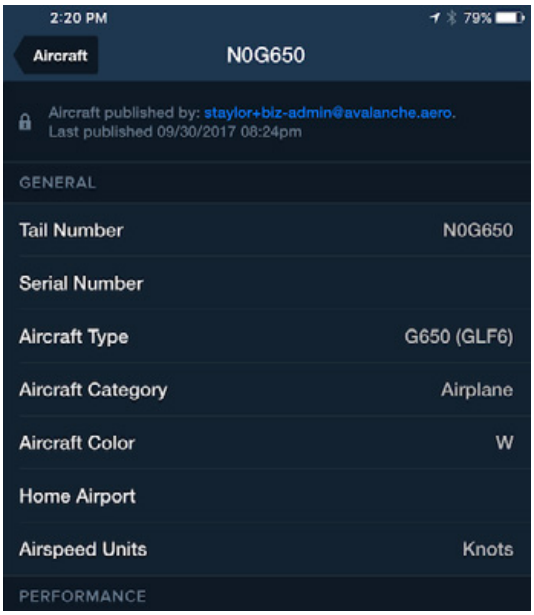
Any time you make changes to a shared aircraft, "(Unpublished Changes)" will appear in green at the bottom of the page, and a "Publish Changes" button will appear in the bottom-right. The changes will not be shared with users on the account until you publish them. Doing so will update the "Last published" date and time at the bottom of the page.

Clicking "Unpublish" will revoke access to the aircraft for all users other than the administrator, and they will no longer be able to see or use the aircraft for flight planning, although a record of the aircraft's tail number will remain attached to flight plans made with that aircraft.

The administrator cannot delete a published aircraft - he or she must first unpublish the aircraft, the delete it.

Aircraft that have been published by an account administrator will appear in the Aircraft list's of all pilots on the account, along with a tag showing the email address of the administrator who published the aircraft. Pilots on the account can view the details of shared aircraft and use them for flight planning as they would their own aircraft, but all details of the aircraft are locked from editing by the pilots, including the performance profiles. Published aircraft include a message at the top of the aircraft detail view with the email address of the administrator who published the aircraft and the time and date of last publishing. Users can tap the email address to create an email to the administrator.

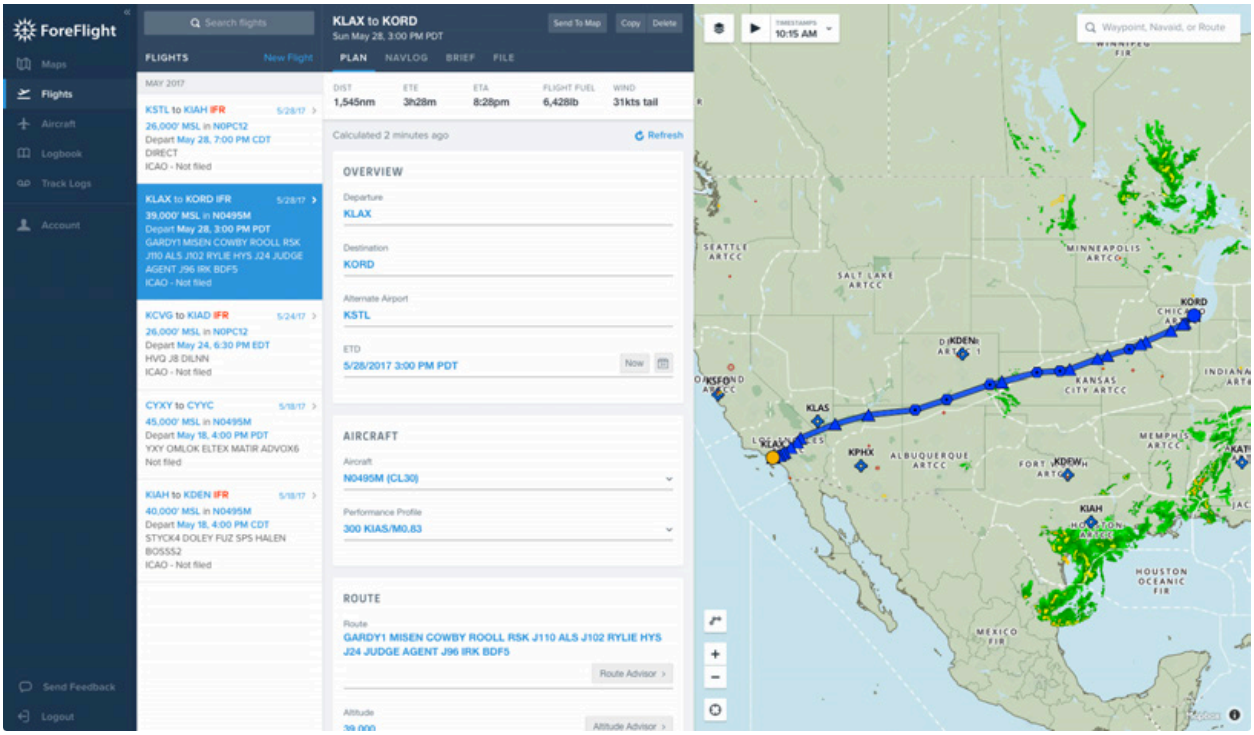




Pilots cannot delete shared aircraft, but they can use the buttons at the bottom of the aircraft detail view to make a shared aircraft the default for flight planning, and to copy a shared aircraft. Copying a shared aircraft creates an identical aircraft profile that they can edit, allowing them to make changes to the aircraft without affecting the original shared aircraft. Copies of shared aircraft are the same in all respects as new aircraft created by the pilot: they cannot be viewed or modified by the account administrator, and changes published to the original shared aircraft will not affect the copy.

Flights on the Web

In addition to setting up and editing aircraft, ForeFlight on the web allows you to plan flights using the same Performance Performance features that are accessible in the mobile app. Click the Flights tab on the left to edit an existing flight or start planning a new one.

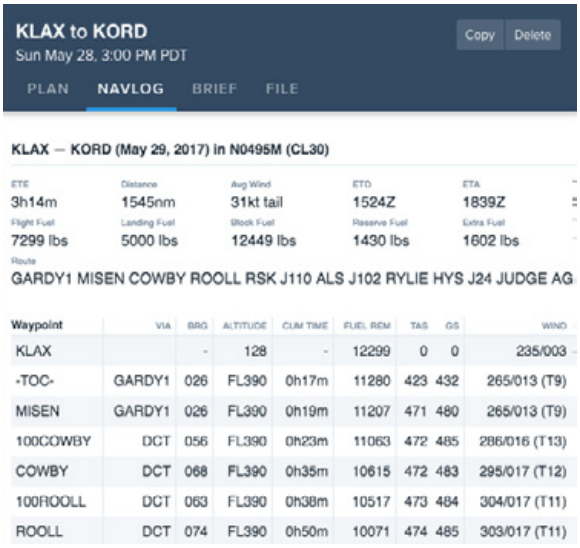


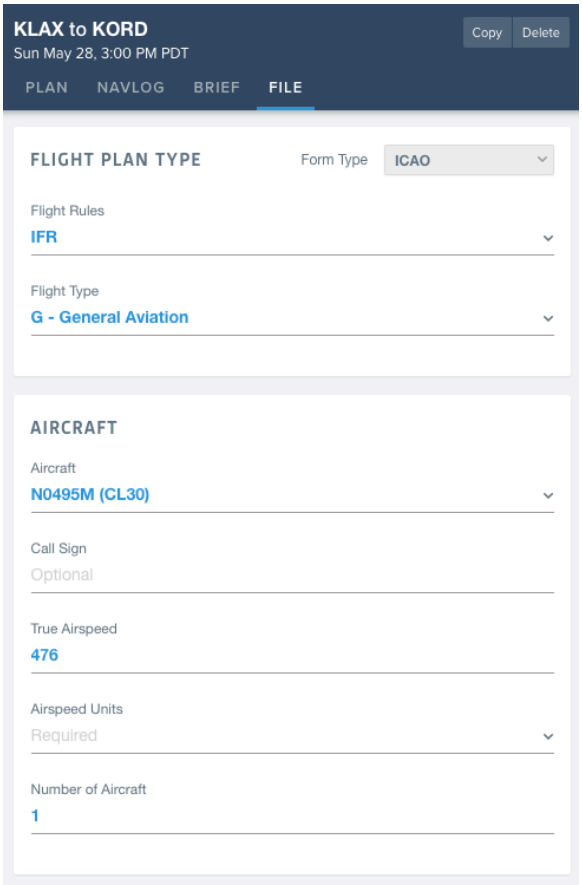
Unlike the mobile app, the web application doesn't make you choose between form-based and map-based planning - the Flights tab on the web includes both the planning form from the mobile Flights view and a fully-interactive map on the right, with the same layer and setting options that you have on the web's Maps tab. Making route changes to either the form or the map will automatically update the other.

As with other aspects of ForeFlight on the web, any flight you create or edit on the web application is immediately synced to all the mobile devices on which you are signed in, allowing you to plan a flight on the web and pick it up seamlessly in ForeFlight Mobile on your iPad or iPhone before departure.

Navlogs and Graphical Briefings can also be created on the web. Click the Navlog and Brief buttons in the page header to view them, and use the refresh button in the bottom left to update them with new information. Click the Send To button in the bottom right to open the Navlog or Briefing in its own tab; from there you can print or save the HTML file by right-clicking on the page and selecting "Print…" or "Save As…" (these labels may vary depending on what web browser you're using).

Click File in the page header to move to the filing form. As in ForeFlight Mobile, you will be prompted to update the filing form with new information if you made any changes in the planning form. Once again, all the fields available in the mobile app are on the web as well. If you have "Mobile Flight Notifications" enabled when you file your flight plan, any flight alerts will appear in the Messages tab in the mobile app.





JetFuelX Prices in ForeFlight

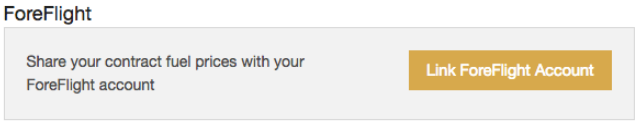
ForeFlight Performance allows you to link a JetFuelX account with ForeFlight to see contract jet fuel prices inside the mobile app and on the web, and issue fuel orders and releases to FBOs using fuel cards in your JetFuelX account.

About JetFuelX

JetFuelX is a free online service allowing users to manage their fuel card memberships, view and compare contract fuel prices for all airports offering them, and request fuel releases from fuel vendors. All ForeFlight customers automatically have accounts with JetFuelX - simply sign in at portal.jetfuelx.com using your ForeFlight username and password and begin adding fuel cards. Our JetFuelX tutorial videos walk through the process of account setup and using the service; follow this link to view them in ForeFlight's Video Library.

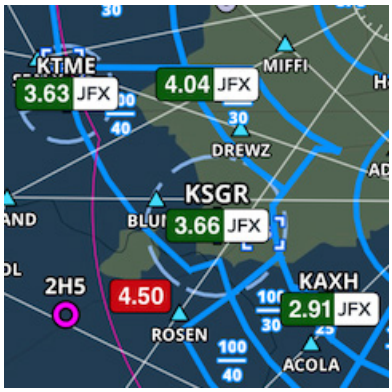
Linking ForeFlight and JetFuelX

For customers who purchase the Performance Plus plan, linking their JetFuelX account to ForeFlight is easy. After signing in to JetFuelX, click "Settings", then "My Profile" in the top right of the page. Underneath the Overview section is a section titled "ForeFlight" - click "Link ForeFlight Account" to begin the linking process.

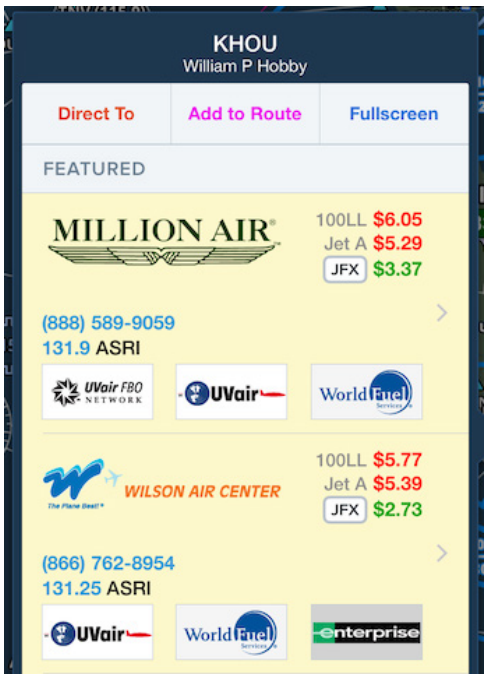


Enter the username and password of the ForeFlight account you want to share jet fuel prices with, click "Login", then click "Authorize" to connect the two accounts. You can only link a JetFuelX account with one ForeFlight account, and vice versa, but the accounts do not need to have the same username or be otherwise connected.

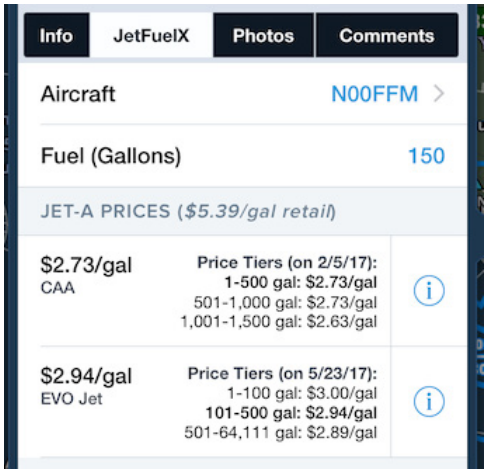
Viewing JetFuelX Prices in ForeFlight



After linking the accounts you will be able to view JetFuelX prices inside ForeFlight by enabling the Jet A map layer. **NOTE**: due to how ForeFlight retrieves and caches fuel prices, it may take up to an hour for JetFuelX prices to appear in the app if you viewed the Jet A map layer shortly before linking the accounts. You can tap the timestamp in the upper-left corner of the map to see when prices were last retrieved - after one hour they should update and JetFuelX prices will then be visible.



Airports with FBOs offering contract fuel based on your fuel card memberships will include a "JFX" label in addition to the price, and the price shown will reflect the lowest contract price available from any FBO or vendor at that airport. Tap on a price marker to view a summary of the FBOs at that airport - JetFuelX prices are shown next to each FBO offering them, beneath the retail prices for 100LL and Jet A. Tap on an FBO to see a more detailed breakdown of the fuel offerings, including retail and contract Jet-A+ prices, if the FBO offers them.



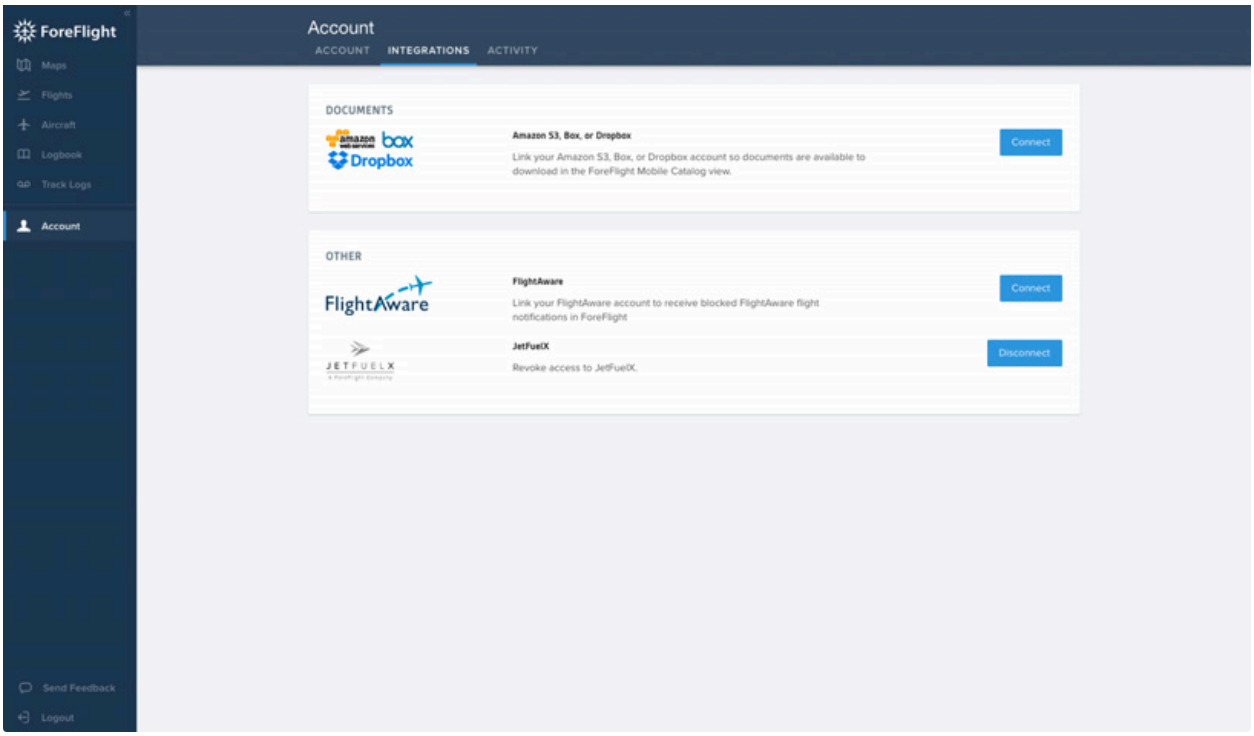
An FBO offering contract fuel will also have a JetFuelX tab in addition to the Info, Photos (if the FBO has uploaded any), and Comments tabs. This allows you to specify your aircraft and fuel amount for the flight - the aircraft shown here come from your JetFuelX account and are not associated with any aircraft in ForeFlight. Below this are Jet-A prices and price tiers for each vendor offering contract fuel based on your memberships. Make sure to check the dates above each price tier to see when those prices were valid - fuel vendor prices manually imported to JetFuelX in a CSV file will not update automatically and so may not reflect current prices. Tap the "i" button next to a fuel vendor to see any notes with additional information about pricing details or other

important charges, as well as miscellaneous information.

JetFuelX prices are also available in ForeFlight on the web, and are accessible in the same way as the mobile app. Turn on the Fuel: Jet A layer to see which airports offer contract fuel, and click any of the markers to see prices from each FBO and price tiers for each fuel vendor.

Unlinking ForeFlight and JetFuelX

If you want to disable the JetFuelX integration, you can do so in the same way that you enabled it from your JetFuelX profile page by clicking "Unlink ForeFlight Account". This will immediately unlink the two accounts without further prompt, but it may take up to an hour for JetFuelX prices to disappear from ForeFlight. You can also unlink the accounts from ForeFlight on the web by going to **Account** > **Integrations**, and clicking "Disconnect" next to JetFuelX.



Performance Guide Change History

For v10.0 NOTE: REQUIRES iOS 10.3 or LATER

- Enabled Fuel Policies when using a Basic performance profile for an aircraft.
- Added Fuel Order field to Flights, allowing you to create and send a fuel order to your destination FBO before the flight. Requires Performance Plus.

For v9.6 NOTE: REQUIRES iOS 9.2 or LATER

- The new Recommended Route (formerly AviationCloud Autoroute) gives you the best route based on your detailed aircraft performance profile and time/fuel savings, while also accounting for preferred routes, recent ATC cleared routes, and how frequently a given route is assigned. Use Recommended Route for more 'cleared as filed' flight plans optimized for your aircraft.

For v9.4 NOTE: REQUIRES iOS 9.2 or LATER

- The Navlog now includes RAIM prediction for the continental U.S., Alaska, and Hawaii.
- Administrators of multi-pilot accounts can "publish" aircraft profiles to all users on an account, improving the efficiency of account management.
- The Route section's Route Preview now includes built-in composite radar on the map, and allow you to tap on it to enter a split-screen interactive mode.

For v9.3 NOTE: REQUIRES iOS 9.2 or LATER

- The Route section and Route Advisor now include Route Previews that allow you to see your route and all route options on an interactive map.
- An Add Next Flight button at the bottom of the planning form makes it easy to quickly plan consecutive flights on a multi-leg trip.
- As part of ForeFlight's support for intra-European flight plan filing, Route Advisor will now perform Eurocontrol route validity checks to indicate whether a route is fileable with Eurocontrol or not.

- The Navlog now syncs between web and mobile.

For v9.2 NOTE: REQUIRES iOS 9.2 or LATER

- Corrected typos

For v9.1 NOTE: REQUIRES iOS 9.2 or LATER

- Created "Performance Planning in ForeFlight Mobile" guide
- ForeFlight customers who purchase the **Performance Plus** plan can utilize advanced ForeFlight Performance Profiles, preconfigured for hundreds of aircraft models; incorporate payload, fuel, and weight details into their flight planning; receive highly-accurate performance calculations from ForeFlight's next generation planning engine; create detailed by-altitude profiles for any aircraft on ForeFlight's web application; and link their JetFuelX account to view their contract jet fuel prices inside ForeFlight