



ForeFlight Mobile

Pilot's Guide



ForeFlight
A Boeing Company

Copyright © 2022 ForeFlight LLC. All rights reserved.

The unauthorized commercial distribution of this manual or any revisions is strictly prohibited.

ForeFlight® is a registered trademark of ForeFlight, LLC and may not be used without the permission of ForeFlight.

CONTENTS

DEFINITIONS	17
GETTING STARTED	22
About this Guide	22
PLAN COMPARISON.....	23
DESIGN	25
1.1 Navigation	25
1.1.1 Navigation Toolbar	26
1.1.2 More Menu and Navigation Toolbar	26
1.1.3 Customizing Tab Order	26
1.1.4 Dynamic Tab	27
1.2 Timer/Stopwatch.....	27
1.2.1 Stopwatch (Count Up Mode).....	27
1.2.2 Timer (Count Down Mode).....	27
1.3 App Theme	28
ACCOUNTS.....	29
2.1 Subscriptions.....	30
2.2 Managing Devices.....	30
2.2.1 Removing Devices	31
2.3 Notifications.....	31
2.4 ForeFlight Labs	31
2.4.1 Taxi Routes	31
2.4.2 Enhanced Weight & Balance	32
JEPPESEN	33
3.1 Purchasing Jeppesen Coverage	34
3.2 Linking Jeppesen Accounts	35
3.2.1 Linking Jeppesen with ForeFlight Mobile (Individual Accounts).....	35
3.2.2 Linking Jeppesen with ForeFlight Web	36
3.3 Multiple Jeppesen Accounts.....	37
3.3.1 Allowing Jeppesen Installs	38
3.3.2 Removing Coverage	38
3.4 Installing Linked Charts	39
3.5 Changing Coverage	39
3.6 Removing Jeppesen Charts	39
3.7 Jeppesen Settings.....	40

CONTENTS

3.8 Viewing Jeppesen Charts.....	40
3.8.1 Terminal Procedures	40
3.8.2 En route Charts	41
3.9 Jeppesen Map Settings.....	41
3.10 Jeppesen Documents.....	43
DOWNLOADS	44
4.1 Download Selections	45
4.1.1 Data Settings	45
4.1.2 Region Settings.....	47
4.2 Downloading Data	48
4.2.1 Updating Downloads.....	49
4.2.2 Automatic Downloads	50
4.2.3 Background Downloads	50
4.3 Deleting Downloads	51
4.3.1 Packed and Unselected Downloads	51
4.4 Preflight Download Check	52
4.5 Troubleshooting Downloads	52
SETTINGS	53
5.1 Search Bar	54
5.2 Brightness Slider	54
5.3 App Theme	54
5.3.1 Light and Dark Settings.....	55
5.4 Airport View Settings	56
5.5 Weather View Settings	57
5.6 Route View Settings	57
5.7 Map View.....	57
5.7.1 Auto Center	57
5.7.2 Extended Centerlines.....	58
5.7.3 Distance Rings.....	59
5.7.4 Track Vector	60
5.7.5 Route Labels.....	61
5.7.6 Current Location Marker	61
5.7.7 Hazard Settings	62
5.7.8 Map Touch Action.....	63
5.7.9 Cockpit Sharing.....	63
5.7.10 Map Annotations	63
5.7.11 Auto-Receive Flight Plans	64
5.7.12 Four-Color Radar	64

CONTENTS

5.7.13 Internet Radar Coverage	64
5.7.14 Breadcrumbs.....	64
5.7.15 Show Map Legend	65
5.7.16 Marked Positions	65
5.7.17 Quick Filters	65
5.8 Layer Selector	66
5.9 Map Annotations.....	66
5.10 Checklist.....	66
5.11 Plate and Document Views.....	66
5.12 Traffic.....	66
5.13 Search and Rescue	67
5.14 Downloads.....	67
5.15 Pack	67
5.16 Track Log.....	68
5.17 Flights.....	68
5.18 Taxi Diagram.....	68
5.19 Preferences	69
5.19.1 Alerts	69
5.19.2 Units/Time	69
5.19.3 Allow Device to Sleep	70
5.19.4 Automatic Clock Check	70
5.19.5 Enable Ownship	71
5.19.6 Ownship Not For Navigation	71
5.19.7 Show Heliports	72
5.19.8 Show Private Airports.....	72
5.19.9 Start on Last Screen	72
5.19.10 Synchronize User Data	72
5.19.11 Enable Diagnostic Logs.....	72
5.19.12 Performance Logging Level	72
5.20 Weight and Balance	73
MAP SETTINGS	74
6.1 Screen Brightness	74
6.1.1 Invert Chart Colors	74
6.2 ForeFlight Map	74
6.2.1 Map Theme	74
6.2.2 Terrain	74
6.2.3 Place Labels	75
6.2.4 Cultural Elements.....	75
6.3 Aeronautical.....	75

CONTENTS

6.3.1 Airports	75
6.3.2 Airspace	76
6.3.3 Airways & Waypoints.....	79
6.3.4 ARTCC/FIR	79
6.3.5 Text Size Adjustment.....	79
6.3.6 Quick Filters	79
6.4 Auto-Center Mode	80
6.5 Map Overlays	81
6.5.1 Hide Distant Traffic (ADS-B)	81
6.5.2 Route Labels.....	81
6.5.3 Extended Centerlines.....	81
6.5.4 Distance Rings	82
6.5.5 Glide Advisor	84
6.5.6 Track Vector	85
6.5.7 Breadcrumbs.....	85
6.5.8 Map Legend	86
6.5.9 Map Annotations	86
6.5.10 Marked Positions	86
6.5.11 Track Log Record Button.....	86
6.5.12 Four-color Radar	87
6.5.13 Internet Radar Coverage	87
6.5.14 Map Touch Action.....	87
6.6 Layer Selector	87
6.7 Opacity Slider	87
6.8 Devices.....	88
APPLE iOS FEATURES AND SETTINGS	89
7.1 iOS Network Settings	90
7.2 iOS Location Settings.....	91
7.3 iOS Multitasking and Split Screen	92
AIRCRAFT.....	93
8.1 Design	94
8.2 Creating an Aircraft Profile	95
8.2.1 General	95
8.2.2 Performance	96
8.2.3 Glide Performance	100
8.2.4 Altitudes	101
8.2.5 Weights	101
8.2.6 Weight and Balance	101
8.2.7 Fuel	103

CONTENTS

8.2.8 Filing Section	105
8.2.9 Dingy	108
8.2.10 Emergency	108
8.2.11 Nav Canada	109
8.3 Sharing Aircraft	110
8.4 Copying Aircraft.....	111
8.5 Deleting Aircraft.....	111
8.6 Published Aircraft.....	112
MAPS	113
9.1 Design.....	113
9.1.1 Upper Toolbar	114
9.1.2 Flight Plan Menu	115
9.1.3 Maps Sidebar	116
9.1.4 Main Map View	117
9.2 High-Resolution Base Map	119
9.3 Aeronautical Map	120
9.3.1 Aeronautical Map Features	121
9.3.2 Aeronautical Map Quick Filters	122
9.3.3 Aeronautical Map Symbols	123
9.3.4 European Airspace.....	126
9.4 Charts	127
9.5 Map Layers.....	129
9.5.1 Radar	129
9.5.2 Echo Tops (XM).....	129
9.5.3 Cloud Tops	129
9.5.4 Satellite	131
9.5.5 Icing	132
9.5.6 Turbulence	133
9.5.7 Clouds.....	135
9.5.8 Surface Analysis	135
9.5.9 Winds	135
9.5.10 Freezing Levels.....	136
9.5.11 Hazard Advisor	136
9.5.12 Traffic	137
9.5.13 Search & Rescue	139
9.5.14 AIR/SIGMET/CWAs	139
9.5.15 NOTAMs.....	140
9.5.16 TFR	141
9.5.17 GAFOR	142
9.5.18 Weather Layers.....	143

CONTENTS

9.5.19 Winds	143
9.5.20 Obstacles	144
9.5.21 User Waypoints	144
9.5.22 Fuel	145
9.5.23 Custom Map Layers	145
9.6 Weather Layer Time Slider	145
9.7 Weather Legends	146
9.7.1 Weather Layer Legend	146
9.8 Maps Sidebar	147
9.8.1 Add to Route	148
9.9 Map Annotations	149
9.10 Marked Positions	150
9.10.1 Editing Marked Positions	150
9.10.2 Exporting Marked Positions	151
9.11 Organized Track Systems	151
9.12 Smart Airway Labels	152
9.13 Attitude Indicator	153
9.13.1 iPhone Attitude Indicator	155
9.11.2 Glance Mode	157
9.11.3 Portable AHRS Positioning	158
9.14 Map Search	159
9.15 Flight Plan Menu	161
9.15.1 Route Summary	162
9.15.2 Route Editor	164
9.15.3 NavLog	165
9.15.4 Profile View	166
9.16 Ruler	175
9.17 Instrument Panel	176
9.17.1 Instruments	177
9.18 Favorite and Recent Routes	179
9.18.1 Favorite and Recent Route Sync	179
FLIGHT PLANNING	180
10.1 Planning with Search	180
10.1.1 Scheduled Flight Search	183
10.1.2 Street Address Search	183
10.2 Planning with Maps	185
10.2.1 Touch-Planning	185
10.2.2 Route Rubber-Banding	186
10.2.3 Route Editor	187

CONTENTS

10.2.4 Slash Codes.....	195
10.3 Route Line	198
10.4 Route Advisor	199
10.4.1 Route Constraints	200
10.4.2 Eurocontrol Valid and Invalid Routes	201
10.5 Altitude Advisor	202
10.6 Procedure Advisor	203
10.6.1 Departure or Arrival	203
10.7 Planning with Flights	215
10.7.1 Destination Services	215
10.7.2 Navlog, Briefing, Messages	217
AIRPORTS	219
11.1 Design.....	220
11.2 Finding an Airport using Search.....	220
11.3 Favorites/Recents/Browse.....	221
11.3.1 Finding an Airport Using Browse	221
11.3.2 Favorite Airports List.....	221
11.3.3 Recent Airports List	223
11.4 Airport 3D View	224
11.5 Airport Frequencies.....	226
11.6 Airport Weather	227
11.6.1 Digital ATIS (D-ATIS).....	228
11.6.2 Daily Weather Forecasts	229
11.7 Model Output Statistics (MOS) Forecasts	231
11.7.1 Runway Winds	233
11.8 Procedures	233
11.8.1 European Airport Information	235
11.8.2 Swipe to Change Plates	236
11.8.3 Using Geo-Referenced Procedures	236
11.9 Airport NOTAMs	238
11.10 FBO Information	239
11.10.1 Comments	239
11.10.2 Fuel prices	239
11.11 A/FD CFS and AIP	240
11.12 Airport and Aircraft Flight Tracking.....	241
FLIGHTS.....	242
12.1 About the Design	242
12.2 Runway Analysis	243

CONTENTS

12.3 Takeoff and Landing Performance.....	244
12.4 Alternate Advisor	245
12.5 Flight Files	246
12.5.1 Supported File Types	246
12.5.2 Adding Files	247
12.5.3 Editing Files	247
12.6 Sharing a Flight	248
12.7 Flight Log.....	250
BRIEFING	251
13.1 About the Design	252
13.1.1 Translated Text vs Raw Text	252
13.2 Briefing Sections	253
13.2.1 Adverse Conditions	253
13.2.2 Synopsis	254
13.2.3 Current Weather.....	254
13.2.4 Forecasts	255
13.2.5 Wind Charts	256
13.2.6 NOTAMs.....	258
PACK	259
14.1 Design	259
14.2 Pack for a Flight	261
IMAGERY	263
15.1 About the Design	263
15.2 Selecting a Collection	264
15.2.1 NATIONAL - Featured	264
15.2.2 CONUS WEATHER	265
15.2.3 GRAPHICAL AVIATION FORECASTS	269
15.2.4 Advisories.....	270
15.2.5 ICING	271
15.2.6 Turbulence	274
15.2.7 SATELLITE	275
15.2.8 DOPPLER RADAR	276
15.2.9 PILOT WEATHER REPORTS.....	276
15.3 Viewing an Image	277
15.4 Favorite Images.....	277
15.5 Sharing Images	277
SYNC	278

CONTENTS

16.1 About the Design	278
16.2 Cockpit Sharing	281
ALERTS.....	282
17.1 About The Design	282
17.2 Runway Proximity Advisor	282
17.3 Cabin Altitude Advisor	283
17.4 Terrain/Obstacle Alerts	283
17.5 Traffic Alerts.....	284
17.6 Overheat Alerts.....	284
17.7 TFR Alerts.....	285
17.8 Sink Rate	286
17.9 Runway Final Approach	287
17.10 500' AGL.....	288
17.11 Device Disconnect.....	288
17.12 Destination Weather Frequency	289
17.13 Transition Altitude	290
17.14 New Flight Plan Loaded From Panel.....	290
17.15 Low Battery	290
PLATES	291
18.1 About the Design	291
18.2 Flight Binders	291
18.2.1 Creating Binders	292
18.2.2 Editing Binder Names	293
18.2.3 Binder Structure	293
18.3 Other Binders	296
18.3.1 Managing Plates in Other Binders	297
18.4 Controls	298
18.5 NOTAM Advisor	298
18.6 FBOs on Airport Diagrams	299
18.7 Printing Plates	300
18.8 Ensuring Your Plates Don't Expire	300
18.9 Plates on a Map	301
18.9.1 Displaying a Plate on a Map	302
18.9.2 Changing or Hiding the Plate on a Map	303
18.9.3 Plate Transparency	303
TRACK LOGS	304
19.1 Enabling Track Logging	304

CONTENTS

19.2 Start/Stop Logging.....	304
19.3 Flight Time Instrument.....	305
19.4 Track Log Listings	305
19.5 Graphical Track Log view	306
19.6 Track Log Control Buttons.....	307
19.7 Logbook Entries	308
19.8 Editing a Track Log.....	308
19.9 Track Log Sync.....	309
19.10 Internet Browser Summary.....	310
19.11 Sharing Track Logs.....	310
19.12 Exporting Track Logs to other Apps.....	311
19.13 Importing G1000 Track Logs	311
19.14 Track Logs on ForeFlight Web	313
DOCUMENTS	314
20.1 About the Design	314
20.2 Drives and Binders	315
20.2.1 Folder Structure	316
20.3 Downloading and Opening a Document.....	317
20.4 Automatic Document Updates	317
20.5 Creating and Managing Binders.....	318
20.5.1 Organizing Binders	318
20.6 Deleting a Document.....	319
20.7 Cloud Document Syncing.....	320
20.7.1 Cloud Document Folder Structure	321
20.7.2 Automatic Downloads	321
20.7.3 Downloading Individual Documents.....	322
20.7.4 Missing Drive	322
20.8 Importing Documents	323
20.8.1 Importing Documents from iTunes or other Apps.....	324
20.8.2 Renaming an Imported Document.....	325
20.9 Viewing a Document.....	326
20.10 Searching for a Document.....	327
20.10.1 Searching in a Document.....	327
20.10.2 Bookmarks	327
20.11 Ensuring Your Documents Don't Expire.....	328
ANNOTATIONS	329
21.1 About the Design	329

CONTENTS

21.2 Annotation Types	330
21.2.1 iPhone Annotations	330
21.3 Adding and Editing Annotations	331
21.3.1 iPad	331
21.3.2 iPhone	331
21.4 Selecting Multiple Annotations	337
21.5 Copying and Pasting an Annotation	337
21.6 Deleting Annotations	337
SCRATCHPADS	338
22.1 ScratchPad Templates	338
22.2 Change Pen Size, Color, Opacity	339
22.2.1 Undo/Redo/Eraser	339
22.2.2 Clear ScratchPad Content	340
22.2.3 Edit a ScratchPad Name	340
22.3 Reposition ScratchPad Thumbnails	340
22.4 Send a ScratchPad	341
22.5 Delete a ScratchPad	341
CUSTOM CONTENT	342
23.1 Creating Custom Content	343
23.2 User Waypoints	343
23.2.1 User Waypoint Fields	343
23.2.2 Creating User Waypoints - Maps View	344
23.2.3 Creating User Waypoints - Map Search	345
23.2.4 Creating User Waypoints - Custom Content View	346
23.3 Multiple User Waypoints (Bulk Import)	347
23.4 Creating CSV Files	347
23.4.1 CSV File Field Formatting	348
23.4.2 Naming User Waypoint CSV Files	348
23.5 KML User Waypoints	349
23.5.1 Creating KML User Waypoint Files	349
23.6 Importing User Waypoints	350
23.6.1 Importing a CSV or KML/KMZ file	351
23.7 Custom Map Layers	352
23.7.1 Creating Custom Map Layers	352
23.7.2 Supported Data Types	353
23.7.3 Waypoints	353
23.7.4 Label and Icon - Style and Color	357
23.7.5 Lines	359

CONTENTS

23.7.6 Shapes	360
23.8 Importing Custom Maps	361
23.9 Custom Charts	362
23.10 Custom Plates (BYOP).....	363
23.10.1 BYOP Naming Convention.....	363
23.10.2 Importing Plates (BYOP).....	365
23.11 Content Packs	366
23.11.1 Package Contents.....	367
23.11.2 Creating Content Packs	367
23.11.3 Adding content to subfolders	368
23.11.4 Manifest.....	368
23.11.5 NavData	370
23.11.6 Layers.....	372
23.11.7 Importing Content Packs	372
23.11.8 Content Pack Cloud Drive Integration	373
FOREFLIGHT CONNECT	375
24.1 Devices.....	375
24.1.1 Location Disabled / Troubleshooting GPS position issues.....	375
24.2 Sentry	376
24.3 Stratus	376
24.3.1 Stratus Status Information	376
24.3.2 Stratus ESG (Stratus 1S/2/2S/3 Only)	379
24.3.3 Stratus Replay	380
24.3.4 Stratus Flight Data Recorder	380
24.3.5 Flight Data Recorder	381
24.3.6 Firmware Update	382
24.4 Garmin Connex	383
24.4.1 Pairing with Flight Stream	383
24.4.2 Using Connex	383
24.4.3 Flight Plan Transfer.....	385
24.4.4 Calibrating Flight Stream 210 AHRS.....	387
24.4.5 Garmin GTX 345.....	388
24.4.6 Calibrating the GTX 345 AHRS.....	390
24.4.7 Garmin GDL 39, GDL 50, GDL 51 GDL 52	391
24.5 XM Weather Data	395
24.5.1 XM Freezing Level	397
24.5.2 XM Surface Visibility	398
24.6 L-3 Lynx.....	399
24.6.1 Connecting to Lynx	399

CONTENTS

24.6.2 Using Lynx	399
24.7 Avidyne IFD 550/540/440	401
24.7.1 Connecting to IFD 550/540/440	401
24.7.2 Flight Plan Transfer	403
24.8 uAvionix echoUAT & SkyEcho	405
24.8.1 Connecting to echoUAT & SkyEcho	405
24.8.2 Using echoUAT & SkyEcho	405
24.9 Dynon SkyView	407
24.9.1 Configuring SkyView Wi-Fi	407
24.9.2 Connecting ForeFlight and SkyView	407
24.9.3 Flight Plan Transfer	408
24.10 FreeFlight ADS-B	411
24.10.1 Connecting ForeFlight and FreeFlight RANGR	411
24.11 SiriusXM SXAR1	413
24.11.1 Connecting ForeFlight to the SXAR1	413
24.11.2 XM Weather Data	414
24.11.3 Bluetooth audio	416
24.11.4 SXAR1 Audio Controls	418
24.12 Satcom Direct Router (SDR) or SDR Gateway	420
24.12.1 Connecting to Satcom Direct Router or SDR Gateway	420
24.12.2 Using Satcom Direct Router or SDR Gateway	420
24.13 DAC International GDC64	422
24.14 Pilatus Honeywell Apex & Aspen Connected Gateway	423
24.15 Baron Mobile Link/WXWorx	426
24.15.1 Available Weather	426
24.16 uAvionix SkyEcho 2 FLARM traffic (Europe-only)	428
24.17 FLARM via NMEA (Europe-only)	429
24.18 Other Third-Party Devices (GDL90)	429
24.19 ADS-B Weather Products	429
24.19.1 ADS-B Information	431
24.20 Animated ADS-B Radar	432
24.21 ADS-B Tower Location on Map	433
24.22 ADS-B Traffic	434
24.22.1 Traffic Access in ForeFlight Mobile	434
24.22.2 Traffic Symbols	435
24.22.3 Hide Distant Traffic Setting	438
24.22.4 Traffic in Synthetic Vision	438
24.22.5 Ownship ADS-B Out Information	439
24.22.6 Traffic Alerts	439

CONTENTS

SUPPLEMENTAL GUIDES441

 Checklist Guide441

 Logbook Guide442

 Weight & Balance Guide443

 Passenger Guide.....444

 Filing Guide445

CHANGE HISTORY446

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
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
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
DAT	Data
DC	District of Columbia

DEFINITIONS

Abbreviation	Definition
DEST	Destination
DLE	Delay
DME	Distance Measuring Equipment
DOF	Date of Flight
DVFR	Defense Visual Flight Rules
EET	Estimated Elapsed Time
ELT	Emergency Locator Transmitter
EOBT	Estimated Off-Block Time
ES	Extended Squitter
ETD	Estimated Time of Departure
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
GNSS	Global Navigation Satellite System
GPH	Gallons Per Hour
GPS	Global Positioning System
GSL	Geometric altitude relative to Sea Level

DEFINITIONS

Abbreviation	Definition
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
MFB	Military Flight Bag
MHz	Megahertz
MLS	Microwave Landing System
MNPS	Minimum Navigation Performance Specifications
MTSAT	Multi-functional Satellite Augmentation System

DEFINITIONS

Abbreviation	Definition
NAV	Navigation
NM	Nautical Miles
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
RTF	Radiotelephone
RVR	Runway Visual Range
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

DEFINITIONS

Abbreviation	Definition
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 postflight 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 that can install the latest Apple 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 guide is divided into sections based on when you will likely use a feature. The guide sections are displayed as tabs on the right side of the page.

Complete guides for the Logbook, Checklist, Weight & Balance, Search & Rescue, Legends, and Filing features 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](http://support.apple.com) 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 and Dispatch are available as per-tail upgrades at www.foreflight.com/buy. Features included with each plan are depicted below with a checkmark.

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			✓		✓
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	✓	✓	✓	✓	✓

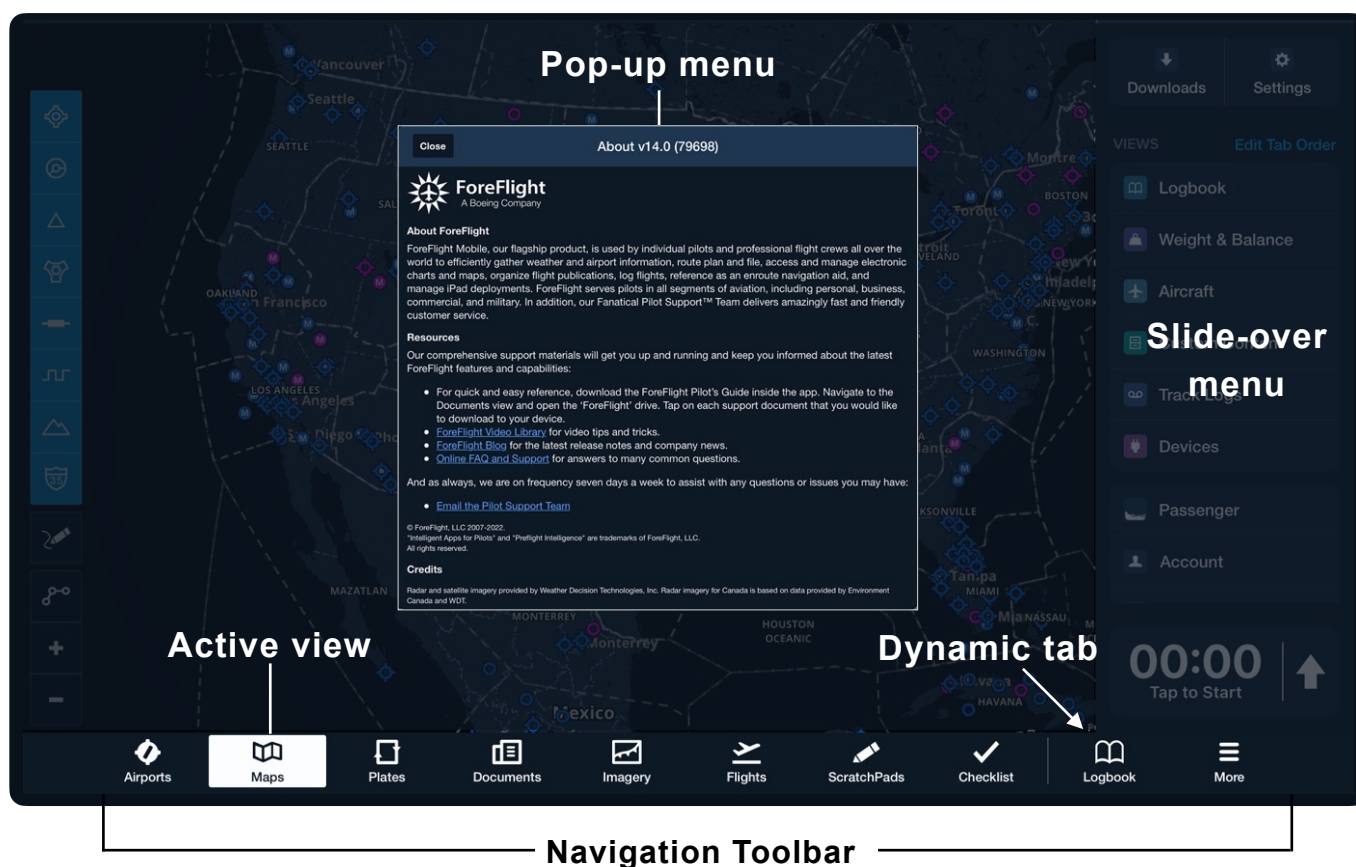
DESIGN

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). This functionality is described below.



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.

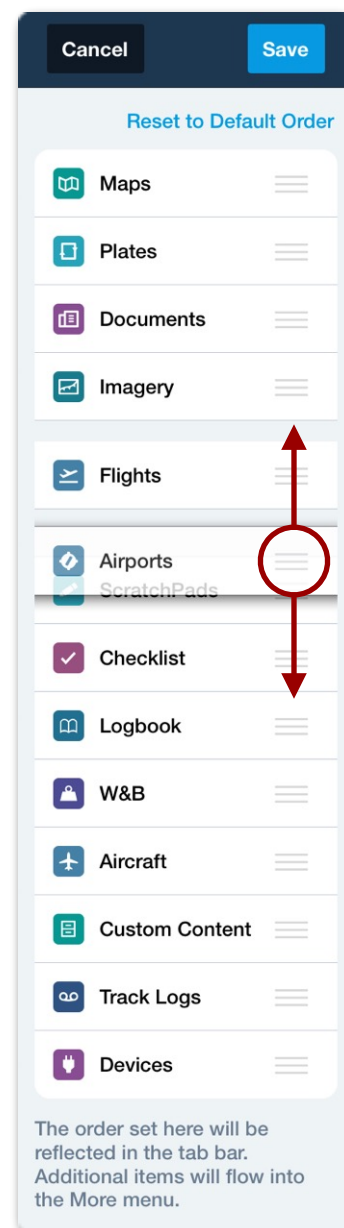
1.1.3 Customizing Tab Order

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

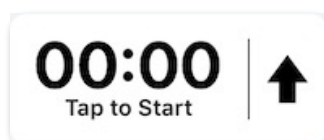
The tab to the left of the More is dynamic and will change as you select different items from the More menu. The dynamic tab allows the last selected item, not otherwise displayed in the navigation toolbar, to be displayed for quick access.

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**.

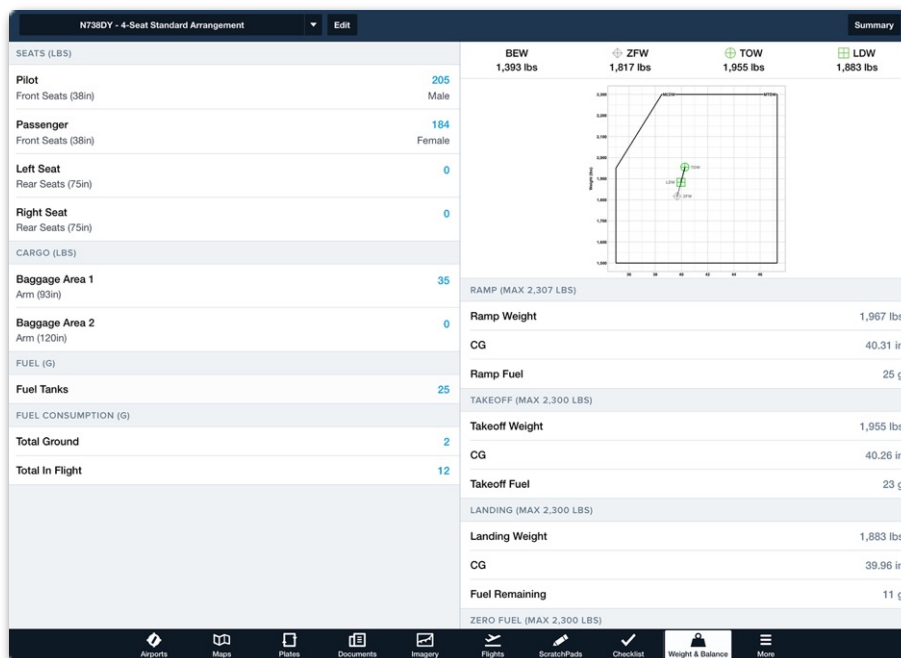


Timer

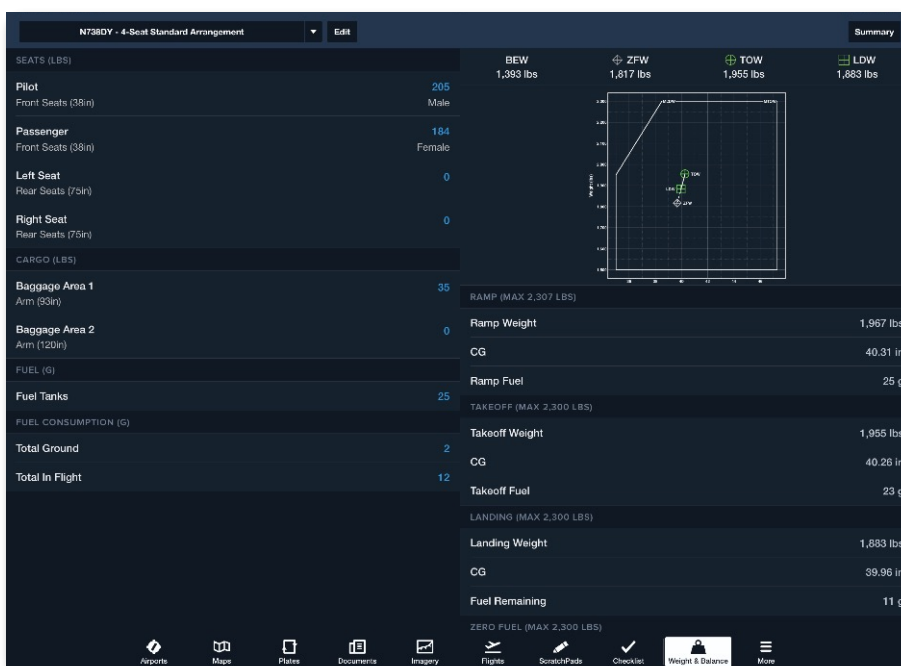
1. DESIGN

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 > Accounts** to view or edit the following information.

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

Close

Account

YOUR INFORMATION

Name

Parker Pilot

Mobile Phone

512-555-5555

Email

parker.pilot@foreflight.com

Change Email

Change Password

CURRENT SUBSCRIPTION

ForeFlight Performance Plus USA

Expires: Feb 17, 2023

ACCOUNT SETTINGS

Notifications

Push Notification Settings

>

ForeFlight Labs

A collection of cutting-edge features that need your feedback! When activated here they will be available to test out right away.

>

Permanently Delete Account

Sign Out on This Device

ForeFlight Mobile Accounts View

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 Managing Devices

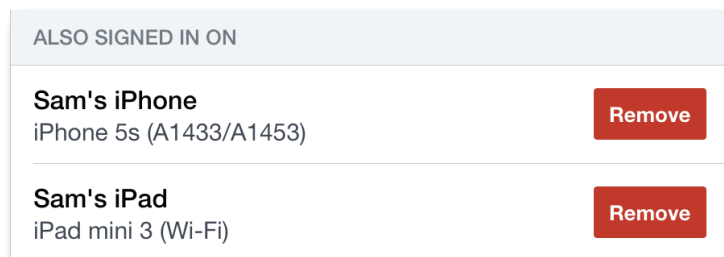
You must sign in to ForeFlight Mobile to manage devices. To sign in to your account, tap **More** > **Account** > **Sign In** and enter your email address (username) and password. If you forgot your password, enter the email address associated with your account and tap **Forgot Password**. A password 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**.

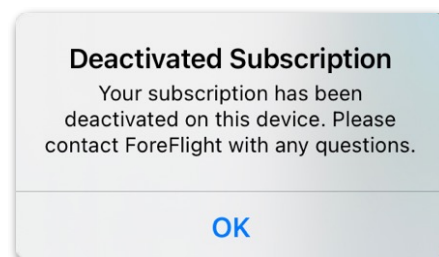
2. ACCOUNTS

2.2.1 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.

2.3 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.

2.4 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.

2.4.1 Taxi Routes

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

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.

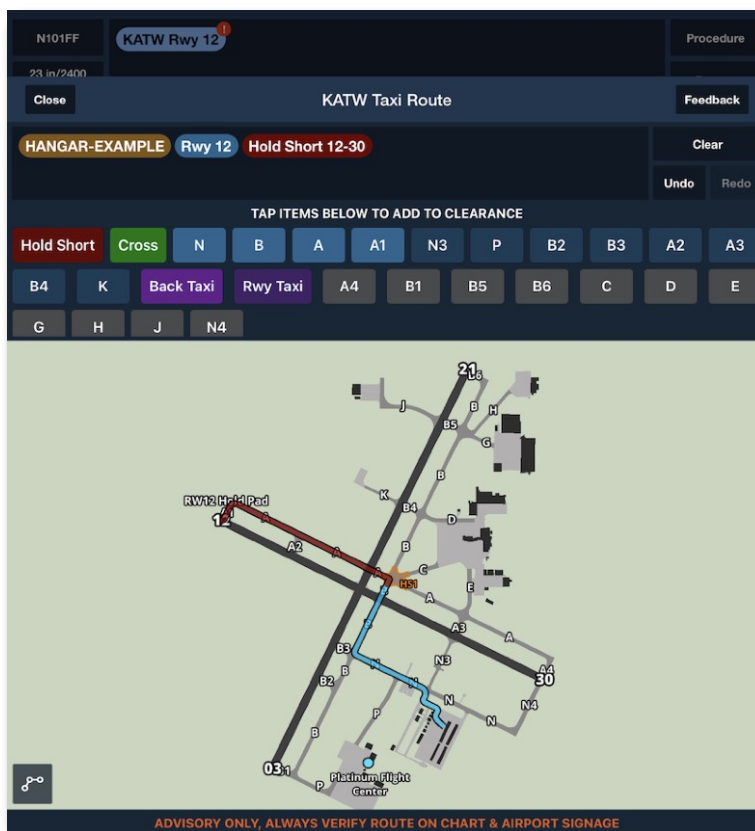
2. ACCOUNTS

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.



Taxi Routes

2.4.2 Enhanced Weight & Balance

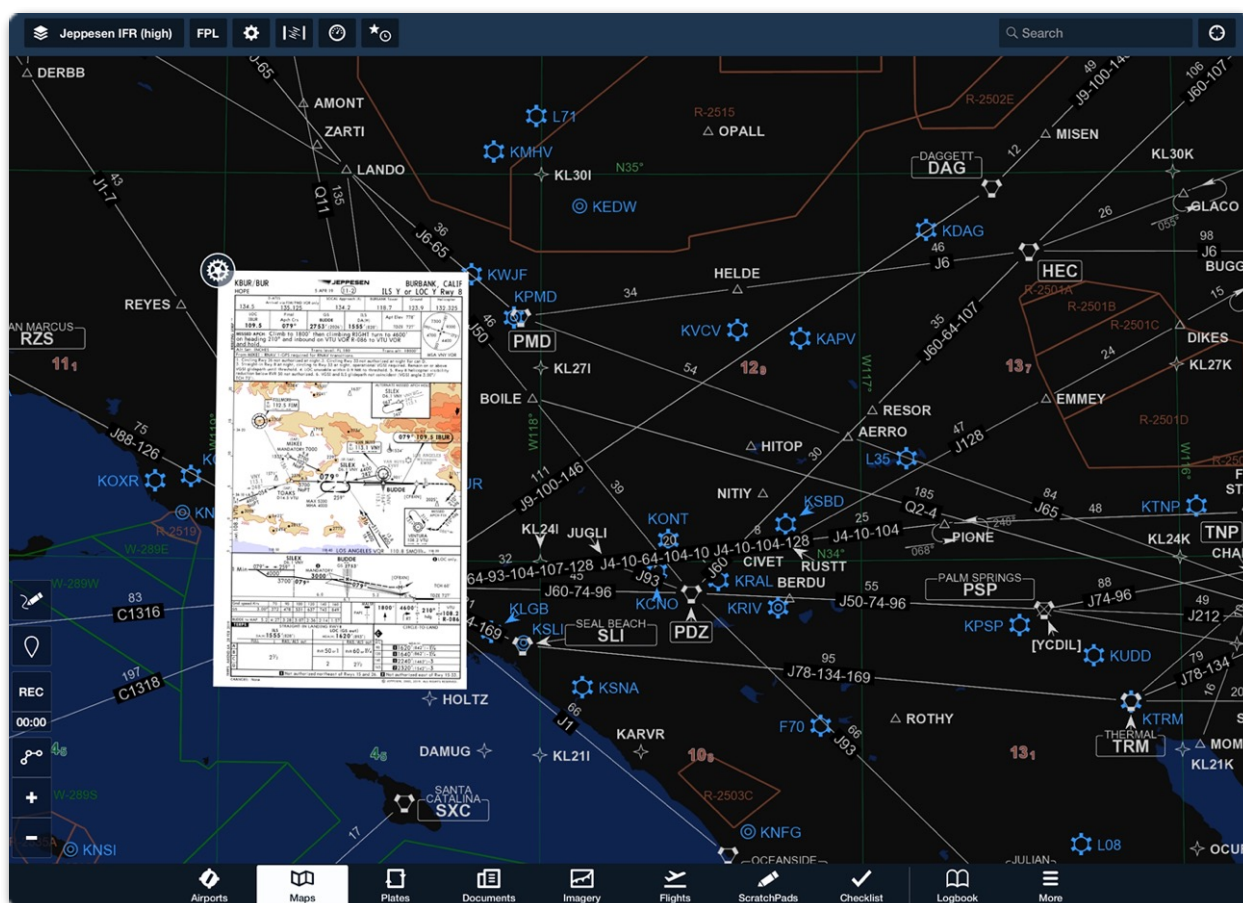
Enhanced Weight & Balance features are available for all accounts beginning with ForeFlight Mobile version 14.2. The improved features are enabled by selecting **More > Accounts > ForeFlight Labs**.

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

JEPPESSEN

View Jeppesen terminal and en route charts in ForeFlight Mobile by linking an existing electronic Jeppesen chart subscription. If you don't have an existing Jeppesen account, you can add Jeppesen charts to your ForeFlight subscription with an online purchase at www.foreflight.com/buy.

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

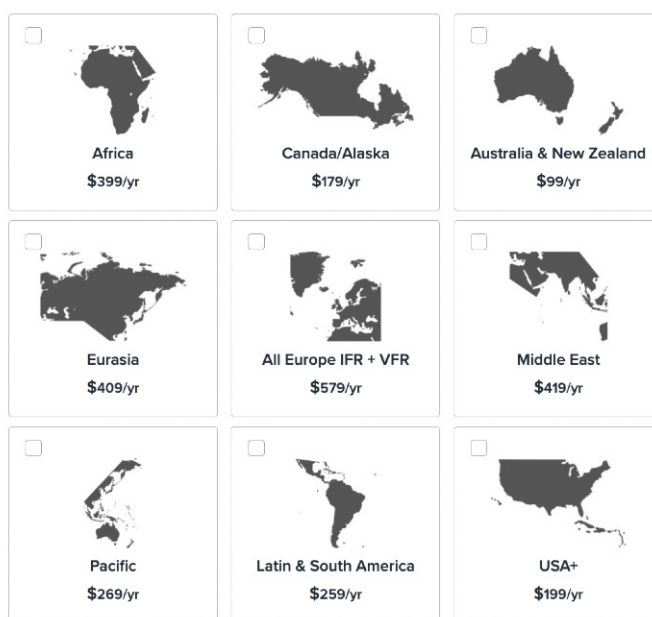
ForeFlight offers ten Jeppesen regions for purchase. Customers with individual ForeFlight accounts can purchase coverage exclusively at www.foreflight.com/buy.

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 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

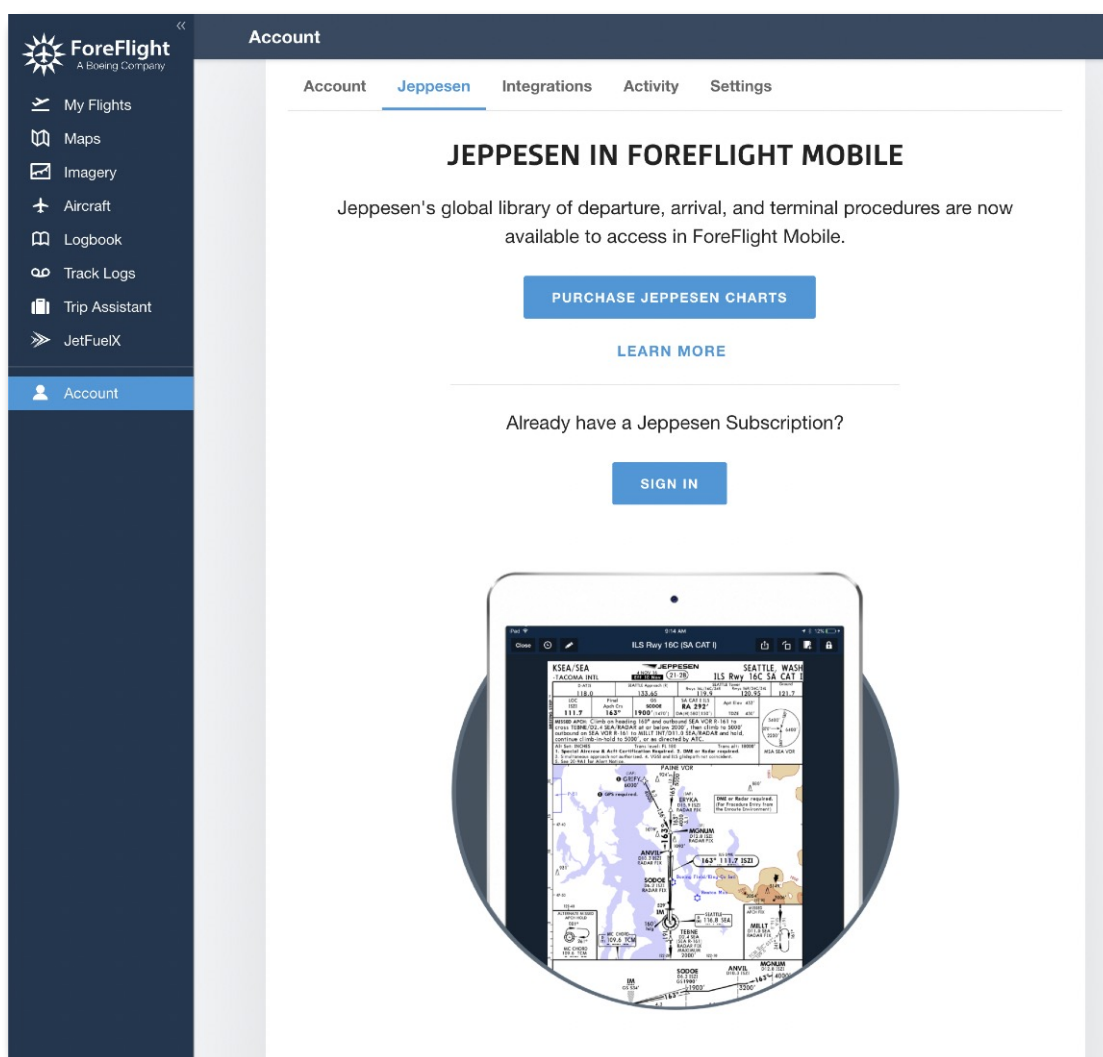
3. JEPPESEN

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

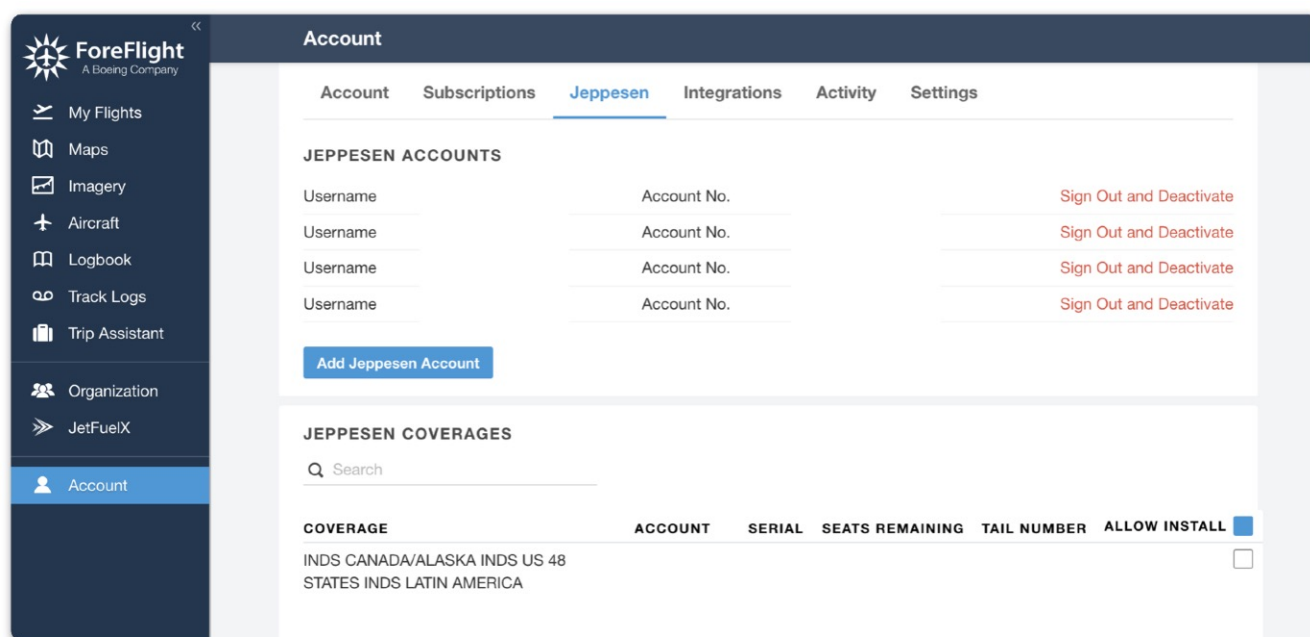
3.3 Multiple Jeppesen Accounts

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 - JEPVIEW 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.

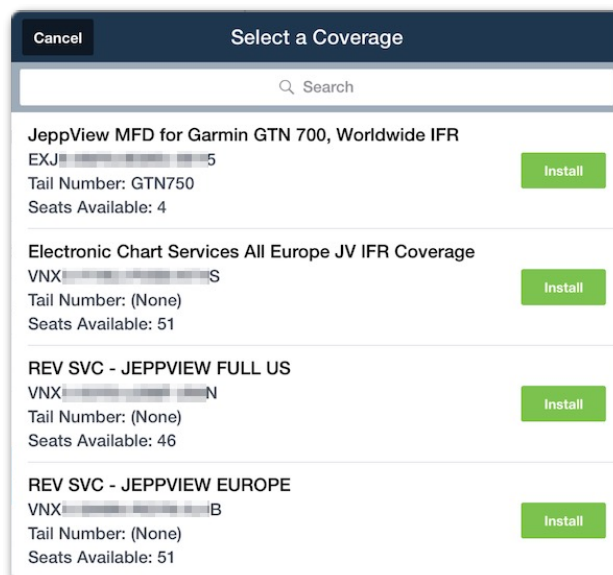
3. JEPPESEN

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

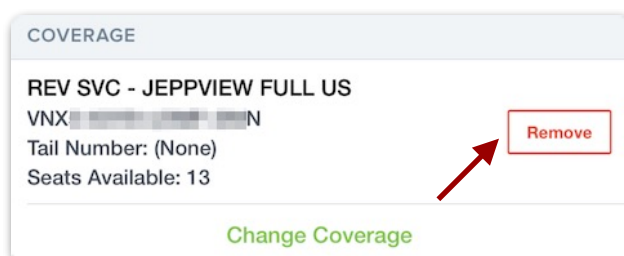
NOTE: Only one linked Jeppesen coverage can be installed at a time. It is not possible to *install* multiple linked coverages.

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.

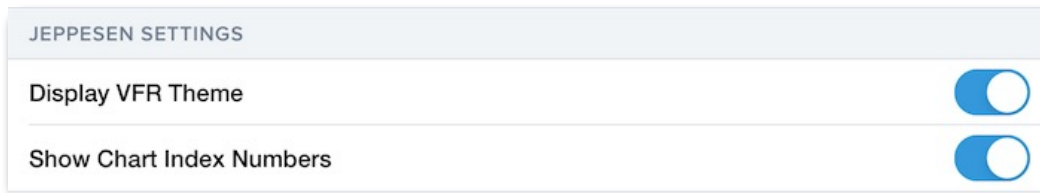


Jeppesen Coverage Remove button

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.

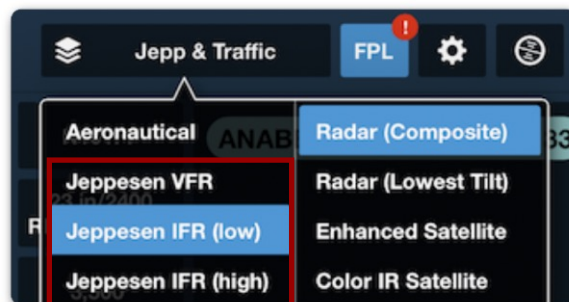
- Tapping **Show Airport Diagram** in the FPL Route Editor.
- Adding an approach using Procedure Advisor.
- Displaying an airport's taxi diagram automatically upon landing.

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

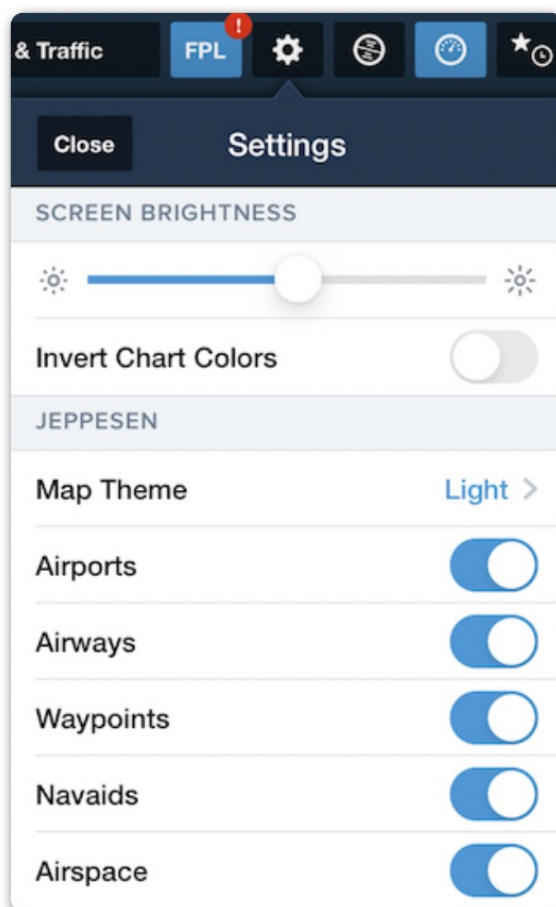
NOTE: Jeppesen en route charts are not available when using the following devices: iPad Mini 1, iPad 2, iPad 3, and iPhone 5 and earlier.

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.

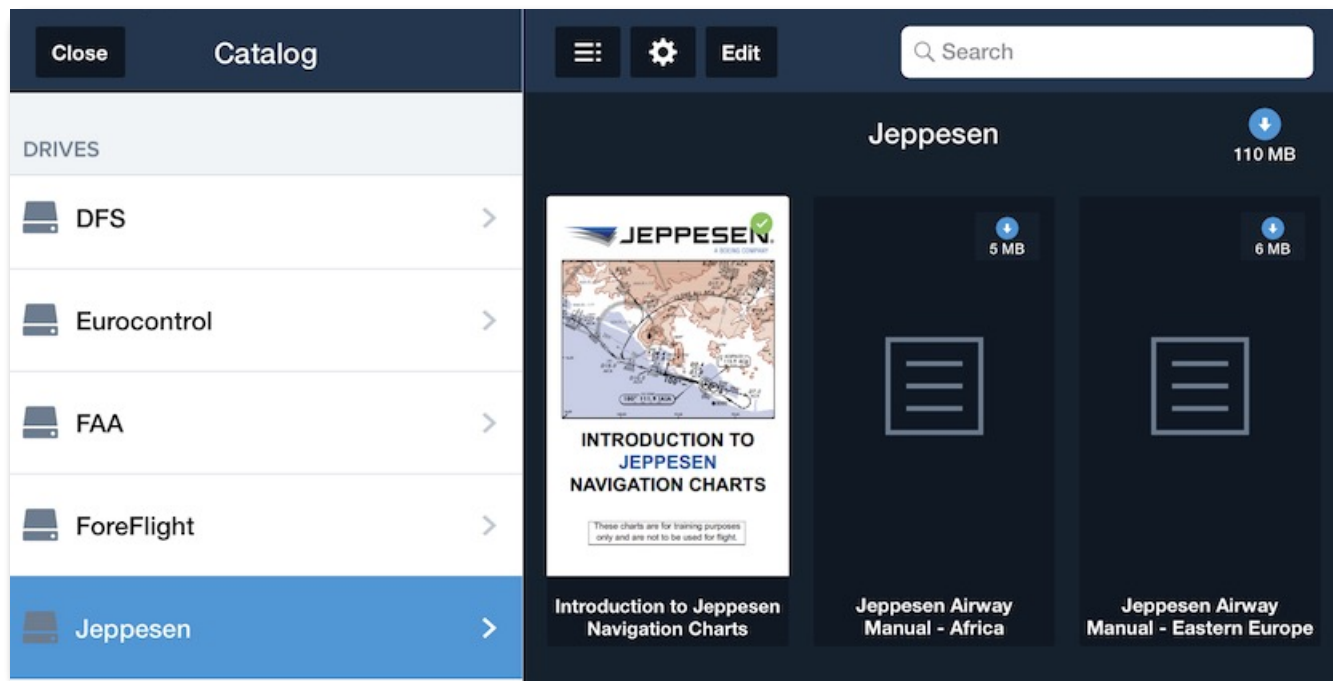
	Jeppesen VFR	Jeppesen IFR (low)	Jeppesen IFR (high)
Map Theme	Choose between a Light and Dark map theme. The Dark Theme inverts black and white while preserving other colors.		
Airports	Show or hide airport markers and labels, including private airports and helipads. Zooming into large airports will 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.

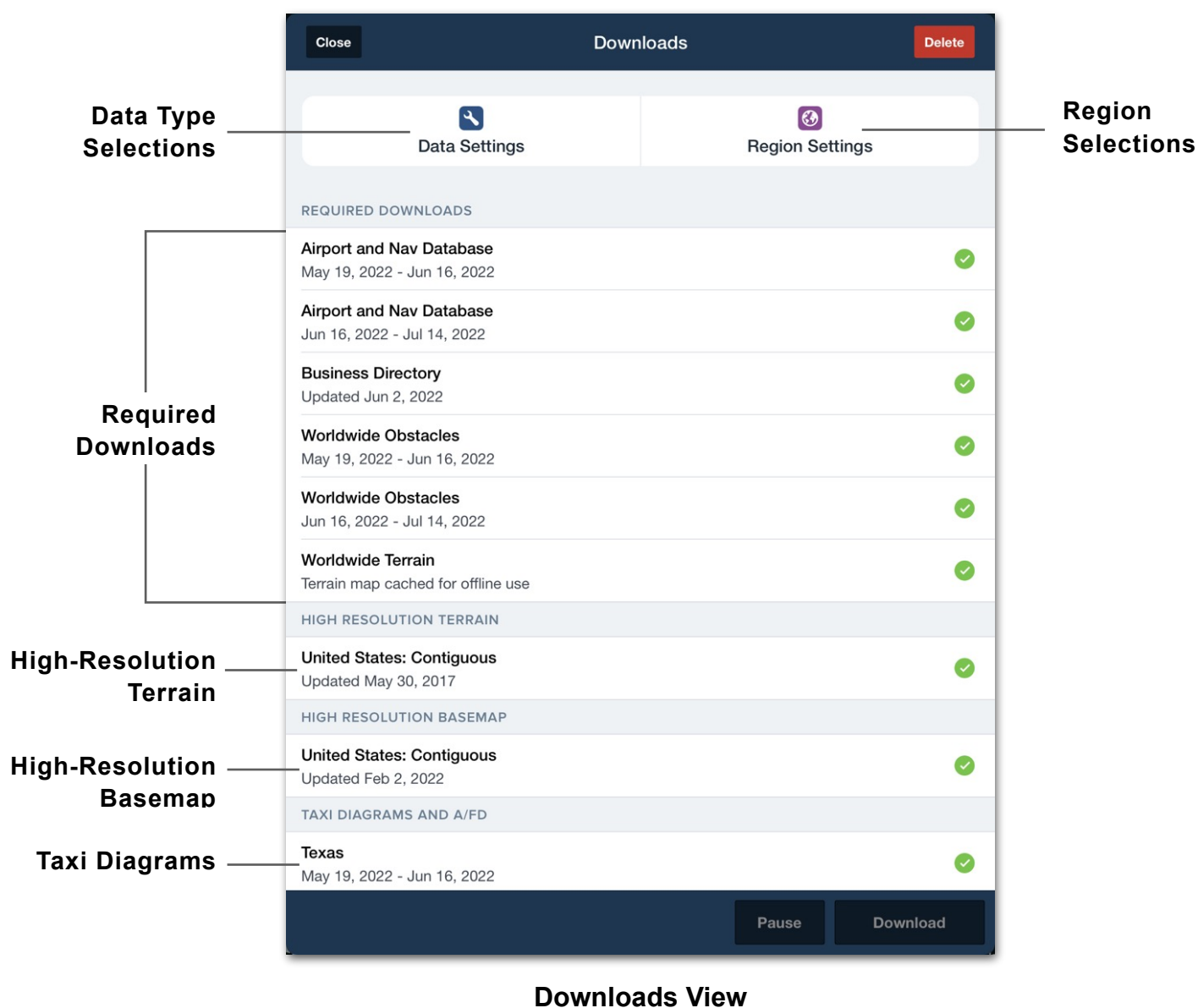


Jeppesen Documents

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.



4. DOWNLOADS

4.1 Download Selections

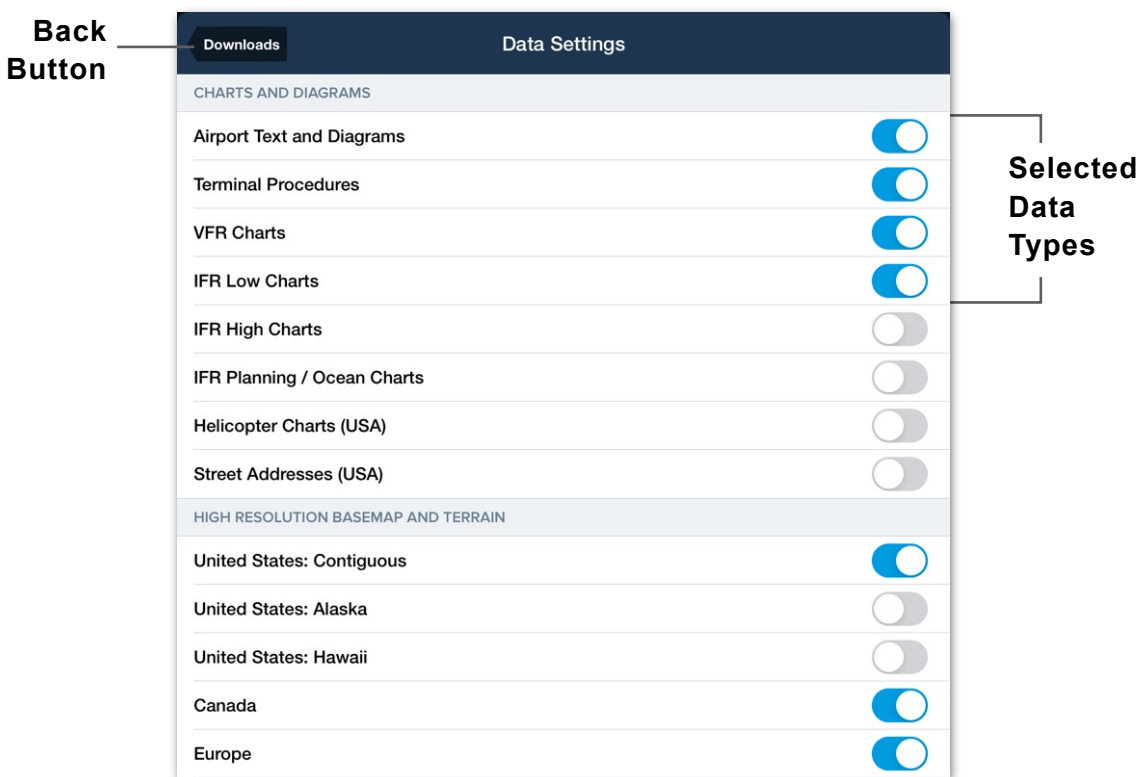
All charts, terminal procedures, and high-resolution download selections are optional. Download selections are not synced between devices and must be made on each device signed into your account. Download selections are divided into two sections, data settings, and region settings.

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, and EuroControl 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, 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).

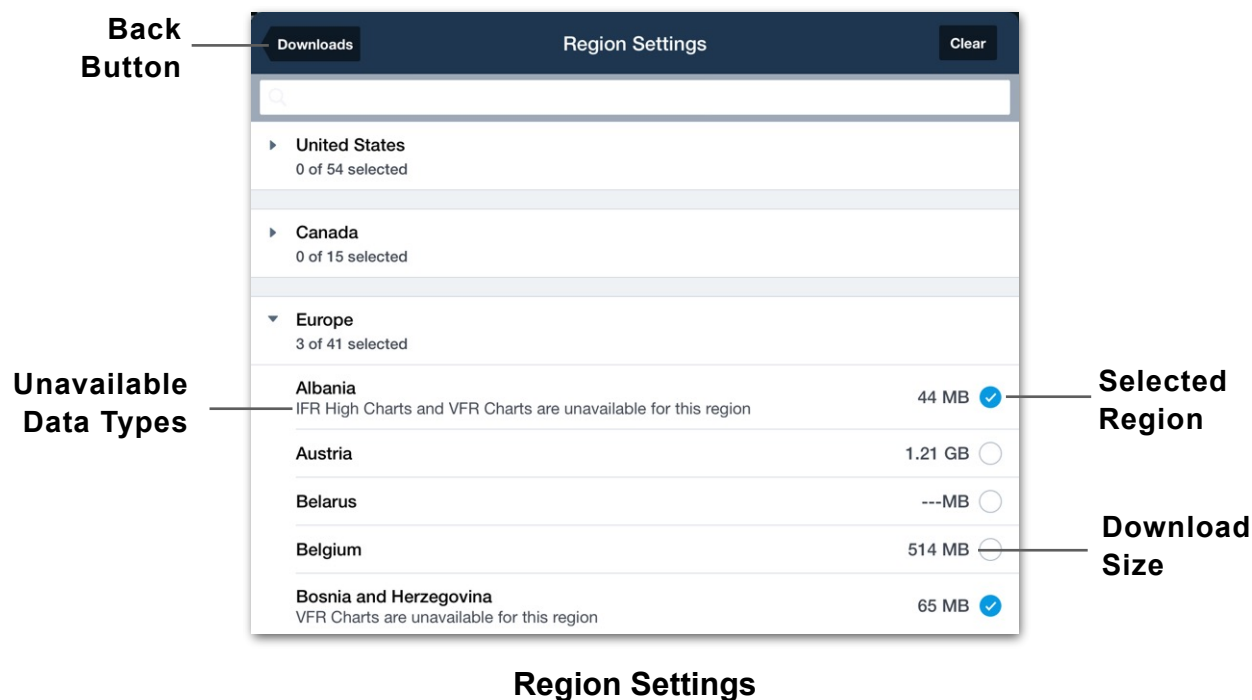
4. DOWNLOADS

4.1.2 Region Settings

Region settings are divided into four sections, United States, Canada, Europe, 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., 44 MB) is listed to the right of the state, province, or country. Download size is dynamic and varies based on the selected data types 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

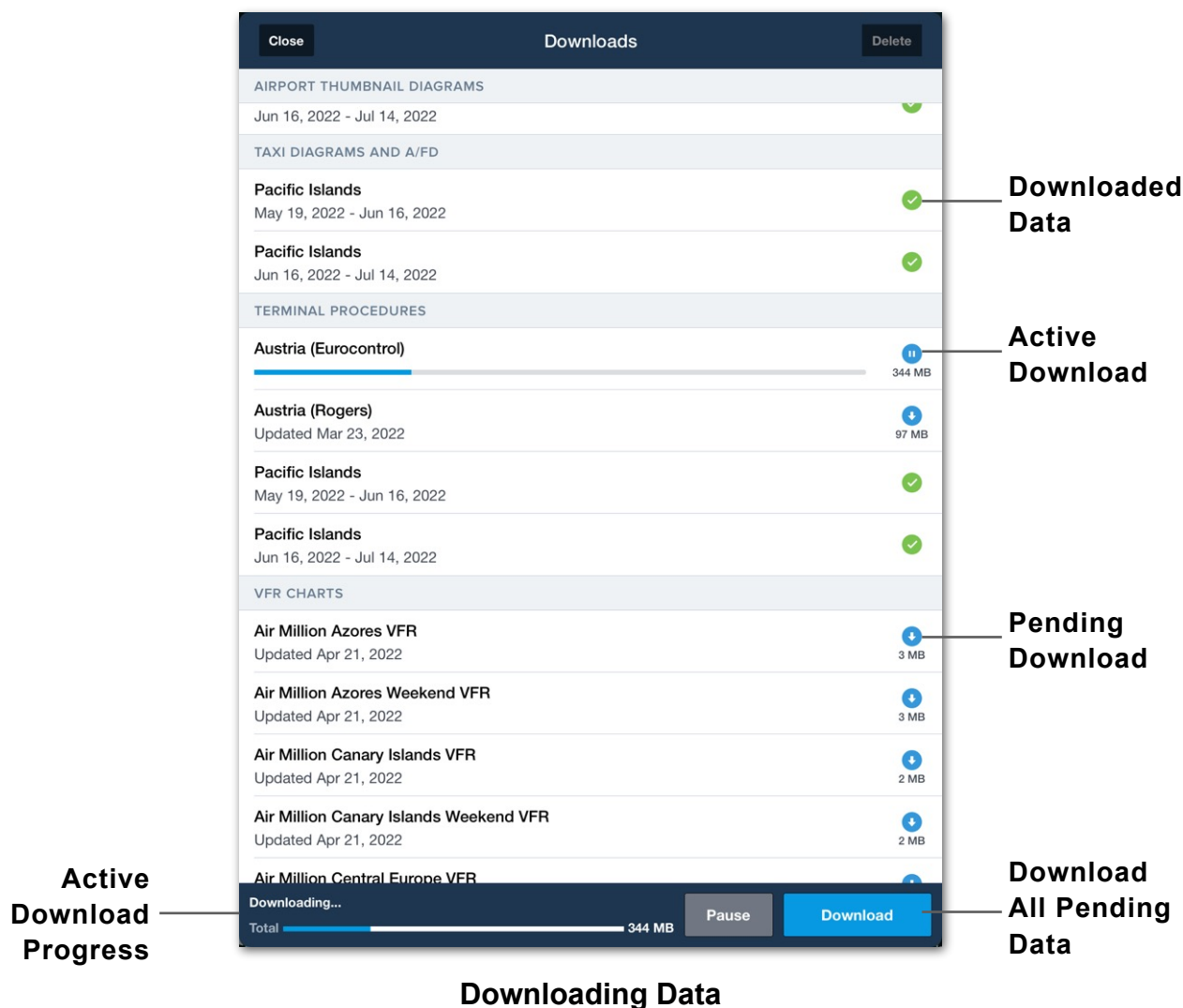
Stop all downloads anytime by tapping the **Pause** button at the bottom of the Downloads view. Stop individual downloads by tapping the pause button associated with the download. Downloads will continue where they left off when resumed.

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

If data has not been downloaded to your device, ForeFlight will display the data over the air using your internet connection. Cellular internet connections are often unreliable when you fly, and your charts may be unavailable or appear blurry.

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 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 change-over date. ForeFlight automatically displays the new data at the change-over date and removes the expired data from your device.

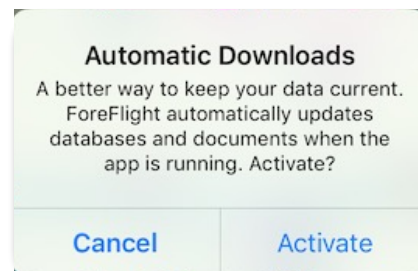
4. DOWNLOADS

4.2.2 Automatic Downloads

ForeFlight can automatically download new data when ForeFlight is open and connected to the 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**.



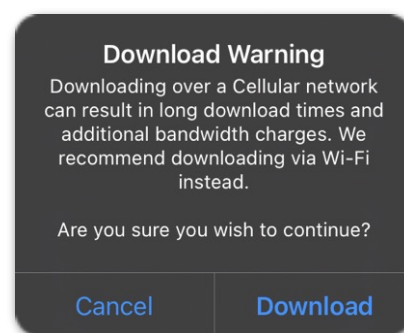
Automatic Download pop-up

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.

4.3 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.

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.



Delete All Downloads

Delete Expired

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.

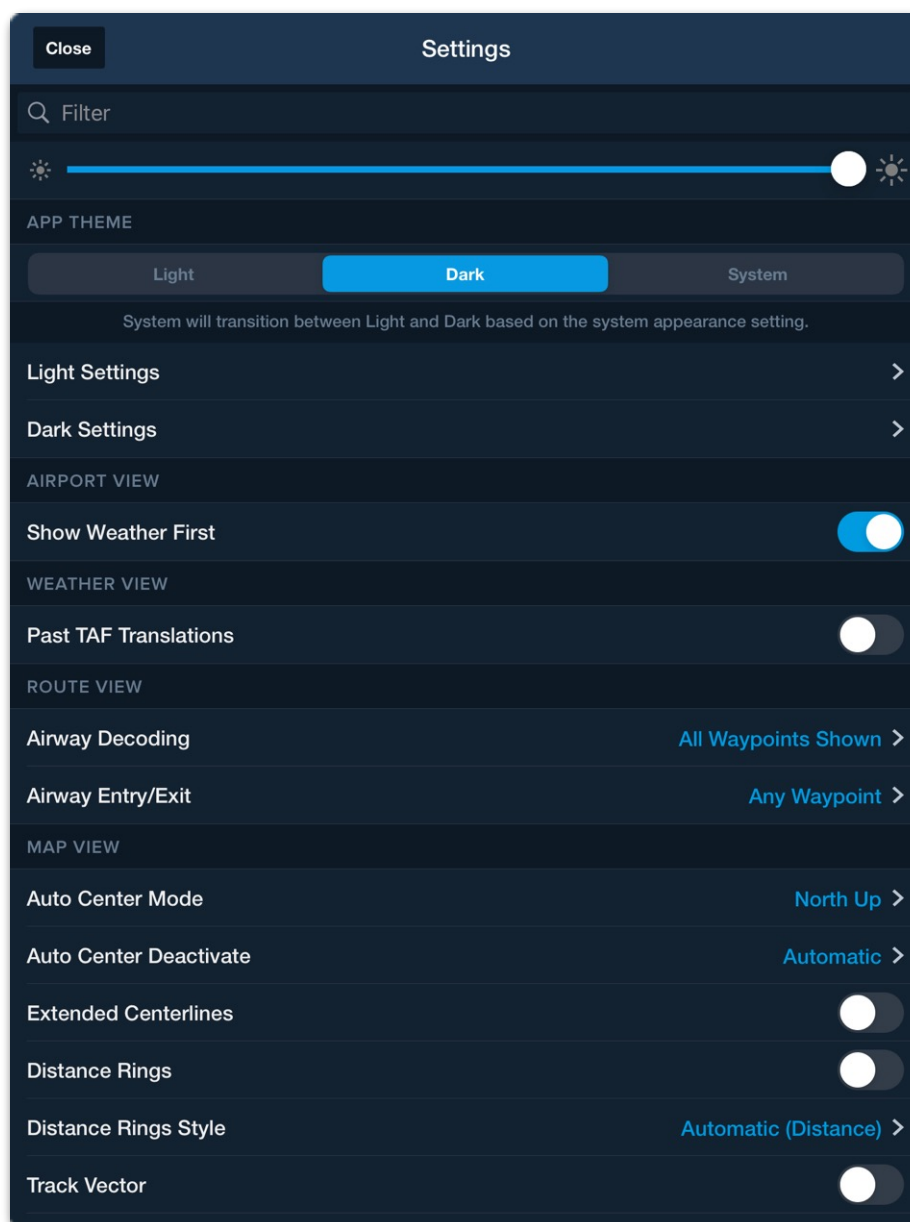
Troubleshooting tips:

- 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**.

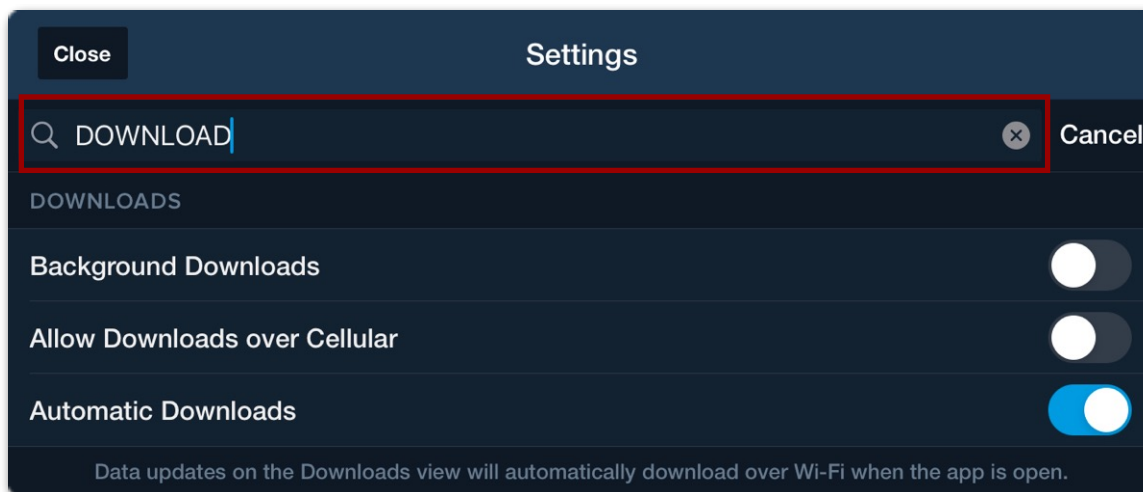


Main Settings Menu

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

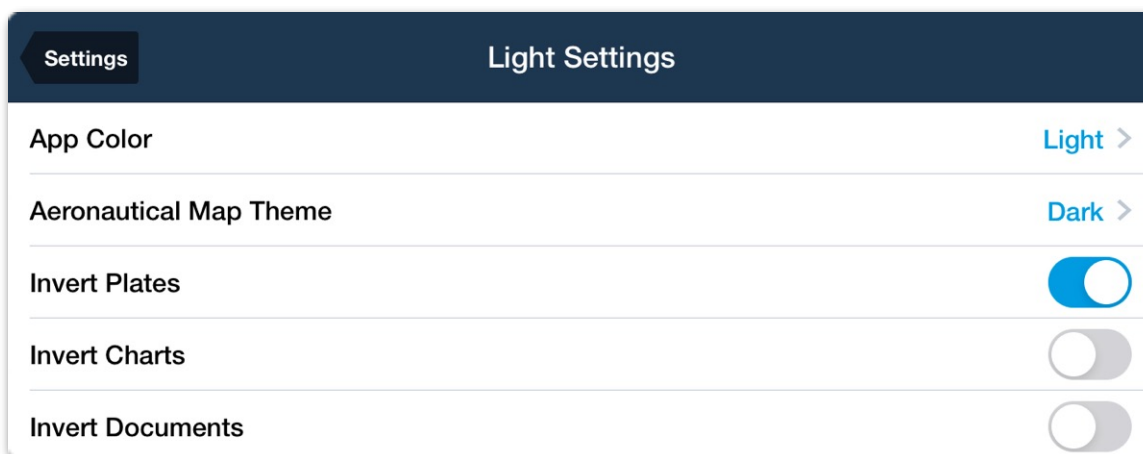
5. SETTINGS

5.3.1 Light and Dark Settings

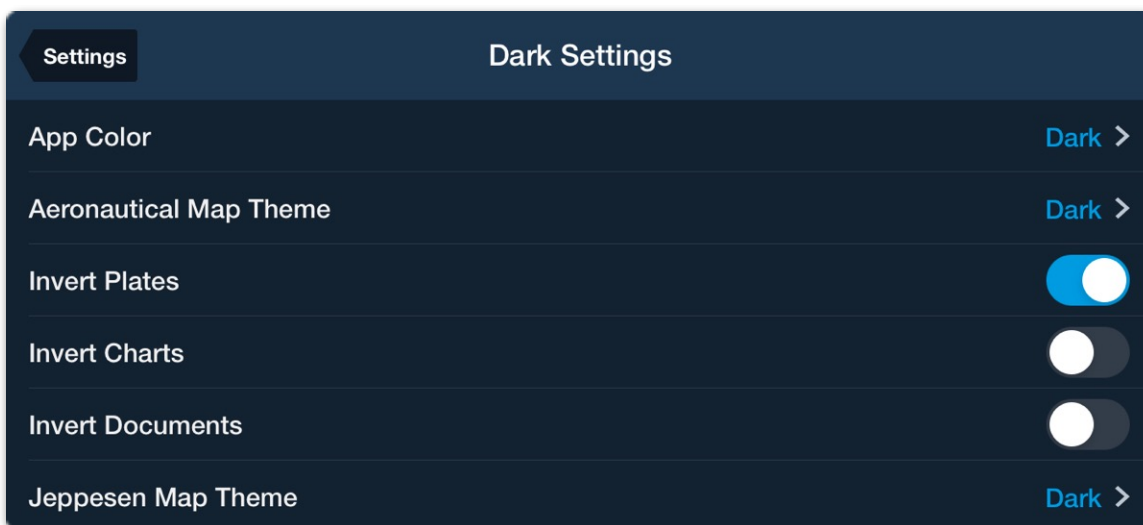
Light and dark settings specify the *App Color*, *Aeronautical Map Theme*, and whether to invert the color of Plates, Charts, and Documents.

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



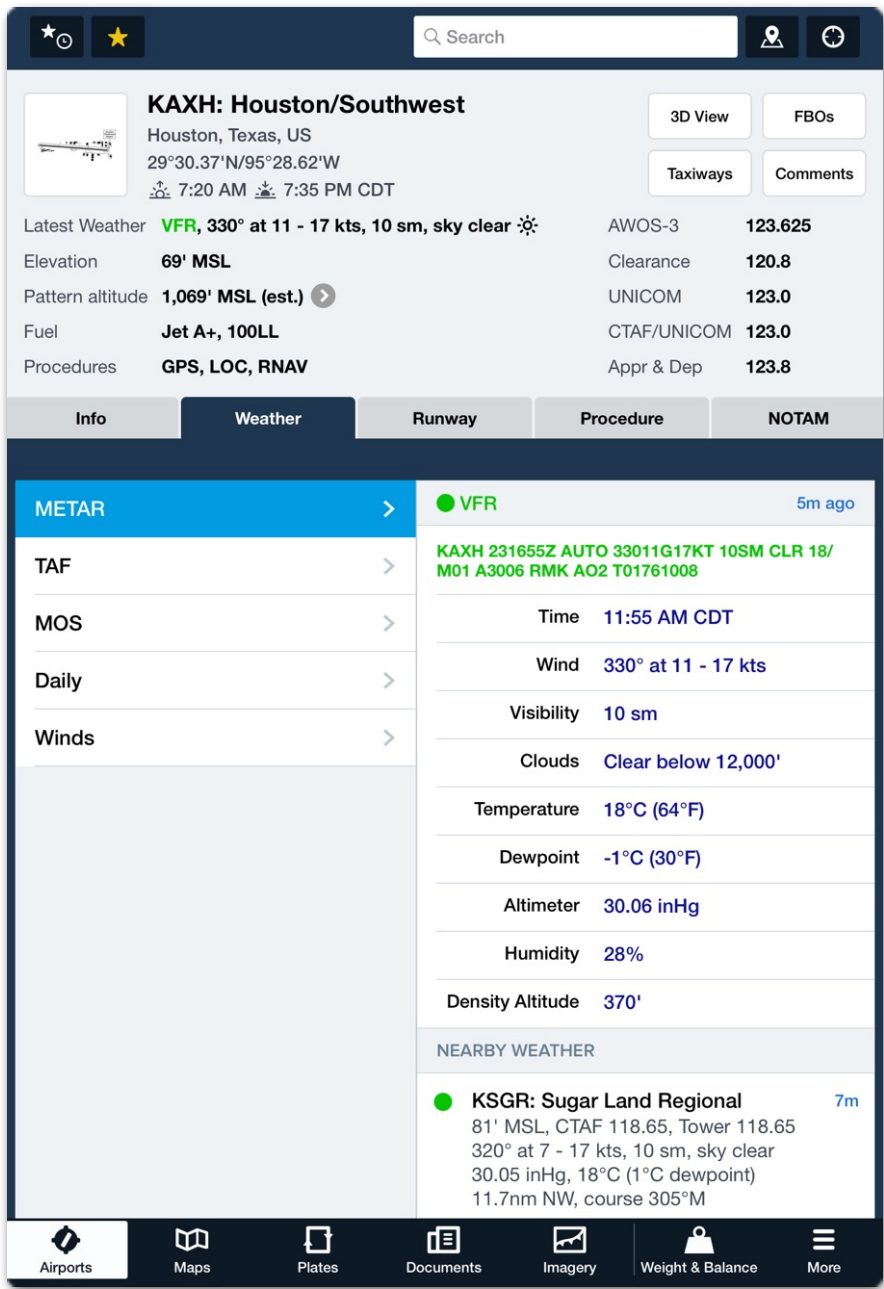
Dark Settings

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.



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

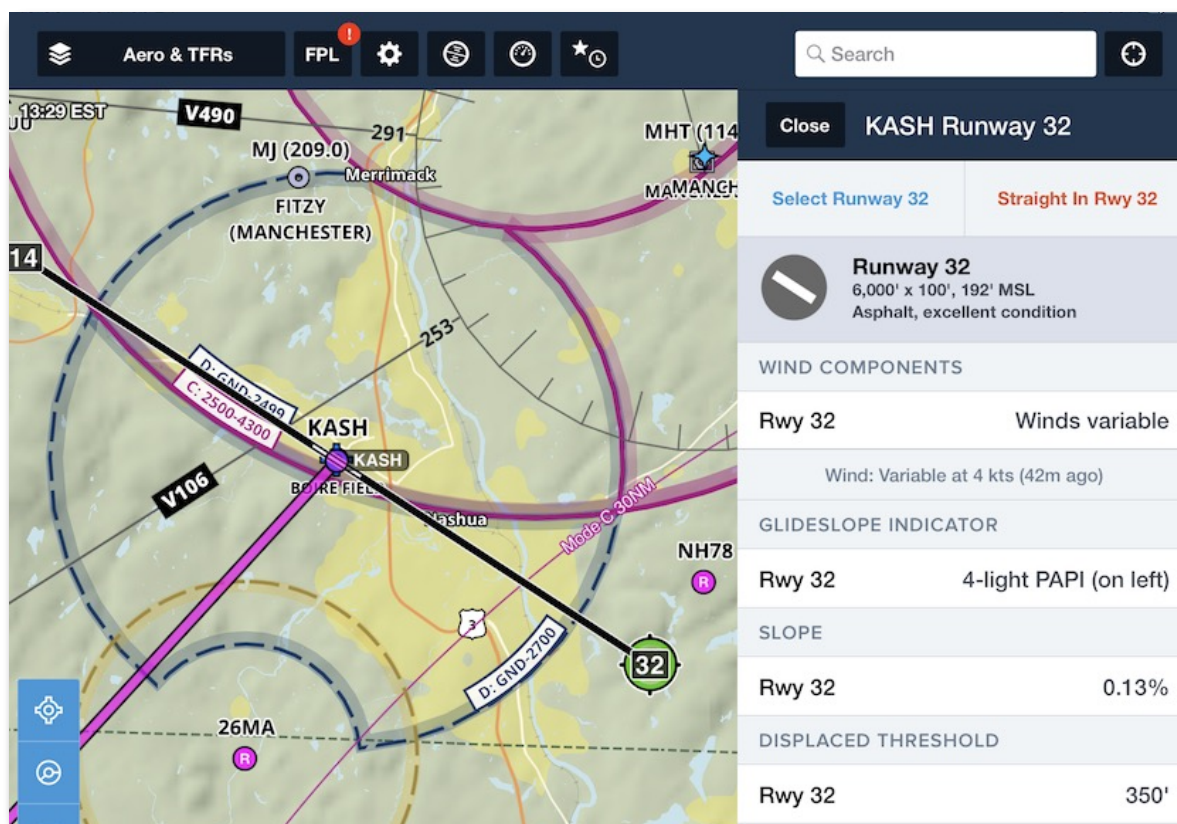
Auto Center Deactivate controls if the map can be panned without first *manually* disabling auto center. The **Automatic** setting disables auto center when the map is panned. The **Manual** setting requires that you first tap the auto-center button on the map to deactivate it to be able to pan.

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.



Extended Centerlines

5. SETTINGS

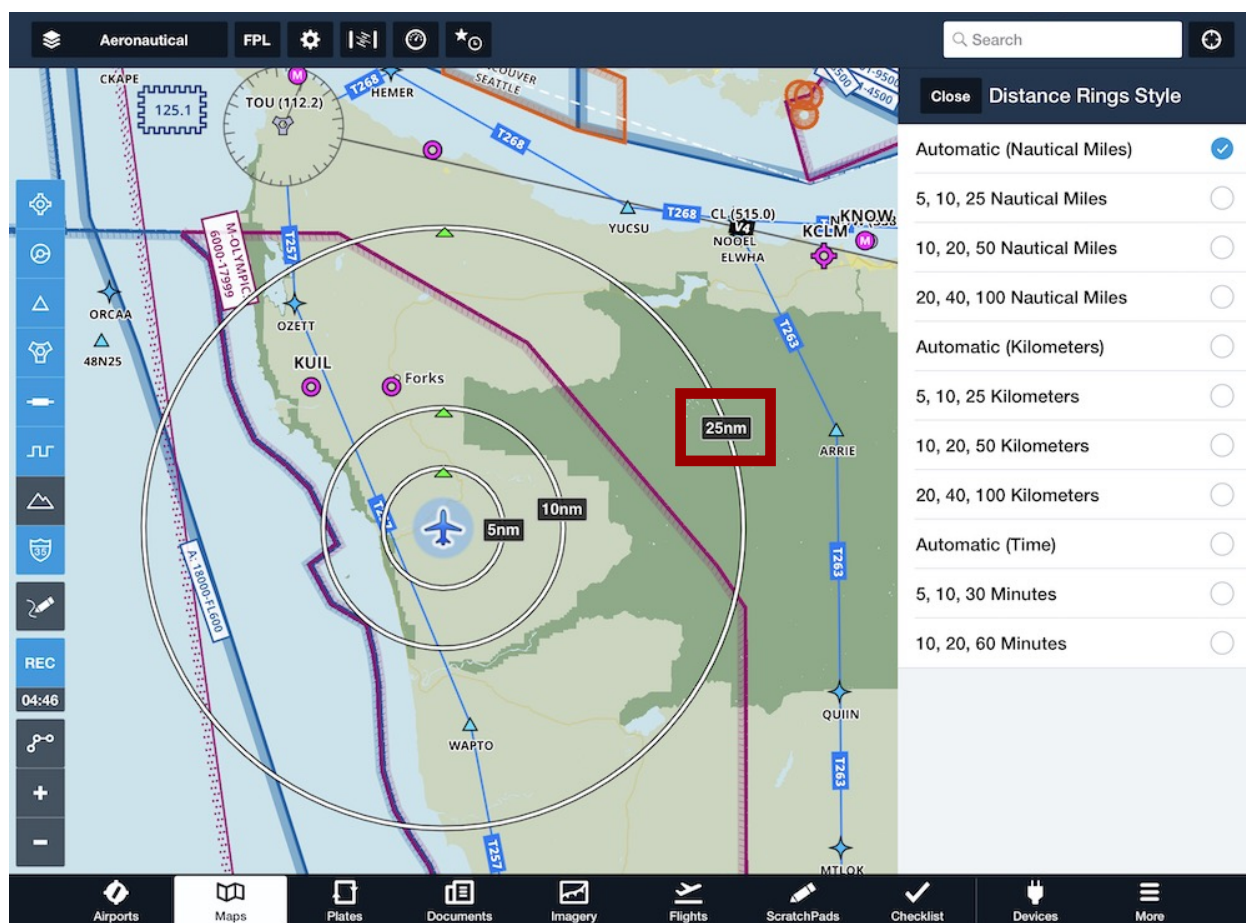
5.7.3 Distance Rings

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

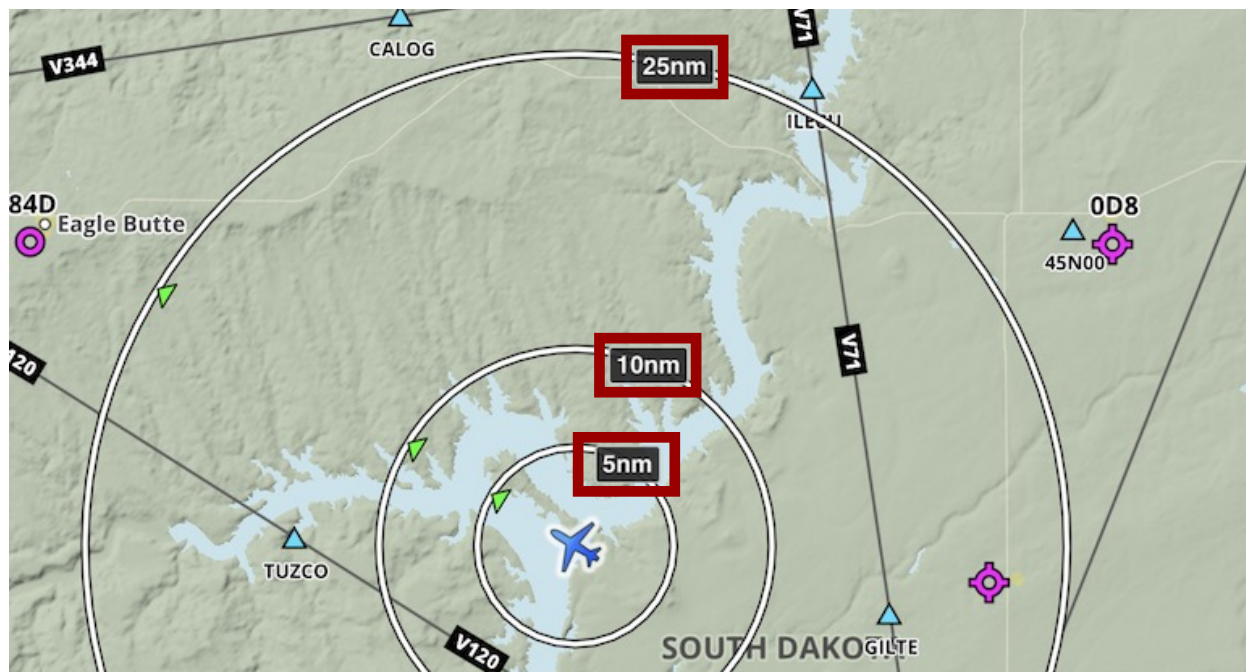
Distance Rings can display distance by time (minutes) or length (nm or km). To set the preferred style, with Distance Rings showing on the map, tap on a Distance Ring label to reveal a slide-over. Select the preferred type from the list. Alternatively, go to **More > Settings > Distance Rings Style**.



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

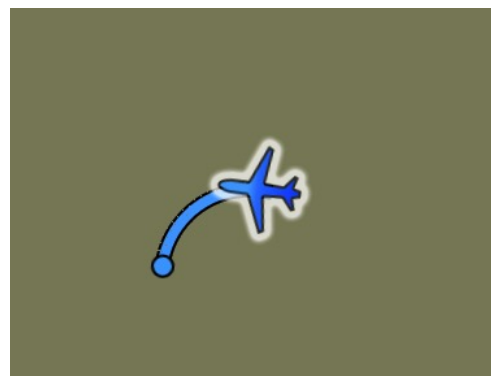
5.7.4 Track Vector

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

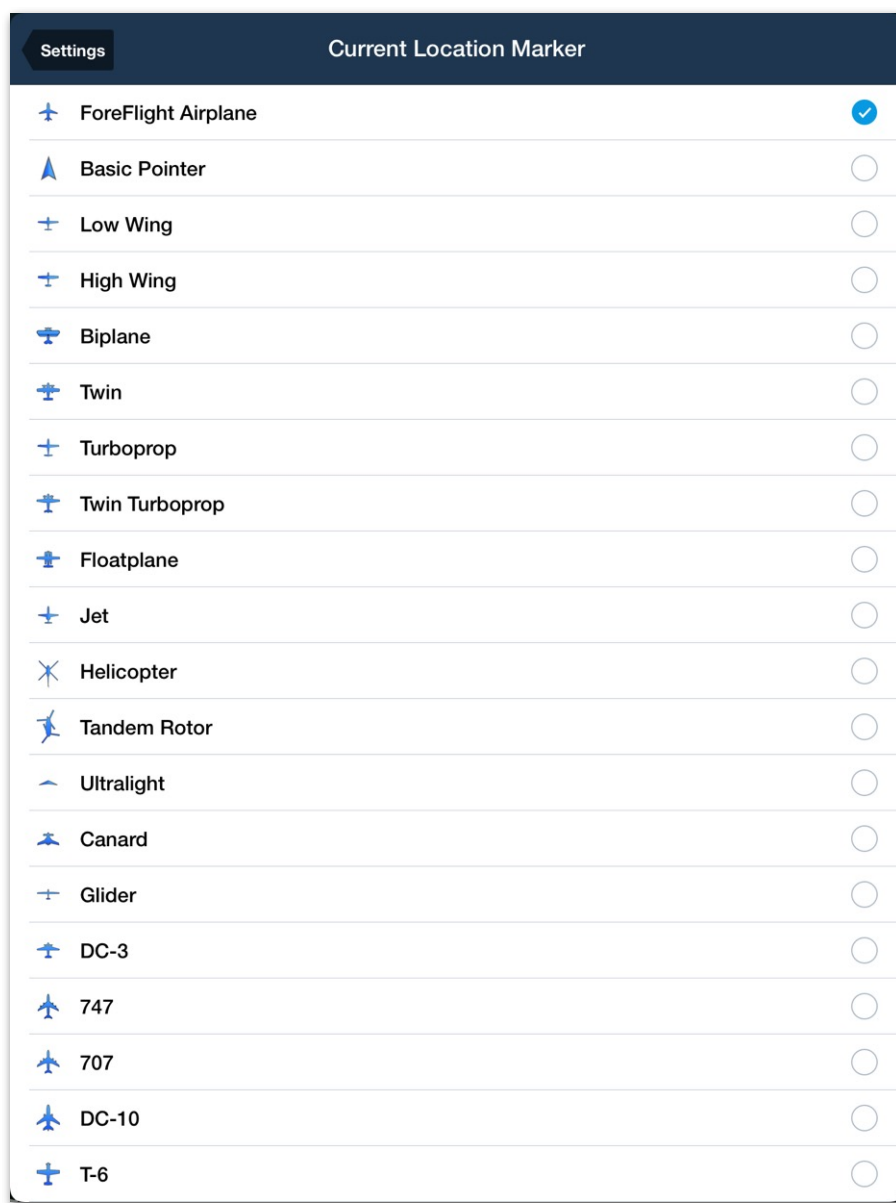
5. SETTINGS

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 Current Location Marker

Current Location Marker specifies the aircraft icon used to show your location when in motion.

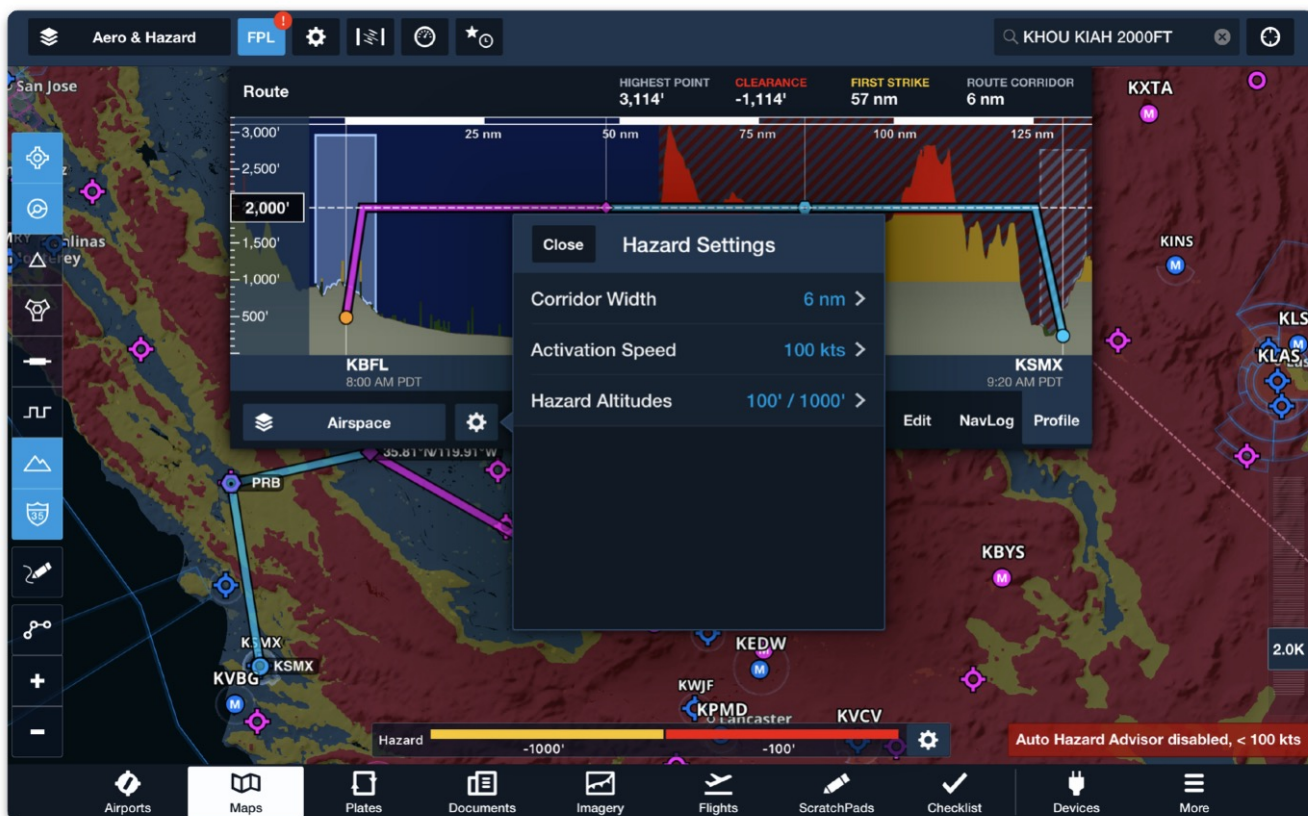


Current Location Markers

5. SETTINGS

5.7.7 Hazard Settings

Hazard Settings control the behavior of the Hazard Advisor and Profile View. There are three hazard-related settings: Corridor Width, Activation Speed, and Hazard Altitudes. Hazard settings are also available on the Map by tapping the hazard label gear button and Profile View by tapping the Profile View (gear) settings button.



Hazard Settings in Profile View

Corridor Width controls the obstacles and terrain depicted in Profile View. Terrain and obstacles within half the distance of the selected corridor width are shown. For example, when corridor width is 2 nm (default), obstacles and terrain 1nm on either side of the route centerline are depicted in Profile View.

Activation Speed controls when the *selected* Hazard Advisor altitude automatically changes to GPS altitude.

Hazard Altitudes controls Hazard Advisor and Profile View coloring. Select the altitudes for which a hazard must be from GPS altitude to be colored yellow or red.

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.

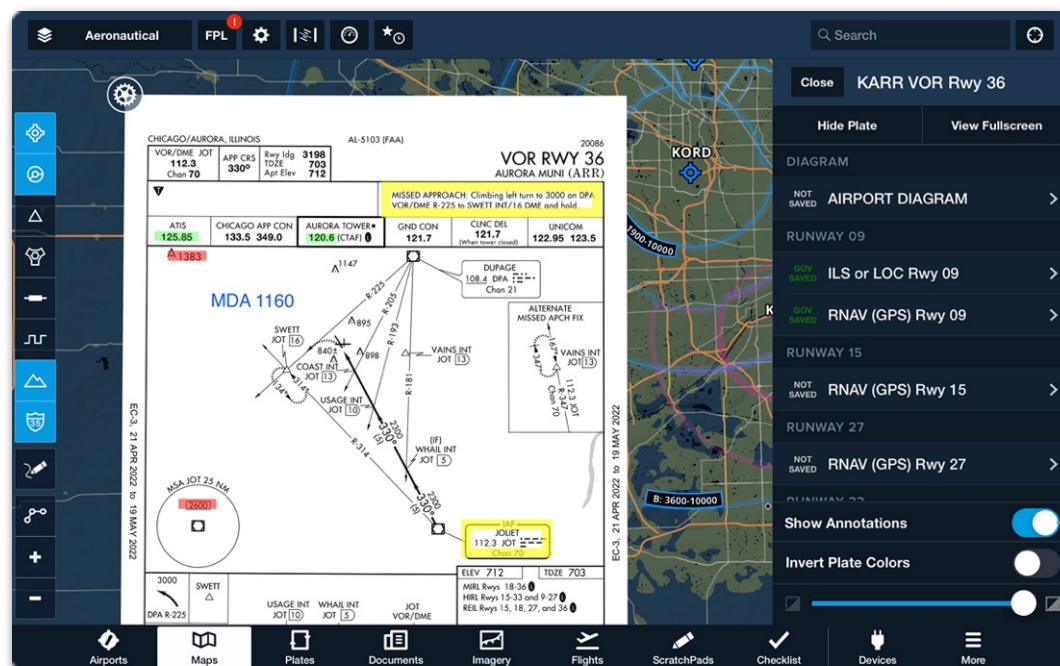
- **No Action** results in no map overlap changes when tapping on the map.
- **Bring chart to front** moves the chart to the top layer with a single tap. When a chart is on the top layer, it overlaps adjacent charts.
- **Bring chart to front with legends** moves the chart, chart legend, and chart border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



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. See the Legends Guide for color scale details.

5.7.13 Internet Radar Coverage

Internet Radar Coverage displays the area of available radar coverage while connected to the Internet. Areas with no coverage are shown with hash marks and a “Radar not available” label.

5.7.14 Breadcrumbs

Breadcrumbs are a thin green line indicating your aircraft’s path since takeoff. Breadcrumbs automatically activate after takeoff and end on short final. Breadcrumbs operate independently of Track Logs.

Tap a Breadcrumb anytime to view flight metrics. The Breadcrumb pop-up provides an option for saving the Breadcrumb as a Track Log.

Saving a Breadcrumb as a Track Log does not affect an ongoing Track Log recording.

Breadcrumbs Clear After

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

Breadcrumbs	
Recorded Time	8m48s
Distance Traveled	32 nm
Average Ground Speed	221 kts
Save as Track Log	
Reset	

Breadcrumb Menu

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 weather layers are selected.

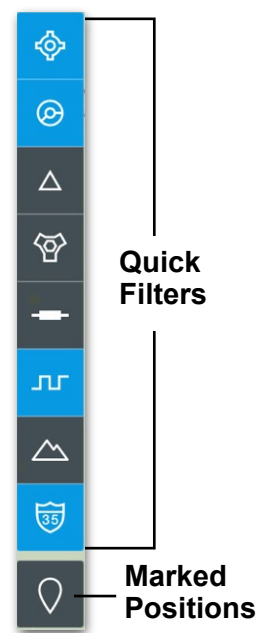
- Radar
- Radar (Lowest Tilt)
- Enhanced Satellite
- Color IR Satellite
- Icing and Turbulence
- Clouds
- Winds (Temps)
- Winds (Speeds)

5.7.16 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. 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, Navaids, 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 enabled, Pack displays a prompt when a new route is planned, and new data can be downloaded. Pack download prompts are a red exclamation badge on top of the Pack button.

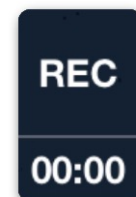
When disabled, Pack evaluates the route when the Pack suitcase button is tapped. It is not possible to automatically pack for flights. Auto-check only evaluates your route to see if new data can be downloaded.

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), Graphical PDF (International), or Classic Text (U.S. only). Flights outside the United States default to the Graphical PDF briefing.
- **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 accounts only).
- **Translate Classic Briefings** converts METARs, TAFs, NOTAMs, CWA/AIR/ SIGMETs, Synopses, and PIREPs to plain text in the classic text briefing.

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 Synchronize User Data

The Synchronize User Data setting is unique to the device. When the setting is enabled, account data is synced to your account. See the [Sync](#) chapter for additional details.

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 restricts 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. SETTINGS

5.20 Weight and Balance

The following setting is available for the Weight and Balance feature.

- **Standard Weights** allows for default standard weights for males, females, and children.

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

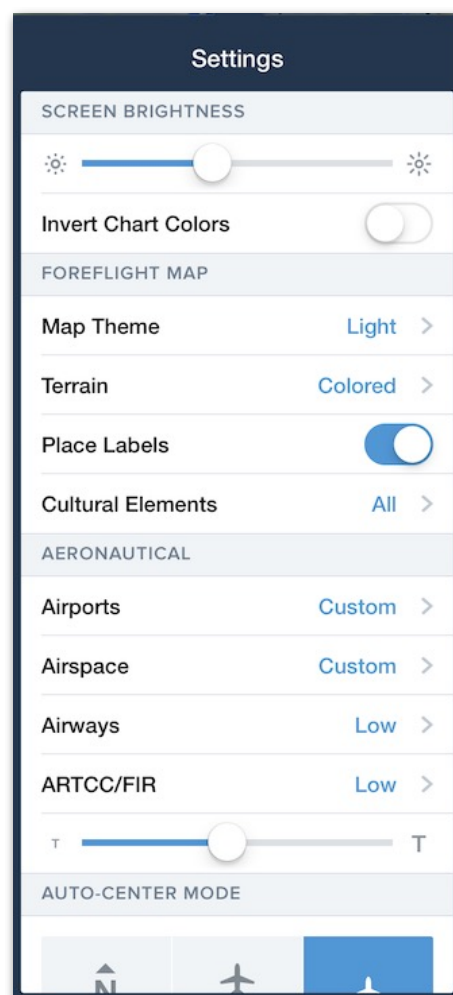
The Map Theme controls whether the ForeFlight base map is **Light** (tan), **Dark** (dark blue), or **Classic** (light brown).

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

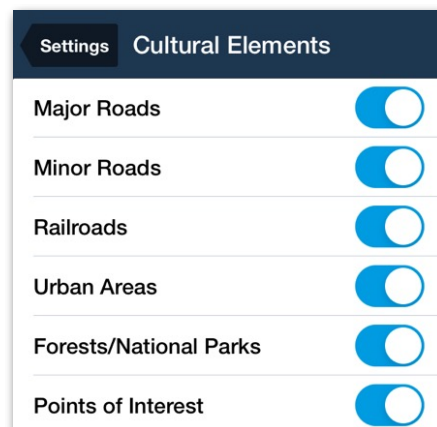
6. MAP SETTINGS

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

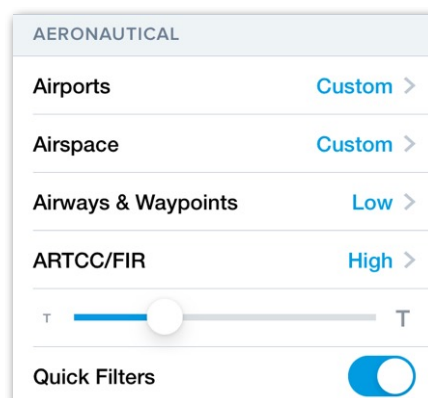
Settings to customize the Aeronautical map are available when the Aeronautical map layer is selected.

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

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.



Aeronautical Settings

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.

Settings

Airspace

Show Airspace

☒

Auto Highlight

☒

Hide Airspace Above (FT)

2,500'

CUSTOMIZE AIRSPACE

Controlled

☒

SUA/MOA

☒

TRSA

☐

Class E (USA)

☐

Parachute Area

☒

Mode C

☐

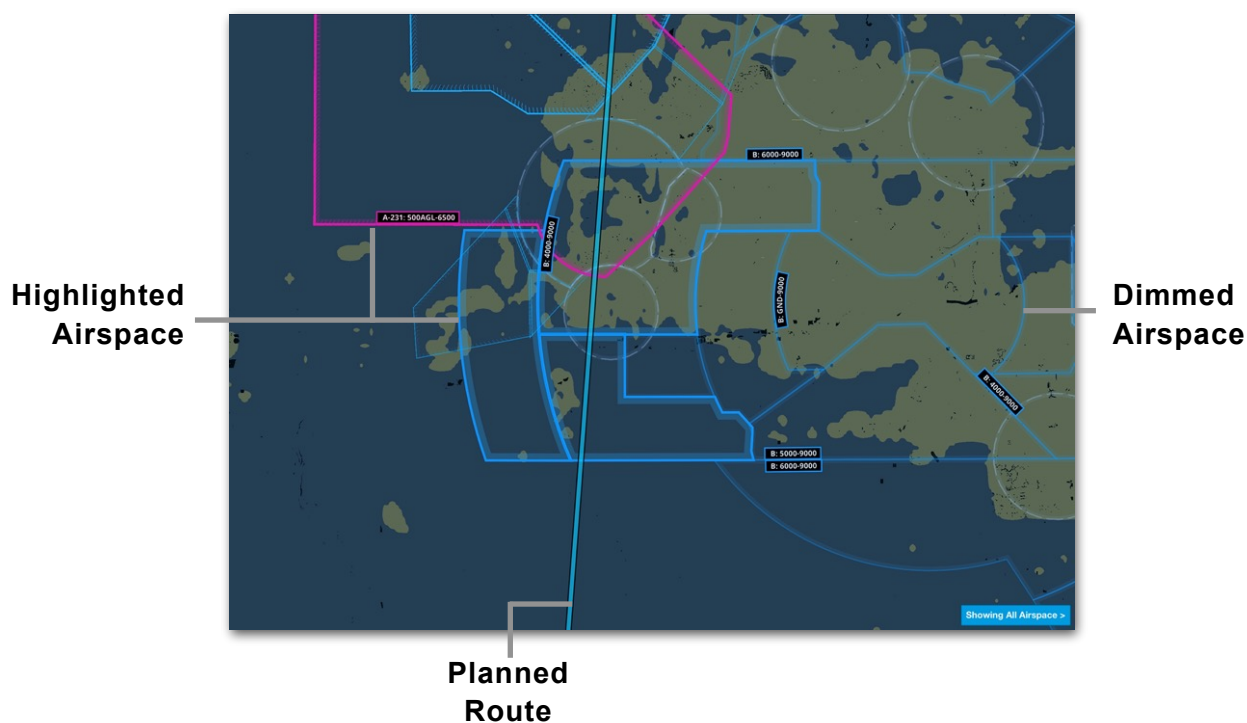
ADIZ

☐

Worldwide Altitudes

☒

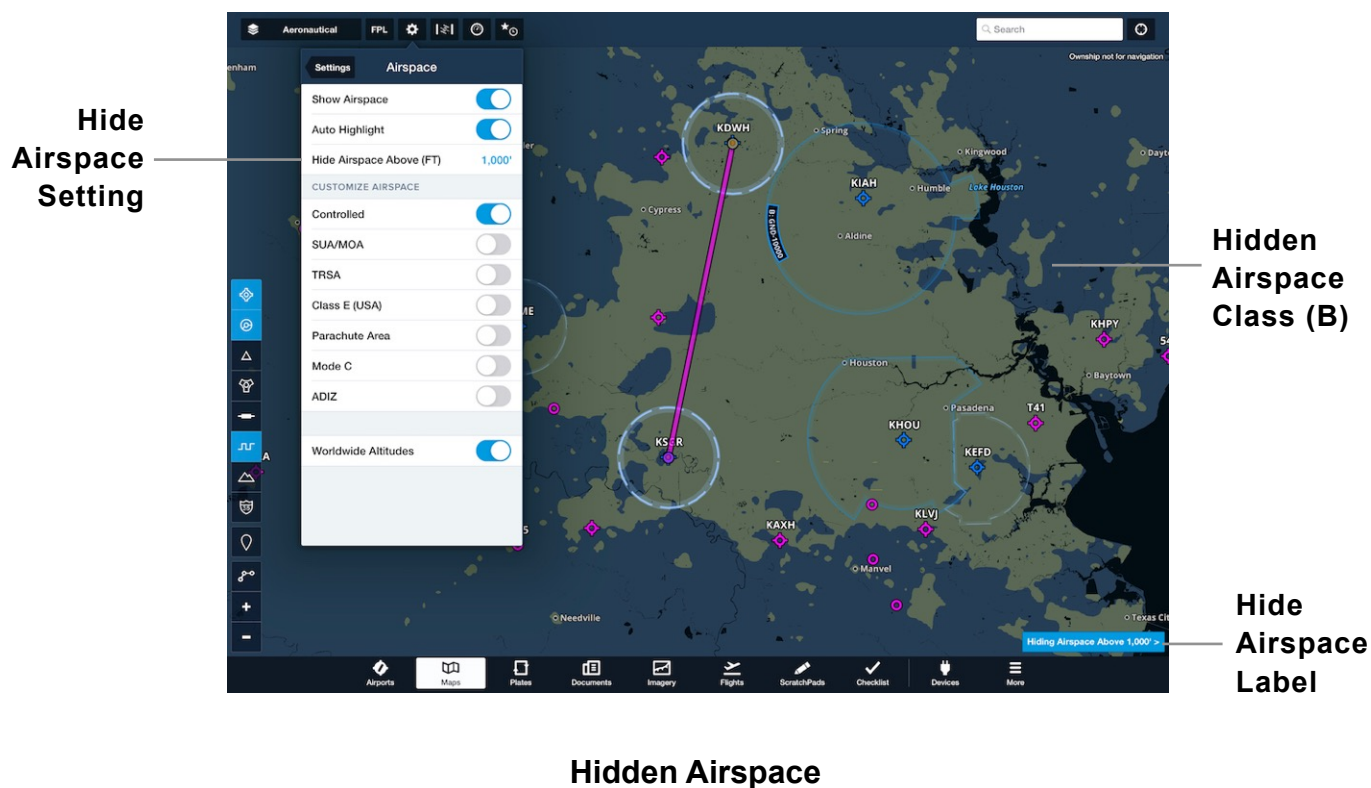
Airspace Settings



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 6500; 320 is expanded to 32000. 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.

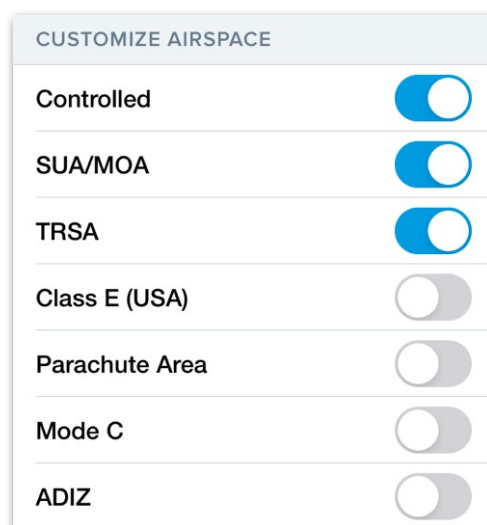


6. MAP SETTINGS

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

Worldwide Altitudes

The Worldwide Altitudes setting specifies the type of airspace label to use. Worldwide altitude labels are dynamic and will reposition as the map is panned and zoomed. Worldwide altitude labels are required to see airspace labels outside the United States.



Worldwide Altitudes Disabled



Worldwide Altitudes Enabled

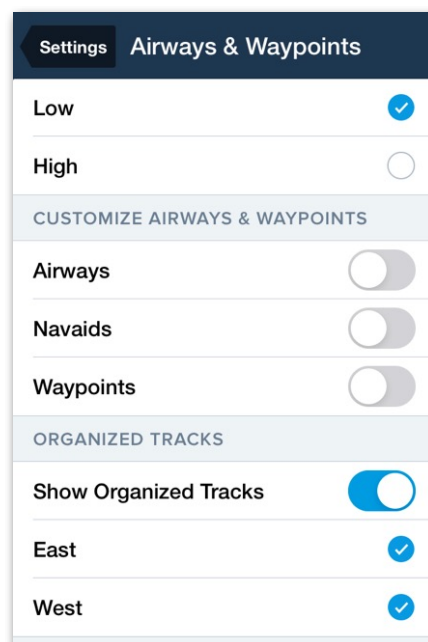
6. MAP SETTINGS

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**

6.3.4 ARTCC/FIR

The ARTCC/FIR setting changes the map's Air Traffic Control Center and Flight Information Region frequency stamps and boundaries. Three options are available **Off**, **Low**, and **High**. The low and high settings relate to low and high-altitude airspace.

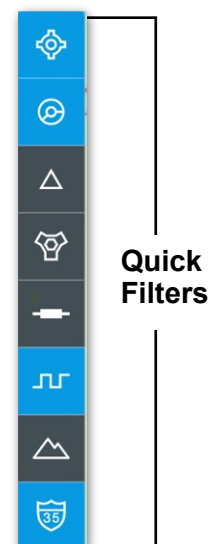
6.3.5 Text Size Adjustment

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.

6.3.6 Quick Filters

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

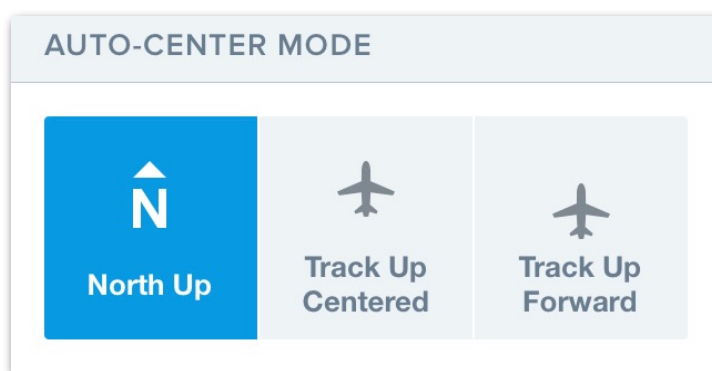
Quick filter buttons are located on the left side of the map and appear when Quick Filters are enabled and the Aeronautical Map is selected.



6. MAP SETTINGS

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 (Composite) or Radar (Lowest Tilt) 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.

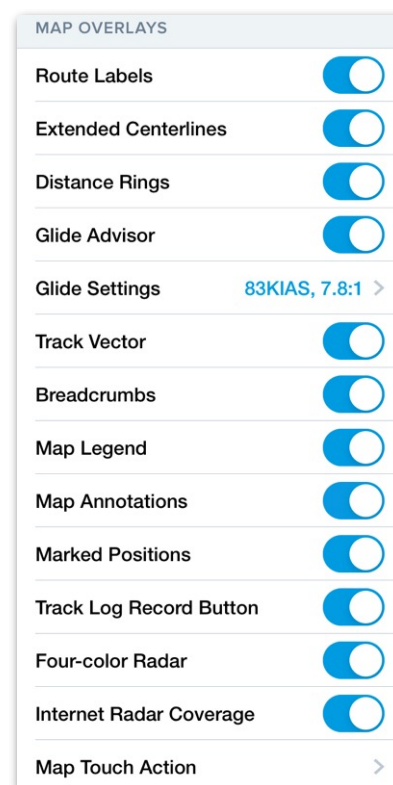
6.5.2 Route Labels

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 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

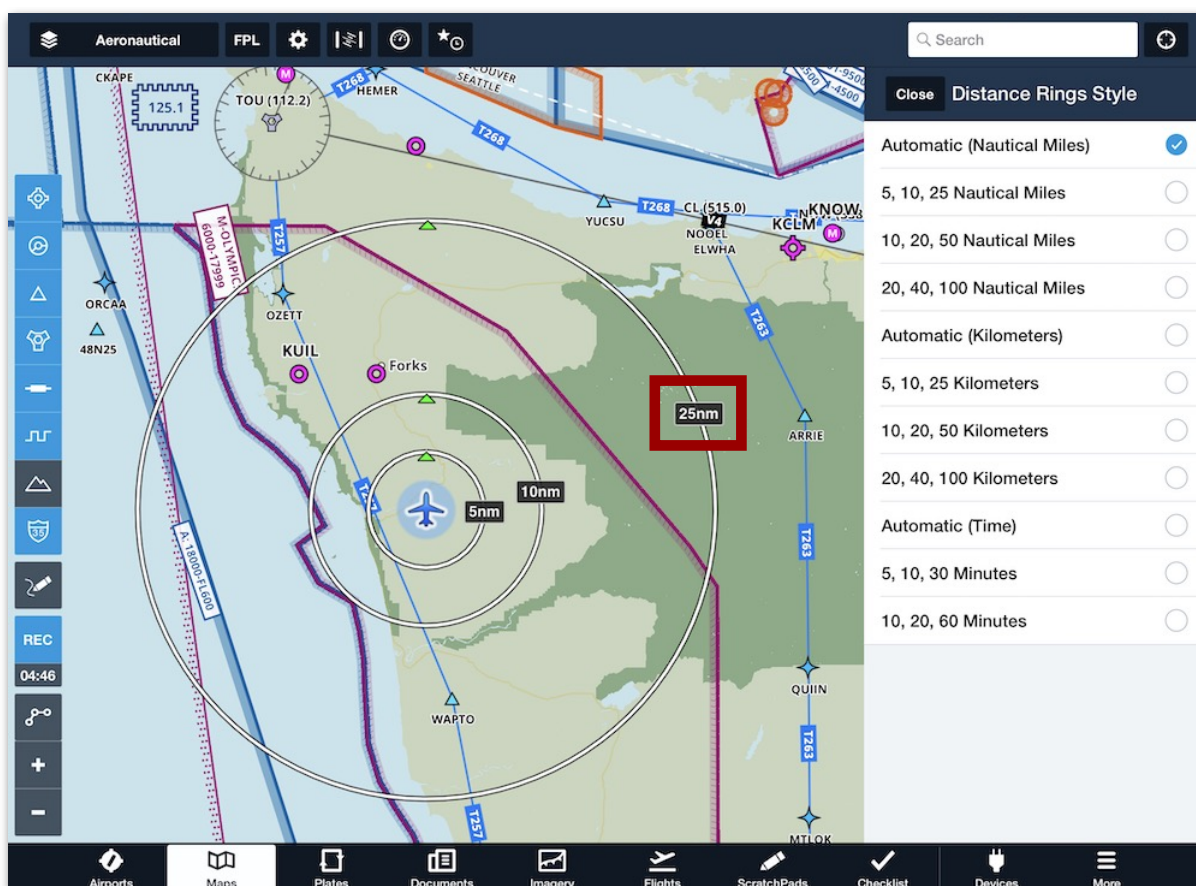
6. MAP SETTINGS

6.5.4 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**.

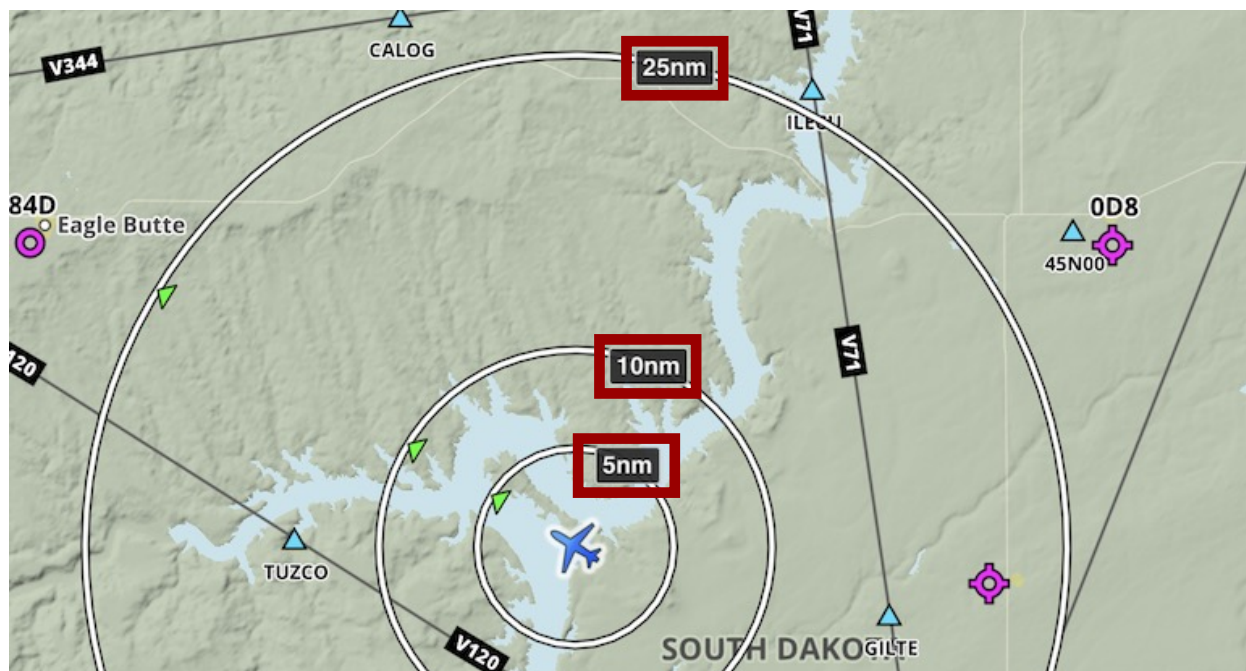
When any automatic style is selected, ring scales adjust automatically when the map is zoomed in or out. Range rings will only show if a GPS position is received. If a time-based style has been selected, the rings are only displayed when you have a GPS fix *and* are moving at more than 10 knots.



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

Glide Advisor uses your aircraft's glide ratio, current GPS altitude, surrounding terrain, and winds aloft to present a ring showing your glide range. Before use, Glide Advisor must be configured with your aircraft's best glide speed and glide ratio. These settings can be entered in the Aircraft profile or the map settings menu when Glide Advisor is enabled.

The Glide Advisor ring shows when your GPS altitude is more than 200 feet AGL. When the Glide Advisor ring is displayed, a Glide Advisor label is shown in the lower-right corner of the map. Tap the label to select a different aircraft profile or adjust the aircraft's glide characteristics. In the examples below, Glide Advisor demonstrates the difference between flying over relatively flat terrain and rising terrain.



Glide Advisor requires your aircraft's glide ratio to be entered in a specific format. The glide ratio should represent how far the aircraft can glide while losing a foot of altitude. Some flight manuals provide glide ratios in this format. Most glide ratios for powered, fixed-wing aircraft (excluding gliders) fall between 5 and 15. As a result, if your aircraft's glide ratio is 8:1, enter 8 into the glide ratio field and the corresponding best glide speed.

Some flight manuals express glide ratios with different distance and altitude units. For example, 1.3 nautical miles per 1000 feet. To determine the glide ratio in the proper format, multiply the distance (1.3 nm) by the number of feet in a nautical mile (6,076.12) and divide by 1000. Enter the result (7.9) in the glide ratio field.

6. MAP SETTINGS

6.5.6 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**.

6.5.7 Breadcrumbs

Breadcrumbs are a thin green line indicating your aircraft's path since takeoff. Breadcrumbs automatically activate on takeoff and end when you land. Breadcrumbs operate independently of Track Logs.

Tap a Breadcrumb anytime to view flight metrics. The Breadcrumb pop-up provides an option for permanently saving the Breadcrumb as a Track Log.

Saving a Breadcrumb as a Track Log does not affect an ongoing Track Log recording. 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**.

Breadcrumbs	
Recorded Time	8m48s
Distance Traveled	32 nm
Average Ground Speed	221 kts
Save as Track Log	
Reset	

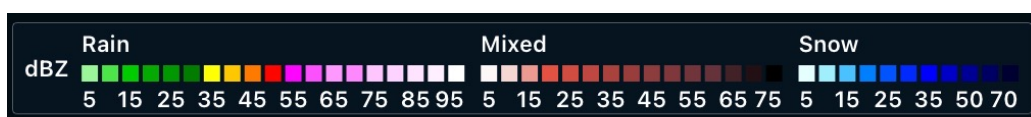
Breadcrumb Menu

6. MAP SETTINGS

6.5.8 Map Legend

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

- Radar
- Radar (Lowest Tilt)
- Enhanced Satellite
- Color IR Satellite
- Icing and Turbulence
- Clouds
- Winds (Temps)
- Winds (Speeds)



Map Legend (Composite Radar)

6.5.9 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**.

6.5.10 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.

6.5.11 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. MAP SETTINGS

6.5.12 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.

6.5.13 Internet Radar Coverage

Internet Radar Coverage displays the area of available radar coverage while connected to the Internet. Areas with no coverage are shown with hash marks and a “Radar not available” label.

6.5.14 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.

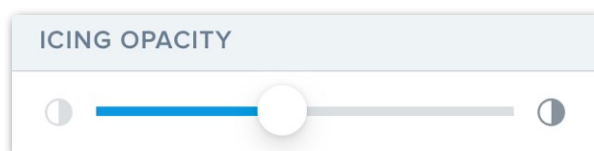
6.6 Layer Selector

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.

6.7 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.

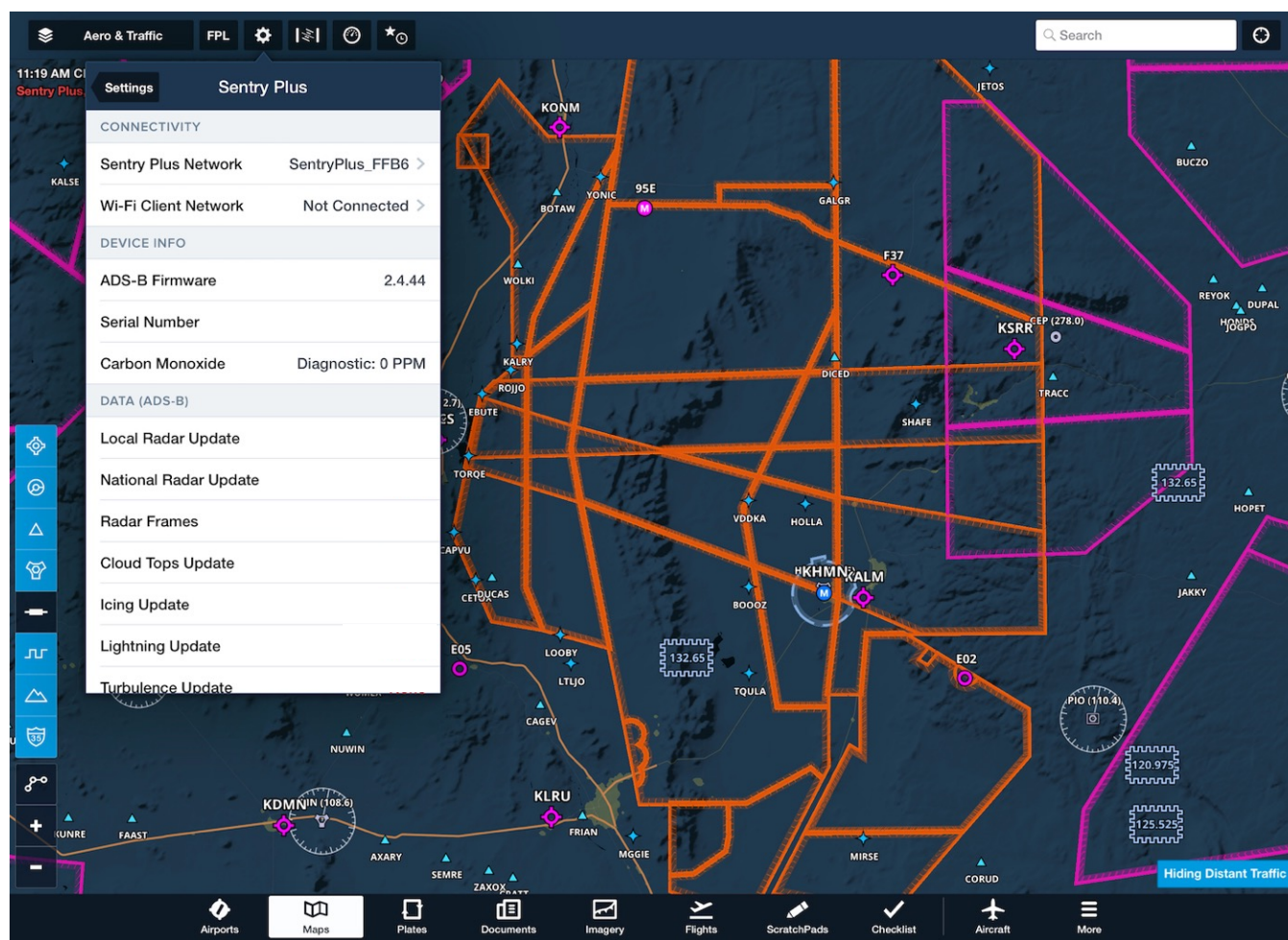


Opacity Slider (Icing)

6. MAP SETTINGS

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

APPLE 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

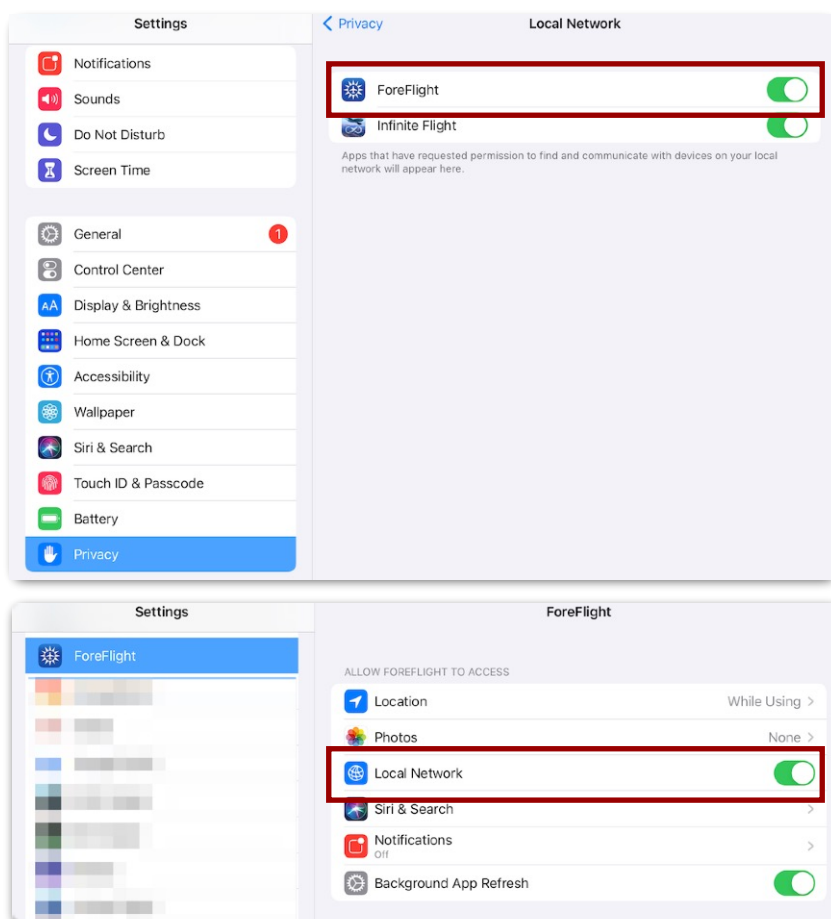
7.1 iOS Network Settings

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**

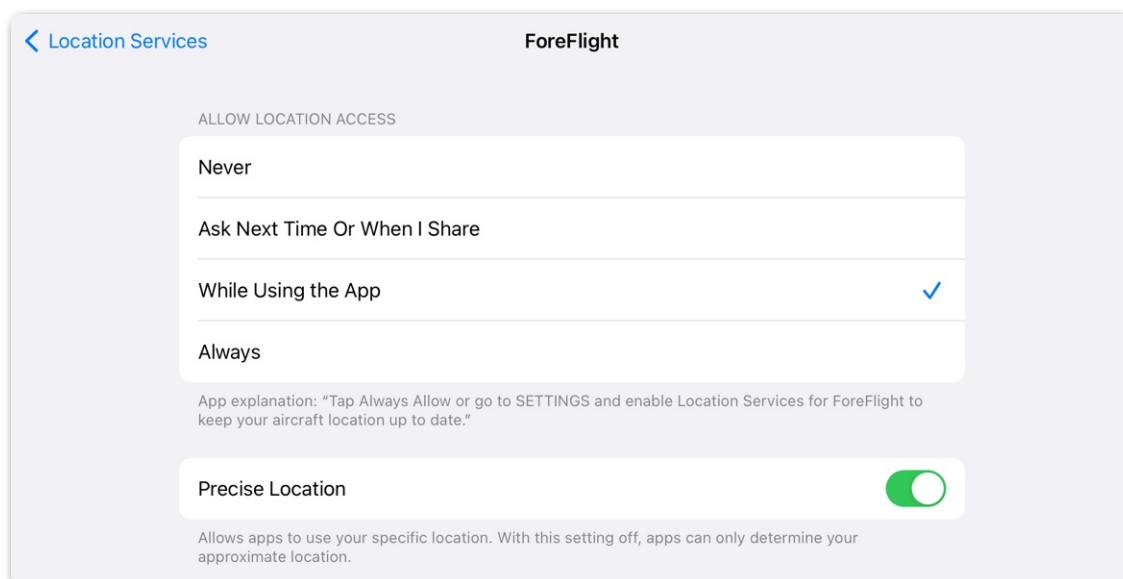


7. iOS FEATURES AND SETTINGS

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

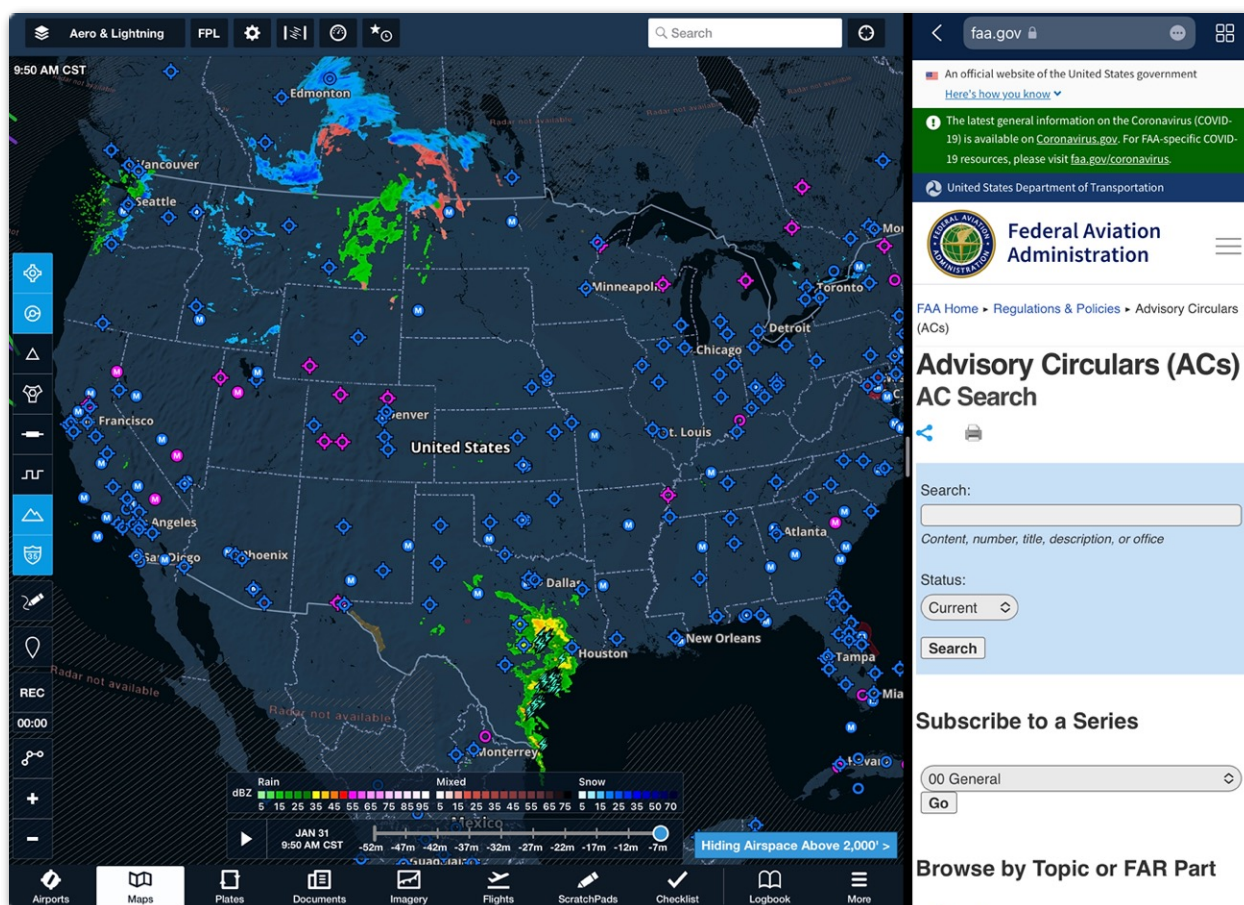
7. iOS FEATURES AND SETTINGS

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](#).

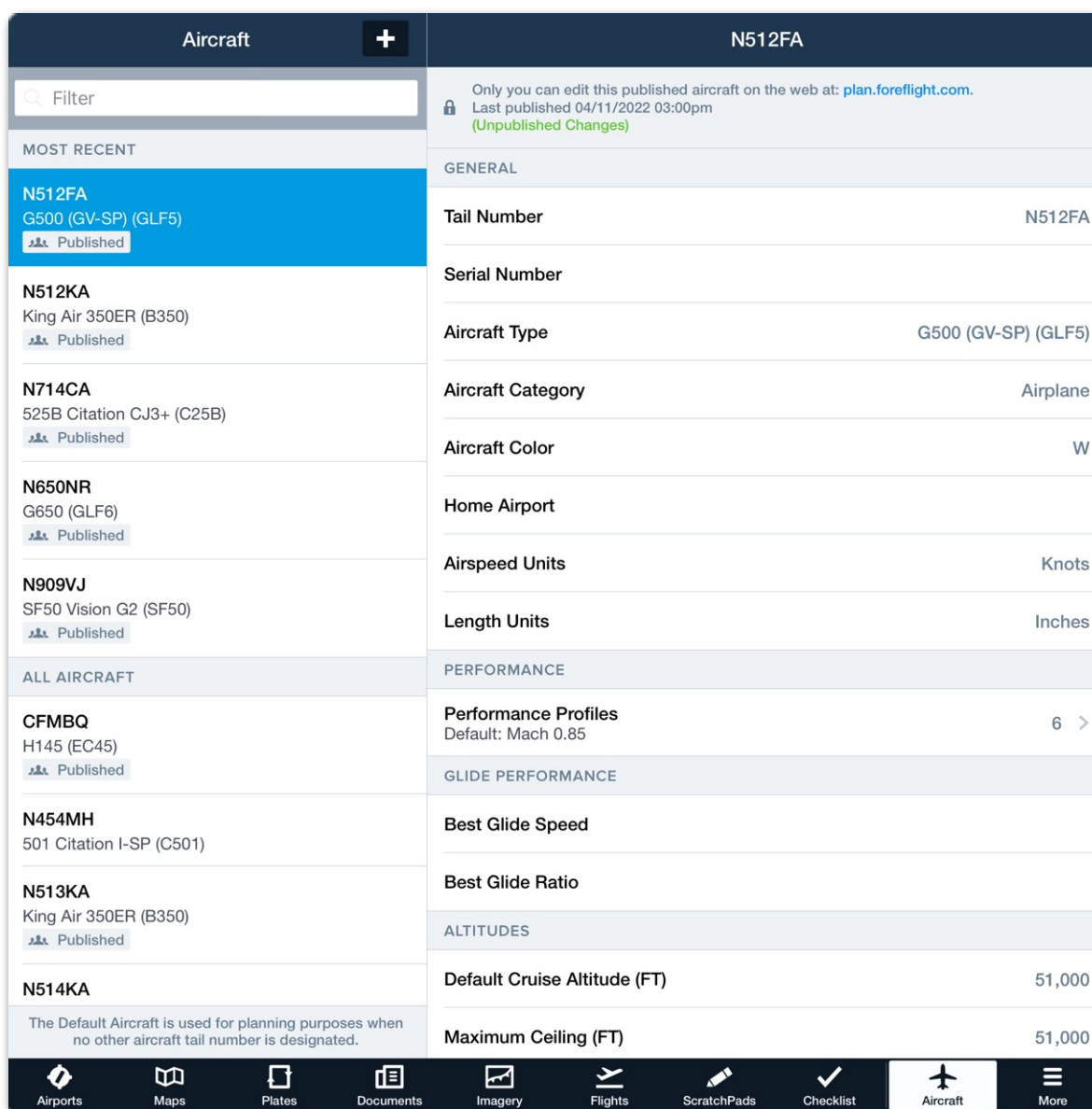


Multitasking with ForeFlight Mobile

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.



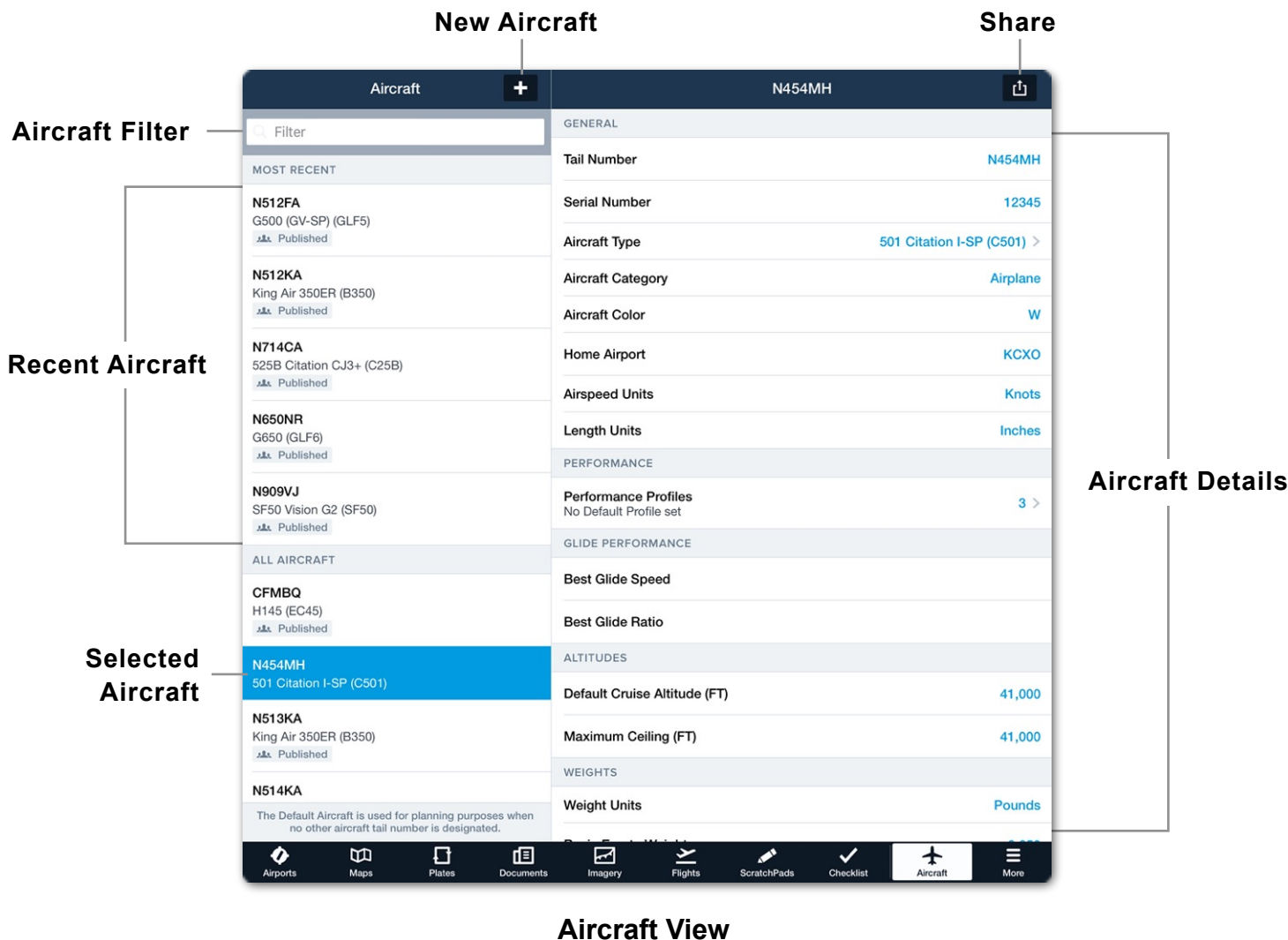
Aircraft View

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 performance profiles associated with the aircraft. 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	
Back	
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
The fuel numbers above are in GALLONS PER HOUR. You can change this on the Aircraft view, under "Fuel Units."	
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.

< Aircraft
N123FF - Economy Cruise
Make Default

CLIMB MODEL

Climb Name
Standard Climb

Low altitude point fuel flow (pph)
18

High altitude point fuel flow (pph)
12

DESCENT MODEL

Descent Name
Standard 500 FPM descent

Low altitude point fuel flow (pph)
12

High altitude point fuel flow (pph)
8

CRUISE MODEL

Cruise Name
Economy Cruise

Aircraft Max Ceiling (ft)
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.

Aircraft Type

King Air

BEECHCRAFT

King Air 250 Halo Conversion
PT6A-52
3 ForeFlight Performance Profiles BE20

King Air 350ER
PT6A-60A
3 ForeFlight Performance Profiles W&B Template Available B350

Available ForeFlight Performance Profiles (Cruise)

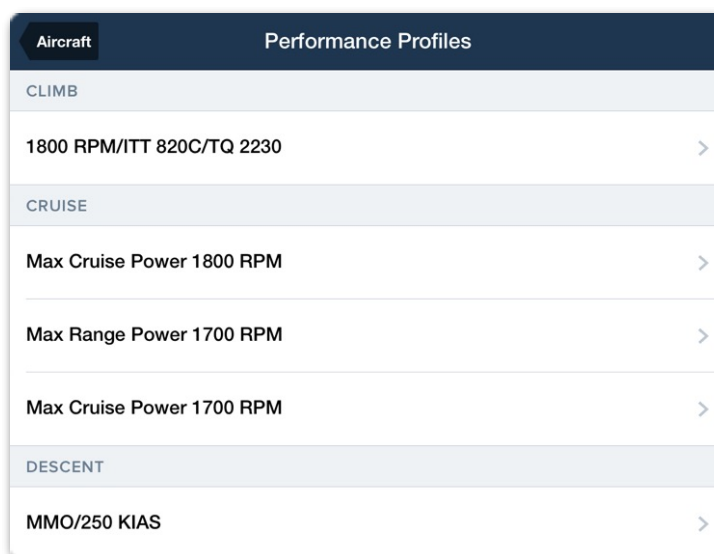
IMPORTANT: Ensure the correct aircraft type is selected including serial number, supplemental type certificate (STC), gross weight increase (GWI), and power plant conversion.

8. AIRCRAFT

When an aircraft is selected that has a ForeFlight Performance Profile, 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.

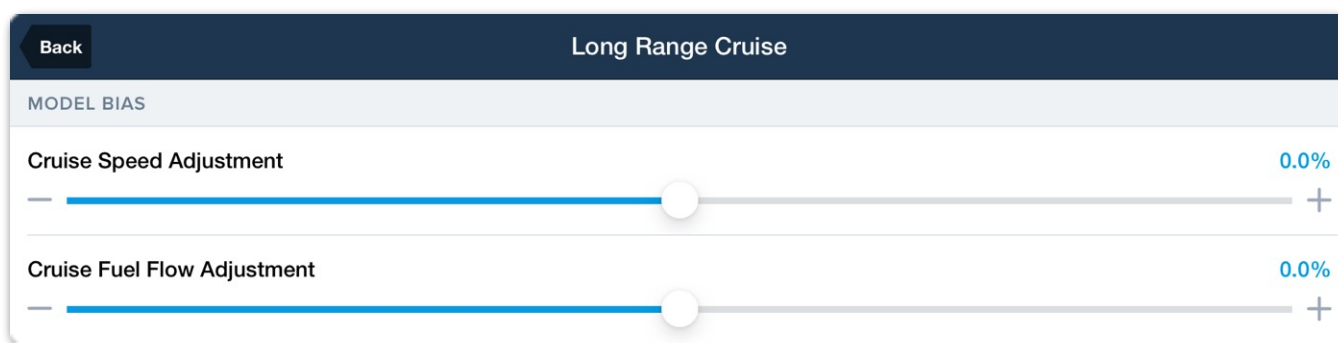
To determine performance values for a specific altitude and temperature combination, refer to the performance section of your aircraft's flight manual.



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 models are biased by a fixed time or fuel amount. For example, if your aircraft consistently burns more fuel during a climb than planned, add a positive fuel bias to the climb performance model. Similarly, enter a negative time or fuel amount if your aircraft burns less fuel or reaches cruise altitude faster than planned.

Model Adjustments (Cruise)

Cruise model adjustments are accomplished by specifying 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.

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.

Cruise Climb 220 KIAS		
MODEL BIAS		
✈	Fixed Time Bias	5 min
✈	Fixed Fuel Bias	45 lbs
Apply Bias to All Climb Profiles		
Clear Climb Bias		
Make Default		

Climb Model Bias

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. AIRCRAFT

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.

8.2.6 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**.

The screenshot shows the 'Aircraft Type' selection interface. At the top, there's a dark header with 'N454MH' on the left and 'Aircraft Type' in the center. Below the header is a search bar containing 'King Air'. The results are categorized under 'BEECHCRAFT'. Three aircraft are listed:

Aircraft Name	Model	W&B Template Available
King Air 250 Halo Conversion	PT6A-52	BE20
King Air 350ER	PT6A-60A	B350
King Air 350ER	PT6A-67A	B350

The 'W&B Template Available' label for the King Air 350ER (PT6A-60A) is highlighted with a red box.

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 fields are 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

The following fields are available in the Fuel section.

- **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 Priest**: 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 fuel your aircraft will consume during Start, Taxi, and Takeoff.
- **Total Useable Fuel** is an auto-populated value and should be verified.
- **Default Reserve Fuel** specifies the minimum amount of reserve fuel each flight should be planned with. The default reserve fuel is used unless the selected Reserve Policy exceeds the default reserve.

8. AIRCRAFT

Dispatch Only Fuel Fields

Aircraft with a Dispatch license include additional fuel fields for specifying a reserve fuel policy. To use an aircraft with Dispatch, the aircraft must be published. Published aircraft can *only* be edited with [ForeFlight Web](#). As a result, it is not possible to edit a Dispatch aircraft profile with ForeFlight Mobile.

Reserve Policy specifies the *default* reserve policy for the aircraft. New flights automatically use the specified reserve policy unless another policy is selected.

Default Contingency Fuel

When a fuel reserve policy is selected that mandates contingency fuel, Dispatch automatically populates the Default Contingency % field with the appropriate amount.

The contingency fuel percentage is set to zero if no contingency fuel is required per the reserve fuel policy. To manually add or edit contingency fuel, use ForeFlight Dispatch manually enter a value. For additional information, refer to the [ForeFlight Dispatch Guide](#).

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 CYYR 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

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

8.2.10 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	ELT Type
Wheels <input checked="" type="radio"/>	None <input checked="" type="radio"/>
Skis / Skids <input type="radio"/>	Automatic <input type="radio"/>
Floats <input type="radio"/>	Automatic Deployable <input type="radio"/>
Amphibious <input type="radio"/>	Fixed <input type="radio"/>
Wheels and Skis <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.

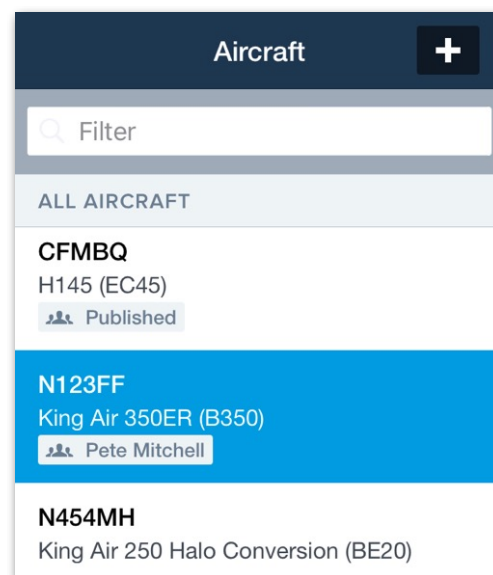
Shared aircraft appear in the Aircraft list with a grey icon and the name of the pilot who shared the aircraft.

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.

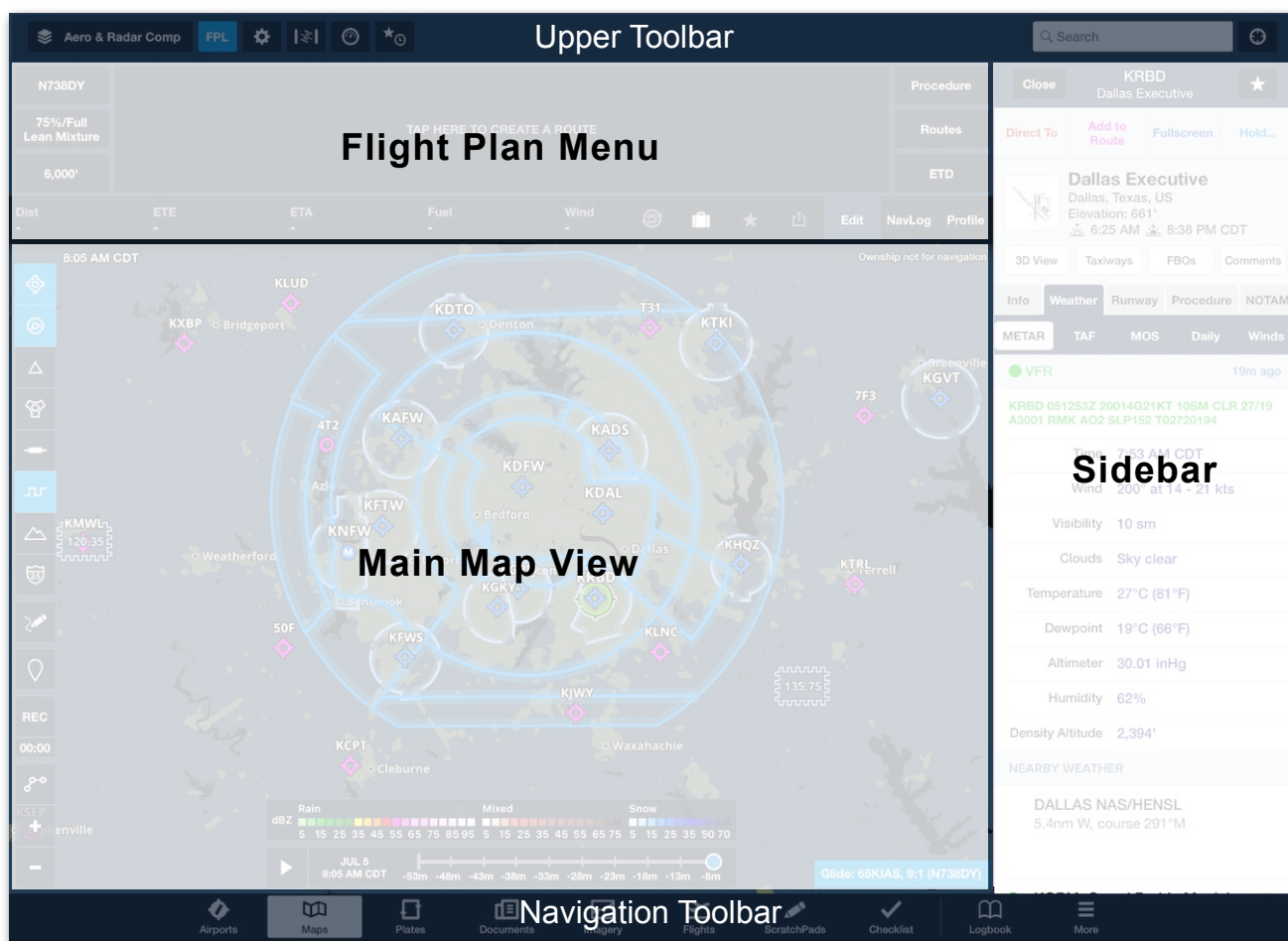
MAPS

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

9.1 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 features to be toggled on and off.



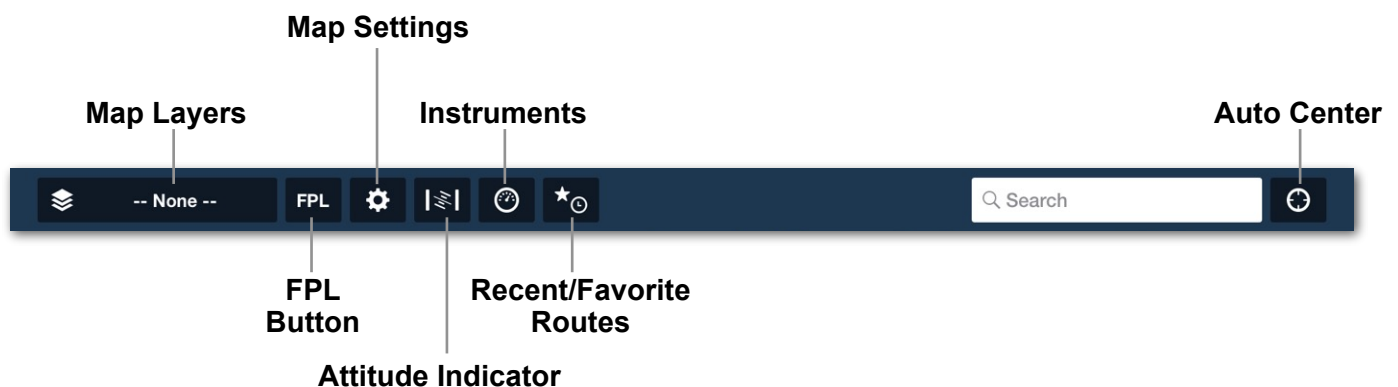
Maps View Design

9. MAPS

9.1.1 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 flight plan menu is used for planning routes, displaying the Navlog, and activating 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.

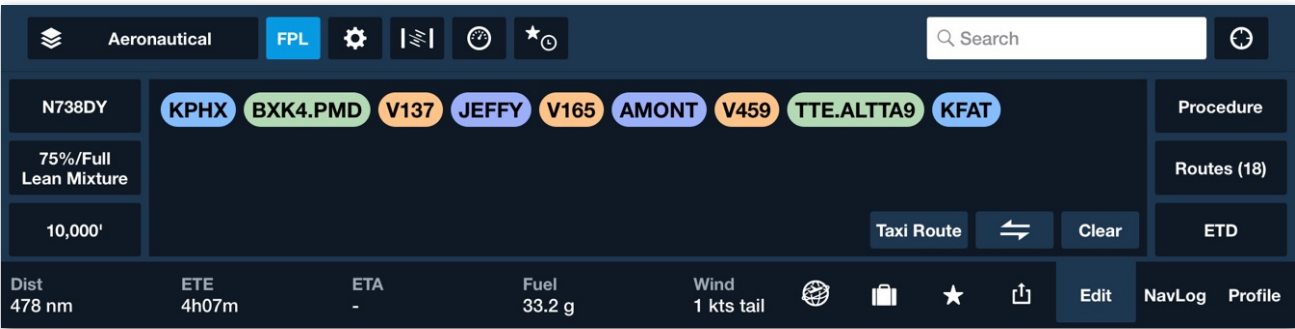


9. MAPS

9.1.2 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.

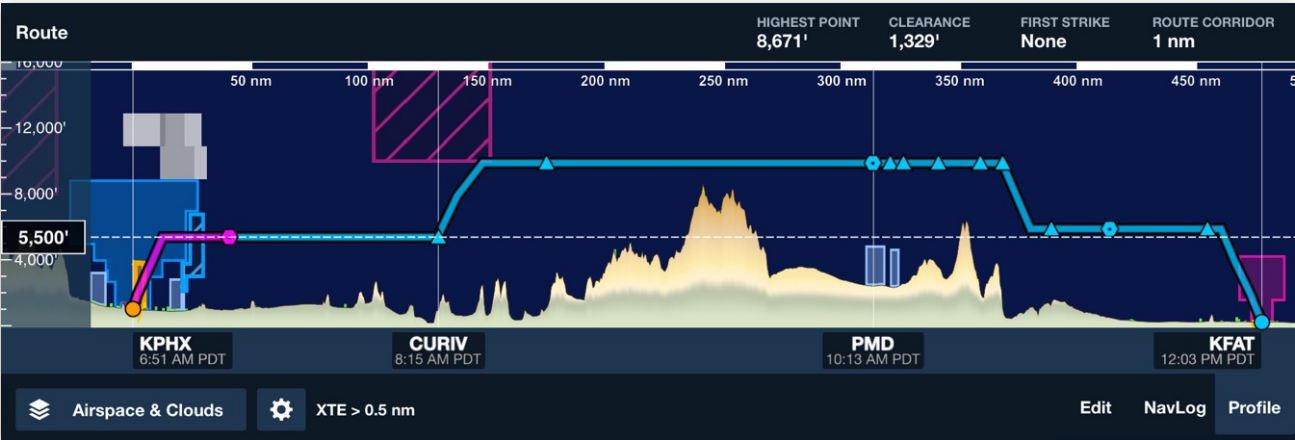
- **Edit** - Displays the Flight Plan Editor.
- **NavLog** - Displays the navlog for the planned route.
- **Profile** - Displays the Profile View (Pro Plus subscription or higher required).



Flight Plan Editor

FROM	TO	HDG	TOTALS	LEG	REMAINING	ETA
KPHX	BXX	258°M	41 nm, 5.6 g	41 nm, 4.5 g	0h28m	-----
BXX	CURIV	264°M	129 nm, 11.0 g	88 nm, 5.3 g	0h42m	-----
CURIV	DECAS	260°M	175 nm, 13.9 g	46 nm, 2.9 g	0h23m	-----
DECAS	PMD	270°M	245 nm, 20.8 g	100 nm, 8.7 g	1h00m	-----
PMD	KFAT	270°M	245 nm, 20.8 g	100 nm, 8.7 g	1h00m	-----
Dist 478 nm, ETE 4h07m, ETA -, Fuel 33.2 g, Wind 1 kts tail						
Edit, NavLog, Profile						

NavLog



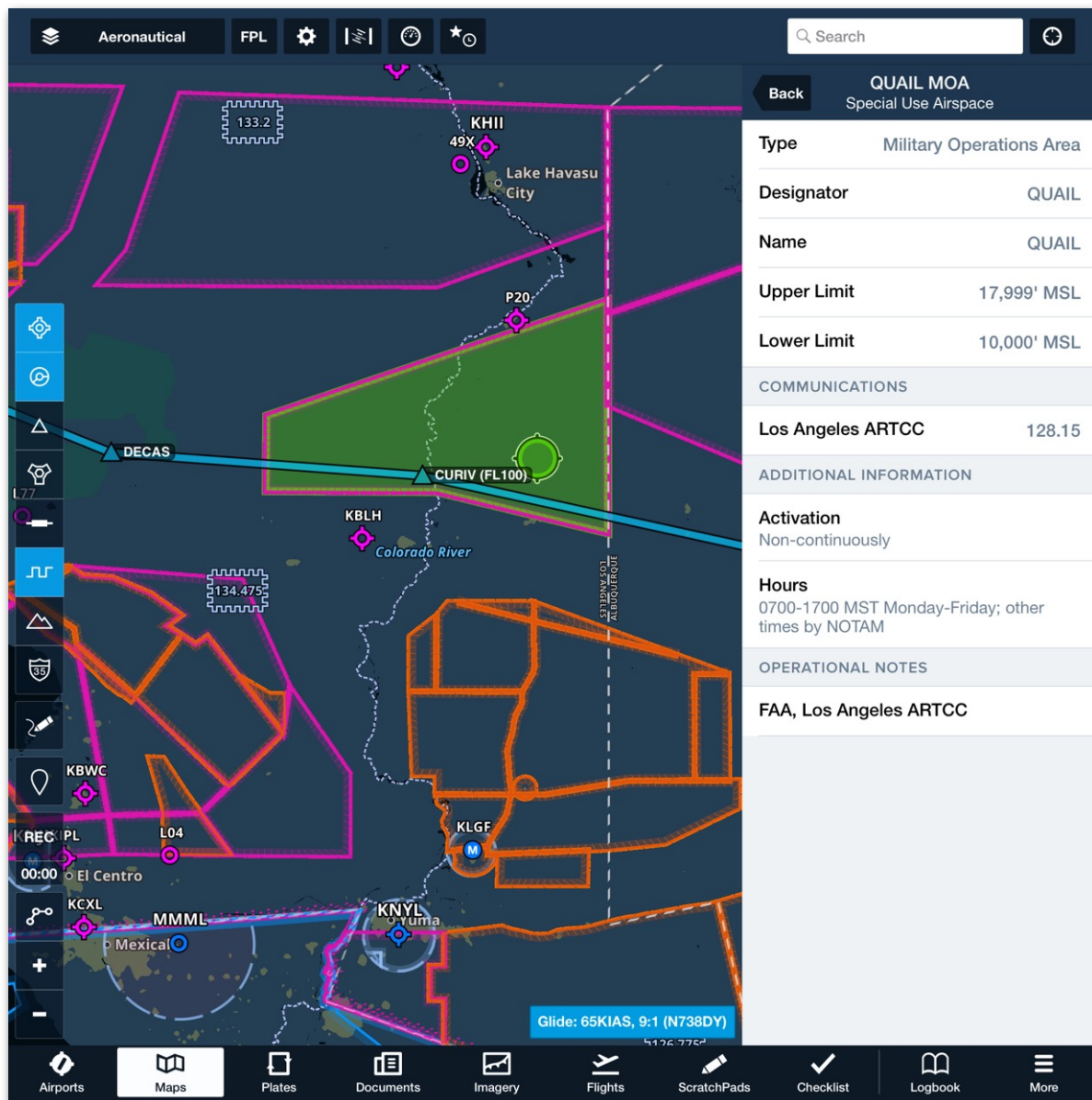
Profile View

9. MAPS

9.1.3 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)

9. MAPS

9.1.4 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

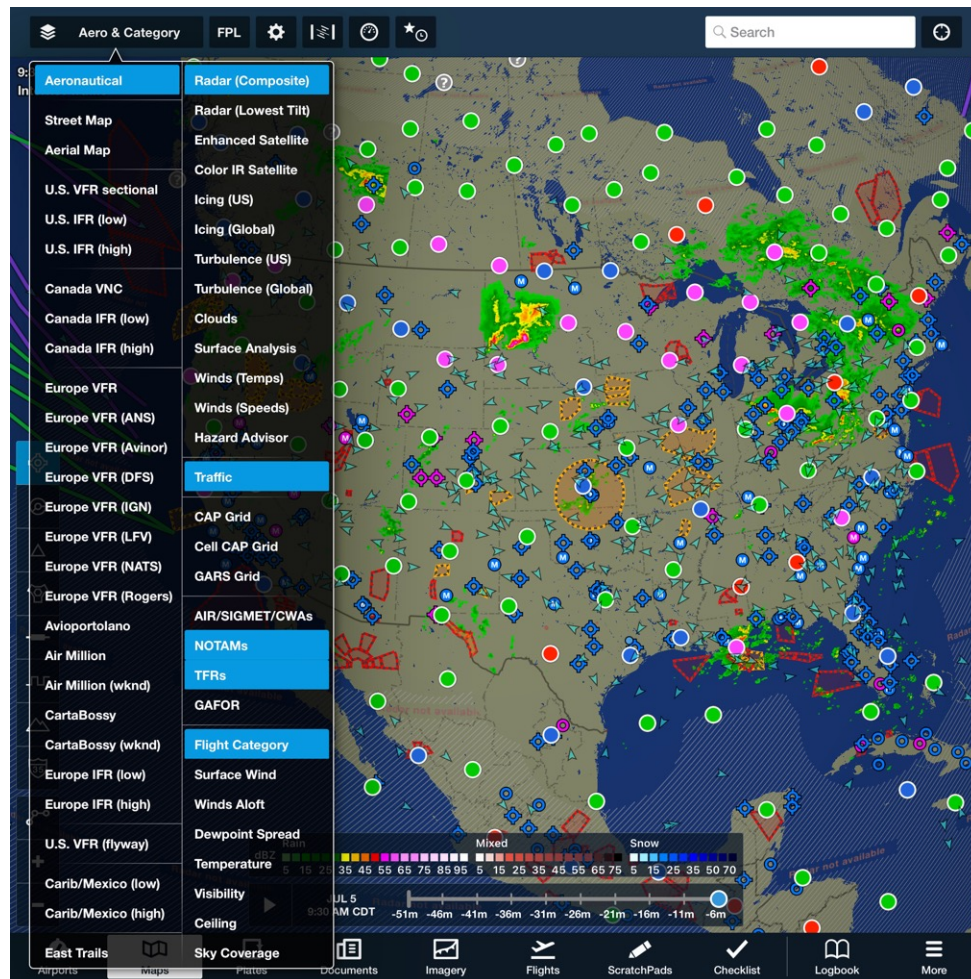
9. MAPS

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

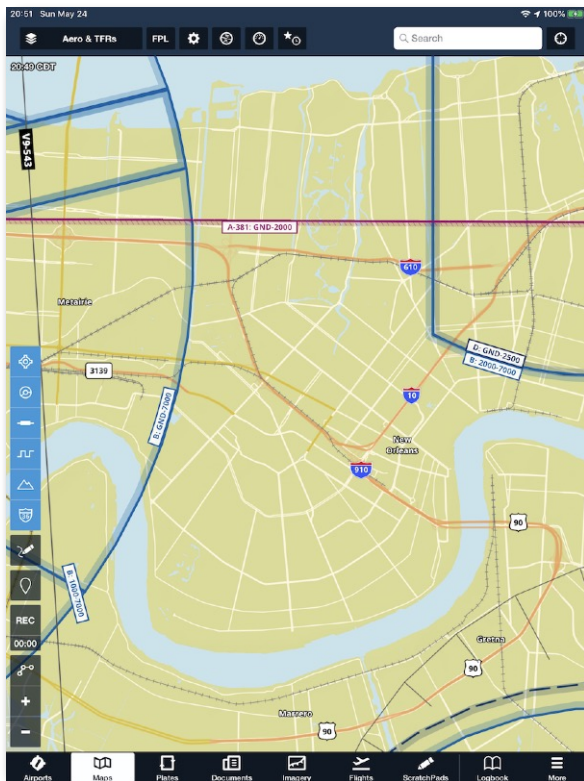
9. MAPS

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.

9.2 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

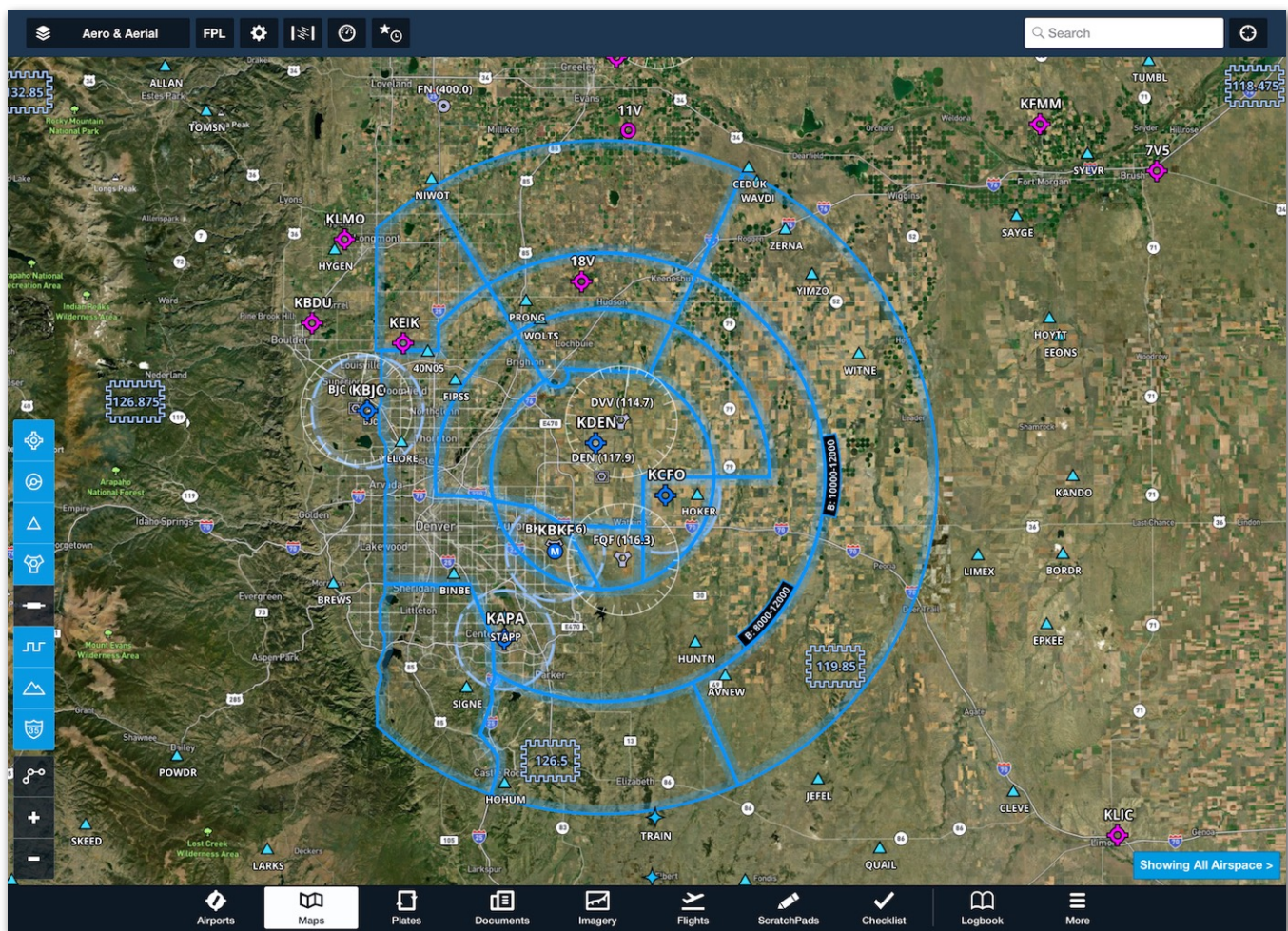
9. MAPS

9.3 Aeronautical Map

ForeFlight's Global Aeronautical Map dynamically displays Jeppesen-sourced digital aeronautical data. The aeronautical map constantly updates to display the most relevant information as you pan and zoom. Enable the **Aeronautical** map from the map layer menu.

Individual aeronautical elements can be displayed or hidden. See [Map Settings](#) for additional information. The Aeronautical map must be enabled to adjust the 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

9. MAPS

9.3.1 Aeronautical Map Features

The Aeronautical Map includes the following features.

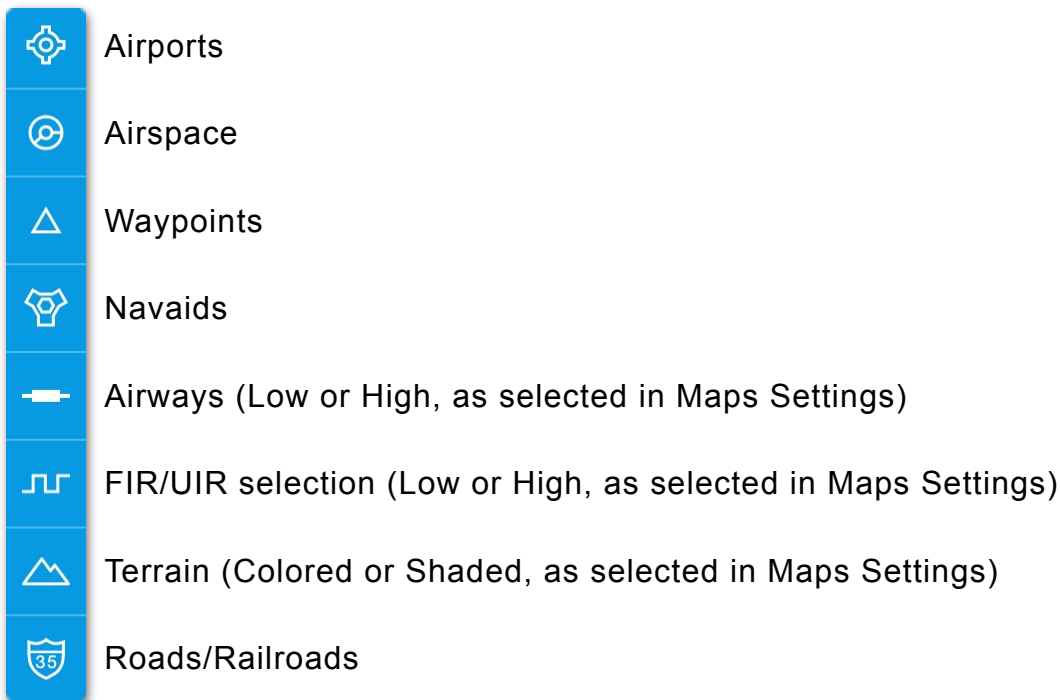
- **Continuous Zoom** - Icons, shapes, and text labels smoothly fade in and out as the zoom level changes, in contrast to traditional (raster) charts which have to re-render at certain zoom levels to maintain their clarity.
- **Decluttering** - The information shown on the map changes along with the 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, and FBO labels.

9. MAPS

9.3.2 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.

9. MAPS

9.3.3 Aeronautical Map Symbols














The following symbols are shown on the Aeronautical Map layer:

	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)
	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
	Class B/TMA/CTA Airspace		Class B Altitude (USA)
	Class C Airspace		Class C Altitude (USA)
	Class D Airspace		Class D Altitude (USA)
	Class E to Surface (USA)		Mode C (USA)
	TRSA (USA)		SATR Area (USA)

9. MAPS

	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
	FIS Boundary		ARTCC Sector Stamps
	Global Airspace Altitude Labels		Helipad
		Airway ID (MEA)	
		Airway ID (MEA / Heading based on route)	
VFR (Europe only)			
	VFR Waypoint		VFR Waypoint (Compulsory)
	VFR Helicopter Waypoint		VFR Helicopter Waypoint (Compulsory)
	Landmarks		HIRTA (High Intensity Radio Transmission Area)
	Low Point		Bird Refuge
	Model Flights		VFR Arrival
	VFR Departure		VFR Arrival & Departure
	VFR Flight Corridors		IFR Flight Corridors
	Helicopter Procedure		VFR Transit Route

9. MAPS

	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)
	Windsock		

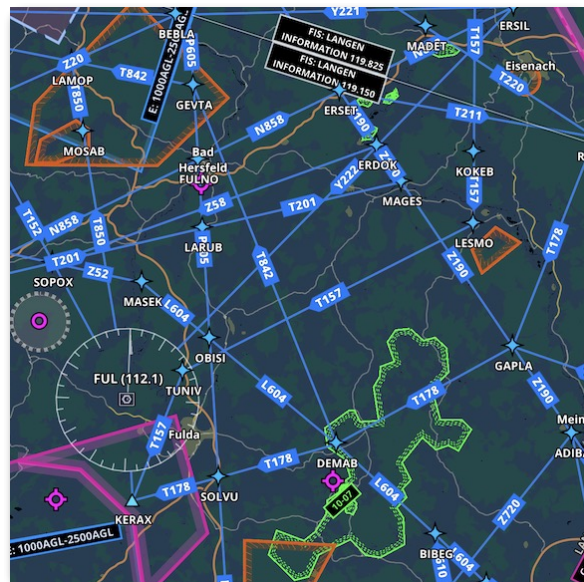
9. MAPS

9.3.4 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.



9. MAPS

9.4 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.
- **U.S. IFR (planning)** - IFR planning chart covering contiguous 48 states.
- **U.S. IFR (ocean)** - Atlantic and Pacific ocean IFR charts.
- **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, nav aids, and obstructions.

9. MAPS

- **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.

9. MAPS

9.5 Map Layers

Map layers are selected from the right column of the map layer selector. Available map layers are dependent upon subscription, region, and device connection. If a subscription, region, or connected external device does not include a feature, it is hidden from the layer menu. Map layers and their details are listed below.

9.5.1 Radar

The composite and lowest tilt radar layers display the location, movement, intensity, and type of precipitation within the coverage area. Radar is included with all subscriptions with an active internet, ADS-B, or SiriusXM connection.

When receiving weather data over a Sirius XM connection, it is impossible to display ADS-B or internet radar. It is impossible to show internet radar when connected to an ADS-B receiver.

Radar (lowest tilt) is not available with an ADS-B connection. Radar (lowest tilt) is not available in Europe. ForeFlight checks for updated radar data every three minutes.

- **Radar (Composite)** - United States, Canada, and Europe radar showing a composite of multiple radar scans.
- **Radar (Lowest Tilt)** - United States and Canada lowest angle (tilt) radar scan. Useful for determining where precipitation is reaching the ground.

9.5.2 Echo Tops (XM)

Echo Tops require a Sirius XM compatible receiver (GDL 51 or GDL 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.

9.5.3 Cloud Tops

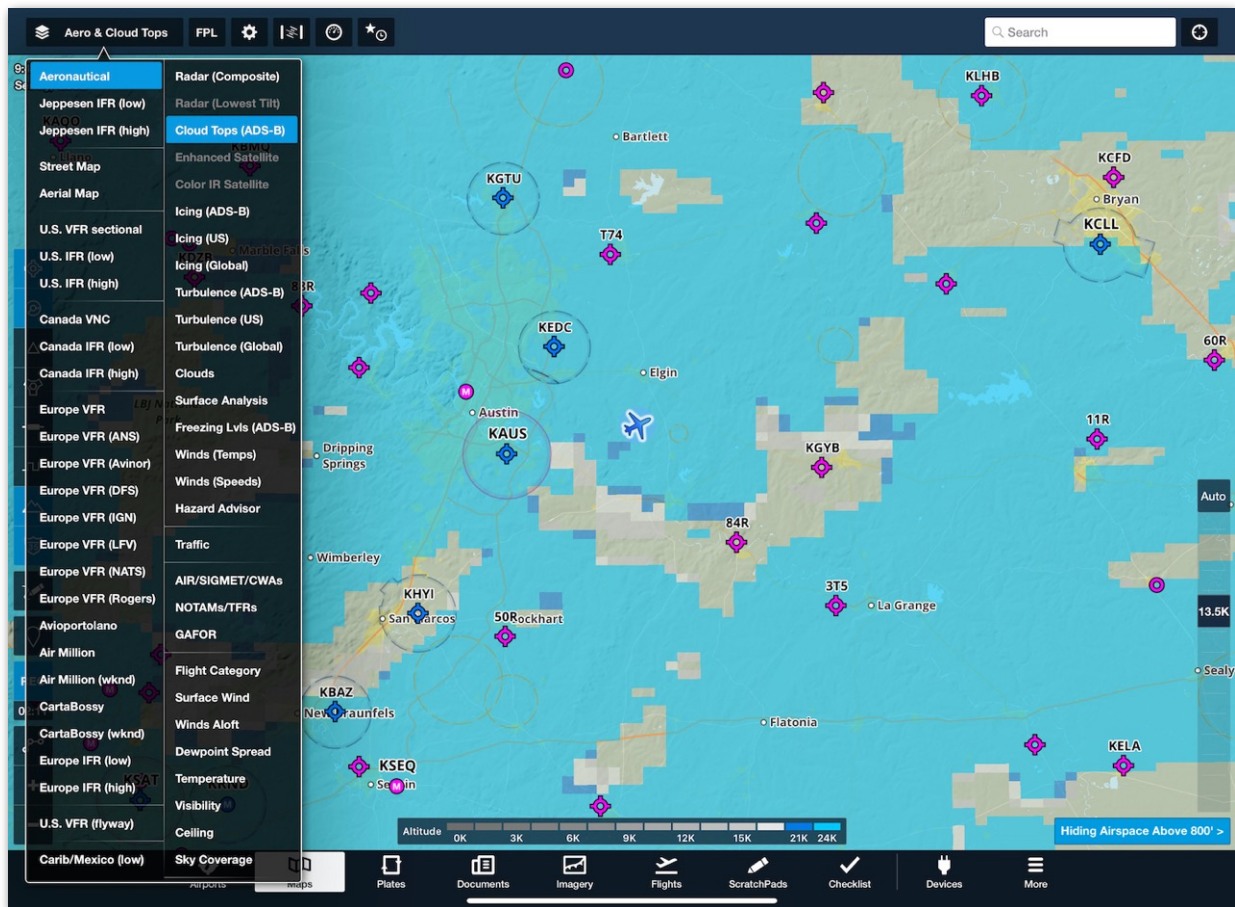
Cloud Tops (XM) require a Sirius XM compatible receiver (GDL 51 or GDL 52). Cloud Tops displays cloud top height derived from satellite temperature sensors. Use the altitude slider on the right to filter out cloud tops at lower altitudes. Covers CONUS plus northern Mexico and southern Canada. 5000' increments from 0' to FL300, and FL400.

9. MAPS

Cloud Tops (ADS-B) require a compatible ADS-B receiver. The Cloud Top (ADS-B) weather layer is included with all subscriptions. Cloud tops are 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.

Select **Cloud Tops (ADS-B)** from the layer selector and use the altitude slider on the right side of the map to filter clouds with tops below the selected altitude. Cloud Tops (ADS-B) is a valuable tool for determining if the flight can be conducted in visual conditions above the clouds. Forecast cloud tops at or above the selected altitude are depicted on the map according to the color-coded scale. Tap **Auto** above the altitude slider to automatically display cloud tops at and above your current GPS altitude.



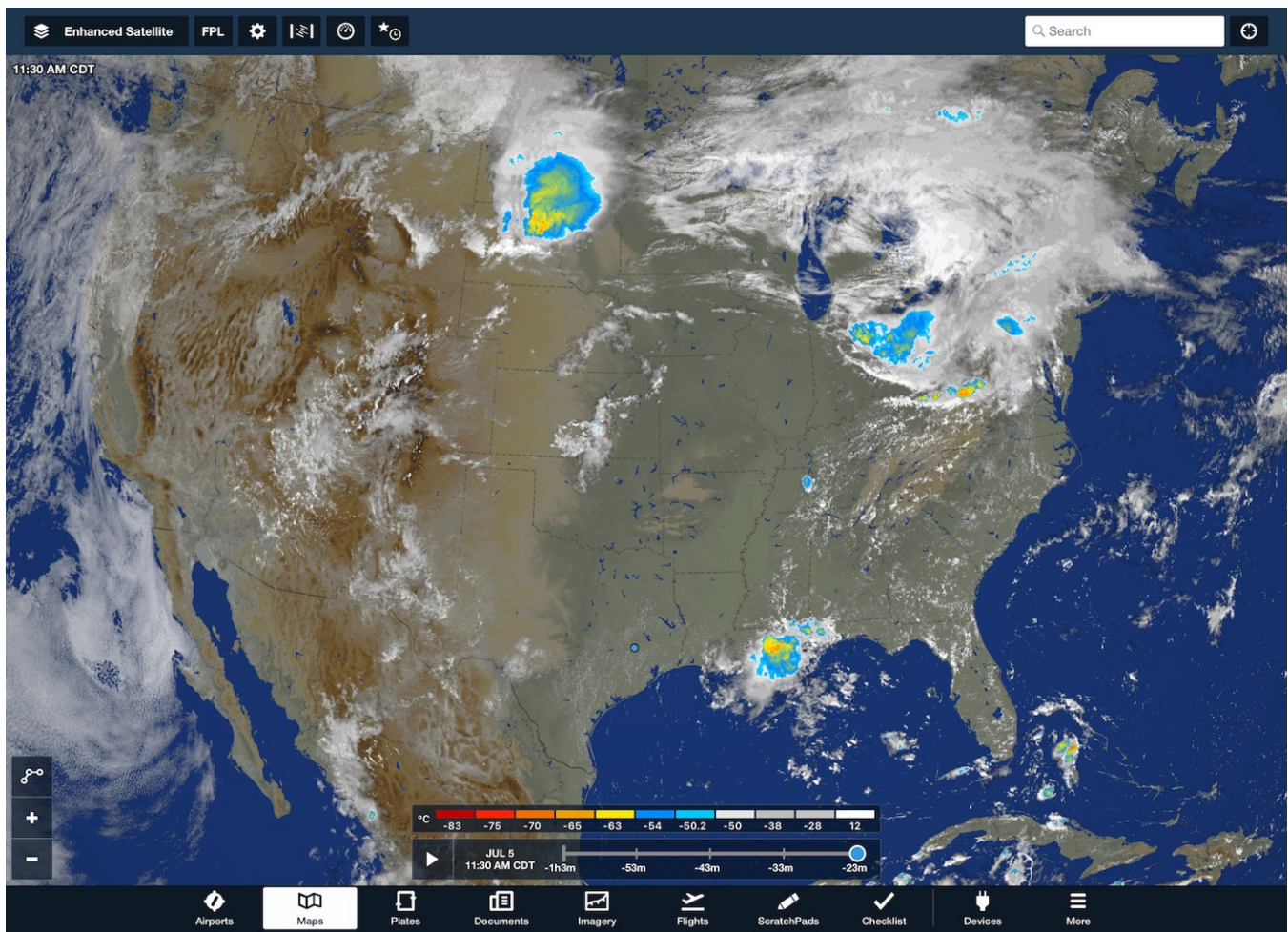
Cloud Tops (ADS-B)

9. MAPS

9.5.4 Satellite

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). The Satellite layer is not available with an ADS-B or SiriusXM weather receiver.



Enhanced Satellite

9. MAPS

9.5.5 Icing

Various icing map layers are available in ForeFlight Mobile. Icing (US and Global) map layers require a Pro Plus or higher subscription. Icing (ADS-B) is available with all subscriptions when connected to an ADS-B receiver. Icing (XM) is available with all subscriptions when connected to an XM receiver.

Icing (US) - Displays icing severity forecasts (light, moderate, heavy) based on the Forecast Icing Product (FIP) run hourly and extended 18 hours into the future. Use the time slider to view different frames in the forecast and the altitude slider to view icing severity at different altitudes. The Icing US layer covers the continental United States, northern Mexico, and southern Canada, generally between 16N and 59N Latitude. Requires a Pro Plus, Performance Plus, or Business Performance subscription.

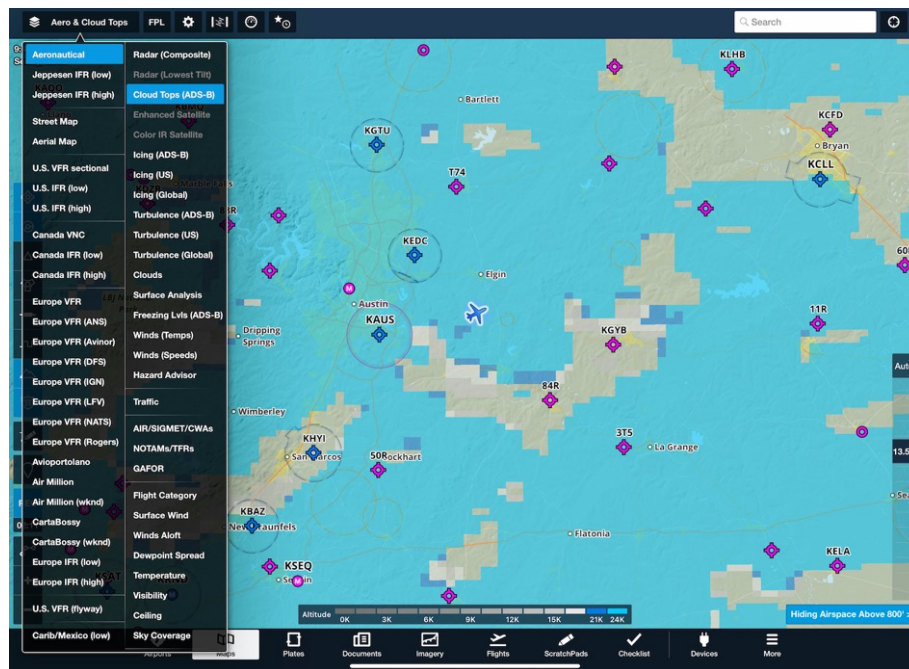
Icing (Global) - Displays icing severity forecasts (light, moderate, heavy) based on the Global Forecast System (GFS) that is run four times per day and extends 24 hours into the future. Use the time slider to view different frames in the forecast and the altitude slider to view icing severity at different altitudes. Provides worldwide coverage. Requires a Pro Plus, Performance Plus, or Business Performance subscription.

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 Latitude. 0'-3000', 3000'-6000', 6000'-9000', 9,000'-12,000', 12,000'-15,000', 15,000'-18,000', 18,000'-21,000', 21,000'-24,000'.

Icing (ADS-B) ADS-B icing 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. The altitude slider on the right side of the map displays the icing data at various altitudes. 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.

9. MAPS

Select **Icing (ADS-B)** and use the altitude slider on the right side of the map to display forecast icing severity and anticipated presence of SLD. Tap **Auto** above the altitude slider to automatically display icing information at your GPS altitude.



Icing (ADS-B)

9.5.6 Turbulence

Various turbulence map layers are available in ForeFlight Mobile. Turbulence (US and Global) map layers require a Pro Plus or higher subscription. Turbulence (ADS-B) is available with all subscriptions when connected to an ADS-B receiver. Turbulence (XM) is available with all subscriptions when connected to an XM receiver.

Turbulence (US) - Displays EDR (eddy dissipation rate) forecasts which translate into turbulence severity based on aircraft weight. Use the time slider to view different frames in the forecast, and use the altitude slider on the right to view EDR forecasts at different altitudes. The Turbulence US layer covers the continental United States, northern Mexico, and southern Canada, generally between 16N and 59N Latitude. Requires a Pro Plus, Performance Plus, or Business Performance subscription.

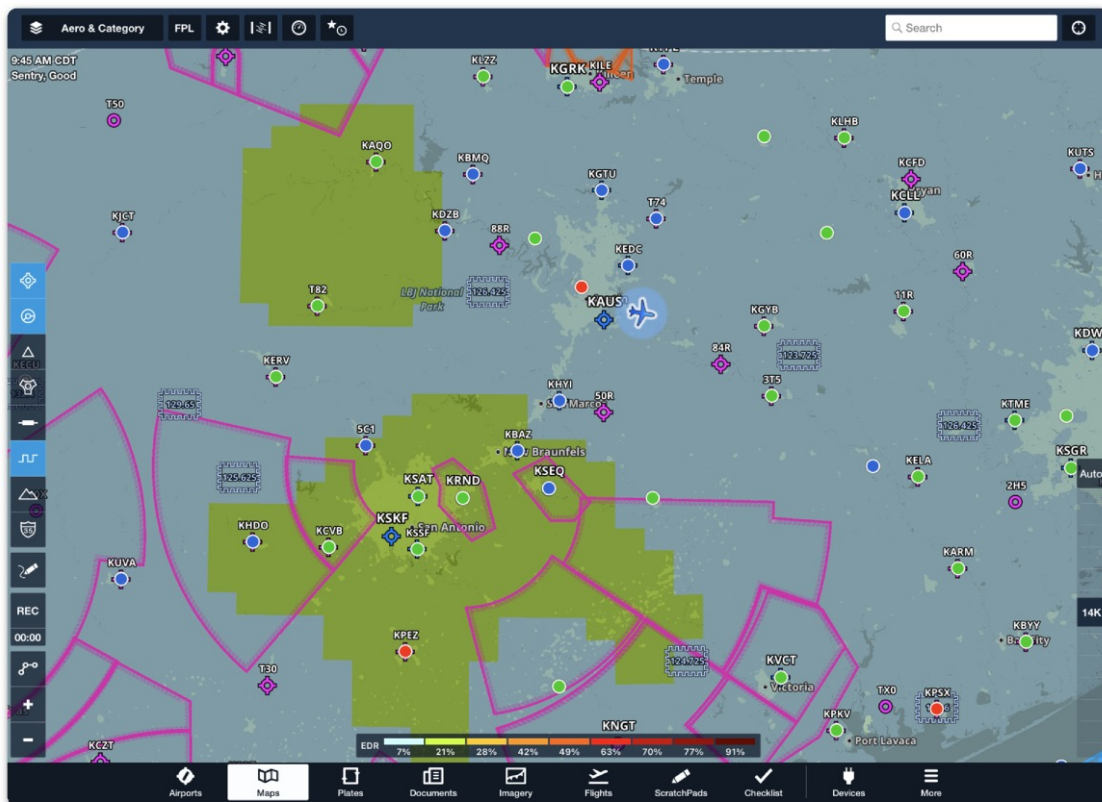
Turbulence (Global) - Displays EDR (eddy dissipation rate) forecasts which translate into turbulence severity based on aircraft weight. Use the time slider to view different frames in the forecast, and use the altitude slider on the right to view EDR forecasts at different altitudes. Provides worldwide coverage. Requires a Pro Plus, Performance Plus, or Business Performance subscription.

9. MAPS

Turbulence (XM) (requires GDL 51 or GDL 52) - Displays turbulence intensity forecast based on a medium aircraft weight category. Use the altitude slider on the right to view turbulence intensity forecasts at different altitudes. Covers the continental United States plus northern Mexico and southern Canada.

Turbulence (ADS-B) - 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 is depicted at every 2,000 feet to 24,000 feet MSL using the altitude slider on the right side of the map. Turbulence (ADS-B) data is available only in the continental United States. Tap **Auto** above the altitude slider to automatically display forecast turbulence intensity at your GPS altitude.



Turbulence (ADS-B)

9. MAPS

9.5.7 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.

9.5.8 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.

9.5.9 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.

9. MAPS

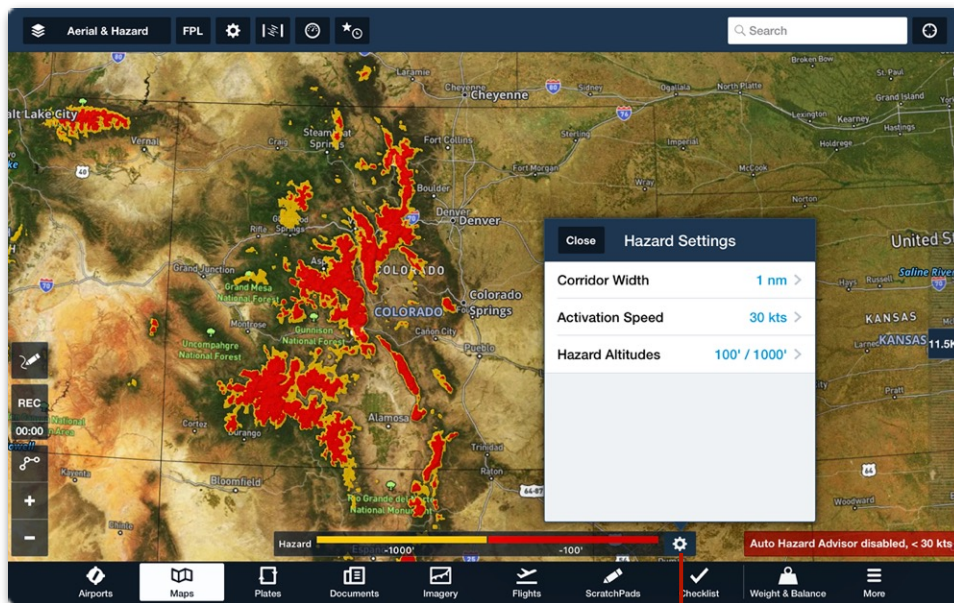
9.5.10 Freezing Levels

Freezing Levels (requires GDL 51 or GDL 52) - Displays freezing level boundaries in 1,000-foot intervals using a colorful overlay. It covers the Continental United States plus northern Mexico and southern Canada.

9.5.11 Hazard Advisor

Hazard Advisor is a preflight and inflight map overlay that depicts terrain relative to a selected altitude. The terrain is colored (red/yellow) based on the *Hazard Altitude* setting. The Hazard Altitude can be adjusted in More > Settings, **Profile View** settings, or using the **map legend** at the bottom of the Maps view.

The selected altitude automatically changes to reflect the GPS altitude when a GPS speed greater than the selected activation speed is detected. In flight, nearby obstacles within 1,000' of GPS altitude are also depicted on the map when Hazard Advisor is enabled. Hazard Advisor requires a Pro Plus or higher subscription.



Selected Altitude
(Slide to adjust)

**GPS speed less than
activation speed**

**Hazard Advisor
Settings**

9. MAPS

9.5.12 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.

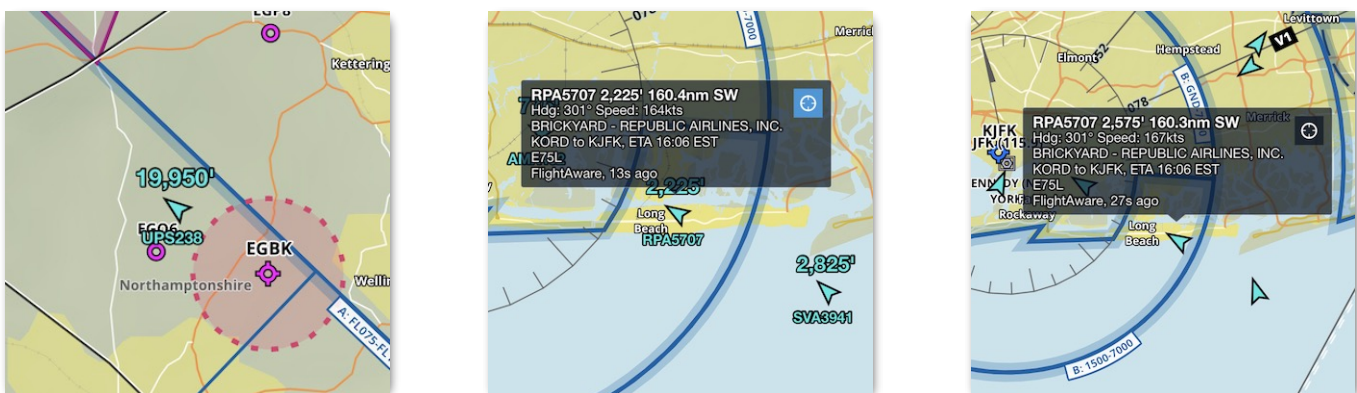
Traffic (Internet)

In partnership with FlightAware, when your iPad or iPhone is connected to the Internet (Wi-Fi or Cellular Data) you can stream live global traffic (including decoded callsign, Departure, Destination, and ETA) directly to the ForeFlight Maps page. The Internet Traffic is tied to the same Traffic map layer used to display ADS-B traffic, and that layer is available anytime your device is connected to the Internet on the ground.

The Traffic layer automatically switches to ADS-B Traffic when your device connects to a compatible ADS-B receiver. Internet Traffic is disabled automatically after takeoff, but ADS-B traffic can be displayed using a receiver like Sentry. It is impossible to display internet traffic while connected to an ADS-B receiver.

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

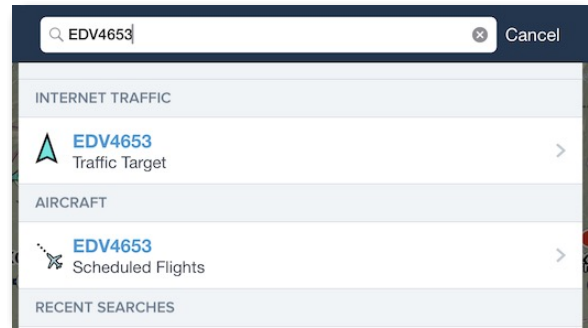


Internet Traffic

9. MAPS

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.



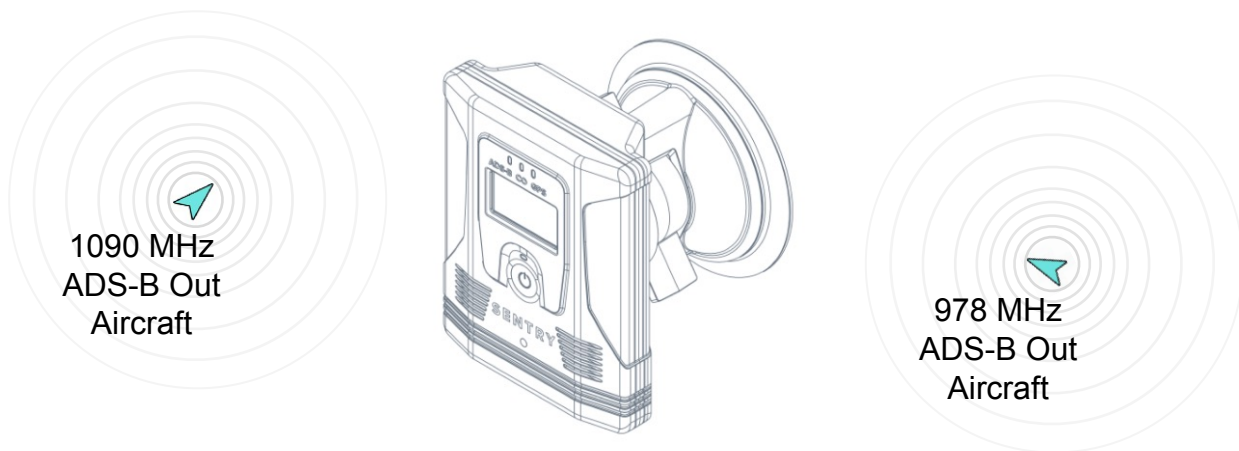
Traffic Search

Traffic (ADS-B)

ADS-B traffic is broadcast on the 978 MHz or 1090 MHz frequency (1090 MHz is required internationally and above FL180). Most modern ADS-B receivers are dual-band and capable of detecting traffic on both ADS-B frequencies. When connected to an ADS-B receiver, 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 traffic. However, if your aircraft is not ADS-B Out equipped, ForeFlight may show significant relative altitude discrepancies.

If your aircraft is not ADS-B Out equipped, ForeFlight may not display traffic detected from surveillance radar. If you are interested in purchasing an ADS-B receiver, ForeFlight recommends Sentry. For more information, visit www.flywithsentry.com.



Sentry Plus Detecting ADS-B Traffic

9. MAPS

9.5.13 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**.

9.5.14 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

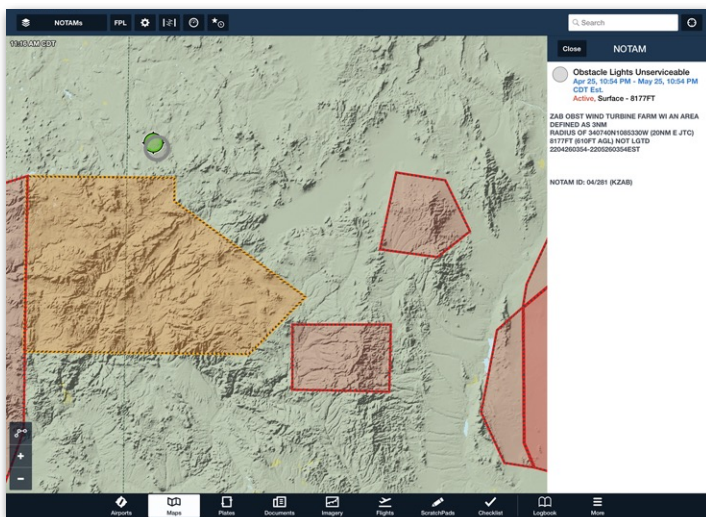
AIRMET. SIGMET, CWA coloration

9. MAPS

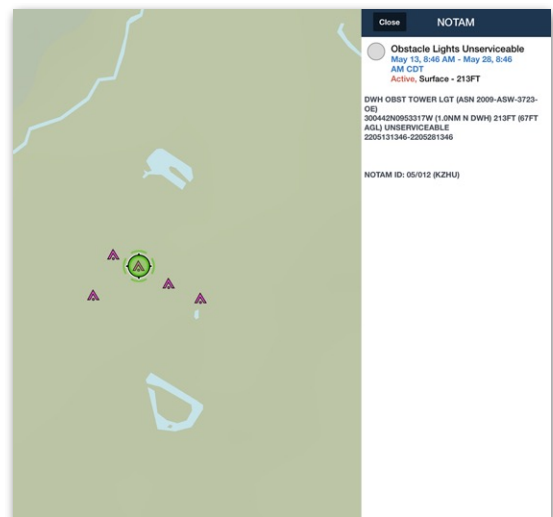
9.5.15 NOTAMs

NOTAMs display geographic and obstacle NOTAMs on the map. NOTAMs are provided globally with the exception of Australia. NOTAMs are displayed on the map two hours prior to becoming active. NOTAMs are *not* affected by the Hide Airspace setting and are always depicted when enabled.

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

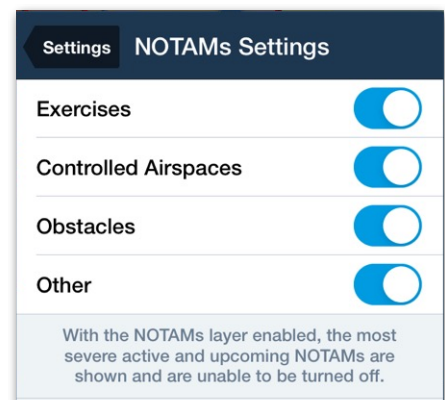


Obstacle NOTAMs

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

9. 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.

9.5.16 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 XM in-flight weather receiver.

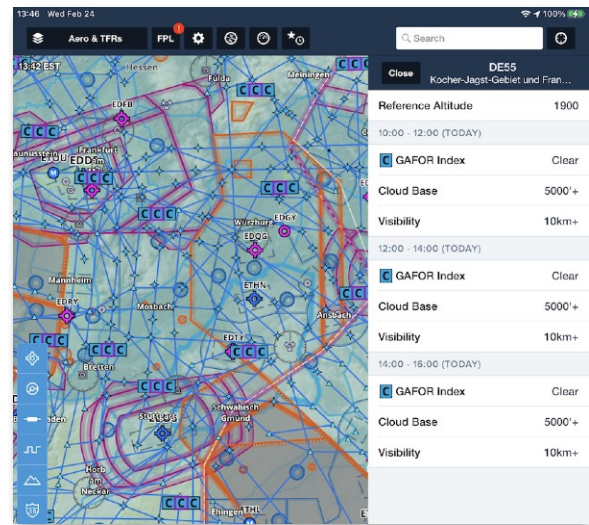
9. MAPS

9.5.17 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

9. MAPS

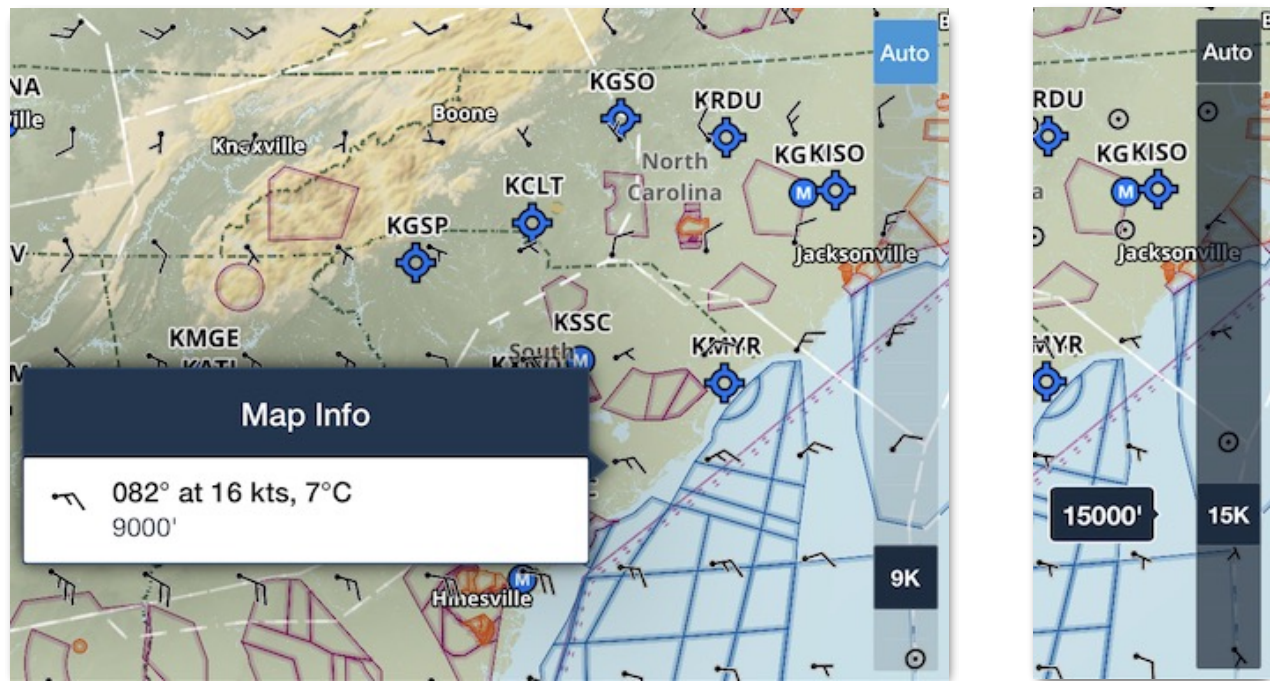
9.5.18 Weather Layers

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.

9.5.19 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

9. MAPS

Surface Winds - derived from METARs at airports show surface wind speed and direction only at those locations.

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.



Surface Winds (Sirius XM)

9.5.20 Obstacles

Obstacles show obstacle markers based on Jeppesen obstacle data.

9.5.21 User Waypoints

All User Waypoints associated with the account are shown on the Map. See [User Waypoints](#) for more information.

9. MAPS

9.5.22 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. When searching for the best prices, zoom in to display more vendors' prices in a given area.

9.5.23 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.

9.6 Weather Layer Time Slider

When you select a time or forecast-based weather layer like radar or satellite, a time slider appears at the bottom of the screen. Tap the play button on the left to animate the layer. 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.

9. MAPS

9.7 Weather Legends






When Radar, Enhanced Satellite, Color IR Satellite, Icing, Turbulence, Clouds, Winds or the Hazard Advisor layers are selected, a color legend can be displayed just above the time slider at the bottom of the Maps page. Enable or disable the legend in Maps Settings.



Map Weather Legend

9.7.1 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.

NOTE: Once flight category data exceeds three hours, it is removed from the map.

9. MAPS

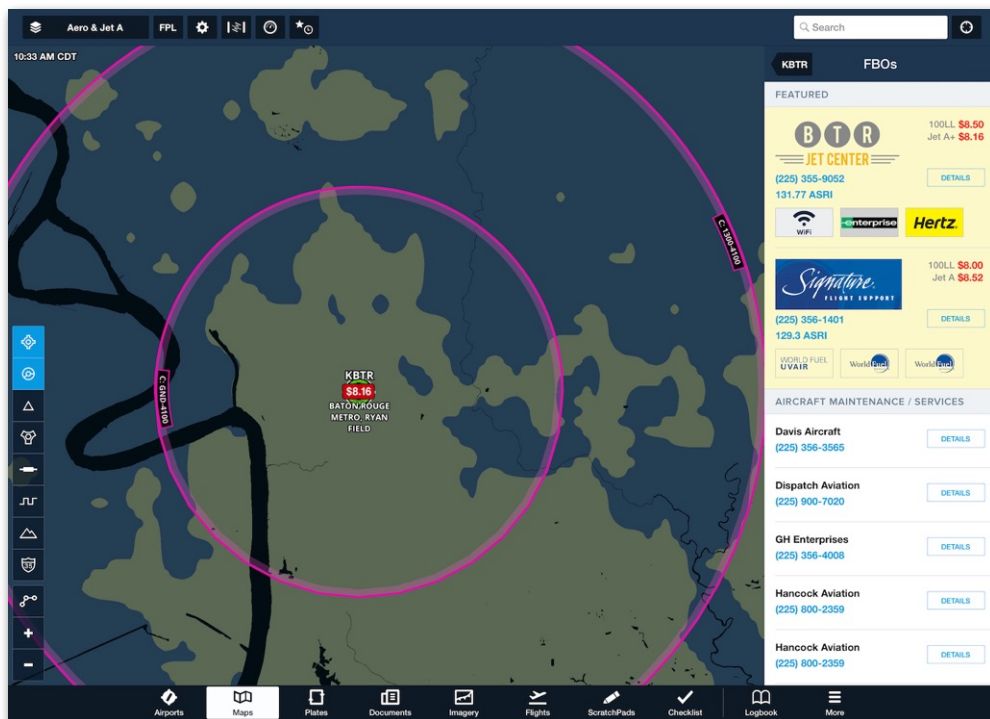
9.8 Maps Sidebar

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.

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

9. MAPS

9.8.1 Add to Route

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

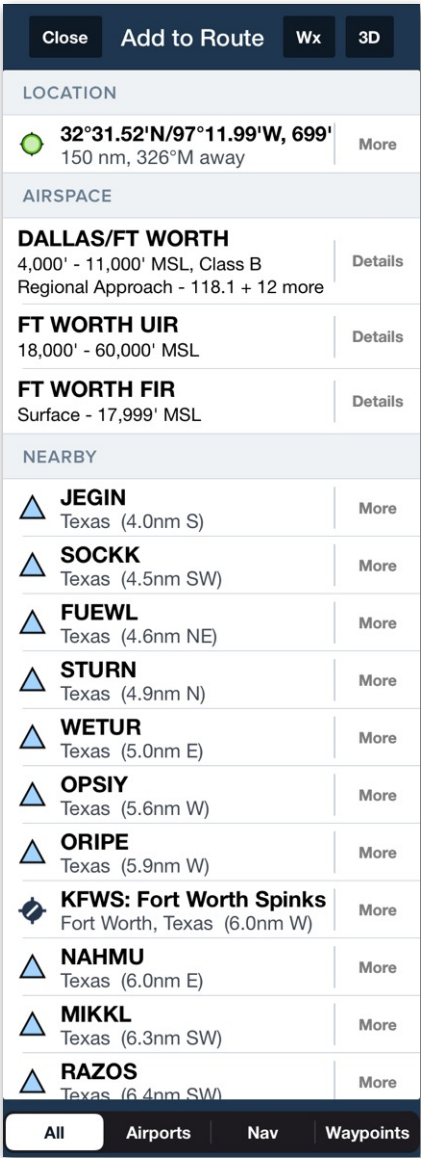
The airspace section lists all airspace from the surface to 60,000 feet. Tap **Details** to highlight the airspace on the map. The airspace details view displays frequencies, RVSM cruise tables, operational notes, speed restrictions, prior notification procedures, and communication details for CPDLC 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.



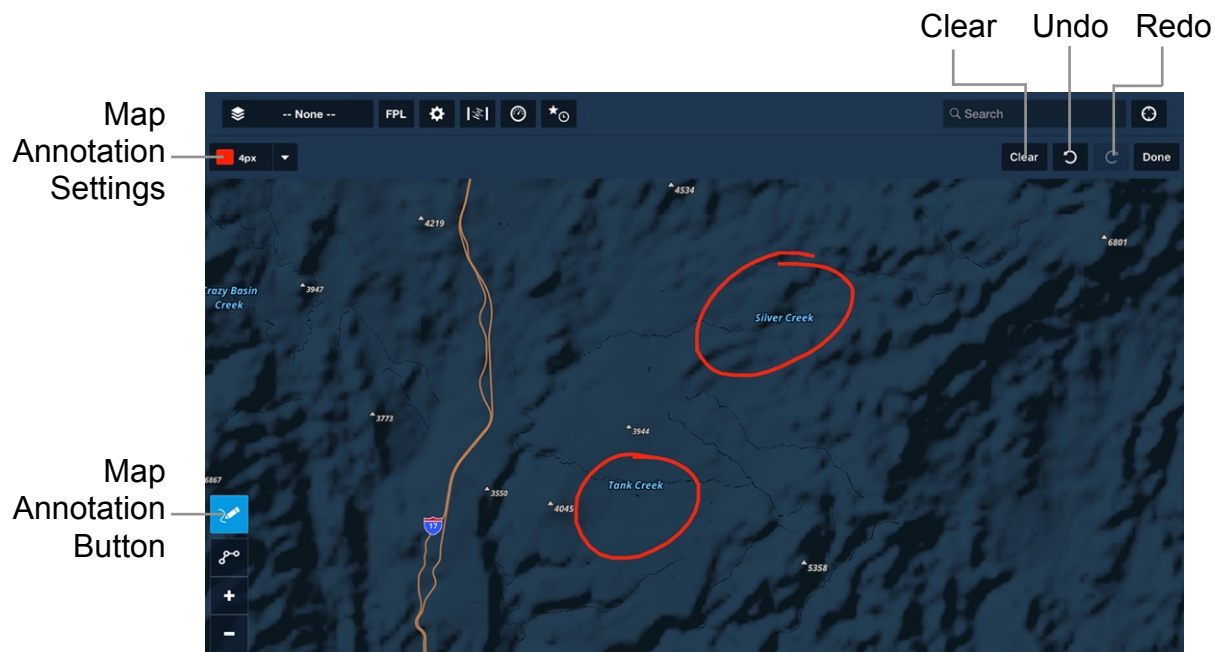
Add to Route Menu

9. MAPS

9.9 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.

9. MAPS

9.10 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.

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.

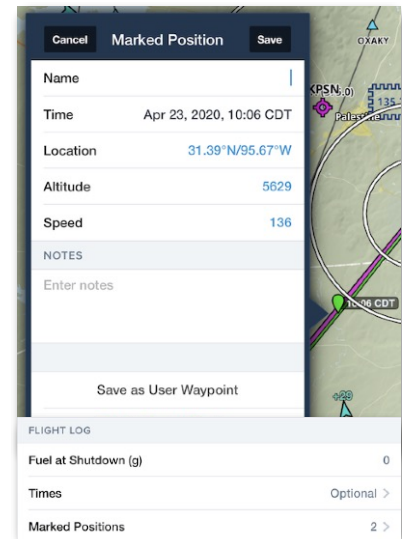
Markers are included in a Track Log recorded during the flight, and can be shared as part of the Track log, viewed in a flight whose ETD and duration span the time when the marker was dropped, and exported from the flight as a KML or CSV file.

The pins for positions marked during a particular flight are automatically hidden from the map 15 minutes after the end of the flight.

9.10.1 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.

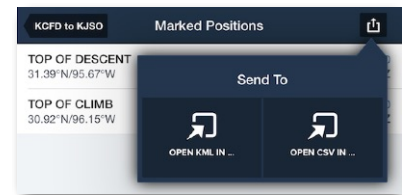
After the flight you can edit a Marked Position by viewing the Track Log containing the position and tapping the Marked Position or tapping the Track Log “Info” button and scrolling down to the Marked Position, or by opening a Flight whose ETD and duration span the time when the marker was dropped and scrolling down to the “Flight Log” section.



9. MAPS

9.10.2 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.

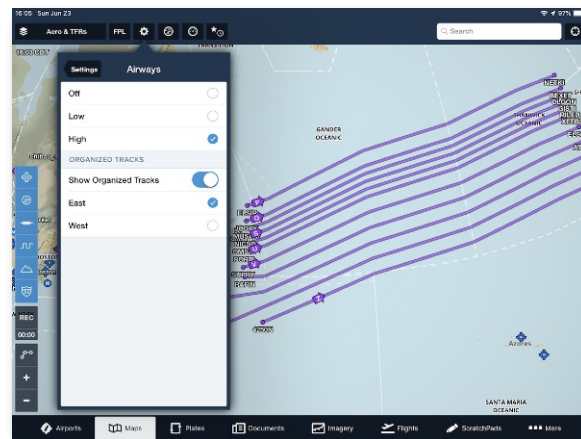
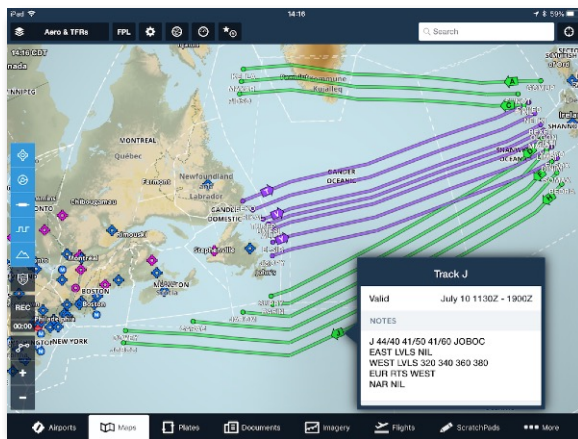


Exporting Marked Positions

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.

9.11 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.

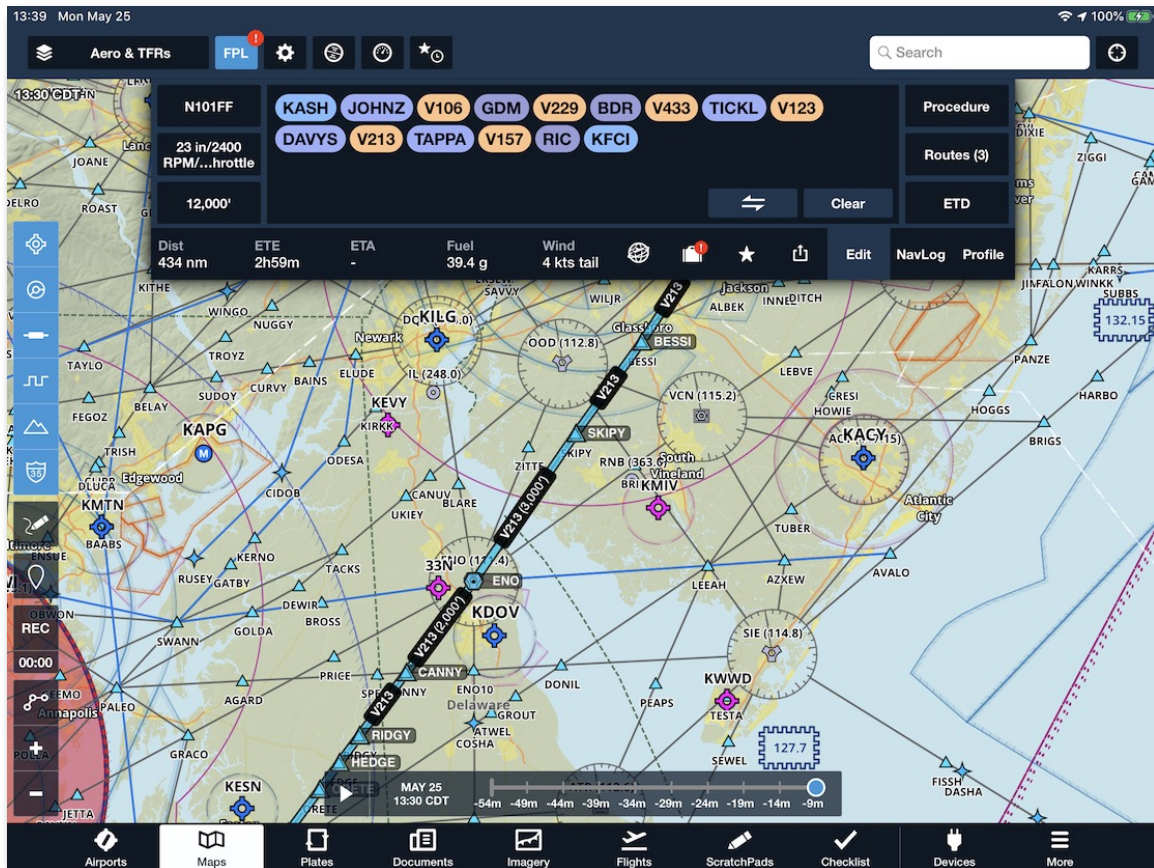
Display the tracks by selecting the Aeronautical Data layer, then tapping the Maps Settings (gear) button, selecting Airways, and turning the Organized Tracks switch ON. You can display only the tracks relevant to your direction of flight by de-selecting **East** or **West** as needed.

NOTE: Organized Tracks cannot currently be automatically added to a route, but the points on a track can be added manually using touch planning.

9. MAPS

9.12 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](#).

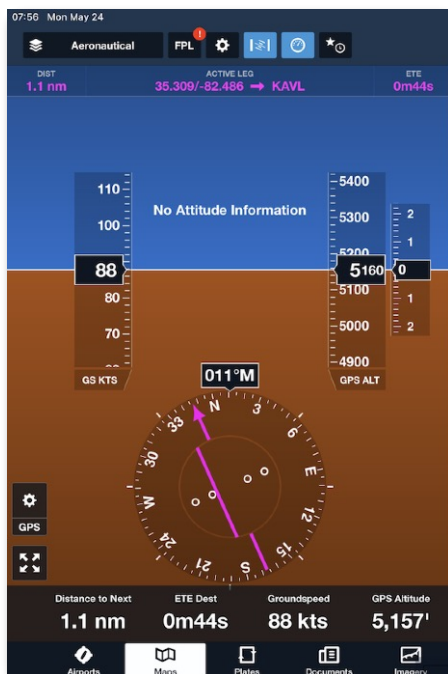
9. MAPS

9.13 Attitude Indicator

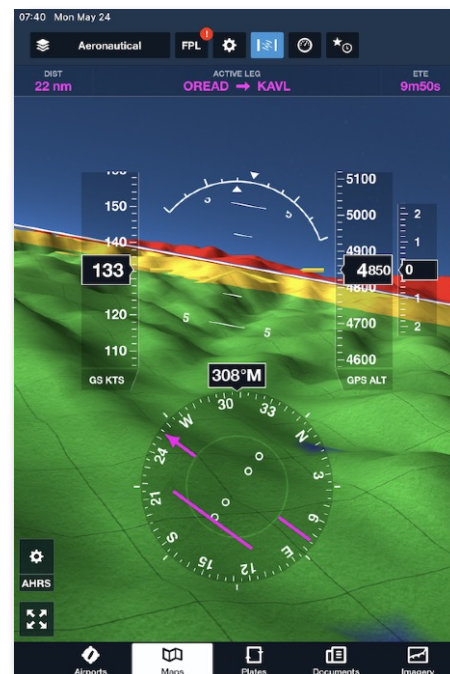
Tap the Attitude Indicator/Synthetic Vision (SV) button  at the top of the Maps page to view the Attitude Indicator. On the iPad the display also includes GPS altitude (MSL), GPS ground track, GPS ground speed and GPS calculated rate of climb (ft/min).

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

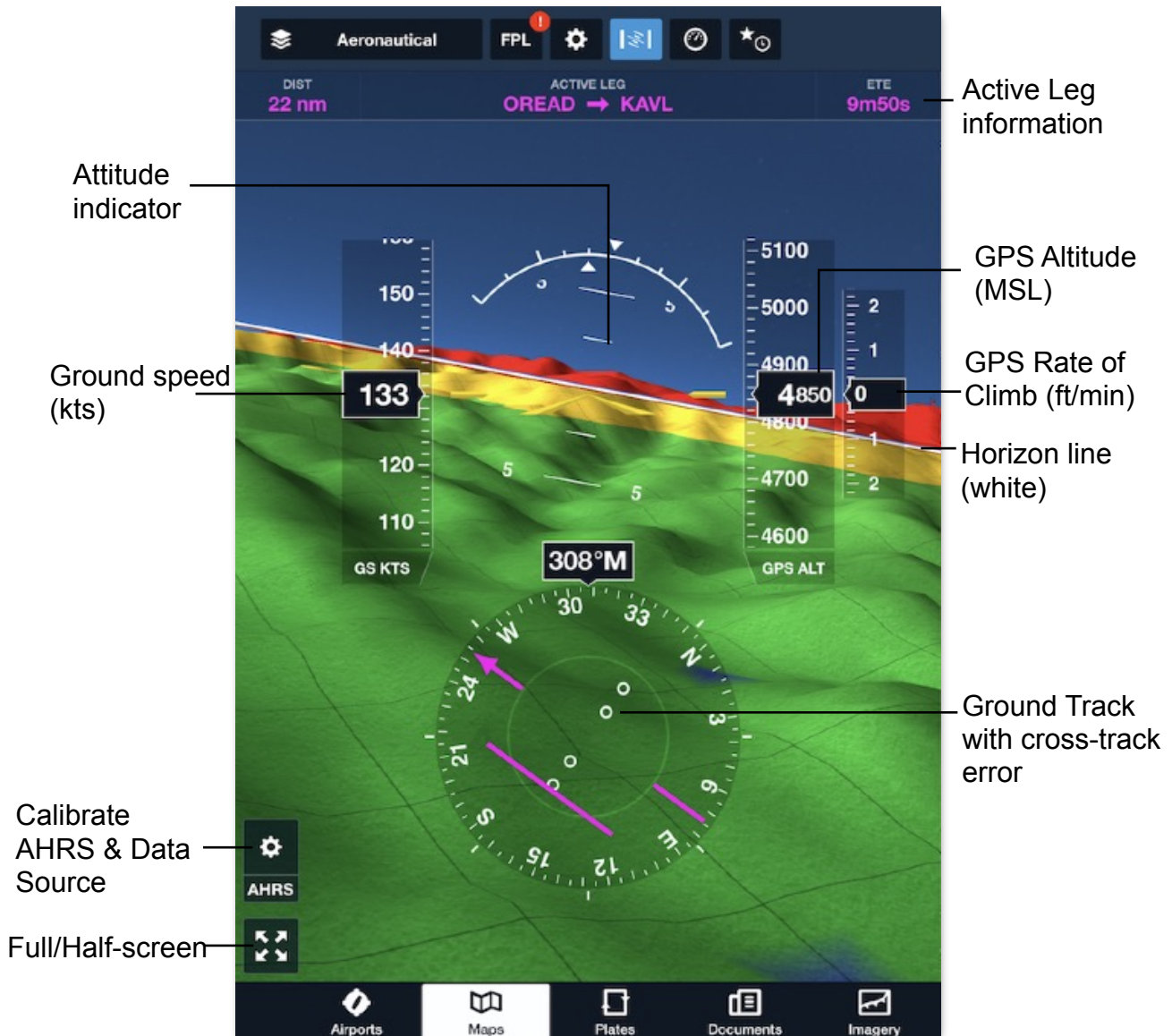


Attitude Information
Synthetic Vision

9. MAPS

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 full-screen/half-screen 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.



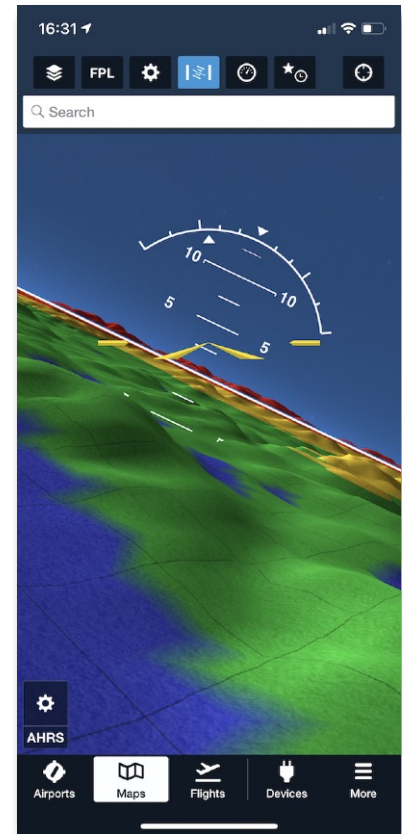
9. MAPS

9.13.1 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.

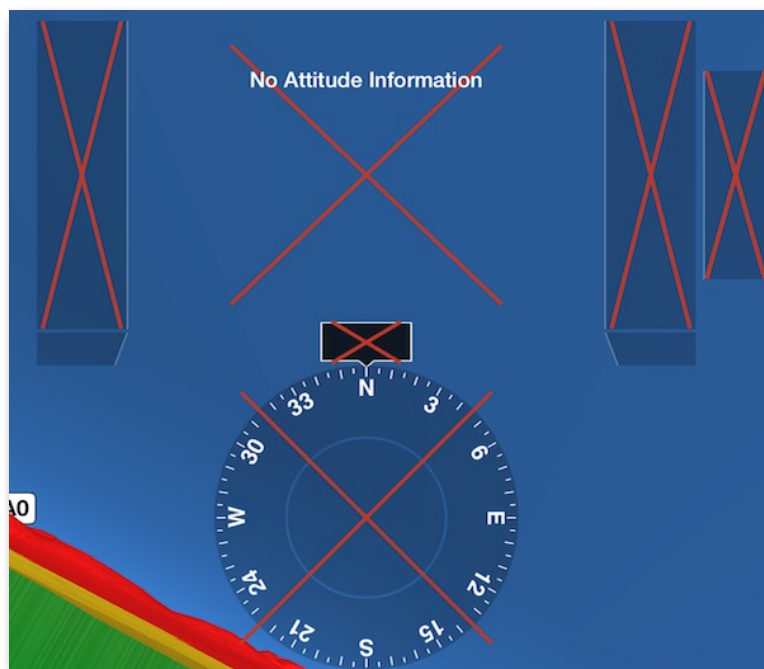
9. MAPS



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.

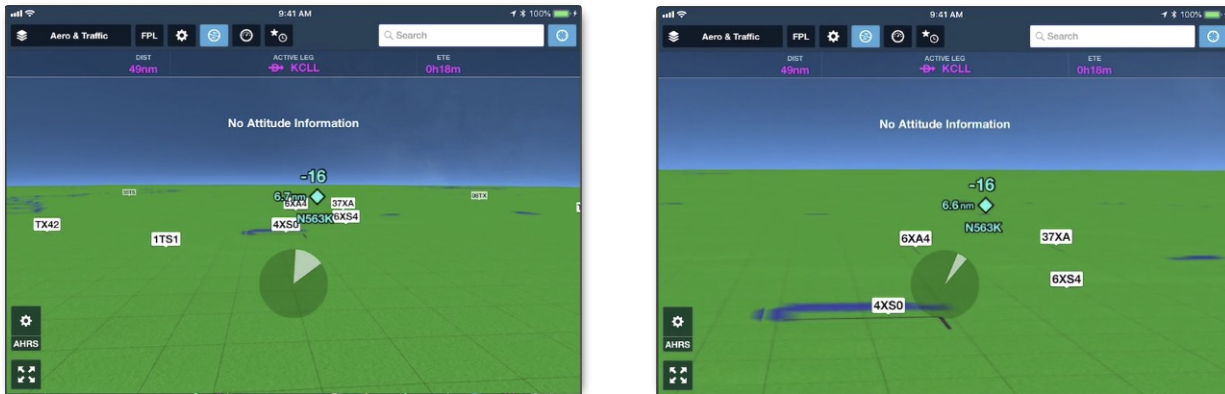


Unreliable GPS data

9. MAPS

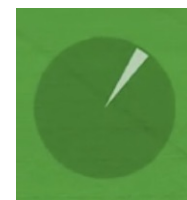
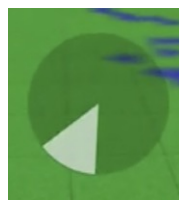
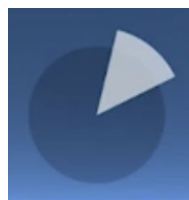
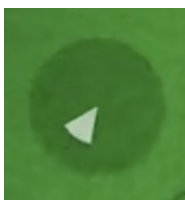
9.11.2 Glance Mode

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.

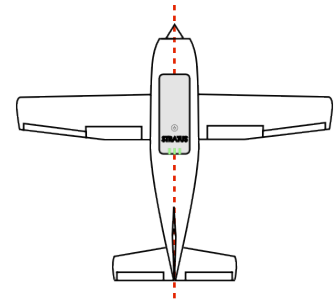


You can also tap on the view indicator to manually exit Glance Mode and return the view to its default forward direction.

9. MAPS

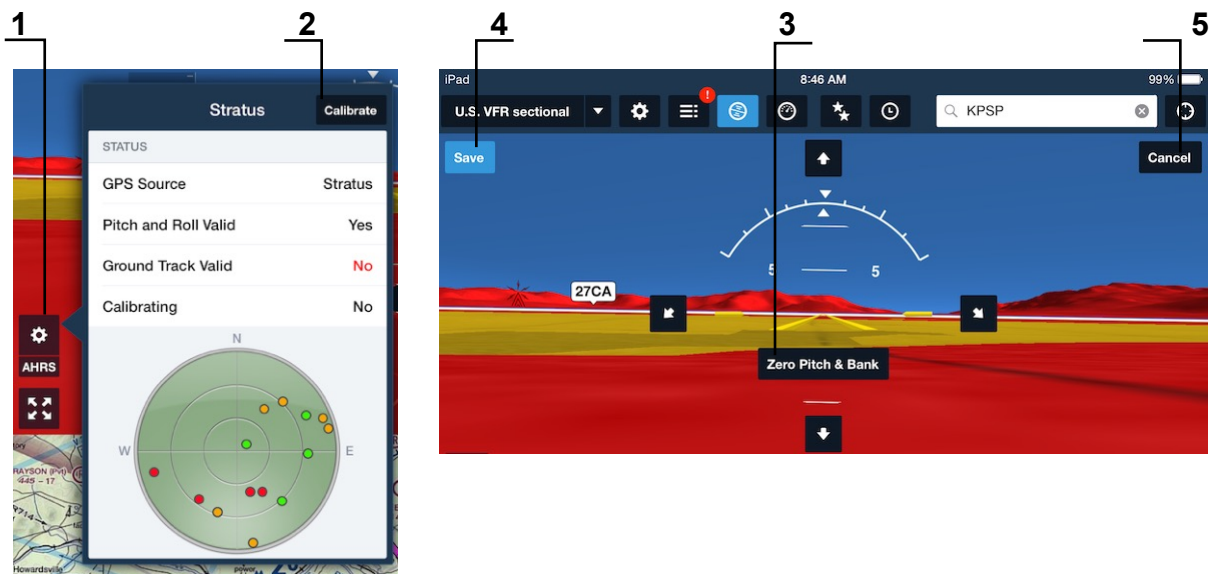
9.11.3 Portable AHRS Positioning

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.



9. MAPS

9.14 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 identifier, and tap the **Search** button on the keyboard.

You can search by 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.

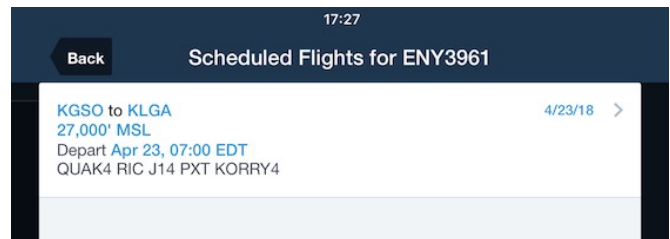
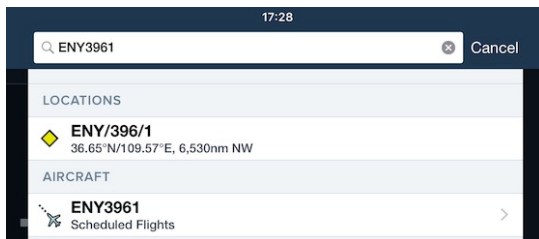
Example Searches:

- KJFK - Centers the map on KJFK airport
- 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

9. MAPS

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.

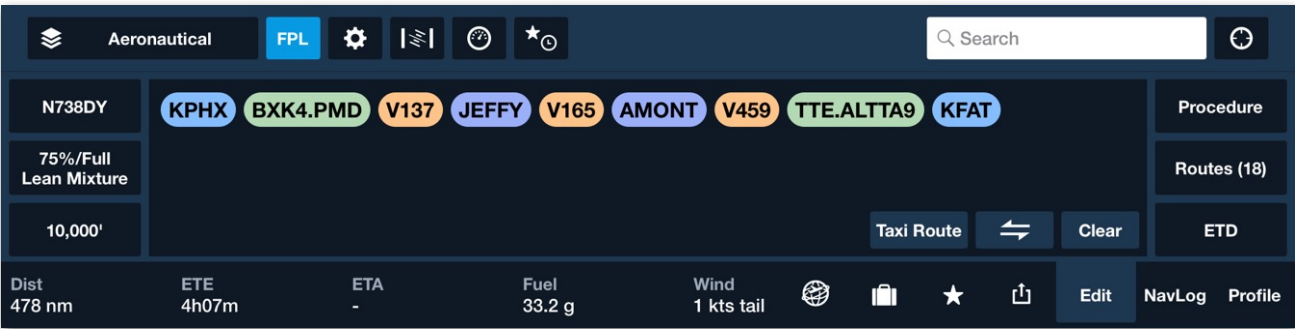


9. MAPS

9.15 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.

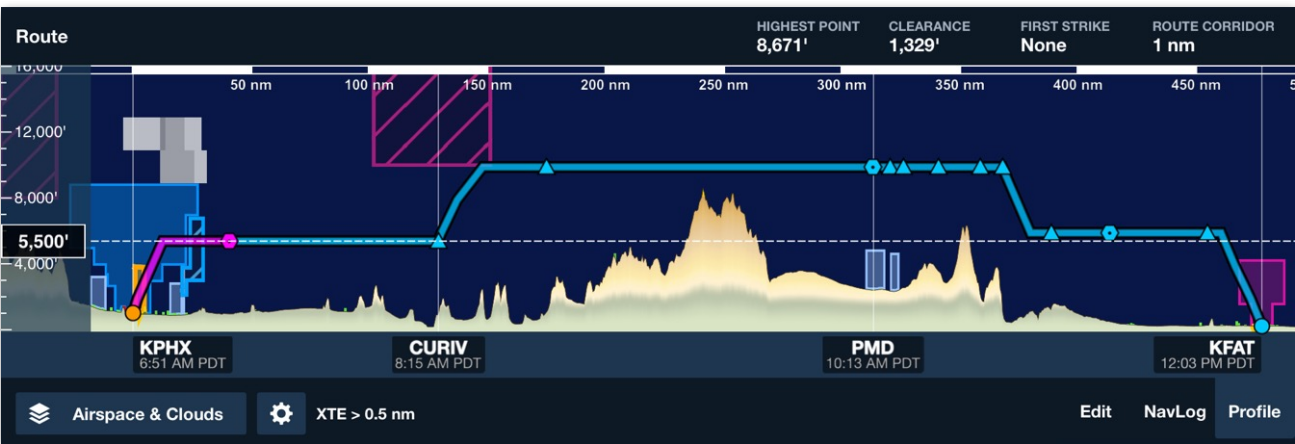
- **Edit** - Displays the Flight Plan Editor.
- **NavLog** - Displays the navlog for the planned route.
- **Profile** - Displays the Profile View (Pro Plus subscription or higher required).



Flight Plan Editor

FROM	TO	HDG	TOTALS	LEG	REMAINING	ETA
KPHX	BXK	258°M	41 nm, 5.6 g	41 nm, 4.5 g	0h28m	---
BXK	CURIV	264°M	129 nm, 11.0 g	88 nm, 5.3 g	0h42m	---
CURIV	DECAS	260°M	175 nm, 13.9 g	46 nm, 2.9 g	0h23m	---
DECAS	PMD	270°M	245 nm, 16.8 g	100 nm, 6.7 g	1h00m	---
PMD	KFAT	270°M	245 nm, 16.8 g	100 nm, 6.7 g	1h00m	---
Dist 478 nm, ETE 4h07m, ETA -, Fuel 33.2 g, Wind 1 kts tail						
Edit, NavLog, Profile						

NavLog



Profile View

9. MAPS

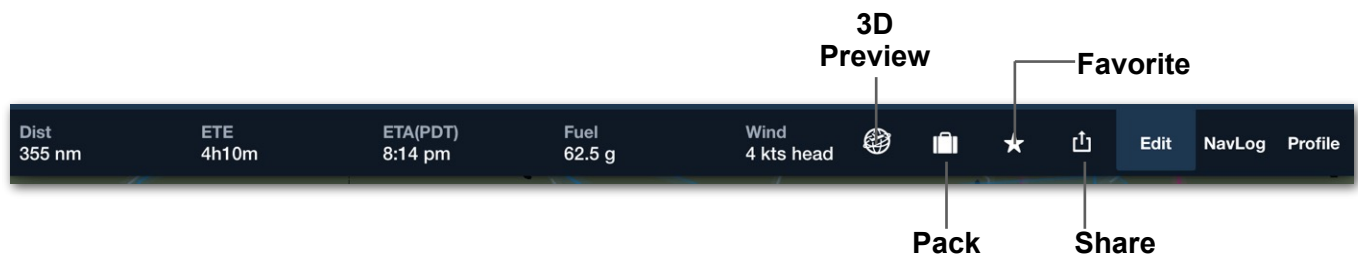
9.15.1 Route Summary

At the bottom of the Edit and Navlog views is 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, 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.



3D Preview

To the right of the route summary is a globe icon. Tap the globe icon to preview the route in a three-dimensional view. Route 3D preview is a Performance Plus feature.

Pack

The suitcase button displays the **Pack** menu. Pack provides a method for downloading all charts, weather, NOTAMs, and fuel-price data needed for the planned route.

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 locating a route in the Favorite Routes list.

9. MAPS

Route Sharing

Routes can be shared via various methods. Tap the share (Send To) button and select one of the sharing options.

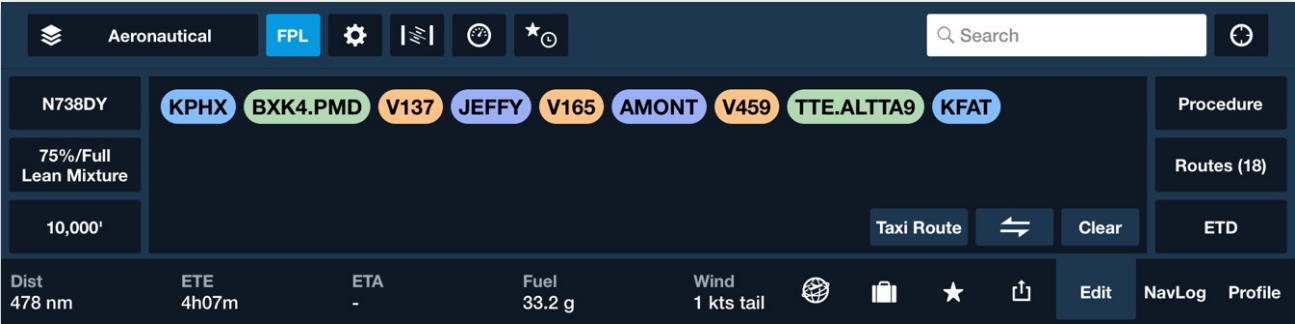
- **Mail** creates a new email message with your navigation log and a screenshot of your trip. The message also includes a link that other ForeFlight Mobile users can tap to load your route onto their iPad or iPhone. **NOTE:** This option only appears if an email account is set up in your device's Mail 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.
- Other devices on the same Wi-Fi network that are running ForeFlight (listed by device name).
- Other - includes Social Media, such as:
 - **Twitter** composes a new Twitter message with your route and a screenshot of your trip. (Requires iOS 5 or higher, plus Twitter account setup in Apple Settings.)
 - **Facebook** composes a new Facebook post with your route and a screenshot of your trip. (Requires iOS 5 or higher, plus Facebook account setup in Apple Settings.)
 - **LogTen** sends a copy of your route to the LogTen logbook app, if installed on your device.

9. MAPS

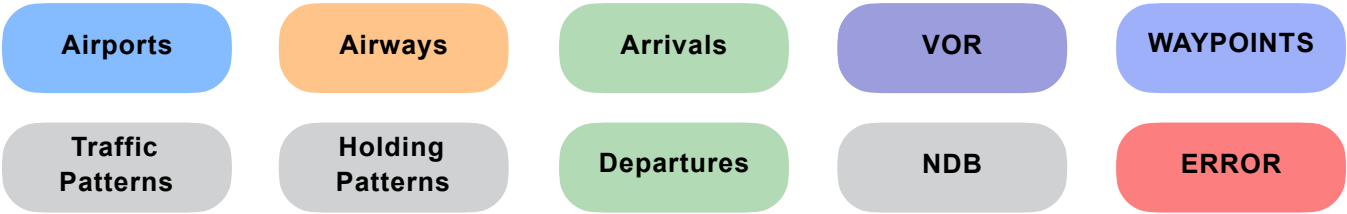
9.15.2 Route Editor

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 elements are any airport, navigational aid, waypoint, airway, or procedure. Route elements are color-coded based on type.



Route Editor (FPL - Edit Mode)



Route Editor - Element Icon Colors

9. MAPS

9.15.3 NavLog


The navigation log (NavLog) 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.

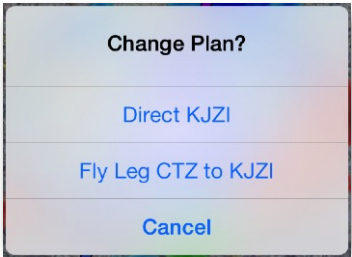
On smaller screens, it's not possible to display all of the columns. Only the destination, departure, heading, and distance/fuel/time totals are depicted.

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	-----	-----
BHAWK	→ DUTYS	100°M	100 nm 31.7 g 0h36m	42 nm 5.4 g 0h11m	-----	-----
Dist 616 nm	ETE 2h42m	ETA(CDT) 15:57	Fuel 96.2 g	Wind 10 kts head	🌐 📄 ⭐ 📶	Edit NavLog Profile

- 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.

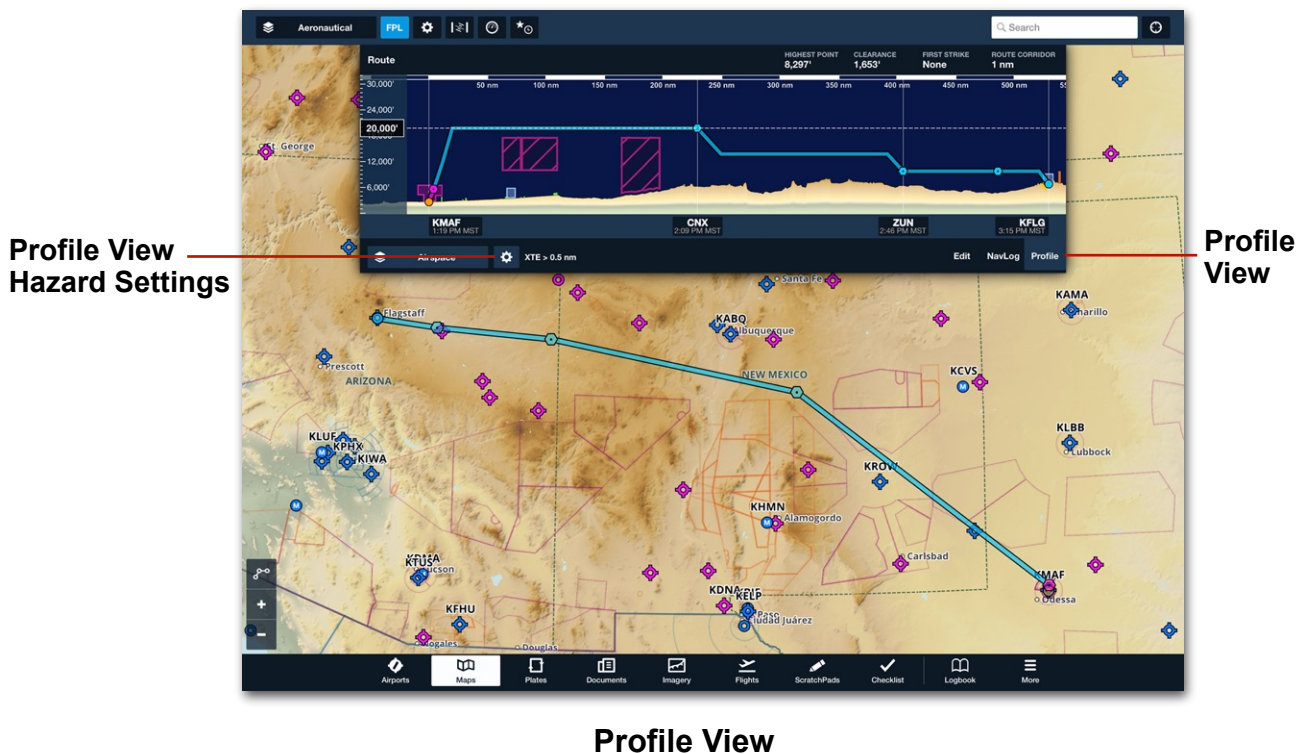


9. MAPS

9.15.4 Profile View

Profile View displays a cross-section of the planned route. Profile View displays the flight's climb, en route, and descent phases. Initial and en route 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 Hazards (Terrain & Obstacles)

Profile View displays the hazards along your route. Hazards include terrain and obstacles. The hazards displayed in Profile View are determined by the **Corridor Width** setting in the Profile View Hazard Settings (gear button).

Corridor width specifies the *total* distance (perpendicular to the route) for which hazards are included. For example, an 8 nm corridor width setting displays all hazards (terrain and obstacles) within 4 nm on either side the route.

9. MAPS

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.

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

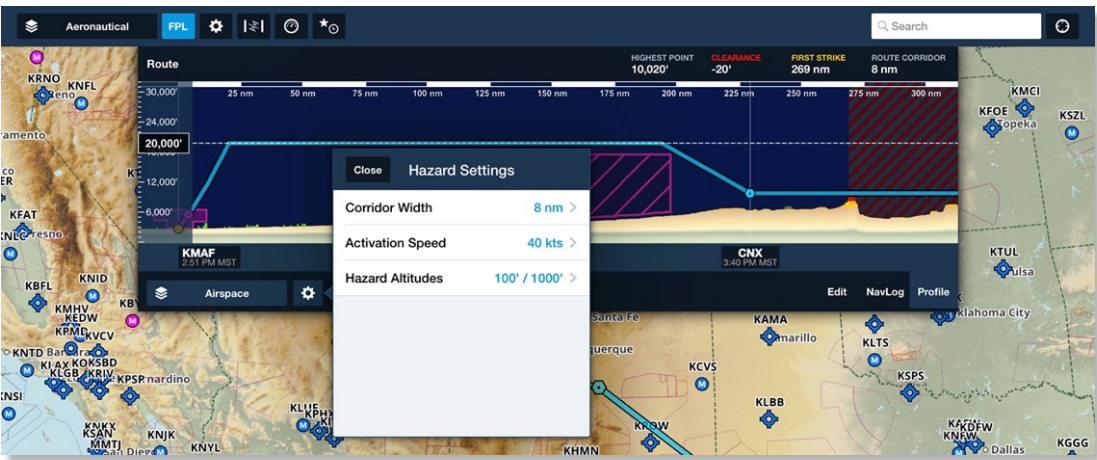
There are four hazard altitude settings. The **Normal 100' / 1000'** setting is selected by default.

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.

100' / 1000'	Normal: 100' / 1000'	<input checked="" type="radio"/>
50' / 300'	Heli - Normal: 50' / 300'	<input type="radio"/>
25' / 200'	Heli - Medium: 25' / 200'	<input type="radio"/>
25' / 100'	Heli - Low: 25' / 100'	<input type="radio"/>

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'.

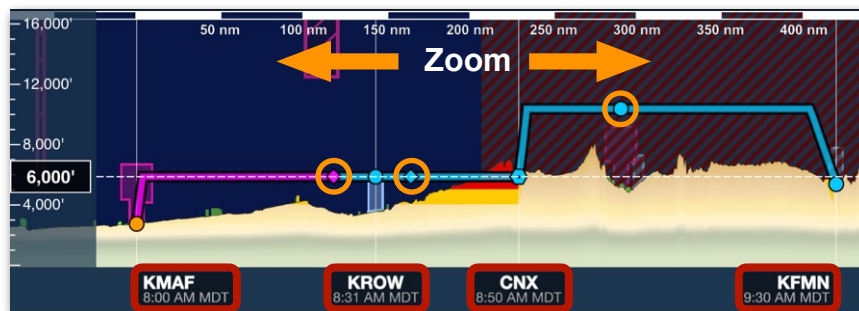


Profile View Hazard Settings

9. MAPS

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)

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.

Close	Altitude/Speed/Time for...	
ALTITUDE		
Start At	Cross At	9,500
Altitude Units		Feet
Altitude changes: Start At starts from a waypoint and Cross At completes at a waypoint		
SPEED		
Speed	No change	
Speed Units	Knots	
DELAY/STAY		
Duration	Unavailable	
Delay/STAY changes not permitted when Altitude or Speed defined		
FLIGHT RULES		
Flight Rules	No change	

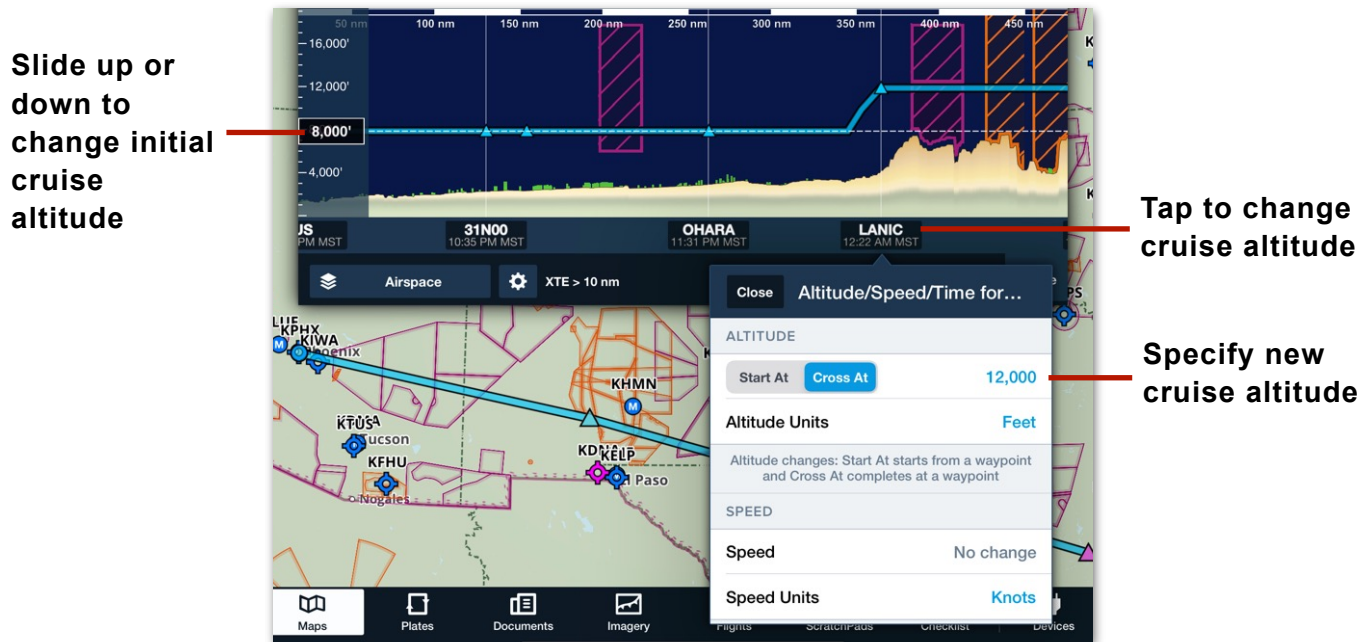
Waypoint Menu

9. MAPS

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

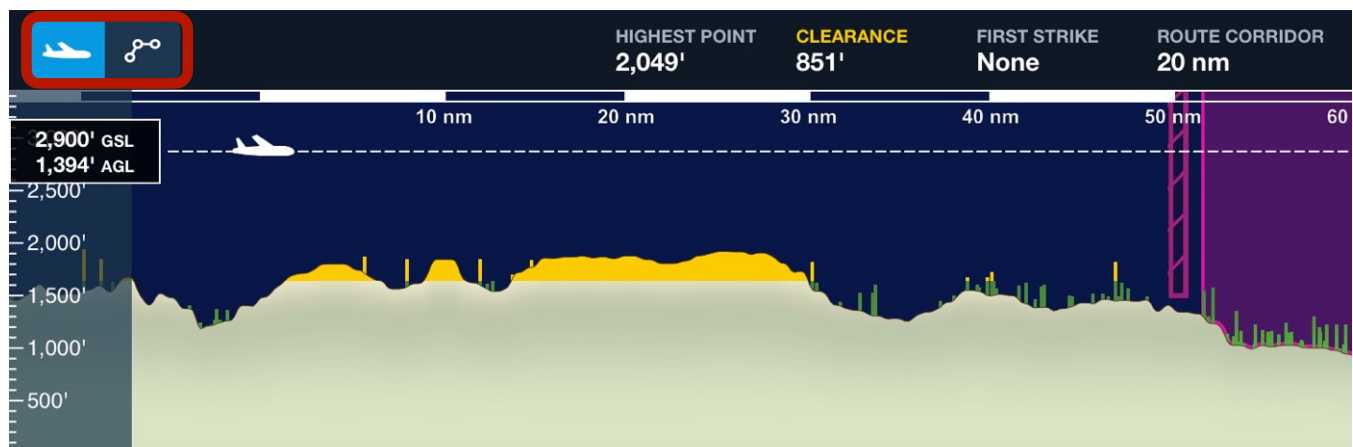
9. MAPS

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)

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.

9. 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.

Profile Layer Selector

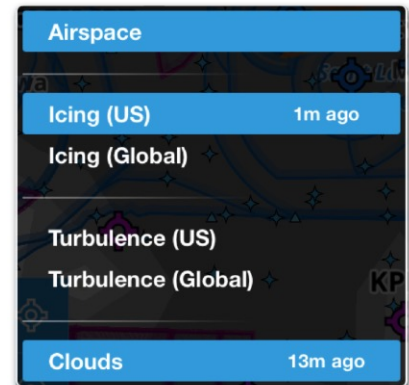
Tap the drop-down menu in the lower-left corner of Profile View to display the layer selector. The layer selector can be used to toggle airspace on and off.

Performance Plus and Business Performance customers can also display Turbulence, Icing, and Cloud layers in Profile view.

Airspace in Profile

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
(Performance Plan)



Layer Selector

Profile View Airspace

9. MAPS

Weather in Profile View

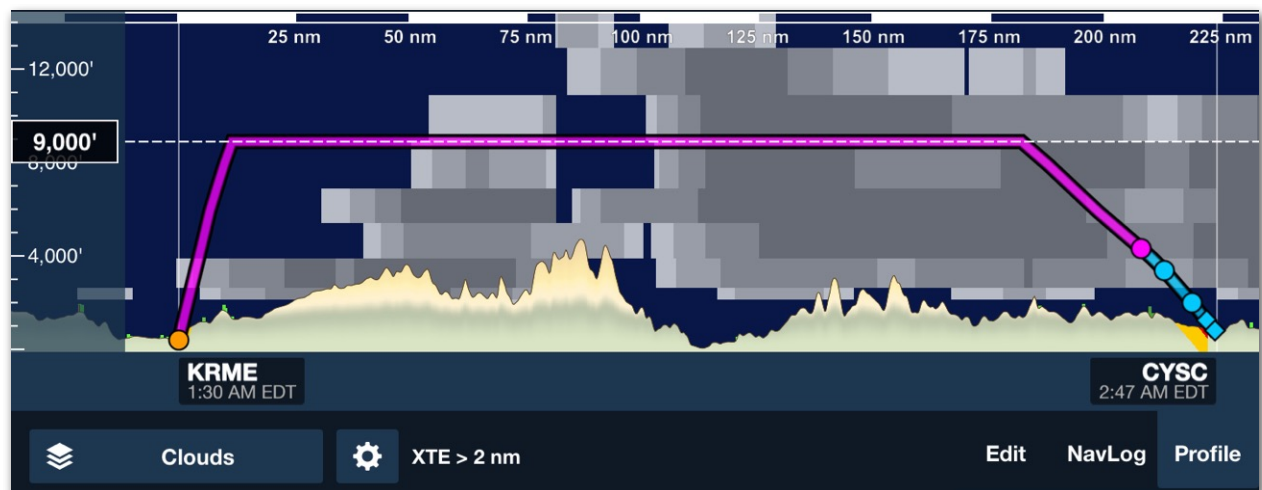
Performance Plus and Business Performance plans offer a cross-sectional view of icing, turbulence, and cloud forecasts along the planned route. Tap the layer selector to enable the Icing, Turbulence, or Cloud forecast.

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.

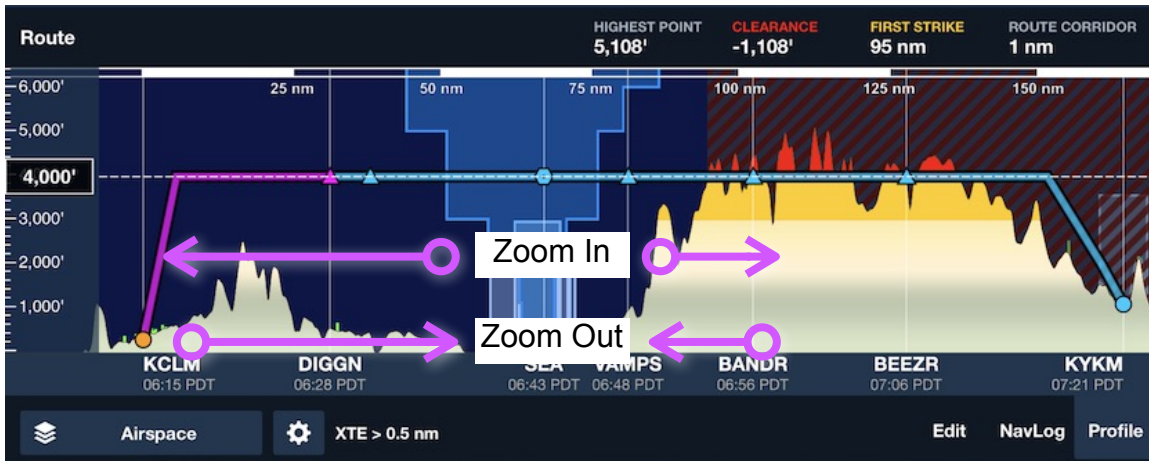


Clouds in Profile View

9. MAPS

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.

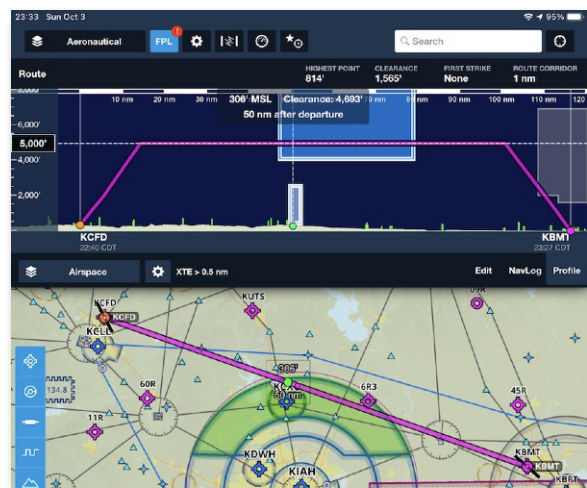
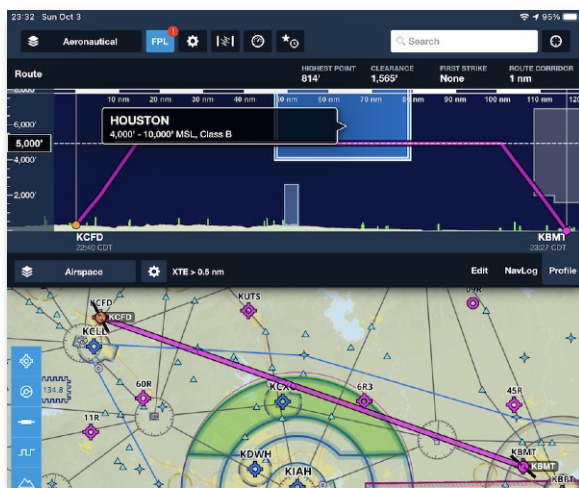


Profile View Zoom

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.

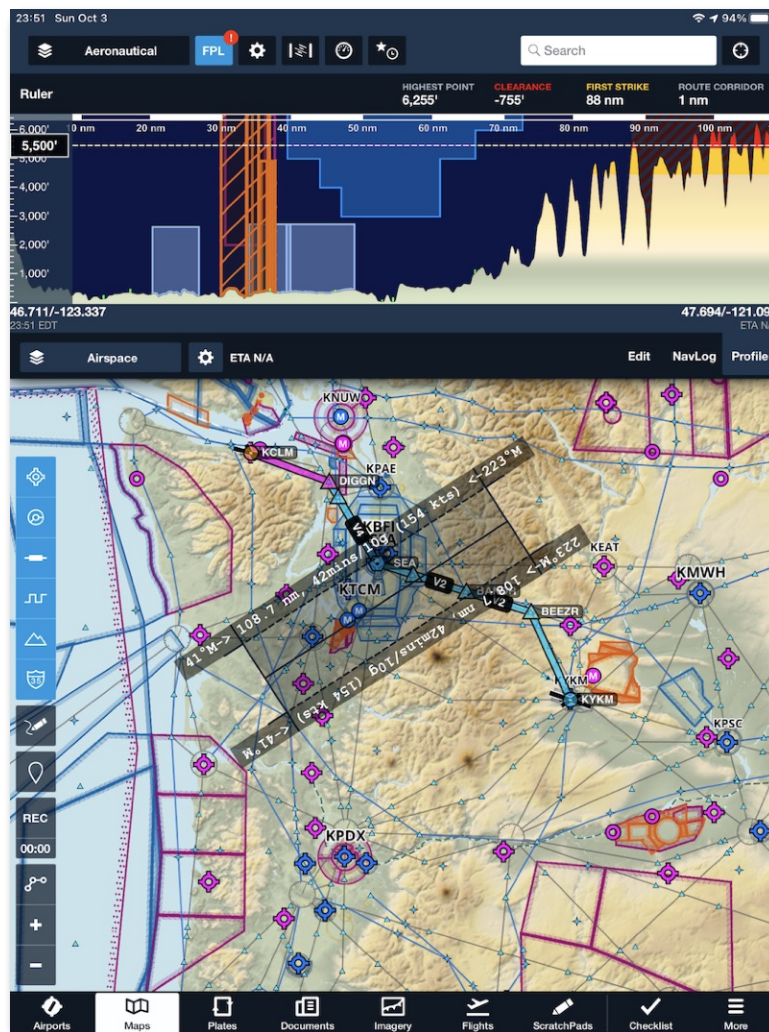


9. MAPS

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.

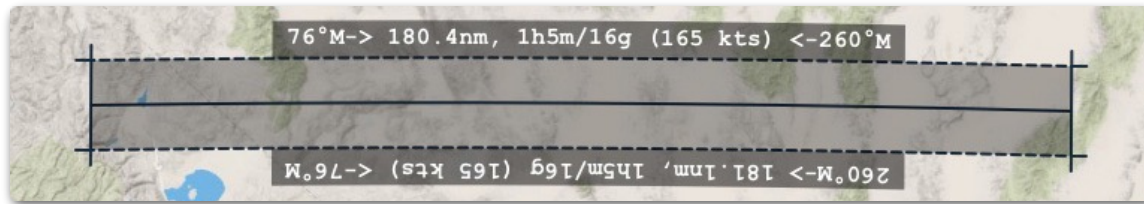


Profile View and Ruler

9. MAPS

9.16 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.

9. MAPS

9.17 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

9. MAPS

9.17.1 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* popup displays all available instruments. Scroll the list up or down to see each instrument.

The list provides a description of each instrument's function, as well as an indication of which ones are already displayed.

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. Instrument descriptions are provided below.

Select Instrument	
NEXT WAYPOINT	
Bearing Next Bearing to next waypoint	<input type="radio"/>
Course Next Desired course to next waypoint	<input type="radio"/>
Cross Track Error Side distance from current leg, in nm	<input type="radio"/>
Nearest Airport (already shown) Relative position from nearest airport	<input checked="" type="radio"/>
Nearest Navaid Navaid Name, Frequency, Radial/Distance	<input type="radio"/>
DESTINATION	
ETE Dest (already shown) Time to destination	<input type="radio"/>
ETA Dest Time of arrival at destination	<input type="radio"/>

Instruments

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 with a built-in barometric sensor, both instruments will show the same value and

9. MAPS

Pressure Altitude will have an “Uncorrected” label, indicating that the value may not correspond to 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. GPS accuracy is reported to ForeFlight by connected external devices or the integrated iOS GPS processor. The Accuracy instrument is color-coded. The lower the accuracy number, the more accurate the position data. See [Ownship](#) for additional GPS accuracy implications.

Green - 20 meters or less

Orange - 20 to 60 meters


Red - Greater than 60 meters

- **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.
- **Nearest Airport** shows the Cardinal position and distance from the nearest airport to your present location.
- **Nearest Navaid** shows the Navaid identifier and the radial and distance from that Navaid.

9. MAPS

- **Nearest Baro** shows the altimeter baro setting for the closest reporting airport, if recent METAR information is available.
- **Horizon Distance** calculates the estimated distance to the horizon in nm based on your present altitude AGL, assuming a simplified, spherical model of the earth.
- **Flight Time** shows the total flight time while recording a Track Log. When Track Log recording is enabled, either manually or automatically, the Flight Time instrument will begin counting up from zero after you take off and continue counting until you land or the Track Log recording is stopped.

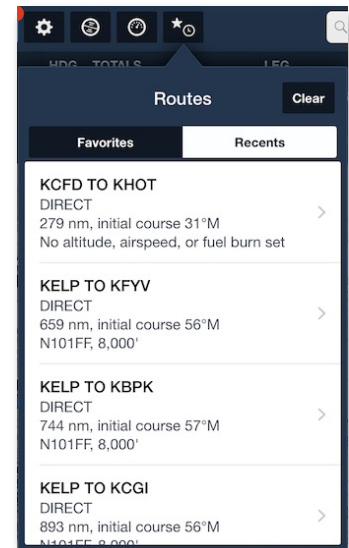
9.18 Favorite and Recent Routes

To view a Favorite or Recent route, tap the star/clock button  in the dark blue tool bar at the top of the Maps view to display a pop-up that shows a list of Favorite & Recent routes, selectable by tapping the Favorites or Recents buttons.

Tap a Recent or Favorite route to make it the active route.

To delete a route from the list, swipe-to-delete (swipe your finger from right to left) across the route, then tap **Delete**. You can delete all routes from the Recents list by tapping the **Clear** button at the top of the list.

The Favorites list can be re-ordered by tapping the **Edit** button. Once in *Edit* mode a three-bar icon is displayed on the right of each route in the list. Touch-and-hold on a three bar icon until the row appears to lift up, then drag the row up or down to the desired location in the list. You can also delete the route by tapping the red button on the left.



9.18.1 Favorite and Recent Route Sync

Changes to your Favorite and Recent routes, including adding, removing and change the order of the routes, are automatically synchronized to each device that is signed-in to your ForeFlight Mobile account.

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.

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.

10.1 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).



Planning with Search

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*.

10. FLIGHT PLANNING

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*.

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.

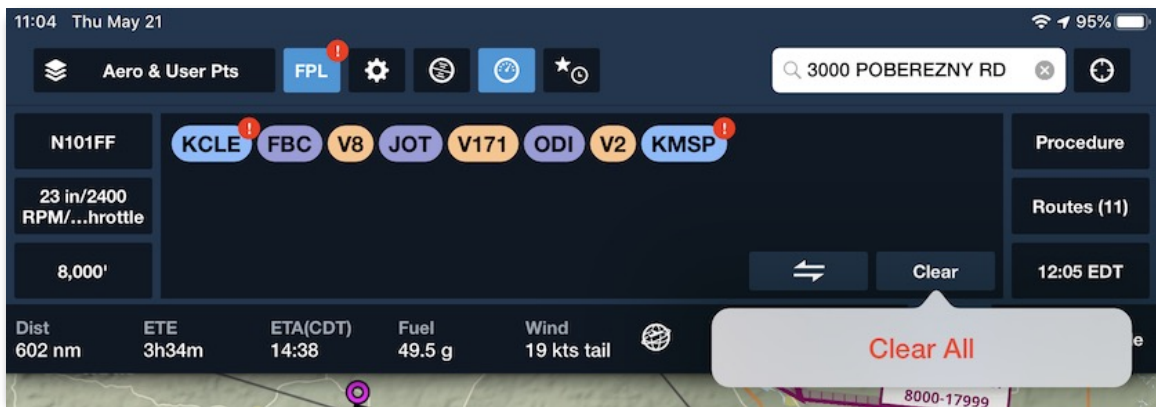
A route search can also include a tail number of an aircraft setup in the More > Aircraft view. When that aircraft has performance data it will be automatically used. Lastly, you can also indicate a departure time in your route search; ForeFlight will use this time to incorporate the proper winds aloft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

10. 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

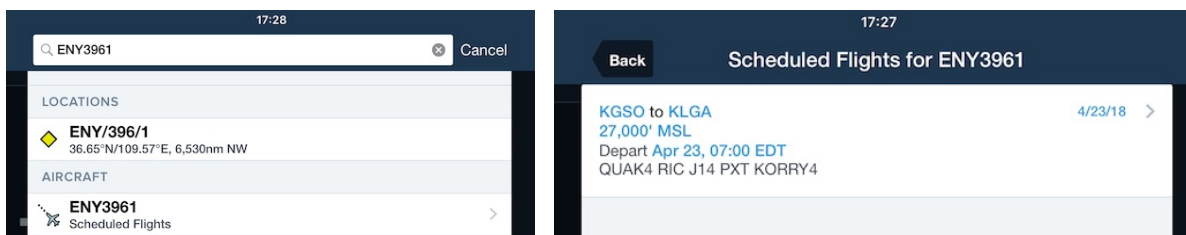
10. FLIGHT PLANNING

10.1.1 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).

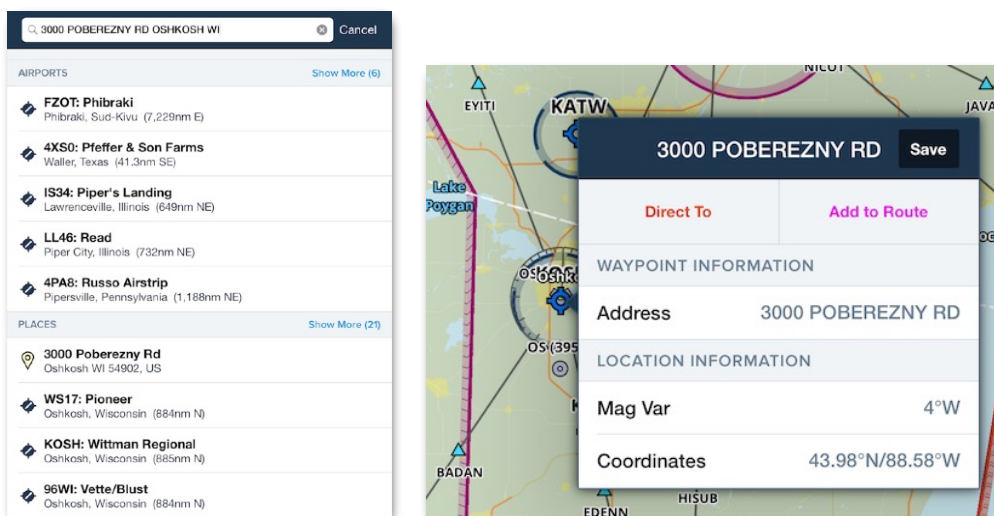
ForeFlight searches FlightAware for any flights that are either currently en route or set to depart in the next 24 hours and displays those flights in a list. Each flight listed includes the departure and destination airports, the filed altitude, the departure time, and the filed route. Tap on a flight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



10.1.2 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**.



10. FLIGHT PLANNING

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.

10. FLIGHT PLANNING

10.2 Planning with Maps

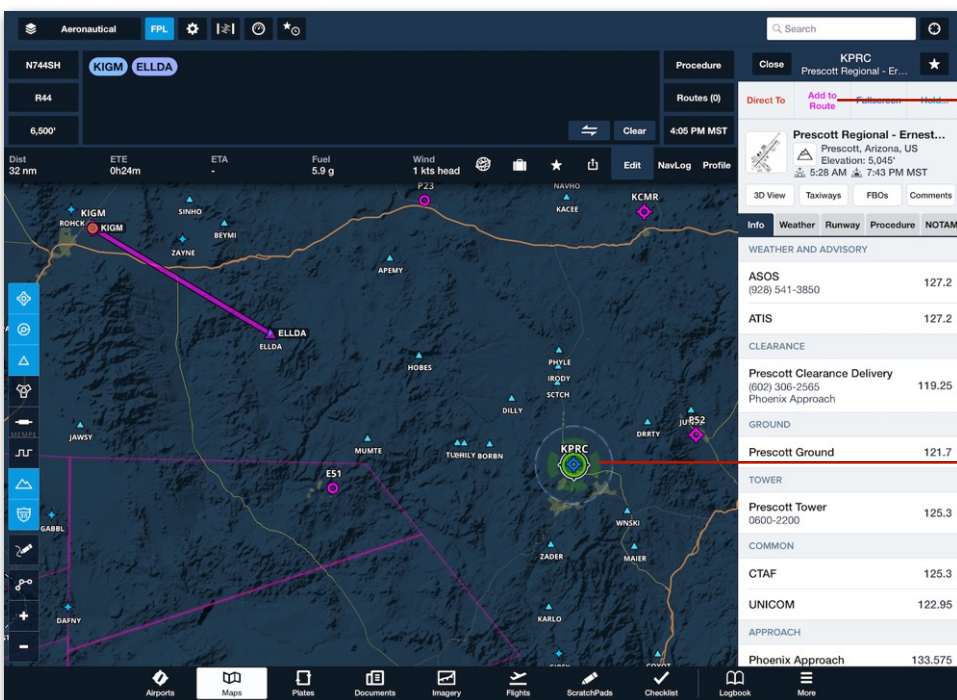
Planning a flight with the Maps view is accomplished using search, the route editor (FPL Edit mode), touch-planning, or a combination of the three. Procedure Advisor, Route Advisor, and Altitude Advisor are used for planning cruise altitudes, routes, and arrival, departure, or approach procedures.

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.

10.2.1 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.



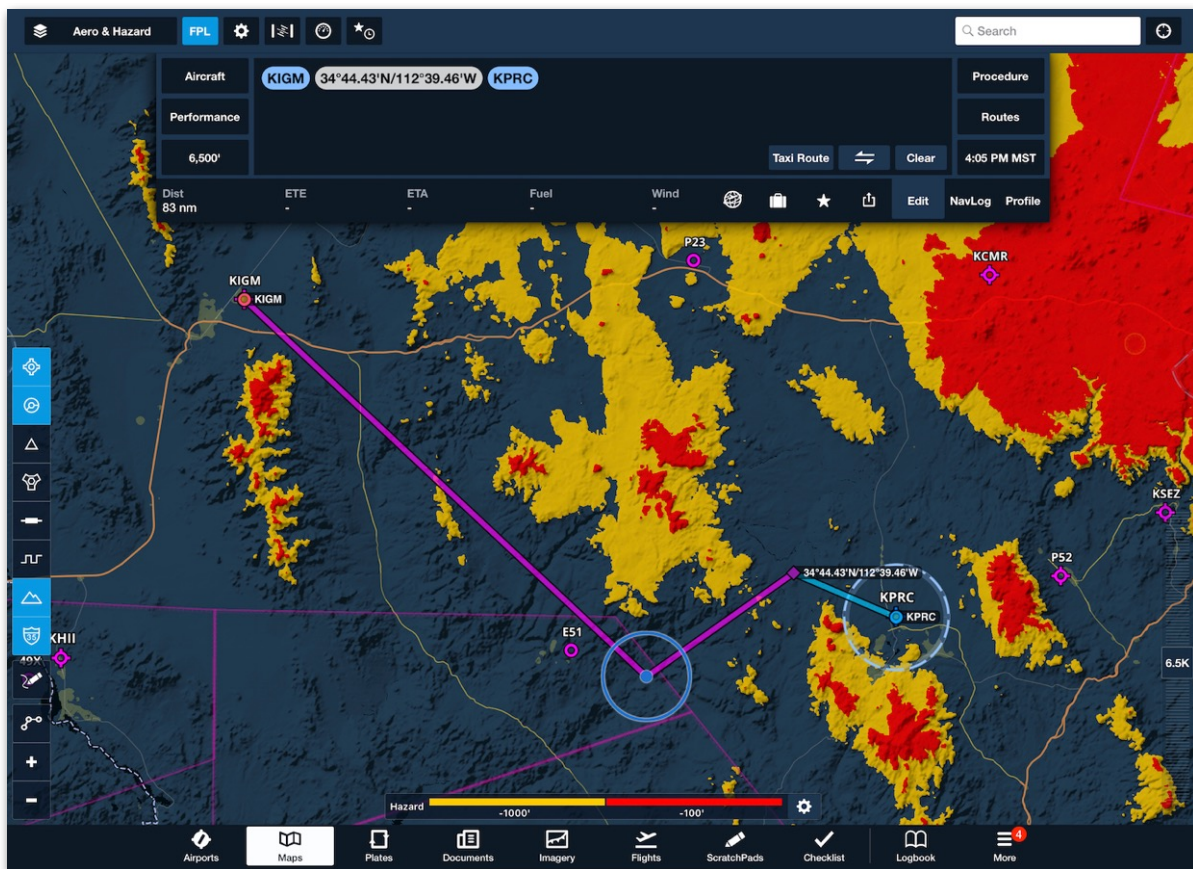
Touch-Planning

10. FLIGHT PLANNING

10.2.2 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.



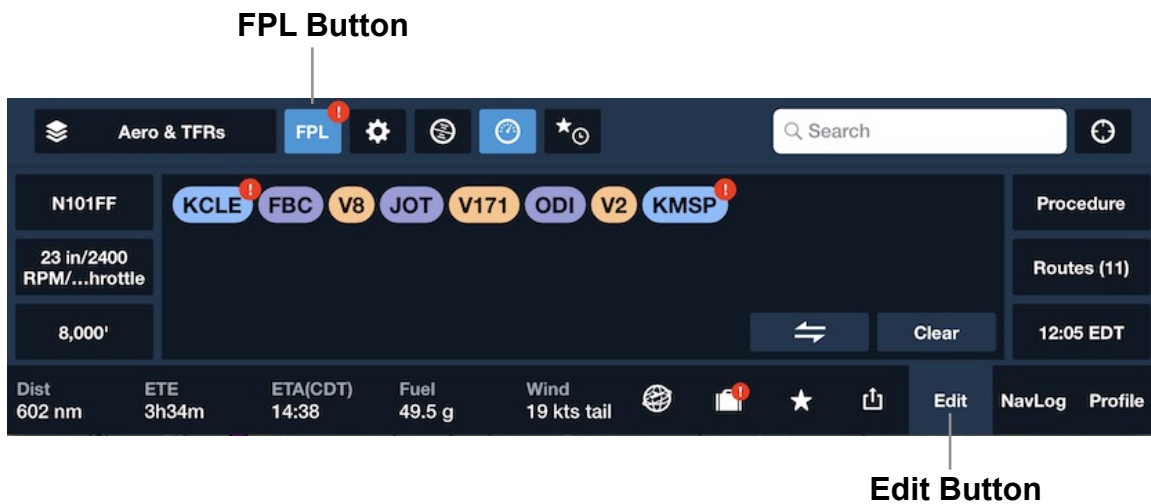
Rubber-banding around terrain

10. FLIGHT PLANNING

10.2.3 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).



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



Route Editor - Element Icon Colors

10. FLIGHT PLANNING

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**.

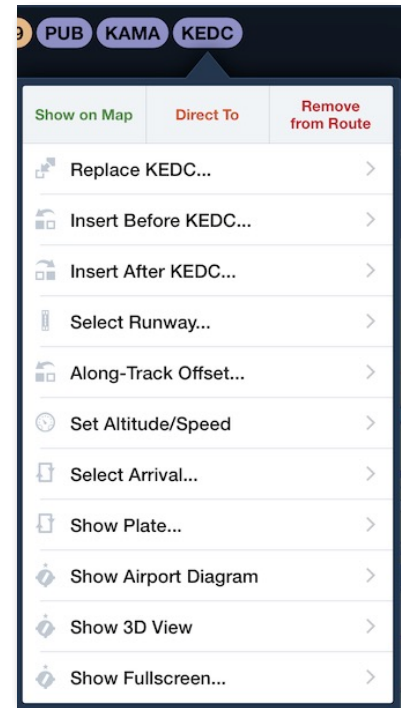
To plan a direct route to an entry, tap the route element and select **Direct To**.

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.

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.

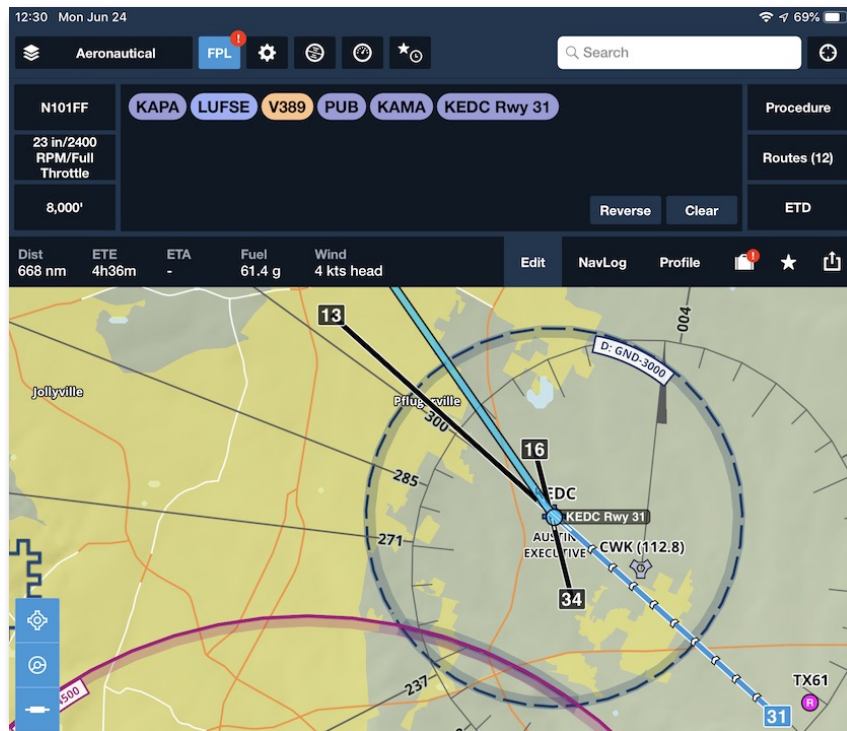


Route Editor

Airport Menu

10. FLIGHT PLANNING

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.



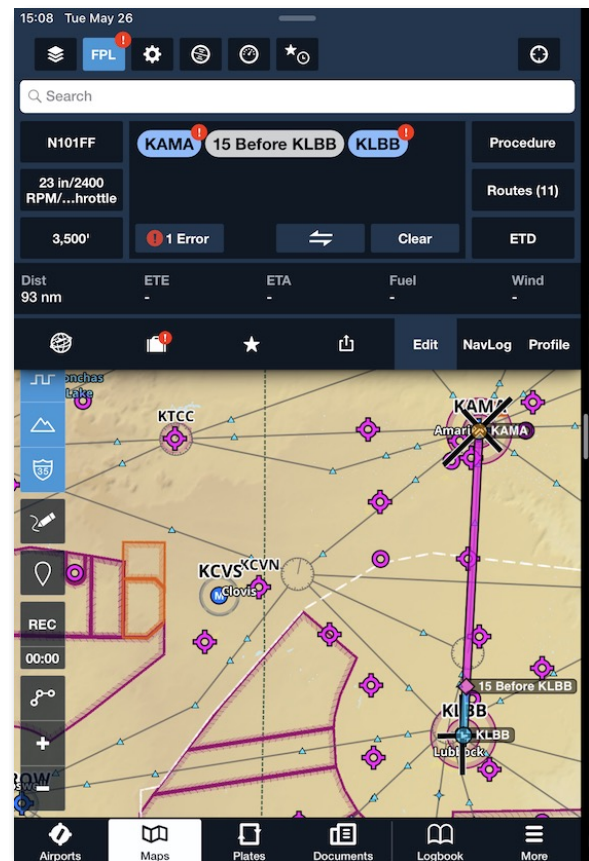
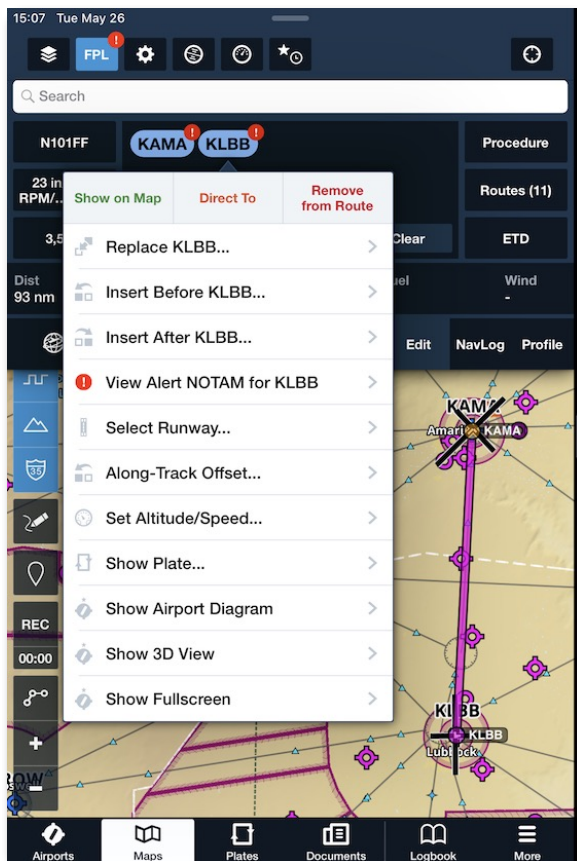
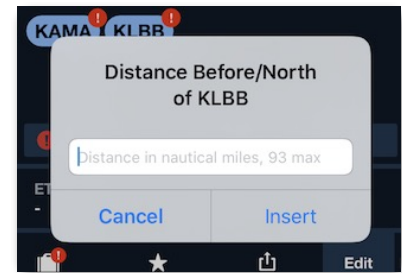
Arrival: blue line and white chevrons leading to runway

10. 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

10. 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.

Close

Altitude/Speed/Time for...

ALTITUDE

Start At

Cross At

9,500

Altitude Units

Feet

Altitude changes: Start At starts from a waypoint and Cross At completes at a waypoint

SPEED

Speed

No change

Speed Units

Knots

DELAY/STAY

Duration

Unavailable

Delay/STAY changes not permitted when Altitude or Speed defined

FLIGHT RULES

Flight Rules

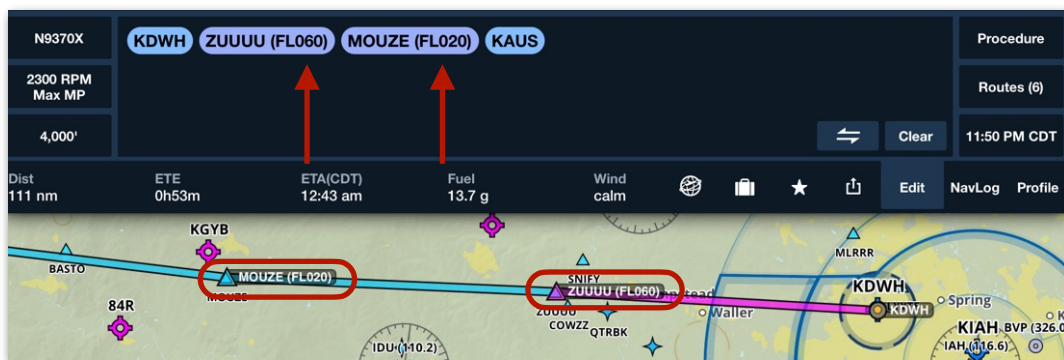
No change

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

10. 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.

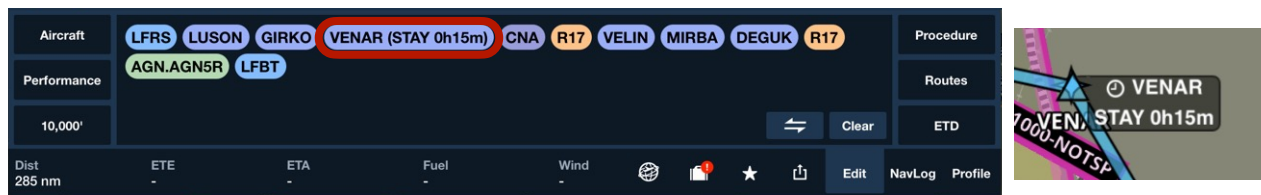
Speed changes are displayed in the FPL editor next to the waypoint in parentheses and on the map when Route Labels are enabled. ForeFlight does not factor in speed changes when determining flight planning results. Thus the Navlog does not reflect manual changes to speed.

10. 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 and Business Performance).

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**.



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.

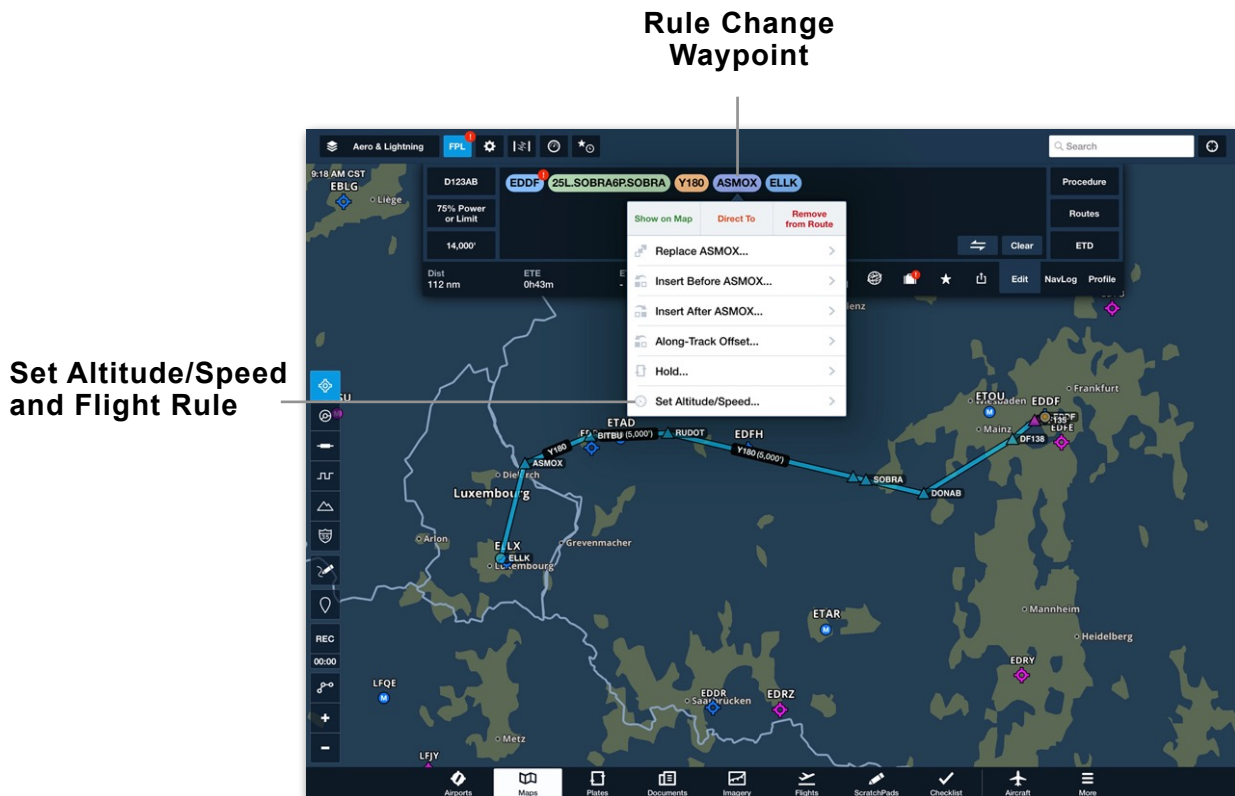
Remarks added with the flight plan editor pop-up are copied to field 18 (Other Information/STAYINFO) of the ICAO filing form.

10. 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.

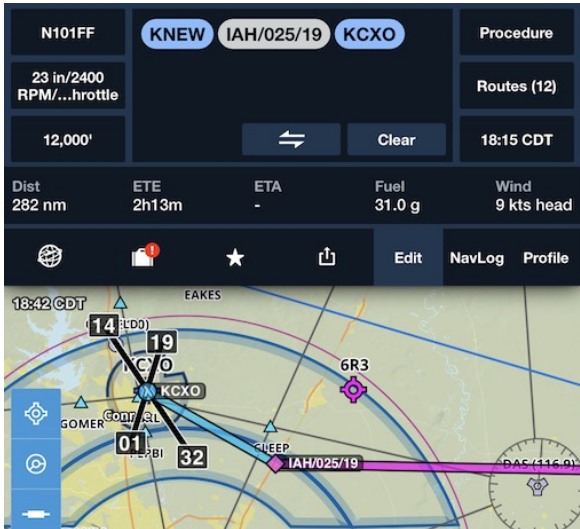

When filing a composite flight plan for the first time, pilots are encouraged to contact the appropriate agencies to ensure the plan was filed correctly.

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.

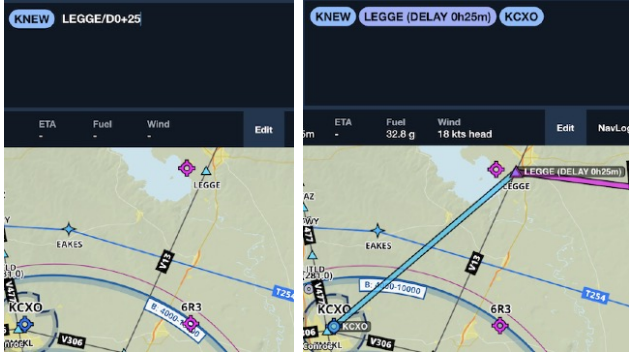

10. FLIGHT PLANNING

10.2.4 Slash Codes

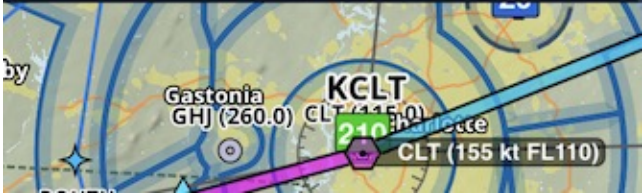
The Route Editor supports various elements that are defined with a forward slash.

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

10. 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:</p> <p>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:</p> <p>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>

10. FLIGHT PLANNING

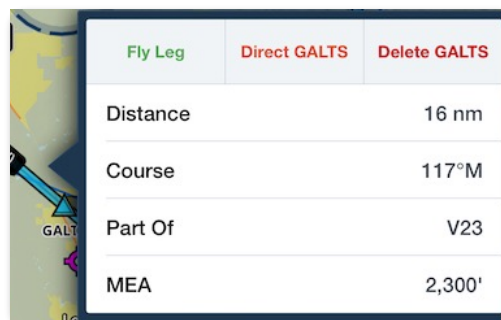
<p>FIX/N0000F000</p> <p>FIX/F000</p> <p>FIX/N0000</p> <p>Change Speed (N0000 in knots) or Altitude (F000 in flight level) at that fix.</p> <p>Ex:</p> <p>CLT/N0155/F110</p> <p>Change to 155 kts and 11000' at CLT</p>	<div><div>KGSPCLT/N0155F110</div><div><div>KGSP</div><div>CLT (155 kt FL110)</div><div>KRDU</div></div><div><div>ETA</div><div>Fuel</div><div>Wind</div><div>-</div><div>17.0 g</div><div>29 kts tail</div></div><div></div><p>NOTE: Can also be selected by tapping the route “bubble” and choosing “Set Altitude/Speed”.</p></div>	<p>Worldwide</p>
---	---	------------------

10. FLIGHT PLANNING

10.3 Route Line

The route line drawn on the map is color-coded to indicate the active leg. **Magenta** is the current leg, **light blue** is a future leg, and **orange** is a past leg. Waypoints in the route are drawn with an icon to represent their type, such as a VOR.

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. 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 delete the waypoint at the end of the leg.



Fly Leg	Direct GALTS	Delete GALTS
Distance		16 nm
Course		117°M
Part Of		V23
MEA		2,300'

Route Leg Options

If an Airport or Runway Closure NOTAM exists for an airport in your route, it is indicated by a red warning icon on the airport's route bubble. Tap the bubble and choose **View Alert NOTAM** to see the NOTAMs.

IMPORTANT: Legs that cannot be depicted on the map, such as Radar Vectors, are depicted with a dashed line.

10. FLIGHT PLANNING

10.4 Route Advisor

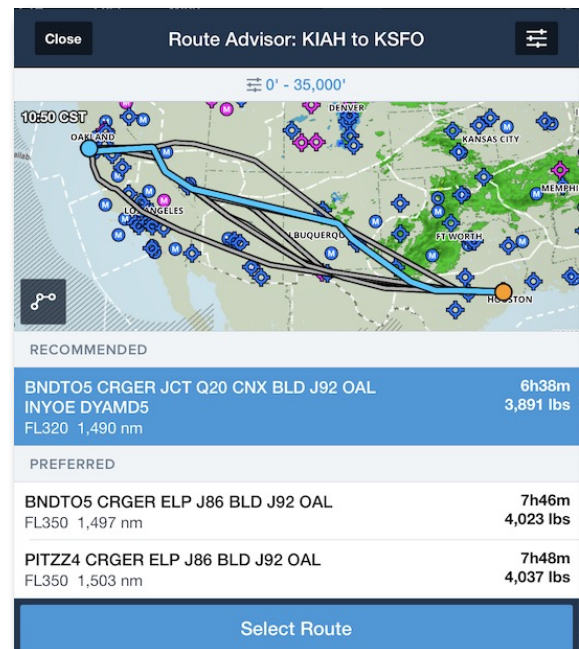
The Routes button opens Route Advisor, which displays a list of potential routes that you can select for a pair of departure and destination airports. To the right of the list is a Route Preview, showing the path of every route on an interactive map. Tap on a route in the list to highlight it on the 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:

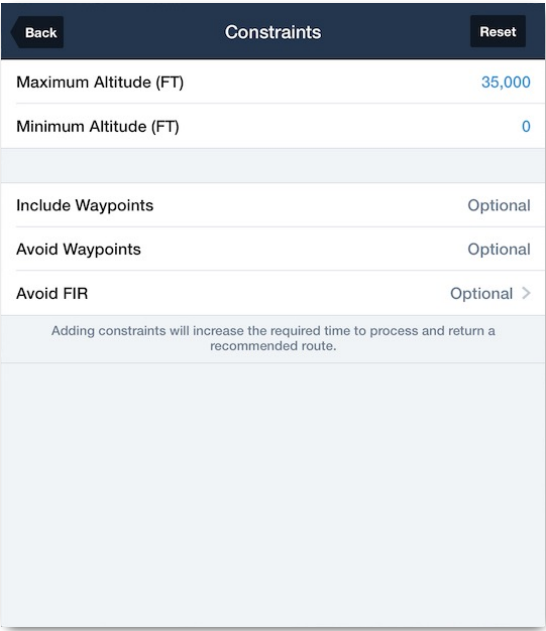
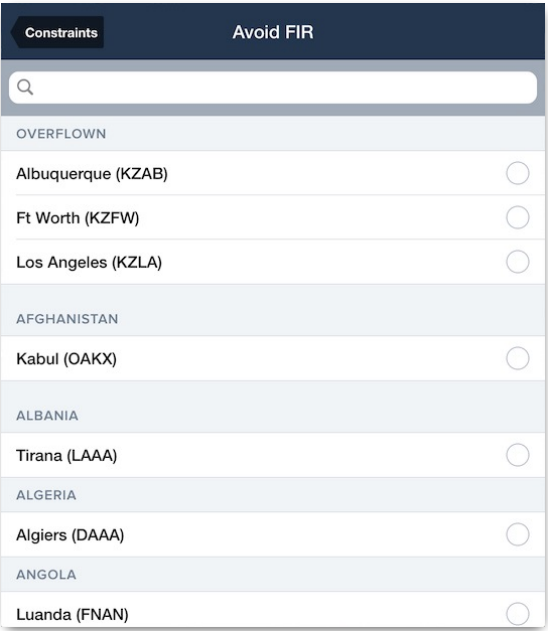
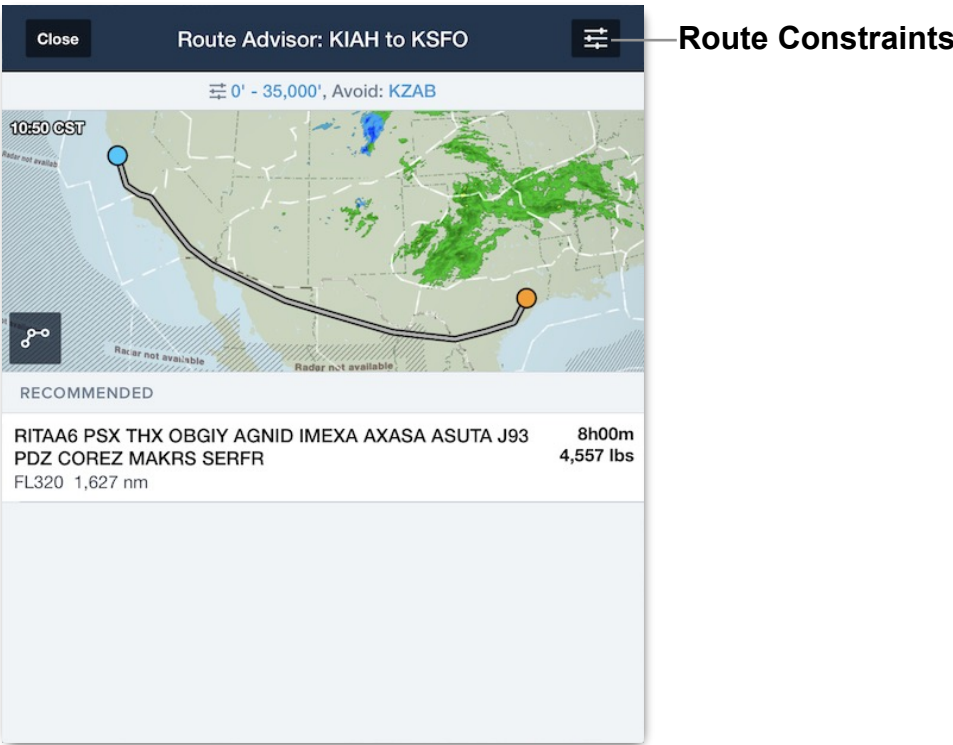
- **Recommended** (Performance Plus only)
 - provides the best route based on your aircraft, time/fuel savings, and chance of being cleared as filed. See the Performance Planning in ForeFlight Mobile guide for more information.
- **TEC/Preferred** - these routes are commonly used and may include an altitude 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.



10. FLIGHT PLANNING

10.4.1 Route Constraints

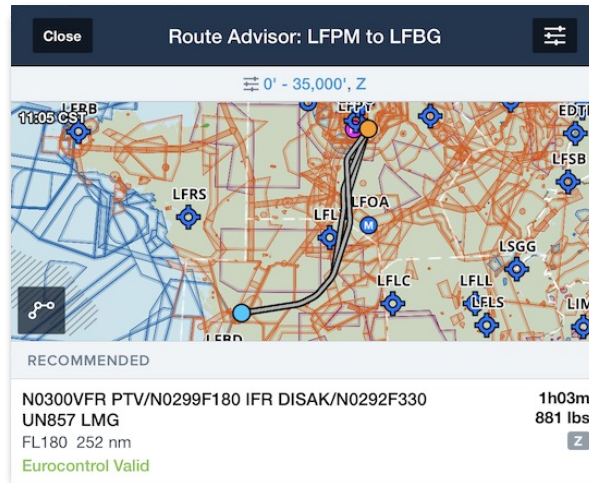
If needed you can specify constraints to include or exclude any waypoint from your route, and avoid any FIR. Tap **Constraints** in the upper-right to specify the waypoints to include or avoid, or the FIR(s) to avoid.



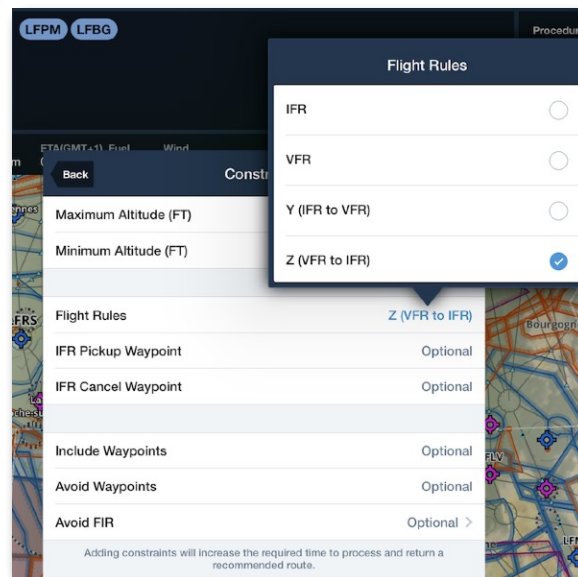
10. FLIGHT PLANNING

10.4.2 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 you 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](#).

10. FLIGHT PLANNING

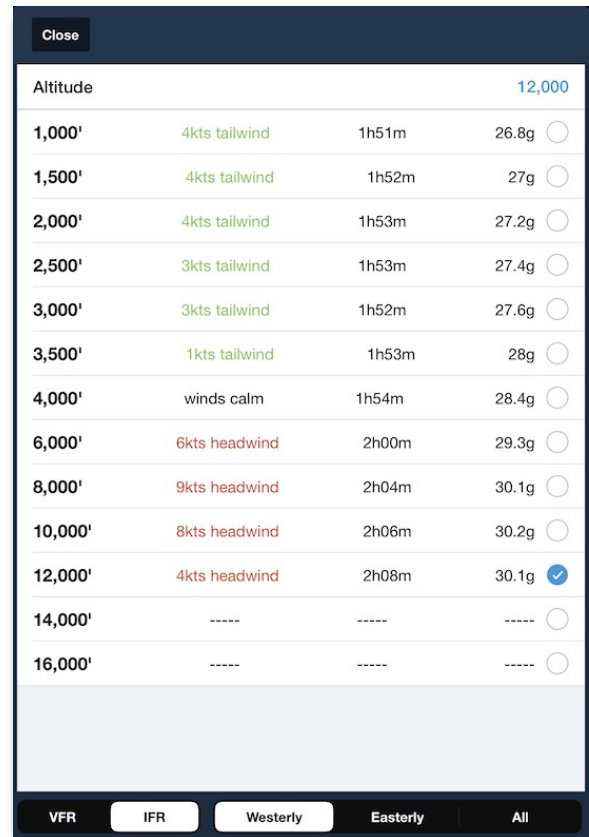
10.5 Altitude Advisor

The Altitude button displays the Altitude Advisor™ which shows the modeled winds aloft at various altitudes, provided the required route and performance data are available. Altitudes resulting in a net average tailwind over the route are shown in **green**, while those resulting in a net average headwind are shown in **red**. Airports included between the departure and destination in the Route Editor are treated as navigation waypoints, so the calculated time and fuel burn do not include descending to and climbing up from those airports.

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.

NOTE: If it will not be possible to reach an altitude given your aircraft's performance, the current winds, and time available before needing to descend, the Altitude Advisor will show "-----" for that altitude's row.

When connected to a Sentry or other ADS-B receiver or SiriusXM SXAR1, Altitude Advisor™ will only display wind effects if you have received recent winds aloft data for the entire route.



Altitude				
1,000'	4kts tailwind	1h51m	26.8g	<input type="radio"/>
1,500'	4kts tailwind	1h52m	27g	<input type="radio"/>
2,000'	4kts tailwind	1h53m	27.2g	<input type="radio"/>
2,500'	3kts tailwind	1h53m	27.4g	<input type="radio"/>
3,000'	3kts tailwind	1h52m	27.6g	<input type="radio"/>
3,500'	1kts tailwind	1h53m	28g	<input type="radio"/>
4,000'	winds calm	1h54m	28.4g	<input type="radio"/>
6,000'	6kts headwind	2h00m	29.3g	<input type="radio"/>
8,000'	9kts headwind	2h04m	30.1g	<input type="radio"/>
10,000'	8kts headwind	2h06m	30.2g	<input type="radio"/>
12,000'	4kts headwind	2h08m	30.1g	<input checked="" type="radio"/>
14,000'	-----	-----	-----	<input type="radio"/>
16,000'	-----	-----	-----	<input type="radio"/>

Altitude Advisor

10. FLIGHT PLANNING

10.6 Procedure Advisor

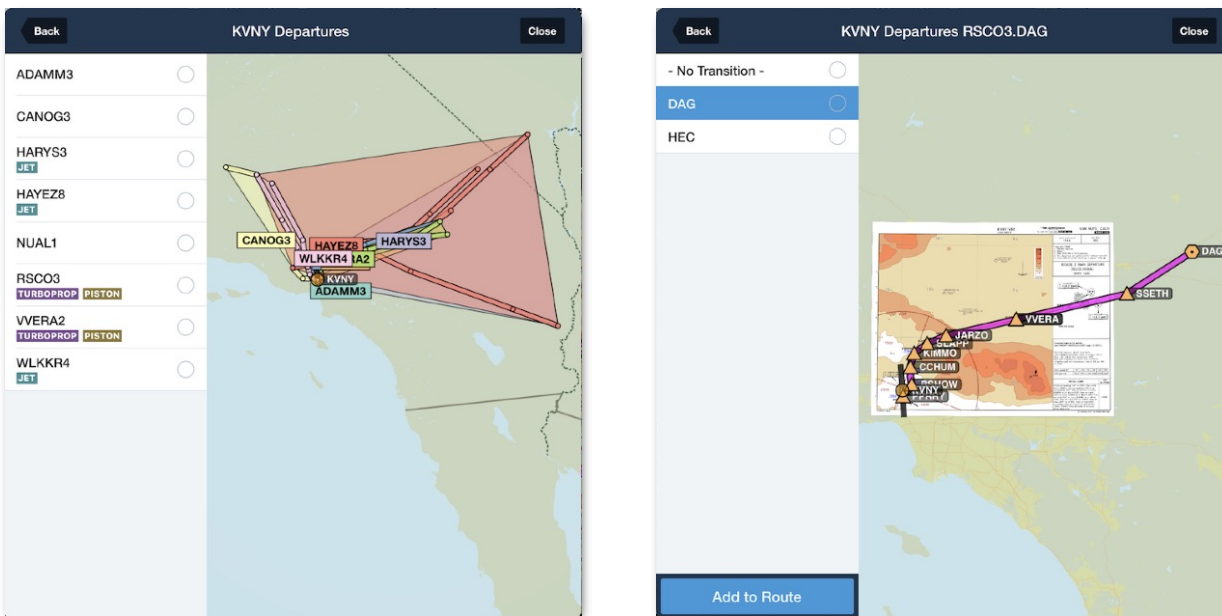
The Procedure button in the top right of the Flight Plan Edit view opens the Procedure Advisor allowing you to add or replace Arrival procedures (STAR), Departure procedures (SID), Approaches, VFR traffic patterns and Search & Rescue (SAR) patterns in the route.

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.

10.6.1 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.

10. 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...**

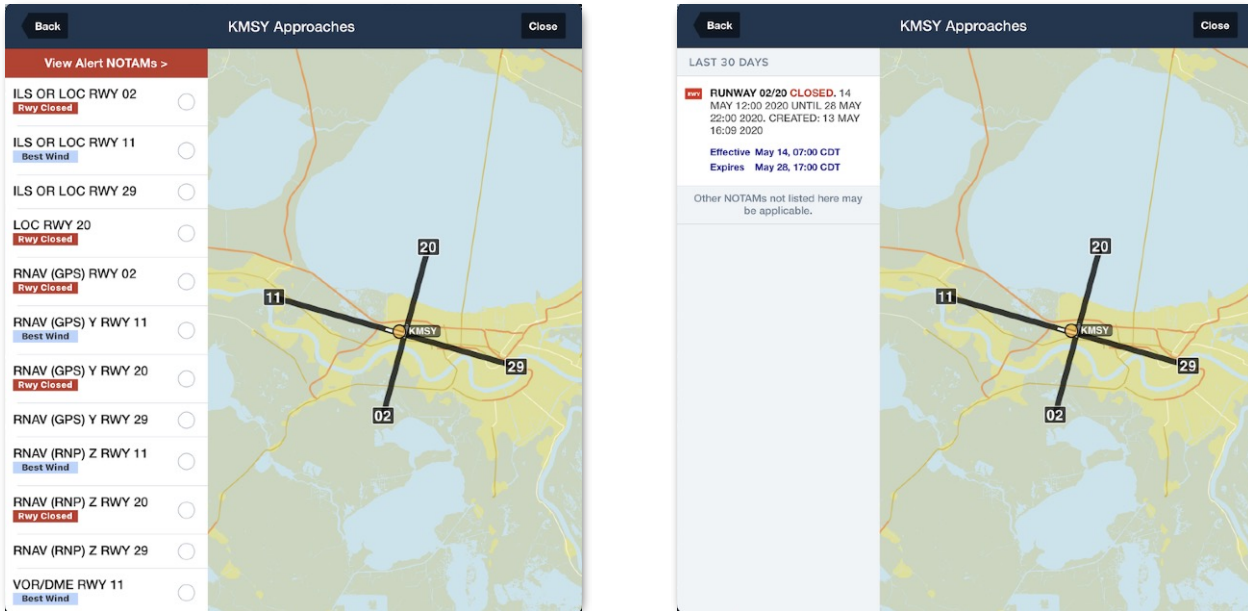
Once the Arrival has been added you can change it or the selected runway by tapping the colored Arrival oval in the Route Editor and choose **Change Arrival...** or **Change Runway...**

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.

10. 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.

10. 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 ☐

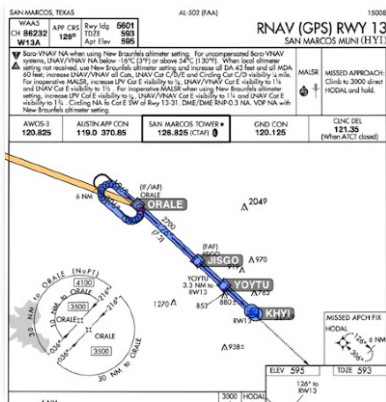
141 to 165 kts

Speeds are V_{at} based on ICAO Doc 8168

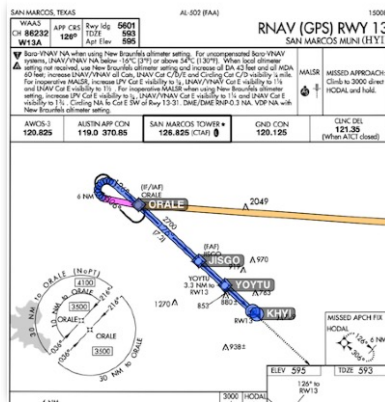
10. FLIGHT PLANNING

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.

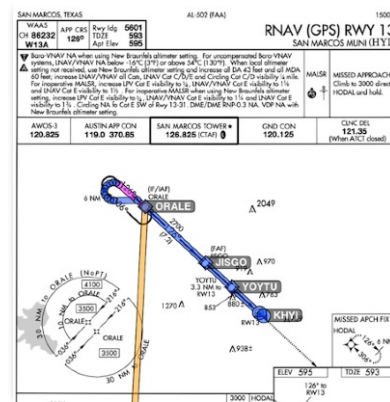
If an Approach entry includes a hold, ForeFlight Mobile will automatically insert the correct Direct, Parallel, or Teardrop entry based on the direction you're coming from.



Direct Entry



Teardrop Entry

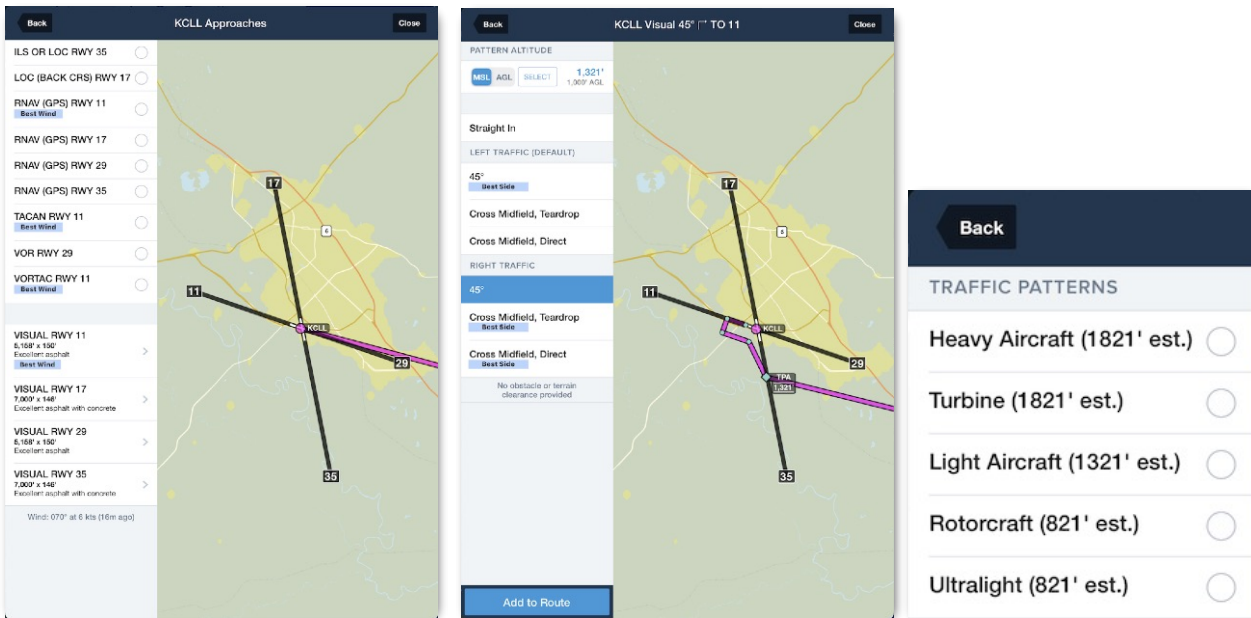


Parallel Entry

10. 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.



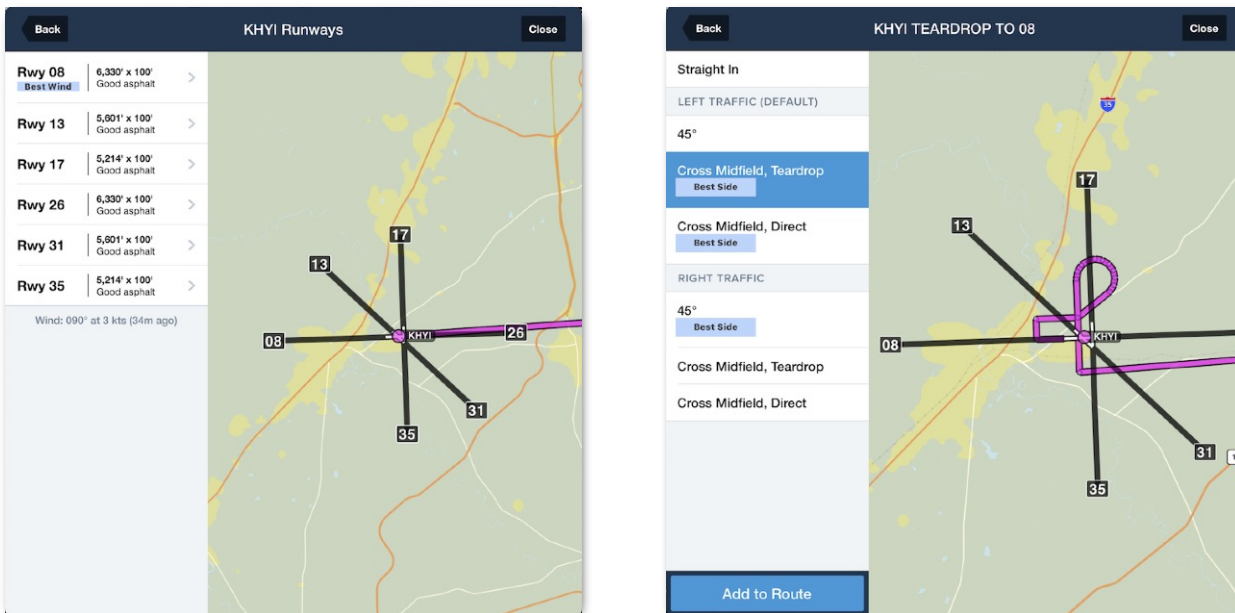
After adding the Visual Approach, a TPA (in MSL) pattern entry waypoint marker is added to the route.



10. 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.

10. 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.

10. FLIGHT PLANNING

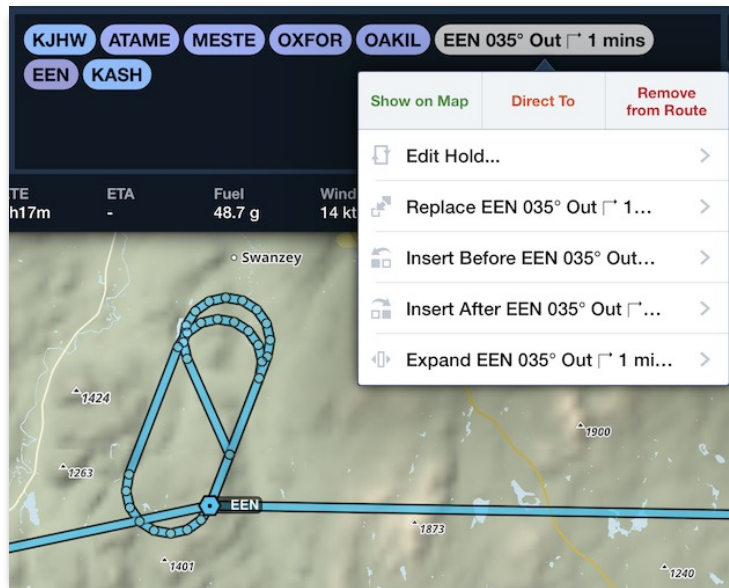
Editing Holds

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.

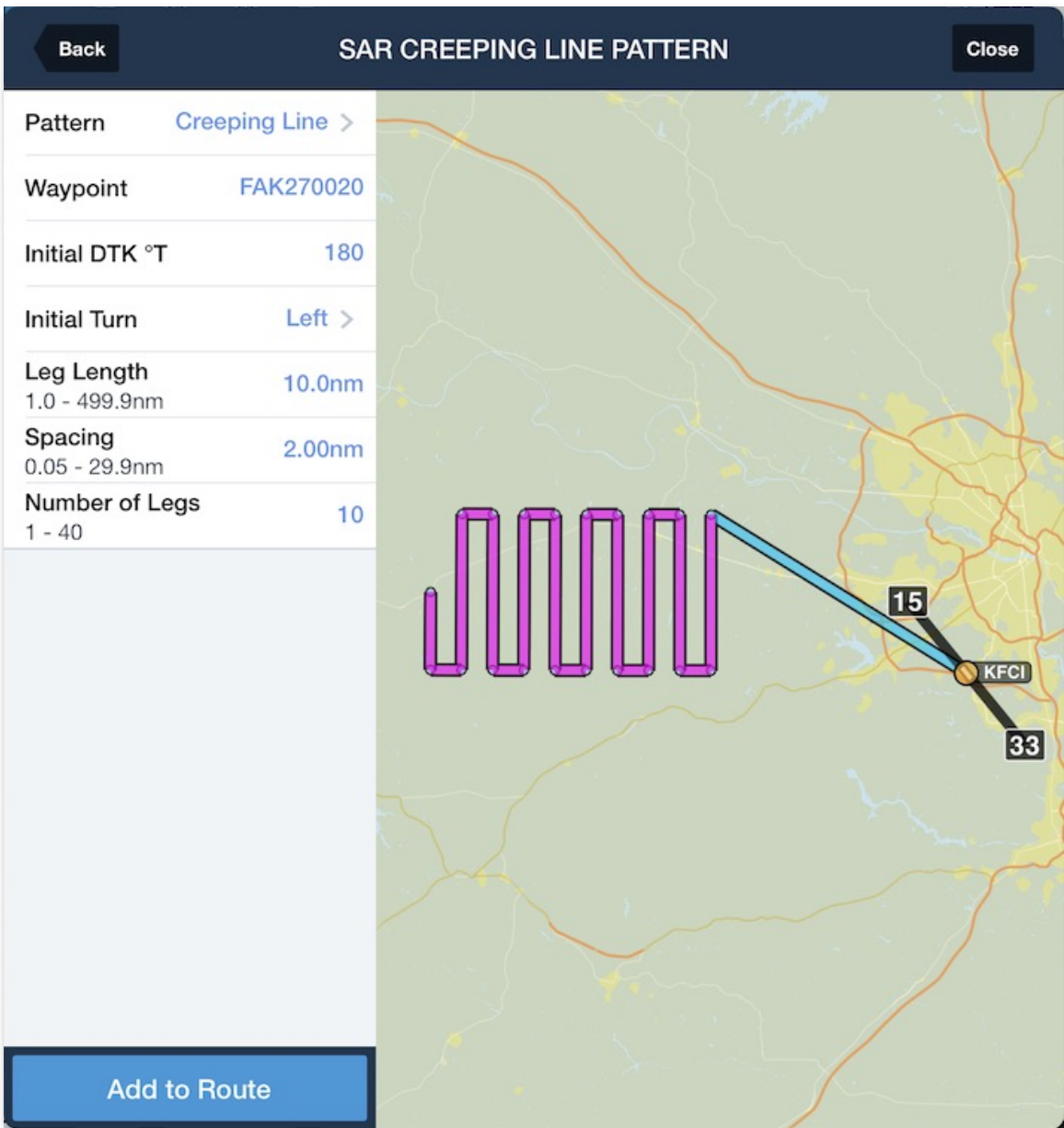
If you send a build a route including a hold then send it to another pilot via email, the hold is automatically expanded in the route in the "FPL" file attached to the email.



10. 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**.



10. FLIGHT PLANNING

Procedure Actions - Tap green approach “oval” in the Route Editor

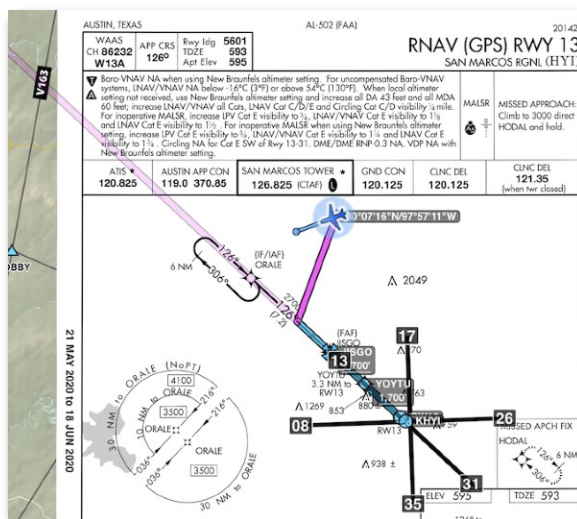
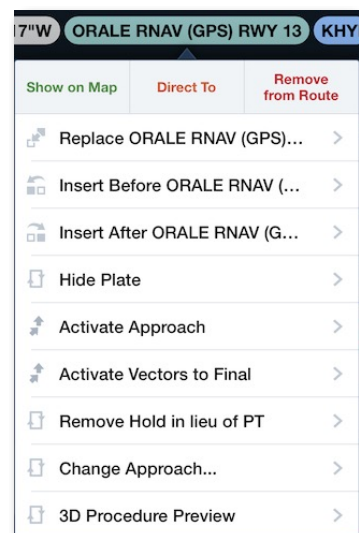
Once an approach has been added to the Route you can perform several actions by tapping the green approach oval in the Route Editor and choosing the desired action:

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.



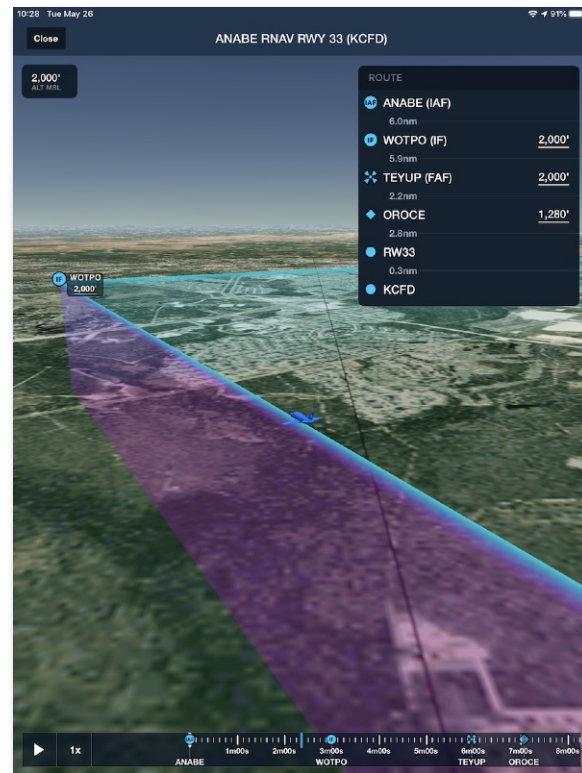
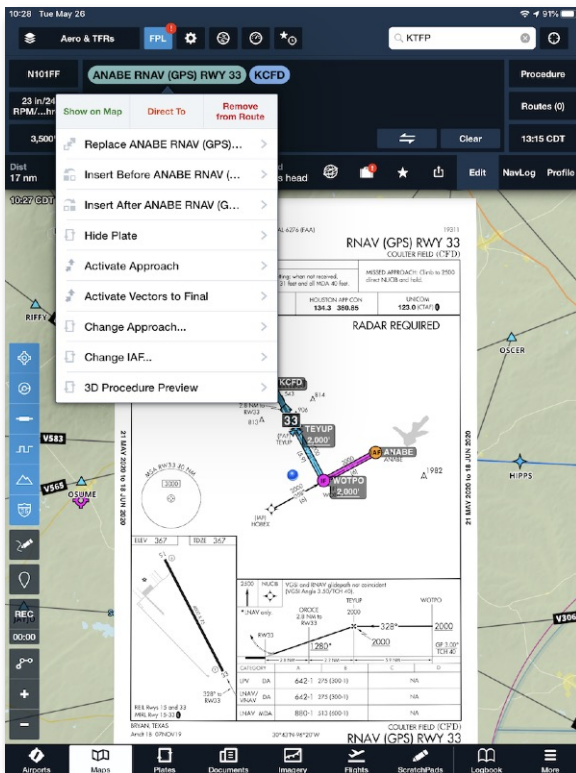
Vectors to Final can also be activated via the Procedure Advisor button: re-select the approach and choose Activate Vectors to Final.

10. 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.

NOTE: If the Instrument 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.

10. FLIGHT PLANNING

10.7 Planning with Flights

To start planning, enter a departure and destination (and alternate, if needed) and an ETD. If you have a Performance Plus or Business Performance plan you can select the ETA toggle and ForeFlight Mobile will work backwards to calculate your required ETD to arrive at that ETA (the ETD is then shown on the Flight Summary in the Flights list on the left).

Tap the “Info” button to display the familiar Airport popup from the Maps page. If your ETD is more than 6-7 days in the future, ForeFlight will use historical winds to calculate performance, based on the average wind speed and direction along your planned route over the past 40 years.

The top row shows a route performance summary that updates as you make changes to the flight. Tap the circular arrow “Refresh” button to update the summary with the latest data if you’re returning to a Flight you started previously.

Select the aircraft and performance profile, then enter your desired route or choose one using Route Advisor. Route Advisor provides ATC-cleared routes (if available) as well as Preferred, TEC, and Airway routes.

10.7.1 Destination Services

While planning on the Flights form you can optionally select an FBO providing fuel at your destination airport using the **FBO** selector under Destination Services. Tap “Details” on any FBO in the list to view its full Directory listing, including photos, user-submitted comments, and contract jet fuel prices if you’ve linked a JetFuelX account (Performance Plus).

The screenshot displays the 'Flights Form' in the ForeFlight mobile application. At the top, it shows the route 'KMSN to KAUW' for 'Thu Apr 30, 12:47 CDT'. A summary row includes: Dist 145 nm, ETE 1h13m, ETA (CDT) 13:59, Flight Fuel 19 g, and Wind 22 kts head. Below this is a 'Calculated moments ago' section with a 'Refresh' button. Navigation tabs for 'Navlog', 'Briefing', 'Files', and 'New Msg' are present. The 'DEPARTURE / DESTINATION' section has 'ETD' and 'ETA' buttons, with 'ETA' selected and showing 'Apr 30 13:59 CDT'. The 'Departure' field is 'KMSN' and the 'Destination' is 'KAUW'. An 'Alternate' field is empty. The 'AIRCRAFT' section shows 'N101FF (C82R/G)' and a 'Performance Profile' of '23 in/2400 RPM/Full Throttle'. The 'ROUTE' section shows 'Flight Rules' as 'IFR' and a map view of the route from KMSN to KAUW. Below the map, the 'Route' is 'UNU OSH CHURP' and there is a 'Not Filed' status with a 'Proceed to File' button.

Flights Form

The screenshot shows the 'Destination Services' screen for 'KSGR to KACT'. It features a list of 'KACT FBOs'. Two featured FBOs are shown: 'WACO JET CENTER' and 'TEXAS AERO'. For WACO, the fuel prices are 100LL \$4.40 and Jet A \$3.60. For TEXAS AERO, the fuel prices are 100LL \$4.30 and Jet A \$3.50. Each FBO listing includes a 'DETAILS' button. The screen also displays logos for 'GOVERNMENT FUEL', 'UVAir', 'CREW CARS', and 'WIFI'.

10. FLIGHT PLANNING

Tap “Select FBO” at the bottom of the Directory listing, or tap on any FBO in the previous list to select it.

The FBO selector now shows the FBO’s name, frequency, and lowest available price for the fuel type used by the selected aircraft. Four buttons provide quick access to common needs - tap the telephone button to view and call the FBO’s phone number, tap the ‘routes’ button to open Apple Maps and zoom to the location of the FBO, tap the mail button to draft an email to the primary email address of the FBO, and tap the “i” button to view the full Directory listing for the FBO. You can remove your FBO selection by tapping on it to view the FBO list, then tapping on the selected FBO to de-select it.

When you select an FBO for a given airport, ForeFlight will automatically select the same FBO on the next flight you plan to that airport.

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, and if you have a Performance Plus subscription it will also use the same payload details and fuel policy as the previous flight.

When you have finished planning, tap **Proceed to File** to file a flight plan.

10. FLIGHT PLANNING

10.7.2 Navlog, Briefing, Messages

Tap the **Navlog** to view a detailed Navlog, including leg times, winds, and fuel burns; winds at altitudes above and below your planned altitude; and frequencies for the airports and selected FBO. The Navlog can be printed (on an available AirPrint printer) or emailed. You can also view the Navlog on a computer by signing-in at plan.foreflight.com and clicking on the Flights menu. Navlogs generated on the web will automatically become available on mobile and vice versa. Navlogs include space to record actual leg times and with a Performance plan, space to record actual leg fuel burn.

09:49 Navlog KMIC to KOSH

KMIC — KOSH (May 21, 2020) in N101FFT (PA40) IFR
Basic Performance Profile @ 17000'

Created May 21 2020 14:02

ETE	Distance	Avg Wind	ETD	ETA	Flight Fuel	Taxi Fuel
1h31m	237nm	15kt head (143/026)	10:00 CDT / 1500Z	11:31 CDT / 1631Z	27 g	3 g

Route
EAU V26 CHURP V191 OSH

WAYPOINT	AIRWAY	MAG	HGS	CRS	ALT	WIND	DIRSPD	ISA	SPO KT	TAS	GS	DIST NM	LEG	TIME	ETE	ACT
KMIC					809				+7	115	109	39	198	0:21	1:10	0:21
-TOC-	DCT	108	097	17000	H6	166/022										
EAU	DCT	104	098	17000	H17	148/025										
EAU CLARE 113.65																
VIYUR	V26	099	093	17000	H17	142/026										
EDGRR	V26	100	094	17000	H17	141/026										
-TOD-	V26	101	095	17000	H18	140/026										
AUW	V26	102	096	14800	H16	140/026										
WAUSAU 111.6																
CHURP	V26	114	109	9600	H15	147/021										
VIYUR	V191	162	162	7900	H16	157/016										
BIPID	V191	162	162	5200	H18	150/018										
EVITI	V191	162	162	5200	H18	150/018										
OSH	V191	160	163	800	H21	141/022										
OSH KOSH 116.75																
KOSH	DCT	191	191	808	H5	000/000										

WINDS ALOFT	13000 FT (ISA: -11°C)	15000 FT (ISA: -13°C)	17000 FT (ISA: -15°C)	FL 190 (ISA: -23°C)	FL 210 (ISA: -27°C)
(COMP) WIND	(COMP) WIND	(COMP) WIND	(COMP) WIND	(COMP) WIND	(COMP) WIND
-TOC-	(H12) 156/020 +10	(H12) 154/021 +10	(H17) 148/025 +11	(H21) 143/028 +11	(H22) 137/027 +11
EAU	(H12) 147/018 +10	(H14) 145/021 +11	(H19) 142/025 +11	(H20) 140/027 +11	(H20) 139/027 +11
VIYUR	(H11) 147/018 +10	(H13) 146/021 +11	(H17) 142/025 +11	(H20) 140/027 +11	(H20) 139/027 +11
EDGRR	(H10) 144/015 +10	(H13) 146/021 +11	(H18) 140/026 +12	(H20) 138/028 +11	(H20) 136/027 +11
-TOD-	(H10) 144/015 +10	(H13) 147/021 +11	(H18) 141/026 +12	(H21) 138/028 +11	(H20) 136/027 +11
AUW	(H10) 144/016 +10	(H13) 147/021 +11	(H18) 141/026 +12	(H21) 138/028 +11	(H20) 137/027 +11
CHURP	(H12) 151/017 +10	(H16) 150/021 +11	(H20) 141/024 +12	(H23) 135/025 +11	(H22) 135/024 +10
BIPID	(H17) 151/017 +10	(H21) 151/021 +11	(H23) 141/024 +12	(H23) 135/025 +11	(H22) 133/024 +10
EVITI	(H16) 149/016 +10	(H16) 147/016 +11	(H20) 146/020 +11	(H21) 144/022 +11	(H21) 141/022 +10
OSH	(H16) 148/016 +10	(H16) 147/016 +11	(H20) 146/020 +11	(H21) 145/022 +11	(H21) 142/022 +10
	1h30m (+0.03), 22 g Avg wind comp: H12	1h30m (+0.03), 23 g Avg wind comp: H13	1h31m (+0.06), 24 g Avg wind comp: H15	1h34m (+0.02), 25 g Avg wind comp: H16	1h35m (+0.04), 26 g Avg wind comp: H16

SUMMARY & TIMES

NOTES

Navlog updated: May 21, 09:49 CDT
Moments ago

09:49 Navlog KMIC to KOSH

KMIC — KOSH (May 21, 2020) in N101FFT (PA40) IFR
Basic Performance Profile @ 17000'

Created May 21 2020 14:02

ETE	Distance	Avg Wind	ETD	ETA	Flight Fuel	Taxi Fuel
1h31m	237nm	15kt head (143/026)	10:00 CDT / 1500Z	11:31 CDT / 1631Z	27 g	3 g

Route
EAU V26 CHURP V191 OSH

WAYPOINT	AIRWAY	MAG	HGS	CRS	ALT	WIND	DIRSPD	ISA	SPO KT	TAS	GS	DIST NM	LEG	TIME	ETE	ACT
KMIC					809				+7	115	109	39	198	0:21	1:10	0:21
-TOC-	DCT	108	097	17000	H6	166/022										
EAU	DCT	104	098	17000	H17	148/025										
EAU CLARE 113.65																
VIYUR	V26	099	093	17000	H17	142/026										
EDGRR	V26	100	094	17000	H17	141/026										
-TOD-	V26	101	095	17000	H18	140/026										
AUW	V26	102	096	14800	H16	140/026										
WAUSAU 111.6																
CHURP	V26	114	109	9600	H15	147/021										
VIYUR	V191	162	162	7900	H16	157/016										
BIPID	V191	162	162	5200	H18	150/018										
EVITI	V191	162	162	5200	H18	150/018										
OSH	V191	160	163	800	H21	141/022										
OSH KOSH 116.75																
KOSH	DCT	191	191	808	H5	000/000										

WINDS ALOFT	13000 FT (ISA: -11°C)	15000 FT (ISA: -13°C)	17000 FT (ISA: -15°C)	FL 190 (ISA: -23°C)	FL 210 (ISA: -27°C)
(COMP) WIND	(COMP) WIND	(COMP) WIND	(COMP) WIND	(COMP) WIND	(COMP) WIND
-TOC-	(H12) 156/020 +10	(H12) 154/021 +10	(H17) 148/025 +11	(H21) 143/028 +11	(H22) 137/027 +11
EAU	(H12) 147/018 +10	(H14) 145/021 +11	(H19) 142/025 +11	(H20) 140/027 +11	(H20) 139/027 +11
VIYUR	(H11) 147/018 +10	(H13) 146/021 +11	(H17) 142/025 +11	(H20) 140/027 +11	(H20) 139/027 +11
EDGRR	(H10) 144/015 +10	(H13) 146/021 +11	(H18) 140/026 +12	(H20) 138/028 +11	(H20) 136/027 +11
-TOD-	(H10) 144/015 +10	(H13) 147/021 +11	(H18) 141/026 +12	(H21) 138/028 +11	(H20) 136/027 +11
AUW	(H10) 144/016 +10	(H13) 147/021 +11	(H18) 141/026 +12	(H21) 138/028 +11	(H20) 137/027 +11
CHURP	(H12) 151/017 +10	(H16) 150/021 +11	(H20) 141/024 +12	(H23) 135/025 +11	(H22) 135/024 +10
BIPID	(H17) 151/017 +10	(H21) 151/021 +11	(H23) 141/024 +12	(H23) 135/025 +11	(H22) 133/024 +10
EVITI	(H16) 149/016 +10	(H16) 147/016 +11	(H20) 146/020 +11	(H21) 144/022 +11	(H21) 141/022 +10
OSH	(H16) 148/016 +10	(H16) 147/016 +11	(H20) 146/020 +11	(H21) 145/022 +11	(H21) 142/022 +10
	1h30m (+0.03), 22 g Avg wind comp: H12	1h30m (+0.03), 23 g Avg wind comp: H13	1h31m (+0.06), 24 g Avg wind comp: H15	1h34m (+0.02), 25 g Avg wind comp: H16	1h35m (+0.04), 26 g Avg wind comp: H16

SUMMARY & TIMES

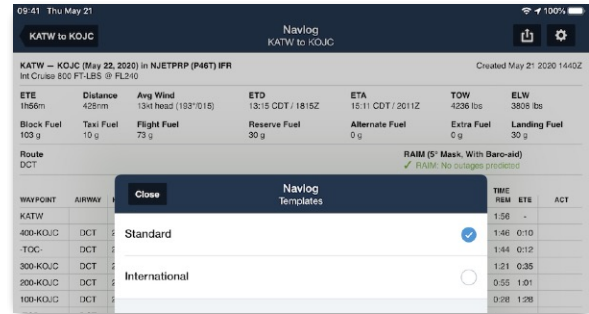
NOTES

Navlog updated: May 21, 09:49 CDT
Moments ago

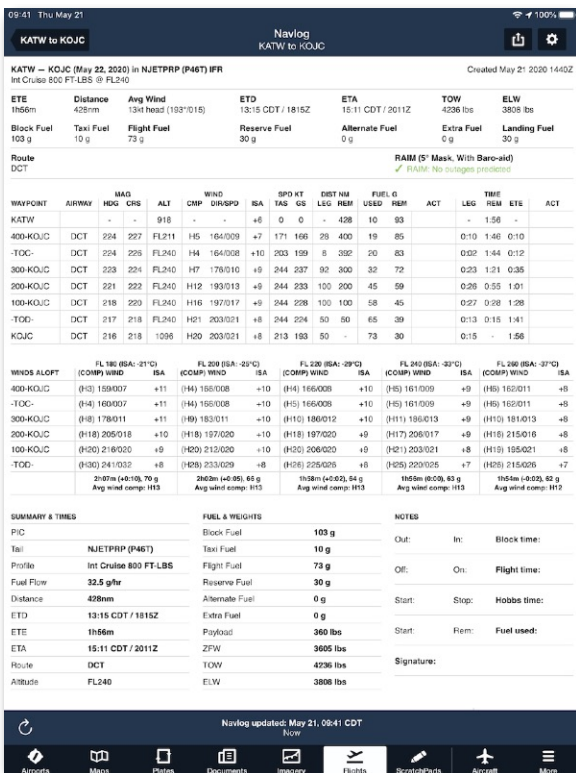
10. FLIGHT PLANNING

Performance Plus Navlog

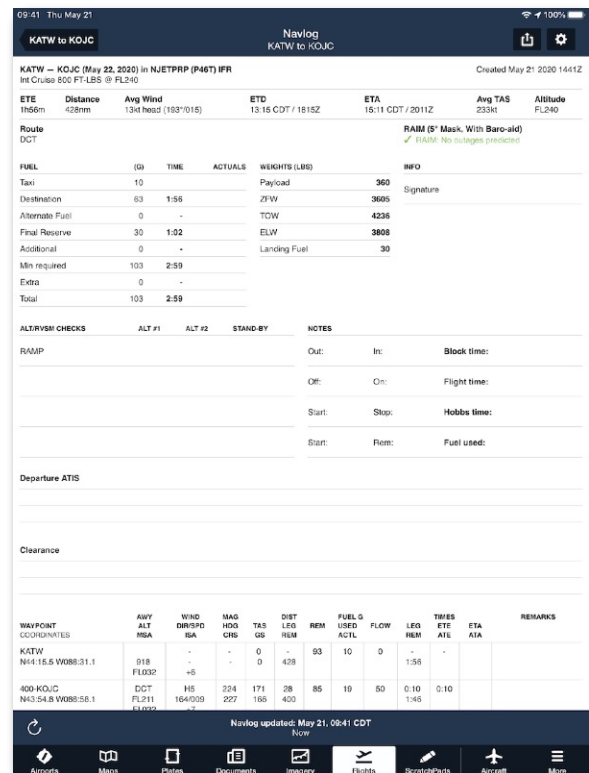
Pilots using a Performance plan can also select an **International** template that some operators may prefer for international flights. It includes additional space for note-taking including ATIS, clearance, as well as inflight actuals and remarks. While viewing the NavLog, tap the gear button and select the desired template.



Performance Plus Navlog Options



Standard Template



International Template

PRE FLIGHT

AIRPORTS

The *Airports* view displays airport information, frequencies, airport thumbnail diagrams, taxi diagrams, terminal procedures, service provider details, fuel prices and terminal area weather for over 20,000 airports worldwide.

Buttons located in the upper toolbar help you find airports near the current airport, find airports near your current position, display the airport's location in the *Maps* view, and add or remove an airport to your *Favorites* list.

Favorites

Recents Browse Edit Favorites Toggle Airport 3D View View on Map Nearby airports

11:14 Wed Dec 2

Airports Edit

Runway 05L/23R closed by NOTAM >

KTYS: Mc Ghee Tyson

Knoxville, Tennessee, US

35.81°N/84.00°W

07:29 17:22 EST

Latest Weather VFR, Winds calm, 10 sm

Elevation 979' MSL

Pattern altitude 1,979' MSL (est.)

Fuel Jet A, Jet A+, 100LL

Procedures ILS, GPS, VOR, LOC, RNAV

ATIS 128.35

Clearance 121.65

Ground 121.9

Tower 121.2

Appr, Dep Multiple

3D View FBOs

Taxiways Comments

Info Weather Runway Procedure NOTAM

FREQUENCIES

Weather and Advisory >

Clearance >

Ground >

Tower >

Common >

Approach >

Departure >

Operations >

WEATHER AND ADVISORY

ASOS (865) 981-4053

ATIS 128.35

Thumbnail diagram

High terrain within 10nm

Next sunrise/sunset

Tab bar

Airports Maps Plates Documents Imagery Flights ScratchPads Checklist Track Logs More

11. AIRPORTS

11.1 Design

The *Airports* view is divided into two sections. The top half displays the latest weather, field elevation, pattern altitude (estimated or verified in the USA & Canada, verified only in Europe), automated weather frequencies, and controller frequencies. For airports in Europe, the Transition altitude (from VFR to IFR) is shown next to the position, altitude, and sunrise/sunset information.

Additional information is displayed in the bottom half of the screen by selecting one of the five tabs. The tabs are “Info” including airport related frequencies, the Airport/Facility Directory entry, and supplemental airport information; “Weather” including current and forecast weather; “Runway” including runway details including crosswind component; “Procedure” including Airport diagrams, SIDs/STARs, and terminal procedures; and “NOTAM” containing Airport, TFR/ARTCC, and Obstacle NOTAMs.

11.2 Finding an Airport using Search

Find airports by entering a search term in the search box, then tapping the ‘Search’ button displayed on the iPad’s on-screen keyboard.

Valid search strings include Federal Aviation Administration airport identifiers (three-letter identifiers), International Civil Aviation Organization identifiers (four-letter identifiers), city name, or keyword. If ForeFlight doesn’t find an instant match for the search term used, a list of close matches will appear.

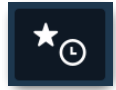
Example Searches:

- **KJFK** - immediately displays airport information for Kennedy Int’l.
- **CDG** - immediately displays airport information for Charles De Gaulle.
- **Kennedy** - produces a list of all airports with “kennedy” in the airport or city name.
- **N35388** - returns aircraft information for the tail number N35388, including a link to FlightAware.com to track that aircraft’s flights.
- **KXIH** - shows the METAR and related info for the KXIH weather station

11. AIRPORTS

11.3 Favorites/Recents/Browse

In portrait orientation the button in the top-left corner of the Airports view opens a sidebar containing three lists of airports: Favorites, Recents, and Browse. When in landscape orientation, the sidebar is automatically displayed on the left side of the screen.

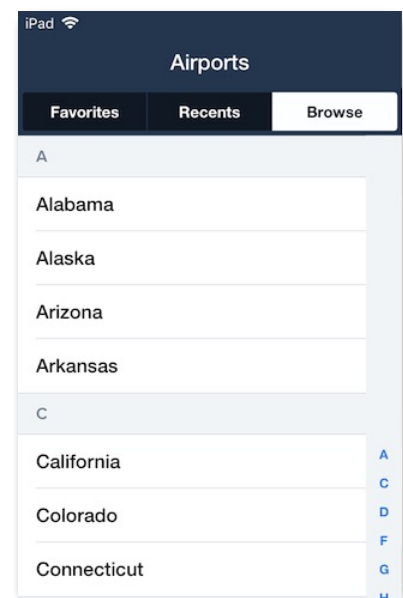


In portrait orientation, view the Favorites list by tapping the Favorites/Recents/Browse button, or by swiping from the left side of the screen. Hide the Favorites sidebar by tapping the “Close” button, or tapping anywhere outside the Favorites sidebar.

11.3.1 Finding an Airport Using Browse

The **Browse** tab on the *Airports* view side-bar allows browsing airport listings by country and region. Search is the preferred method for locating airports, but Browse is a helpful option for locating an airport using the same State/City hierarchy you may already be familiar with from using Airport/Facilities Directories.

Tap the **Favorites/Recents** button and tap **Browse** to display the *Airports* List. Use the ‘A - Z scroller’ on the right hand side of the Airports List to move forward and backwards quickly through the list. Tap the *Global* tab at the bottom of the airports list to view airports outside of the United States.



11.3.2 Favorite Airports List

Use the Favorites list to store frequently visited airports, area airports, and airports for upcoming flights.

While viewing an airport, tap the single star button on the Airport view menu bar to add the airport to your Favorites list. Tap the button a second time to remove the airport from your Favorites list.

While the Favorites list is visible, tap any airport listed to display that airport’s full information.

11. AIRPORTS

Tap the Edit button in the top-right corner of the Favorites list to reorder or remove airports. Reorder an airport by touch-holding on the stacked lines to the right of the airport, then sliding it up or down in the list. Remove an airport by tapping the red circle to the left of the airport and tapping the Delete button that appears. Tap Done to exit Edit mode.

Airports can also be deleted outside of Edit mode by swiping left across the airport to reveal the Delete button.

Each airport in the Favorites list displays the most recent weather information for the airport (if available).

Information displayed includes the current flight rule, observation age, wind speed and direction, ceiling, barometric pressure, temperature, and dew point. Weather warnings (e.g., fog, thunderstorms, cumulonimbus clouds, lightning, mist) - are displayed and highlighted in red when present. ForeFlight Mobile automatically checks for updated weather observations every minute. If a more current observation is available, it is downloaded immediately and the display is updated.

ForeFlight uses the following convention for conveying the airport's current Flight Category:

- **Green** **VFR**
- **Blue** **MVFR**
- **Red** **IFR**
- **Magenta** **LIFR**

11. AIRPORTS

11.3.3 Recent Airports List

Tap the Recents tab to display a list of airports you've viewed in reverse-chronological order.

To remove airports from the Recents list, there are two methods available: *clear* and *swipe-to-delete*. Tap the **Clear** button to remove *all* airports from the list. To remove a single entry from the Recents list use the standard Apple 'swipe-to-delete' function: swipe your finger across the airport, then tap the red "Delete" button.

Favorite and Recent Airport Sync

Changes to your Favorite and Recent airports, including adding, removing and changing the order of Airports, are automatically synchronized to each device that is signed-in to your ForeFlight Mobile account.

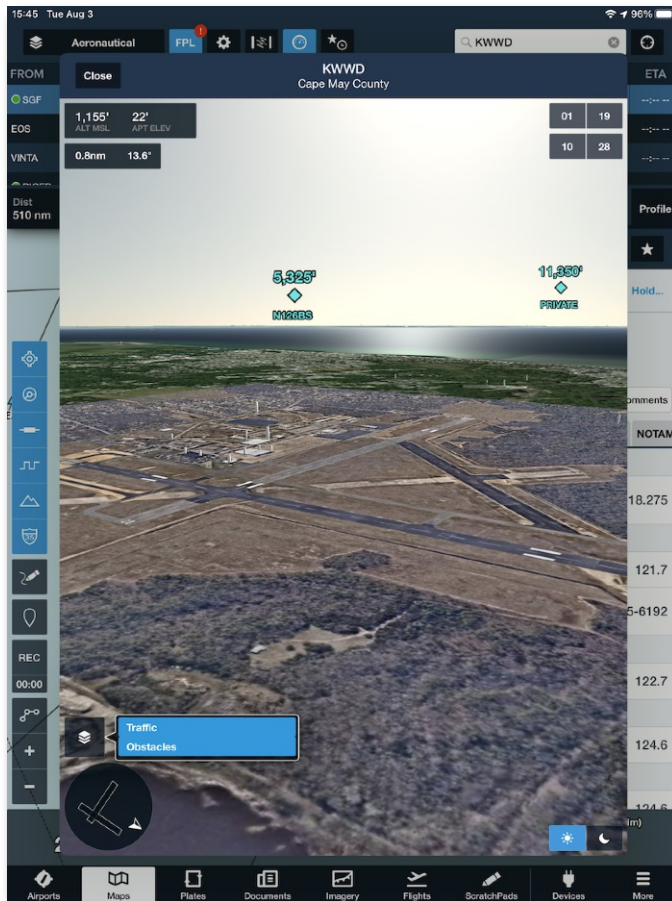
Airports		Clear
Favorites	Recents	Browse
	<div><div></div><div>KDAL: Dallas Love Field</div><div>486' MSL, Tower 123.7</div><div>320° at 11 kts, 10 sm, sky clear</div><div>30.28 in Hg, 11°C (-4°C dewpoint)</div></div>	24m
	<div><div></div><div>KFTW: Fort Worth Meach...</div><div>710' MSL, Tower 118.3</div><div>320° at 11 kts, 10 sm, sky clear</div><div>30.28 in Hg, 12°C (-4°C dewpoint)</div></div>	24m
	<div><div></div><div>KDFW: Dallas-Fort Worth...</div><div>607' MSL, Tower 127.5, Tower 134.9,...</div><div>340° at 12 kts, 10 sm, sky clear</div><div>30.26 in Hg, 13°C (-4°C dewpoint)</div></div>	24m
	<div><div></div><div>KACT: Waco Regional</div><div>516' MSL, CTAF 119.3, Tower 119.3</div><div>340° at 10 kts, 10 sm, sky clear</div><div>30.30 in Hg, 14°C (-4°C dewpoint)</div></div>	26m

Recent Airport List

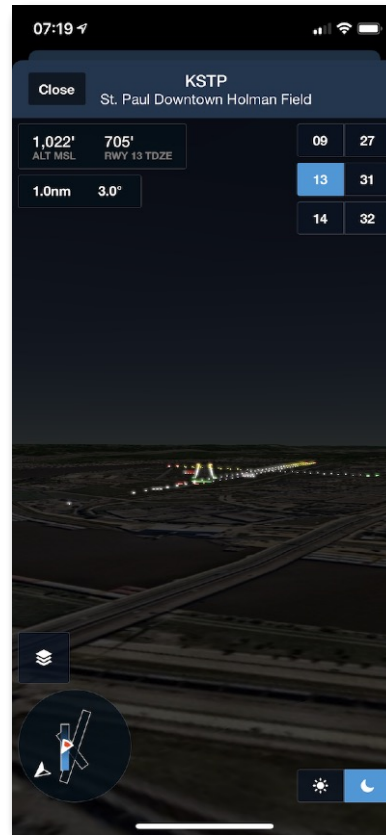
11. AIRPORTS

11.4 Airport 3D View

Airport 3D View provides a dynamic 3-dimensional preview of the airport environment combining high-resolution terrain data and aerial imagery to help you familiarize yourself with the airport environment before arrival. Airport 3D View is included in Performance Plus, Business Performance, and MFB Performance subscription plans.



iPad 3D View



iPhone 3D View

Selectable runway buttons in the upper-right allow you to visualize straight-in approaches by automatically positioning the camera 1nm from the runway threshold along the published glideslope (or at an inclination of 6° if no glideslope information is available).

Tap the Layer button in the lower-left to toggle display of Internet Traffic as well as Obstacles, and tap a target to highlight it and track its position. Tap the Day/Night buttons in the lower-right to switch between Day and Night view. The Night view dims the surrounding terrain and display realistic runway lights.

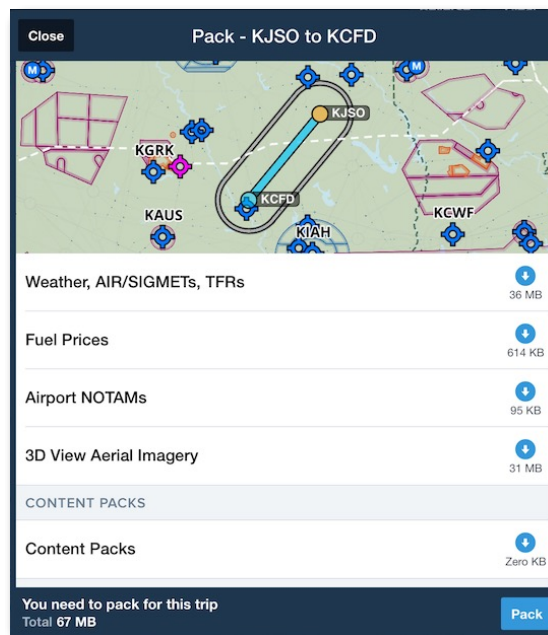
11. AIRPORTS

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.

Use a single finger to pan the view around and the 2-finger “pinch to zoom” to zoom the view out up to 15 nautical miles from the airport. A data readout in the upper-left corner of the view provides information about the runway and current camera elevation, and the distance and angle of the camera from the end of the selected runway.

When Airport METAR data is available a windsock icon appears over the selected runway icon in the lower-left. In the examples above, the icon indicates a headwind with right crosswind.

The Airport 3D View uses high-resolution Aerial imagery, which is cached in memory the first time you view it for a particular airport. Use Pack before the flight to save the 3D View Aerial Imagery for all of the airports currently added to your route.



The app caches the 3D Aerial imagery for up to 20-25 airports, so the Airport 3D View for a previously-viewed (or Packed) airport may still be available while offline (eg: in-flight) even if that airport was not in the most recently-Packed route. However once the cache fills-up, the data for airport(s) that has been in the cache the longest will be cleared-out to make room for the new.

11. AIRPORTS

11.5 Airport Frequencies

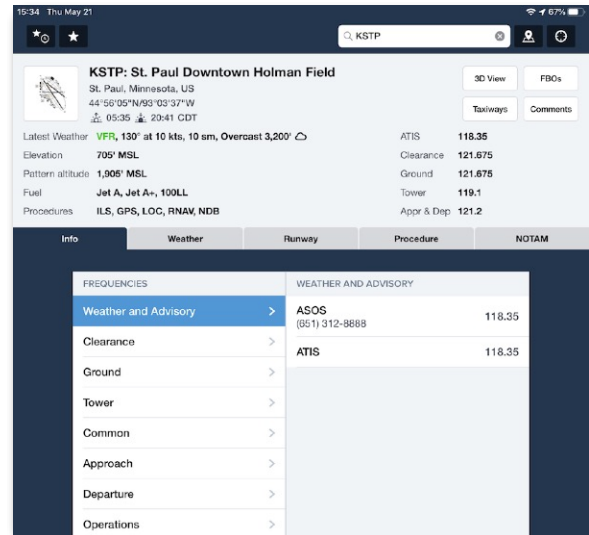
Airport Frequencies are shown in the “Info” tab, broken-down by categories such as Approach, Center, Clearance, Common, etc...

For airports in the US, in support of the FAA’s Clearance Relay Initiative, ForeFlight now shows 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.

On the iPhone, and when using the iPad in Split Screen, the categories such as “Approach”, “Center”, etc... are listed different sections in the scrolling area, and the upper area of the Airports page smoothly moves into and out of view as you scroll.

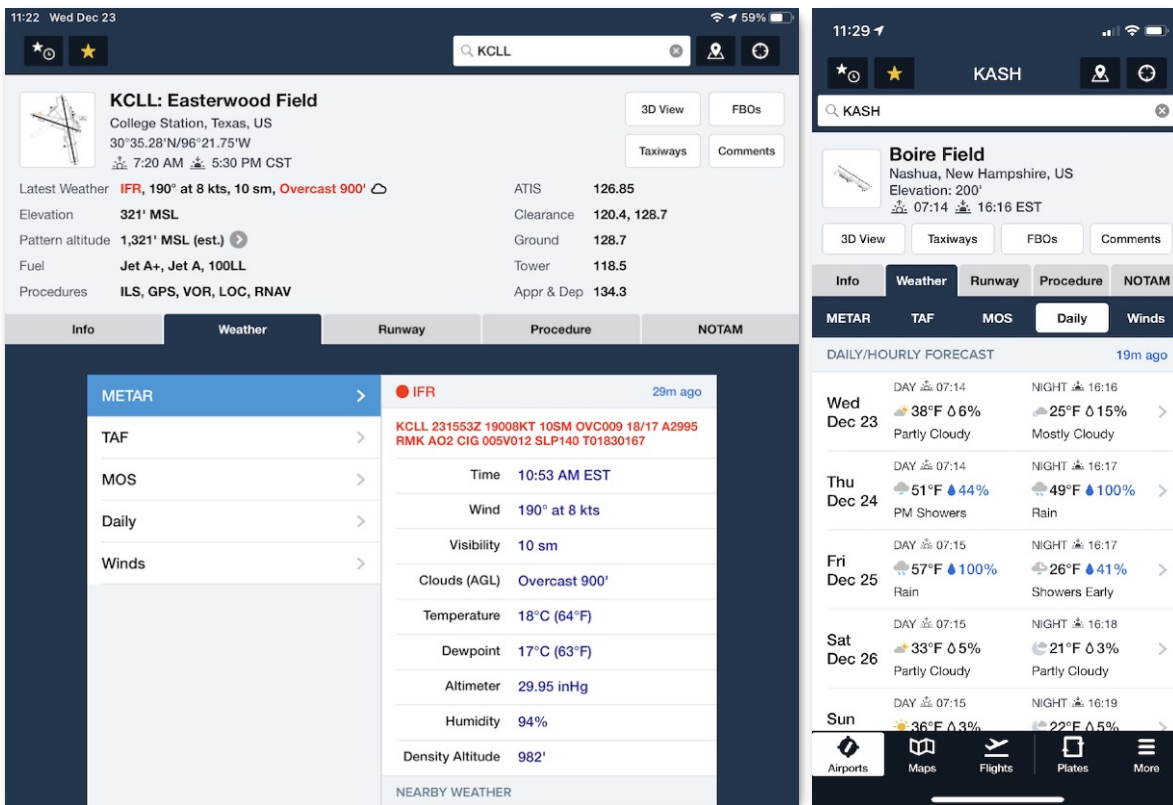
Performance Plus and Business Performance customers, larger US airports where electronic Pre-Departure Clearances (PDC) are available for IFR flights are noted with the “PDC” badge next to the Clearance frequency.



11. AIRPORTS

11.6 Airport Weather

Current Flight Category and a summary of weather (METAR) are shown for each airport on the **Favorite Airports** list. Tap the “Weather” tab to view detailed weather data for the selected airport, including METAR, TAFs (with Forecast Discussion), Model Output Statistics (MOS) forecasts, Daily/Hourly forecasts, and Winds and Temperatures aloft with calculated difference from ISA (International Standard Atmosphere). Scroll down to see future forecasted TAFs and Winds Aloft.



The forecast Temperatures Aloft at different altitudes are colored based on temperature range:

- **Grey** Above +2° C
- **Magenta** From +2° C down to -25° C
- **Tan** Below -26° C

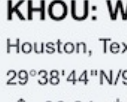
11. AIRPORTS

11.6.1 Digital ATIS (D-ATIS)

For Performance Plus and Business Performance customers, the latest D-ATIS is shown on the Airport Weather view and on the Maps view when viewing the Airport popup. D-ATIS requires an active Internet connection (Wi-Fi or Cellular Data).

✪
KHOU
🔍

Runway 17/35 closed by NOTAM >



KHOU: William P Hobby

Houston, Texas, US

29°38'44"N/95°16'44"W

⏰ 06:24 🌤️ 20:10 CDT

3D View

FBOs

Taxiways

Comments

Latest Weather	VFR, 160° at 11 kts, 10 sm, Broken 17,000' ☁	ATIS	124.6
Elevation	46' MSL	Clearance PDC	125.45
Pattern altitude	1,046' MSL (est.) ➡	Ground	121.9
Fuel	Jet A+, Jet A, 100LL	Tower	118.7, 119.1
Procedures	ILS, GPS, LOC, RNAV	Appr, Dep	Multiple

Info
Weather
Runway
Procedure
NOTAM

METAR	HOU ATIS
D-ATIS	ARR/DEP F 28m ago
TAF	HOU ARR/DEP INFO F 2053Z. 17011KT 10SM SCT037 BKN170 BKN250 31/22 A2983 (TWO NINER EIGHT THREE). ILS RWY 13R APPROACH IN USE. PRIMARY DEPARTURE RWY 22. GROUND CONTROL COMBINED WITH TOW ER ON 118.7. NOTAMS... RUNWAY 17, 35 CLOSED. TAXIWAY G 2, G 3, K 2, TWY C NEAR SOUTH EAST RAMP CLSD. TWY D BTWN TWY M AND RWY 17 CLOSED. TWY Y SFC PAINTED HOLDING POSITION SIGN FOR APPROACH END RWY 22 REMOVED. TWY M, H 2, G, AND H IN PAVEMENT RWY GUARD LGT OTS. BIRD ACTIVITY VICINITY HOU APT. FOR CPDLC LOGON USE KUSA. ALL ACFT TAXI WITH TRANSPONDER ON. ...ADVS YOU HAVE INFO F.
MOS	
Winds	

William P Hobby Airport - Digital ATIS

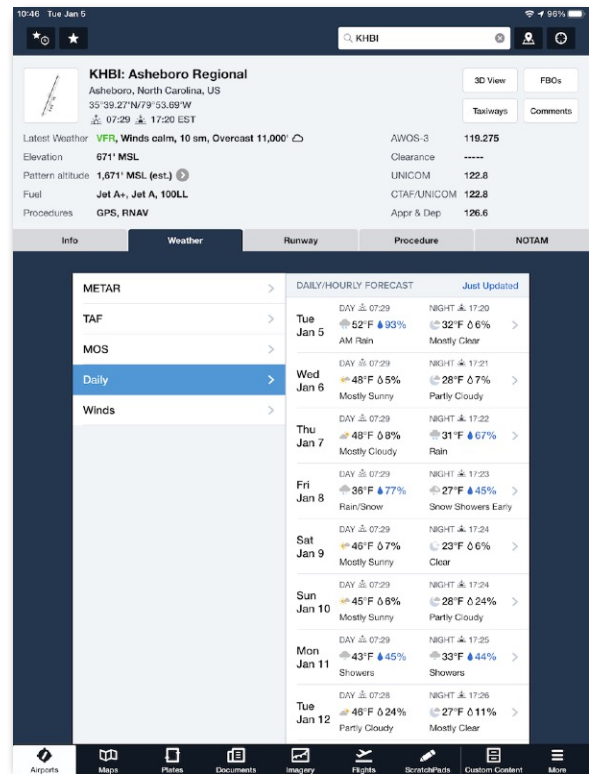
11. AIRPORTS

11.6.2 Daily Weather Forecasts

The Daily/Hourly Weather Forecasts are an all-purpose 10-day, hourly computer-generated forecast powered by data from The Weather Company. The forecasts are available for both airports and for other locations when the device is connected to the Internet. Daily Weather forecasts are included in all subscription plans except for the discontinued “Legacy Basic” and “Legacy Pro” plans for individuals.

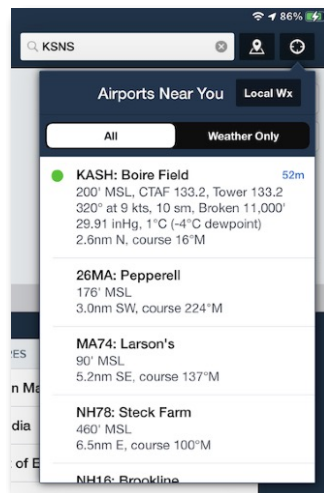
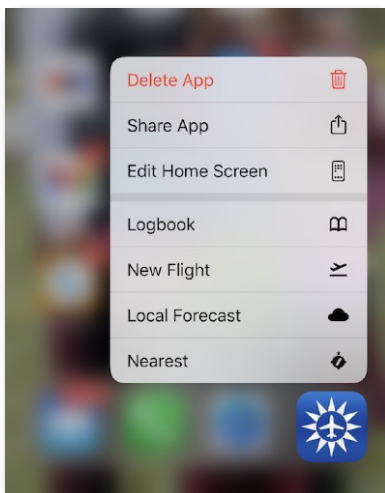
For airports, access them on the **Airports > Weather > Daily** tab, or on the Airports pop-ups on the Maps page or Flights views. Forecasts for airports in the route are included in **Pack** and are available for up to 24 hours after being downloaded.

For any arbitrary location on the Maps page, touch-hold on the location then tap the “Wx” button in the upper-right.



Asheboro Regional Daily Weather

Quickly access a forecast for your current location by tap-holding the ForeFlight icon on your device’s home screen then tapping Local Forecast, or from the Airports page by tapping the Nearest (cross-hair) button in the upper-right and tapping the “Local Wx” button.



11. AIRPORTS

Daily Weather Forecast (continued)

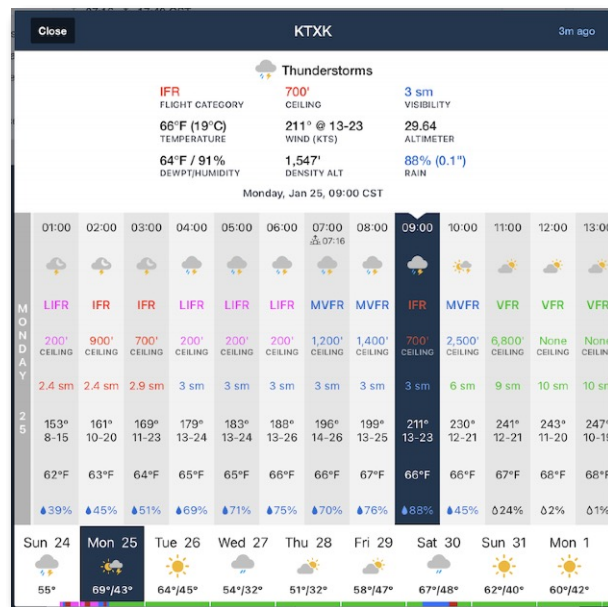
Tap the Day you'd like to see the hourly detail, including estimates of temperature, surface wind speed and direction (Magnetic), barometric pressure, dewpoint and humidity, density altitude, chance of rain and forecast quantity of precipitation (for that hour), ceiling, visibility, sunrise and sunset times, and color-coded flight category.

The detail view that opens includes summary data at the top, including Flight Category, and the age of the forecast data. When the device is connected to the Internet, forecast data is automatically refreshed after 1 hour. The middle & lower detail sections are tappable & scrollable horizontally to show daily & hourly detail.

The bottom of the daily weather depicts the forecasted flight category, with Green = VFR, Blue = MVFR, Red = IFR, and Magenta = LIFR.

When looking at the hourly detail note that the forecast element(s) responsible for the flight category forecast are also colored that color.

For example in this KTXK daily detail, from 04:00-07:00 the forecast flight category is LIFR (magenta) due to forecast 200' ceiling (also shown in magenta). From 07:00-08:00 the forecast flight category is MVFR (blue) due to the forecast of 3sm visibility, which is shown in blue. Note the sunrise icon and time (07:16) is shown in that hour. At 09:00 the forecast flight category is IFR (red) due to the forecast 700' ceiling (also highlighted in red), and 0.1" of rain is forecast during that hour. At 11:00 the forecast flight category is VFR (green).



Hourly Forecast

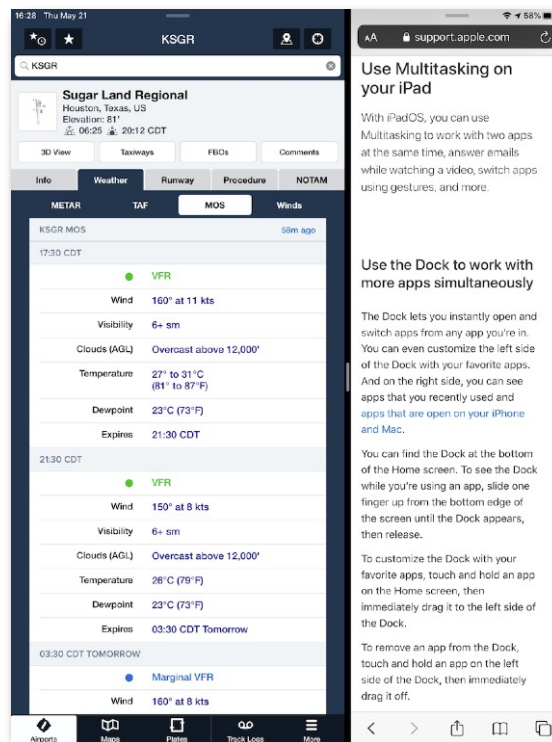
11. AIRPORTS

11.7 Model Output Statistics (MOS) Forecasts

Model Output Statistics (MOS) forecasts are derived from the output of numerical weather prediction models. An automated process developed by research meteorologists at NOAA, MOS takes the "raw" model forecast and uses a statistical approach to produce an objective site-specific forecast. For most stations, MOS forecasts are updated hourly for the first 24 hours, then updated every six hours from 25 hours to 3 days in the future. The new forecast is ordinarily available at 30 minutes past the hour.

IMPORTANT: MOS should ONLY be used as a supplemental product for enhanced situational awareness and is not meant as a substitute for official NWS forecasts.

While TAFs provide the official forecast for over 660 civilian airports throughout the US and its territories, MOS provides weather guidance for over 2000 airports including some military air bases.



MOS builds on the original forecast model by taking into account an historical record of observations at forecast points (such as airports), removes any known systematic model biases, and quantifies any uncertainty (like precipitation or thunderstorm chances) into probabilistic forecasts.

11. AIRPORTS

MOS also transforms the model data into sensible weather elements basic to aviation such as sky cover, ceiling height, visibility, wind speed and direction (True), the probability of precipitation, and the precipitation type. Unlike TAFs, MOS forecasts also include temperature and dewpoint when available, which can be expressed as either single values or a range of values, indicating that the value is expected to vary over the forecast period.

MOS is a point forecast similar to a TAF. That is, MOS is valid at the station (airport) and should not be used as zone or area forecast. Pilots should use MOS in a similar way they may use a TAF, keeping in mind that TAFs are constructed by highly trained meteorologists and will ordinarily be more accurate than a MOS forecast for the same airport. Although MOS cannot be used as a forecast for dispatch to the airport or for IFR alternate requirements as required by FAA regulations (use TAFs and the area forecast (FA) for this purpose) they are useful for getting a picture of likely weather at airports without a TAF, and for getting a more recently updated forecast for airports that do have a TAF, since MOS are updated hourly.

The use of "Nearest MOS" is provided strictly for convenience. Keep in mind that a MOS forecast for an airport that is 20 miles away, for example, may not be representative of the forecast for the intended airport.

Despite its advantages, the MOS has some **important limitations vs. TAFs**:

- MOS is only available for US airports and some airports in US territories.
- MOS forecasts are never amended.
- MOS does not predict temporary conditions.
- MOS cannot forecast multiple cloud layers.
- MOS does not predict specific cloud layers above 12,000' AGL.
- MOS cannot forecast precipitation intensity and cannot distinguish between rain and drizzle.
- MOS cannot distinguish between freezing rain, freezing drizzle and ice pellets. so if any is present, it just says "Freezing Precipitation."
- MOS cannot predict variable winds.
- MOS cannot forecast non-convective low level wind shear (LLWS) or no significant weather (NSW).

11. AIRPORTS

11.7.1 Runway Winds

Tap on the Runways tab to view the preferred runway based winds reported in the last METAR received by ForeFlight Mobile. Headwinds are indicated by a green arrow and tailwinds by a red arrow, and the magnitude and direction of the crosswind are shown next to the grey arrow.

The > to the right of the runway wind summary points to the additional information about each runway.

Remember that Runway heading is listed in Magnetic, while Wind direction is True. ForeFlight automatically applies the current Magnetic Variation when calculating the wind components. You can see the Magnetic Variation on the Airports page “Info” tab by scrolling down to the Features section.

In this example, the most recently received METAR for KSTP reports the winds are from 170° at 12 knots (38 minutes ago). This means that the wind on Runway 14 is a 11 knot headwind (green arrow) with a 5 knot crosswind (grey arrow) from the right.

Tap on each runway entry to see additional information about the runway, such as glideslope indicator, displaced threshold, and actual magnetic heading.

11.8 Procedures

Terminal Procedures include Standard Terminal Arrival Routes (STARs), Standard Instrument Departures (SIDs), and approach plates. These are all accessible from the *Airports* view. Use the search or browse methods of finding an airport, then tap the **Procedure** tab located on the segmented menu bar towards the top of the *Airports* view.

Depending on the procedures available for an airport, several types of procedures may be displayed according to type, such Arrival, Departure, and Approach. Departures and Arrivals (SIDs/STARs) that have aircraft type restrictions (eg: restricted to Piston, Turboprop, and/or Jet) are tagged in the list.


Procedures are marked as **Saved** or **Not Saved**. Procedures marked *Saved (in green)* are stored locally on your iPad and are available when offline. Procedures marked **Not Saved** are **NOT stored** on your iPad and must be downloaded by viewing them or by using the Downloads view to download that region’s terminal procedures in bulk.

11. AIRPORTS

From the **Procedures** tab, touch a procedure's name to display the ForeFlight procedure viewer. The procedure viewer includes buttons for: accessing a list of recently viewed procedures, sending a plate to the Map (if you have a Pro Plus or Performance Plus subscription) printing a procedure, adding a procedure to your current Plates binder, and locking the procedure.

ForeFlight Mobile's **Lock** button disables touch interaction (zooming and scrolling) with the terminal procedure viewer, 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 [More > Settings](#).

Multi-page procedures can be viewed by sliding pages left or right with a single finger.

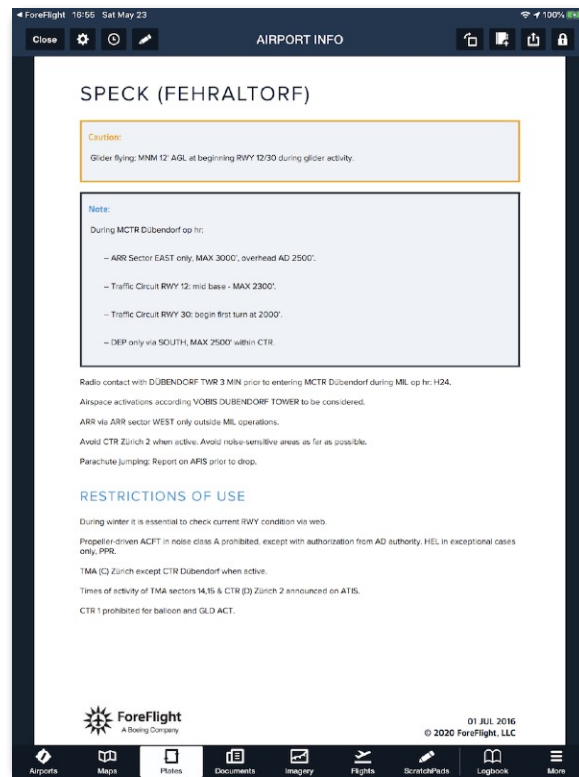
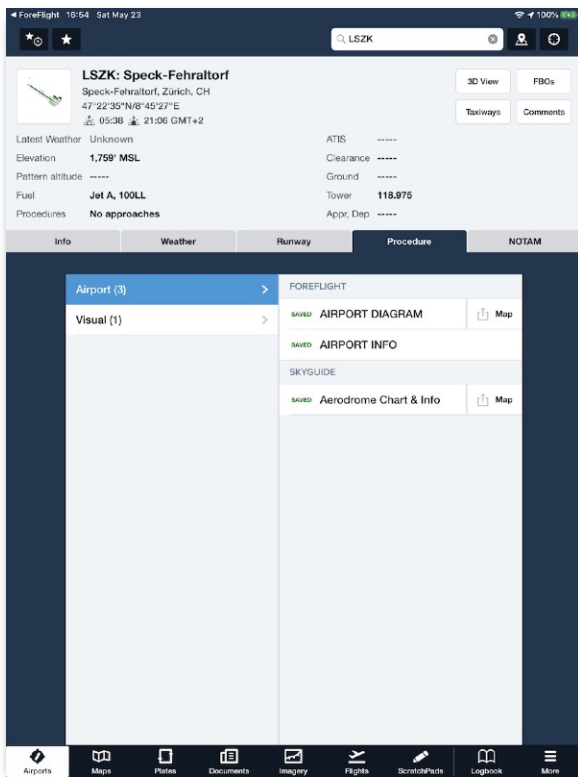
Tap the **Rotate** button  in the upper toolbar to rotate the plate clockwise 90 degrees per tap.

11. AIRPORTS

11.8.1 European Airport Information

Beginning with ForeFlight Mobile version 12.3, additional Jeppesen-sourced information about many European airports (similar to what was previously available in Jeppesen Mobile FliteDeck VFR) is now available as “AIRPORT INFO” under **Airports** > **Procedures**, in the ForeFlight category.

This information includes airport-specific notes for ground movement, general aviation access, VFR and helicopter procedures, and more. The documents are included when the “Aerodrome Charts & AIP” download option is selected ON.



11. AIRPORTS

11.8.2 Swipe to Change Plates

When viewing a plate from the Airports page or the Plates page (including in a binder) you can quickly change between plates by **swiping three fingers** from Right to Left (or Left to Right).

When viewing plates at an Airport, swiping from Right to Left with three fingers will display the next Procedure in that airport's list and swiping from Left to Right will display the previous Procedure in that airport's list.

When viewing plates in a binder on the Plates page, swiping from Right to Left with three fingers will display the next Procedure in the binder and swiping from Left to Right will display the previous Procedure in the binder.

In either case the lists do not “wrap around” so when you get to the end of the list, additional swipes in the same direction will not take you to the end (or beginning) of the list or binder.

IMPORTANT: The “Zoom” Accessibility option (in Apple Settings, General, Accessibility) must be OFF for plate swiping to work. If the “Zoom” Accessibility feature is ON, swiping with three fingers will not change between plates.

NOTE: Displaying the Instrument Panel and aircraft position on a Plate requires a ForeFlight Pro, Pro Plus or Performance Plus subscription. Basic Plus subscriptions do not show the Instrument Panel on the Plates page.

11.8.3 Using Geo-Referenced Procedures

Geo-referencing is an optional feature that requires a Pro Plus or Performance Plus subscription. Go to www.foreflight.com/buy or the *Accounts* view to learn how to purchase or upgrade your subscription.

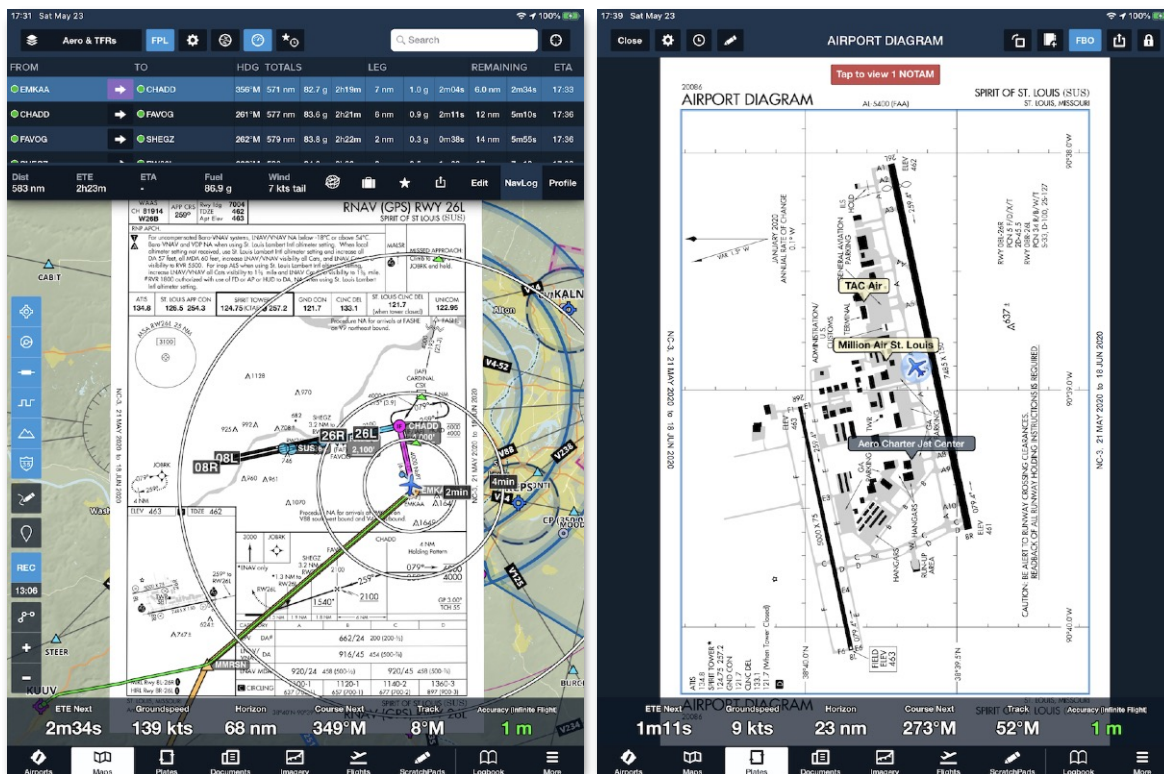
Most instrument procedures can be geo-referenced. This allows ForeFlight Mobile to display the aircraft's position on the procedure.

Typically, only approach plates and taxi diagrams are geo-referenced; most STARs/DPs are not drawn to scale and so cannot be geo-referenced. However some STARs/DPs produced by Jeppesen can be georeferenced, and displayed on the Maps page. And using the “Procedure” button on the Flight Plan Editor you can add the points on the SID/STAR to your route.

11. AIRPORTS

When a geo-referenced procedure is displayed, a blue square is drawn around the geo-referenced area. This is the only area of the plate in which your aircraft will be shown. Note that some plates are only drawn to-scale in the center portion - if your aircraft's location is shown outside that area it is positioned based on the scale of the center area and must *only* be compared to elements within that center area.

Until GPS data senses movement and provides a track over the ground, position is indicated using a small blue dot. Once your aircraft starts moving, the aircraft icon selected in ForeFlight Mobile settings is shown. Much like the *Maps* view, the aircraft speed, track, etc. is displayed at the bottom of the view. Single-tap on the Plate to hide/show the instruments at the bottom. The order and layout of the instruments is the same as on the Maps page. Tap an instrument to change it.



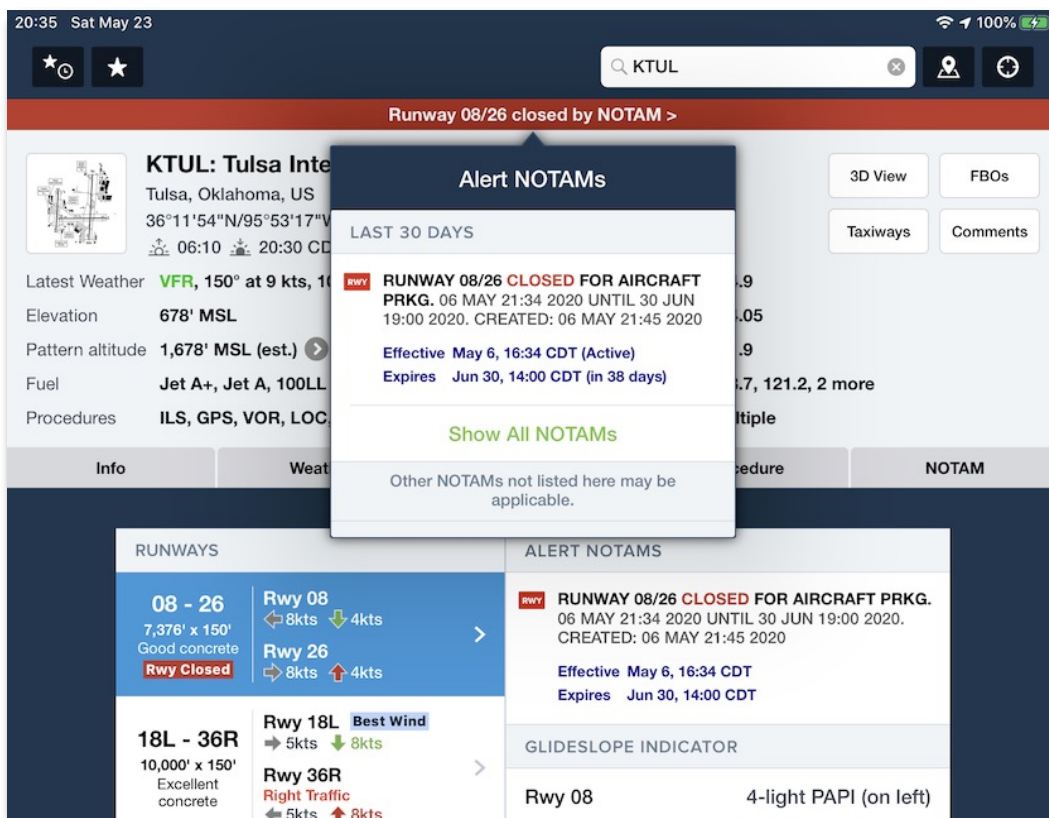
11. AIRPORTS

11.9 Airport NOTAMs

Tap the NOTAM tab to view all the NOTAMs that have been issued for that airport. ForeFlight divides NOTAMs according to their type, with sub-tabs for Airport, Obstacle, TFR, and ARTCC NOTAMs. If you've purchased or linked [Jeppesen chart coverages](#) in ForeFlight, a Jeppesen tab is also available with NOTAMs for that airport issued by Jeppesen.

If any runway or airport closure NOTAMs are in effect for an airport, ForeFlight will display a prominent banner across the top of the Airports view. Tap the NOTAM banner to directly view the NOTAMs.

For runway closure NOTAMs, the banner includes the name of the closed runway, and a red **Closed** label is also added on the Runways tab. Tap the closed runway to see the relevant NOTAM.



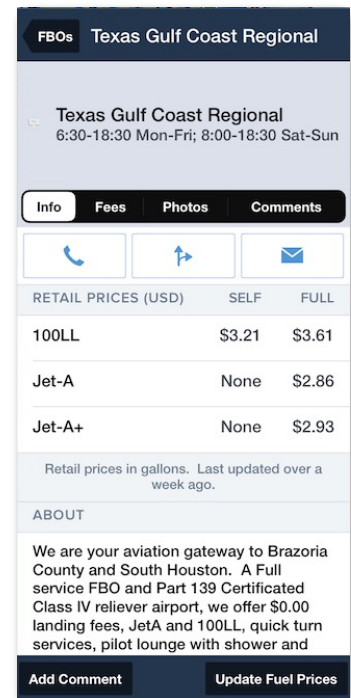
Airports - Runway Closure NOTAM

11. AIRPORTS

11.10 FBO Information

To access a list of Fixed Based Operators providing pilot services at an airport, tap the **FBOs** button. FBO details displayed include hours of operation, fuel prices, location on field, fuel availability, comments, contact numbers and frequencies, and any additional services provided. ForeFlight includes FBO details for thousands of airports worldwide.

The location of FBOs that sell fuel can also be shown directly on the Airport Diagram. FBO information can also be accessed on the Maps page by tapping on an airport icon, then tapping the FBOs button. When you tap on an FBO's entry, the popup shows details of that FBO including Information (including the table of fuel prices, contact information, website, and address), Fees, Photos, and pilot-submitted Comments.



RETAIL PRICES (USD)	SELF	FULL
100LL	\$3.21	\$3.61
Jet-A	None	\$2.86
Jet-A+	None	\$2.93

Retail prices in gallons. Last updated over a week ago.

ABOUT

We are your aviation gateway to Brazoria County and South Houston. A Full service FBO and Part 139 Certificated Class IV reliever airport, we offer \$0.00 landing fees, JetA and 100LL, quick turn services, pilot lounge with shower and

Add Comment Update Fuel Prices

11.10.1 Comments

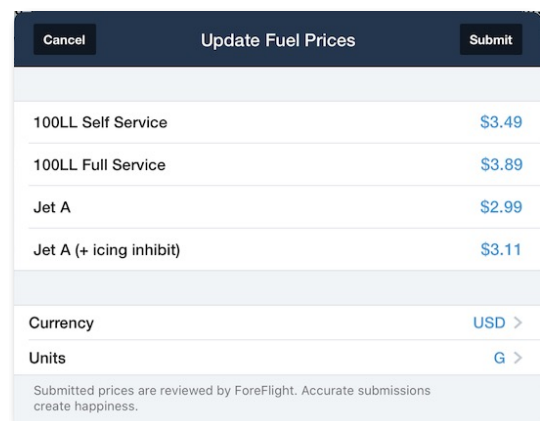
User-provided comments are available for FBOs and airports. View FBO comments by tapping the Comments tab just above the fuel price information. Once you access comments, they are saved to your device so you'll be able to view them again later - even when you are offline.

To add a comment, tap the "Add Comment" button. Comments are moderated by ForeFlight and will appear for all users to see after they are reviewed.

11.10.2 Fuel prices

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

Tap **Update Fuel Prices** when viewing an FBO's details to submit updated fuel prices. When submitting price data, leave unknown prices blank. Blank values will be ignored when the prices are updated on the ForeFlight system.



100LL Self Service	\$3.49
100LL Full Service	\$3.89
Jet A	\$2.99
Jet A (+ icing inhibit)	\$3.11

Currency USD >

Units G >

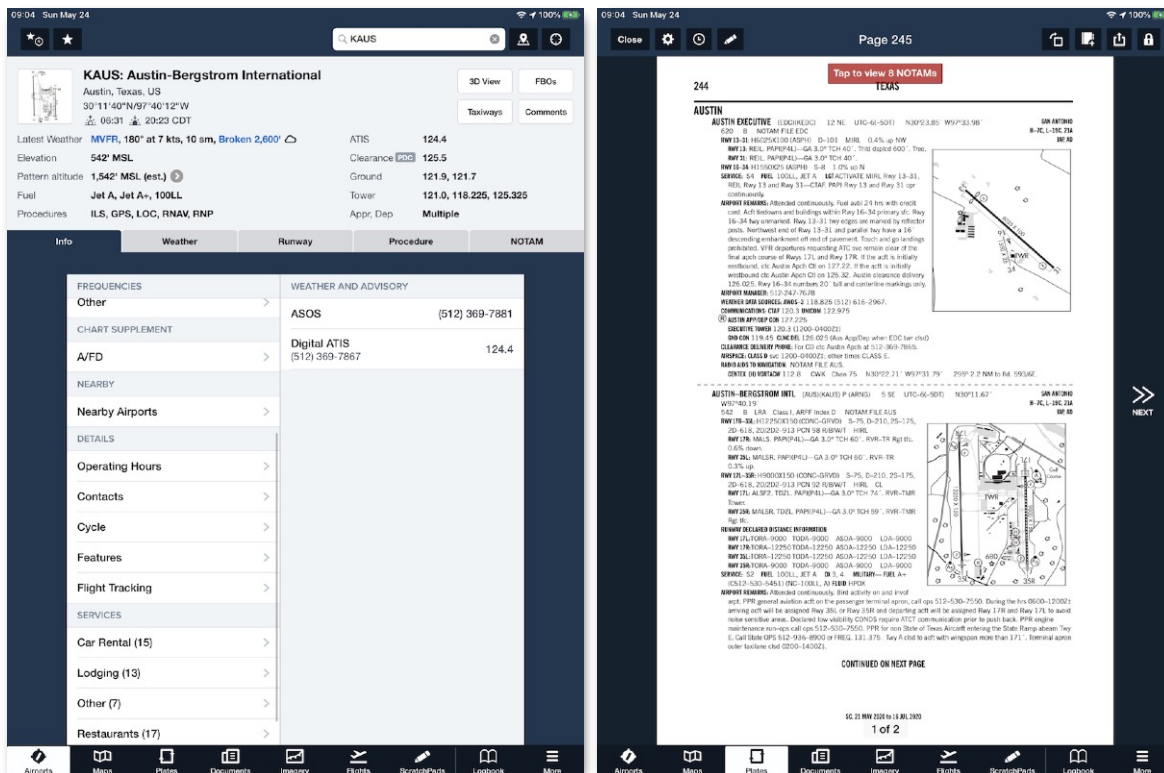
Submitted prices are reviewed by ForeFlight. Accurate submissions create happiness.

11. AIRPORTS

11.11 A/FD CFS and AIP

For additional airport information like pilot-controlled lighting procedures, parachute jumping activities, etc., sometimes there's just no better place than the Airport/Facility Directory, Canada Flight Supplement (for Canadian airports) or Aeronautical Information Publication (for European and other airports around the world).

Each airport's A/FD entry is accessible from the Airports > Info tab, under A/FD (or CFS, or AIP) category: scroll down tap the entry to open it on the Plates page.



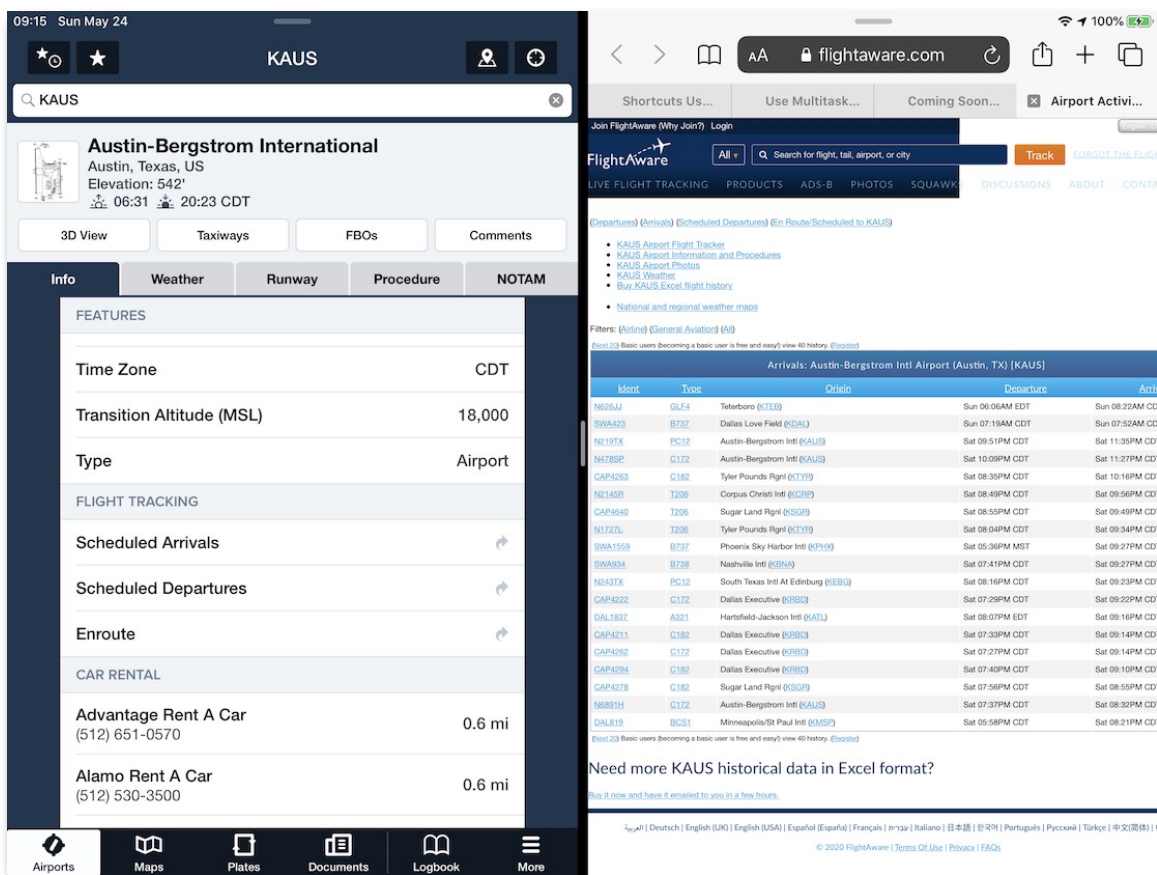
If the entry has multiple pages you can single-finger swipe to the left or right to change pages. A single-tap on the A/FD page will display the “1 of n” at the bottom of the page, where n is the number of pages relating to that airport.

11. AIRPORTS

11.12 Airport and Aircraft Flight Tracking

Flight tracking data is provided by FlightAware.com and is available only while connected to the Internet. On the Airports page, tap on the **Info** tab then scroll down to the **Flight Tracking** category.

Tap Scheduled Arrivals, Scheduled Departures or Enroute to open Safari and show a list of aircraft scheduled to arrive or depart, or that are enroute to the airport. If your iPad is in Split Screen view with Safari displayed, the FlightAware website will open there.



NOTE: To track an individual aircraft, type an aircraft Tail-number in the Search box, then tap the “Track” button in the aircraft registration information popup.

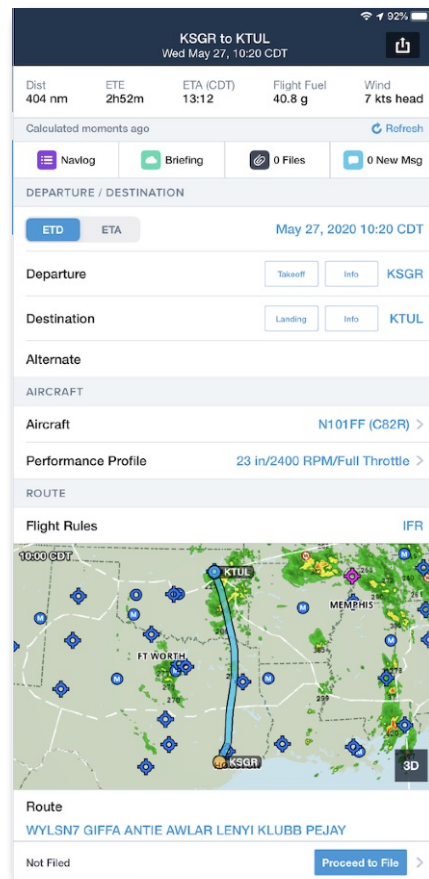
FLIGHTS

The Flights view provides a quick way to plan, brief, and file a flight plan. Flight plans can be filed for departures from 10 minutes in the future up to days in advance.

12.1 About the Design

The top-to-bottom workflow follows a logical progression from inputting airports, selecting an aircraft and performance profile, defining a route and altitude, then filing the flight plan. Plans created on the Flights page can also be sent to the Maps page for graphical review, and routes can still be sent from the Maps page to Flights to create and file a flight plan, and to get a briefing.

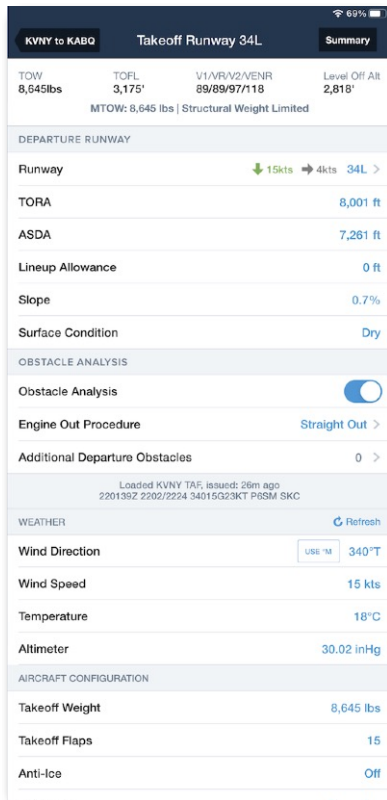
ForeFlight customers who have purchased a Performance Plus or Business Performance subscription choose between a desired ETD or ETA, and also use high-fidelity aircraft performance profiles to quickly and accurately plan their flights including Takeoff & Landing performance, passengers, baggage, and fuel.



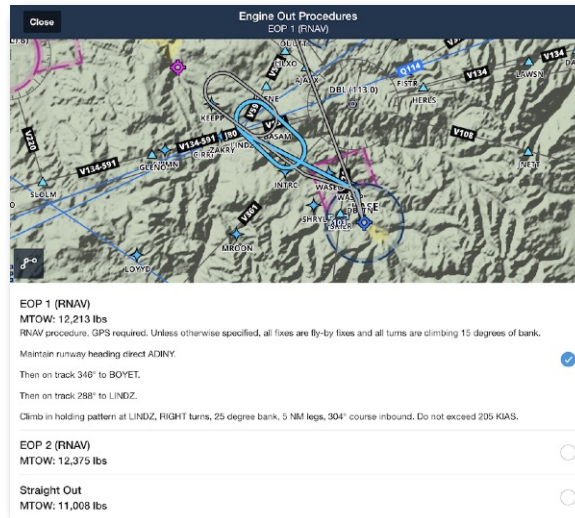
12. FLIGHTS

12.2 Runway Analysis

Runway Analysis, a paid per-type add-on to ForeFlight Performance Plus and Business Performance subscription plans, is a sophisticated runway and obstacle analysis for jets that is seamlessly integrated into the Flights view. Runway Analysis was developed with AFM data and procedures sourced directly from OEMs, and meets the requirements of 14 CFR 135.379. Runway Analysis provides MTOW/MLW solutions for multiple constraints, and offers Engine Out procedures designed using AC 120-91A and the ICAO counterpart. For more information, see the **Performance Planning in ForeFlight Mobile** guide in Documents in the ForeFlight Drive, or in the [ForeFlight Support Center](#).



KVNY to KABQ Takeoff Runway 34L Summary	
TOW	8,645 lbs
TOPL	3,175'
V1/VR/V2/ENR	89/89/97/118
Level Off Alt	2,818'
MTOW: 8,645 lbs Structural Weight Limited	
DEPARTURE RUNWAY	
Runway	34L
TORA	8,001 ft
ASDA	7,261 ft
Lineup Allowance	0 ft
Slope	0.7%
Surface Condition	Dry
OBSTACLE ANALYSIS	
Obstacle Analysis	On
Engine Out Procedure	Straight Out
Additional Departure Obstacles	0
Loaded KVNY TAF, issued: 26m ago 220135Z 220222Z 34015G32KT P6SM SKC	
WEATHER	
Wind Direction	340°T
Wind Speed	15 kts
Temperature	18°C
Altimeter	30.02 inHg
AIRCRAFT CONFIGURATION	
Takeoff Weight	8,645 lbs
Takeoff Flaps	15
Anti-Ice	Off



Engine Out Procedures
EOP 1 (RNAV)

MTOW: 12,213 lbs
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 ADINZ.
Then on track 340° to BOYET.
Then on track 298° to LINDZ.
Climb in holding pattern at LINDZ, RIGHT turns, 25 degree bank, 5 NM legs, 304° course inbound. Do not exceed 205 KIAS.

EOP 2 (RNAV)
MTOW: 12,375 lbs

Straight Out
MTOW: 11,008 lbs

If you have a single-pilot plan, to add Runway Analysis for one or more types please visit <https://www.foreflight.com/buy> and enter your ForeFlight subscription address, choose Performance Plus, then scroll down and click on the “OPTIONAL: JET RUNWAY ANALYSIS” section to select your desired type(s) and complete the purchase. Please email team@foreflight.com if your desired type(s) are not shown.

12. FLIGHTS

12.3 Takeoff and Landing Performance

Integrated Takeoff & Landing Performance calculations for over 290 popular piston and single-engine turboprop aircraft are now included at no additional charge in Performance Plus and Business Performance. The calculations incorporate aircraft performance and weather data (live data including from ADS-B or XM, or pilot-updated based on ATIS/AWOS) as well as a pilot-entered safety factor to calculate important flight metrics such as Takeoff Roll, Approach speed, etc..., and help pilots ensure they're within the aircraft's and runway's limits. For more information, see the **Performance Planning in ForeFlight Mobile** guide in Documents in the ForeFlight Drive, or in the [ForeFlight Support Center](#).

The screenshot displays the ForeFlight Mobile app interface for flight planning from KSGR to KTUL on Wednesday, May 27, 2020, at 10:20 CDT. The main screen shows flight details: Distance 404 nm, ETE 2h52m, ETA (CDT) 13:12, Flight Fuel 40.8 g, and Wind 7 kts head. It also includes a 'Calculated moments ago' section with buttons for Navlog, Briefing, 0 Files, and 0 New Msg. The 'DEPARTURE / DESTINATION' section shows ETD and ETA for May 27, 2020, 10:20 CDT. The 'AIRCRAFT' section lists the aircraft as N101FF (C82R) and the performance profile as 23 in/2400 RPM/Full Throttle.

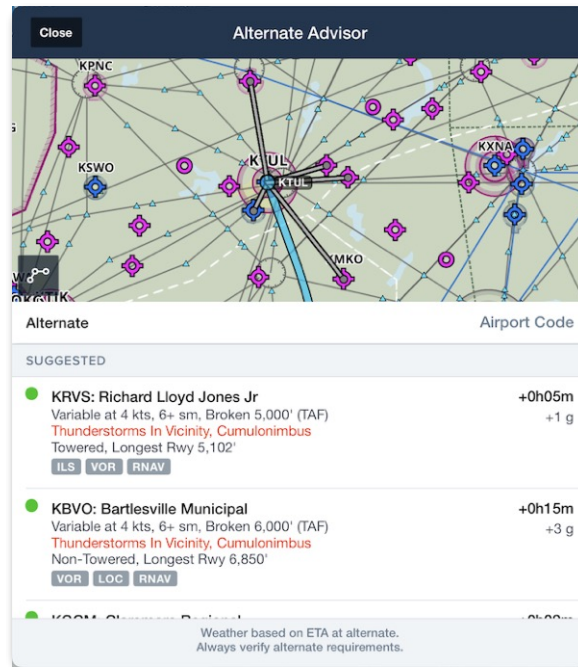
The secondary screen, titled 'Takeoff Runway 17', shows takeoff performance metrics: Weight 2,305 lbs, Total Dist 983', and 50' Speed 50 kias. It also displays Runway 17, Slope -0.09%, Runway Surface Dry Paved, and Usable Length 8,000'. A 'Declared Distances Information' section lists TORA-8000, TODA-8000, ASDA-8000, and LDA-8000. The 'WEATHER' section shows Wind Direction 230°T, Wind Speed 9 kts, Temperature 27°C, and Altimeter 29.92 inHg. A 'Safety Distance Factor' dialog box is overlaid on the screen, showing a numeric keypad and a value of 1.2.

Category	Value
Dist	404 nm
ETE	2h52m
ETA (CDT)	13:12
Flight Fuel	40.8 g
Wind	7 kts head
Runway	17
Slope	-0.09%
Runway Surface	Dry Paved
Usable Length	8,000'
Weight	2,305 lbs
Total Dist	983'
50' Speed	50 kias
Wind Direction	230°T
Wind Speed	9 kts
Temperature	27°C
Altimeter	29.92 inHg
Safety Distance Factor	1.2
Liftoff Speed	42 kias
Ground Roll	517'
50ft Speed	50 kias
Total Distance	983'

12. FLIGHTS

12.4 Alternate Advisor

The Alternate Advisor lists possible alternate airports based a number of criteria such as time and fuel requirements to reach the alternate, 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 not in the suggested list, simply tap on the “Airport Code” and type your desired airport.

The map view shows each alternate with a grey line between it and the destination. Tap the entry to see the route from your destination to the alternate highlighted in blue on the map, then tap the “Add [ID] as Alternate” button to add that alternate to your Flight.

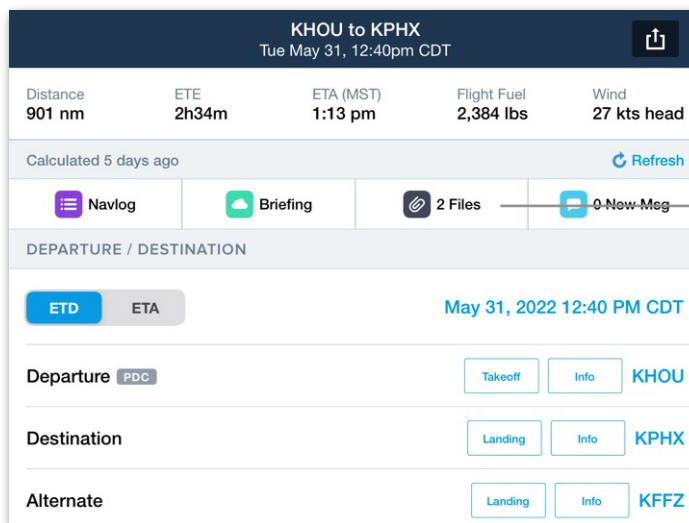
NOTE: For Performance subscribers, Takeoff and Landing Performance is not currently calculated for the Alternate airport.

12. FLIGHTS

12.5 Flight Files

ForeFlight Performance Plus and Business Performance subscribers can add files to flights. Files sync between the devices signed in to an account. Sync requires an active internet connection.

Files added to a flight are available off-line. Files are associated with flights indefinitely provided the flight is not deleted.



Flights View

12.5.1 Supported File Types

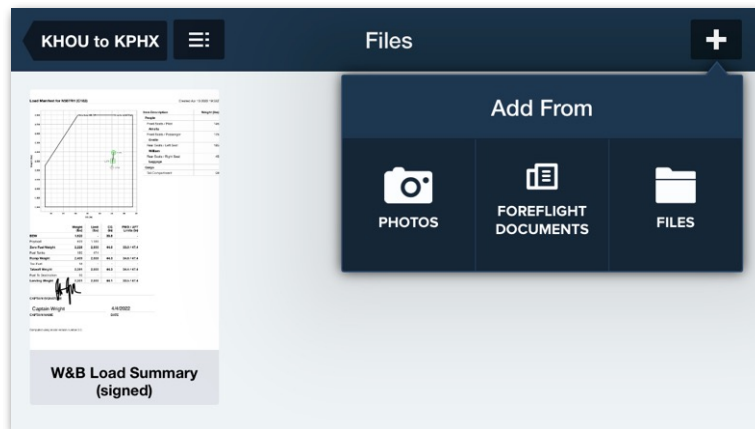
Supported file types include PDF, TIFF, TIF, JPG, JPEG, GIF, PNG, BMP, BMPF, TXT, DOC, DOCX, XLSX, XLS, PPTX, PPT, CSV, Pages, Key, and Numbers. Individual file attachments are limited to 25 MB or less.

12. FLIGHTS

12.5.2 Adding Files

To add a file to a flight, tap the **Files** button near the top of the Flights view. Tap the **[+]** button to add a new file. Files can be imported from Photos, ForeFlight Documents, or the device's iOS Files. Select where the file will be imported from and then choose the file to attach to the flight.

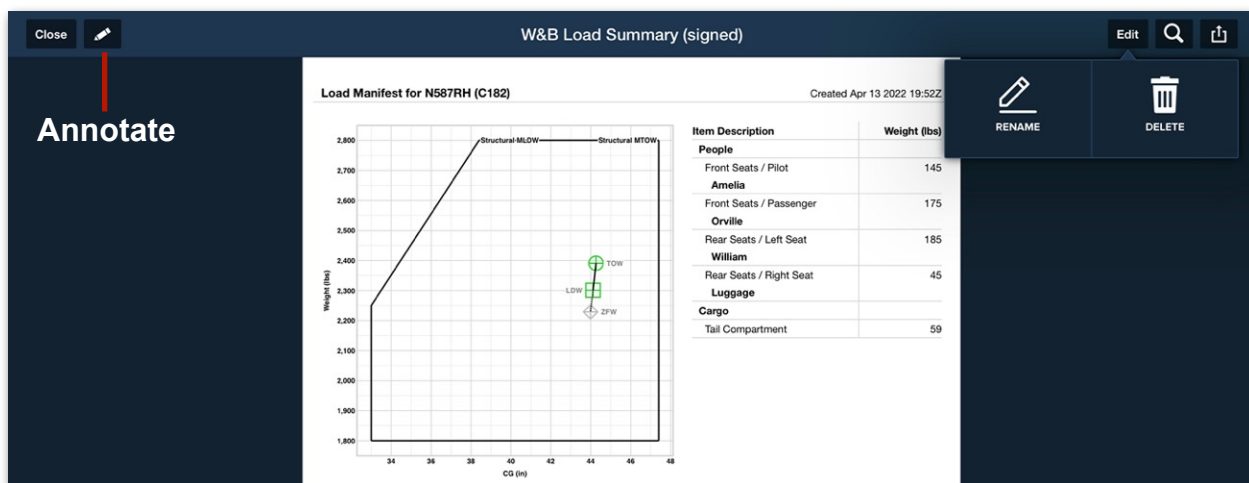
Files can also be imported with AirDrop. To import via AirDrop, select **ForeFlight > Flights** from the AirDrop “Open with...” menu. Once a file has been added, the **Files** button depicts the number of files currently attached to the flight.



Adding a file to a flight

12.5.3 Editing Files

Once a file has been attached to a flight, tap the preview icon to open the file viewer. The file viewer contains an upper toolbar with options for annotating, renaming, searching, sharing, and deleting the file.



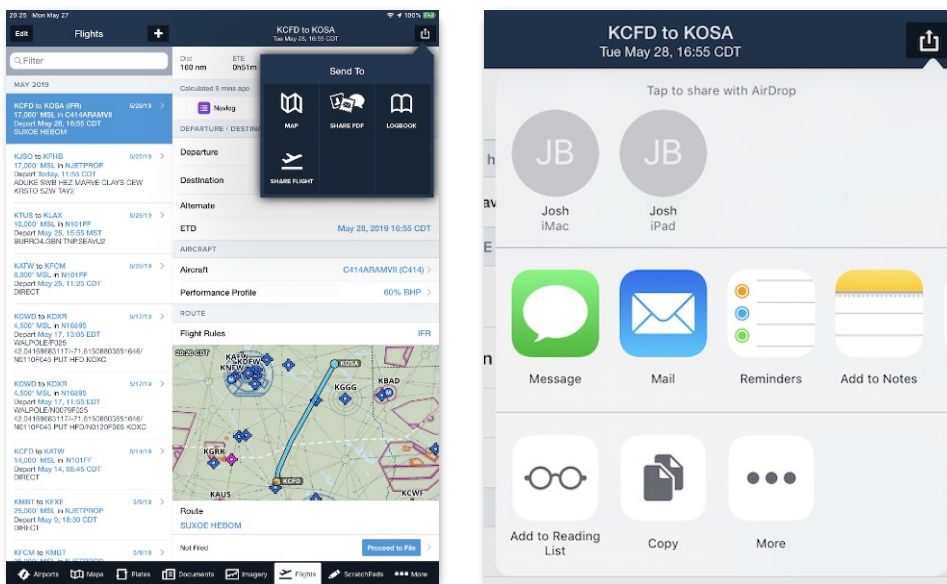
File Viewer

12. FLIGHTS

12.6 Sharing a Flight

Flight Sharing allows you to easily share a read-only copy of planned and filed flights with fellow pilots, co-pilots, or crew members who use ForeFlight Mobile, for improved collaboration and more efficient flight planning. Flight Sharing is available for all ForeFlight subscription plans.

To share a flight, tap the “Send-to” button in the upper right of the Flight, and choose “Share Flight”. You can share flights via AirDrop, email, text message, or any other app that can send messages. Any sharing method other than AirDrop will generate a link that the recipient can tap to load the shared flight onto their device.



When the recipient Accepts the shared flight, it is added to the Flights list, with a label indicating who shared the flight. Note that the Flight information, including Departure, Destination, Aircraft, Performance Profile, and loading are all in grey text indicating they cannot be edited by the recipient.

A shared flight stays connected to the original via ForeFlight’s Sync system, so any changes made to the original flight are also reflected on the recipient’s shared flight once both devices have an internet connection (changes made while offline are cached and sent once online again). The Flights Navlog, Briefing, and Takeoff & Landing Performance calculations are also tied directly to the original account. So those are not synced until they are viewed by the pilot who shares the flight.

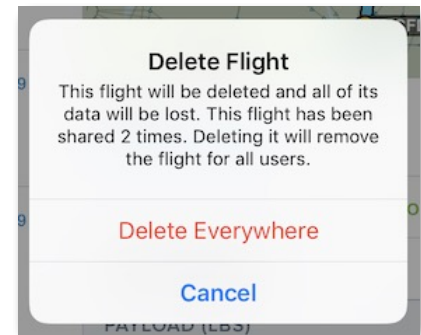
12. FLIGHTS

NOTE: If you share a flight from a Performance subscription plan to a recipient who does not have a Performance plan, they will not be able to view the Flights Navlog due to the extra information included on the Navlog with the Performance plan.

A 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.

A recipient of a Shared flight can delete the shared flight using the swipe-delete gesture in the Flights list, or by tapping "Delete Flight" at the bottom of the Shared flight. Once deleted by the recipient, the Shared flight cannot be restored by the recipient. However the flight can be shared to the recipient again.

If the pilot who shared a flight tries to delete it, a warning appears advising that deleting the Shared flight will also delete it from all recipients of that shared flight.



12. FLIGHTS

12.7 Flight Log

The Flight Log allows pilots to quickly record fuel remaining at shutdown, as well as flight meter (aka: Hobbs, or tach) times, as well as Times Out, Off, On, and In times.

FLIGHT LOG

Fuel at Shutdown (g) 11

Times	FLIGHT	BLOCK	METER
	3.0	3.2	3.3

The Flight Log is shown on the Flight view and is included in all plan levels. The Flight time (the difference between Off and On), Block time (the difference between Out and In), and Meter times (the difference between Start and End) are all calculated automatically once values have been entered.

Times can be entered a Zulu (Z) time, or in local times. Flight Log times are not synchronized with Logbook.

KEDC to KMOB Times KEDC to KMOB

FLIGHT METER

Start 0.0

End 0.0

Total 0.0

TIME

Time Out 1518Z

Time Off 0000

Time On 0000

Time In 0000

Flight 0.0

Block 0.0

Time Out 09:18 CST

Zulu 1518Z

Clear Time

Fri Mar 2 08 15

Sat Mar 3 07 16

Sun Mar 4 08 17

Today 09 18

Tue Mar 6 10 19

Wed Mar 7 11 20

Thu Mar 8 12 21

Fuel at Shutdown (g)

1 2 3

4 5 6

7 8 9

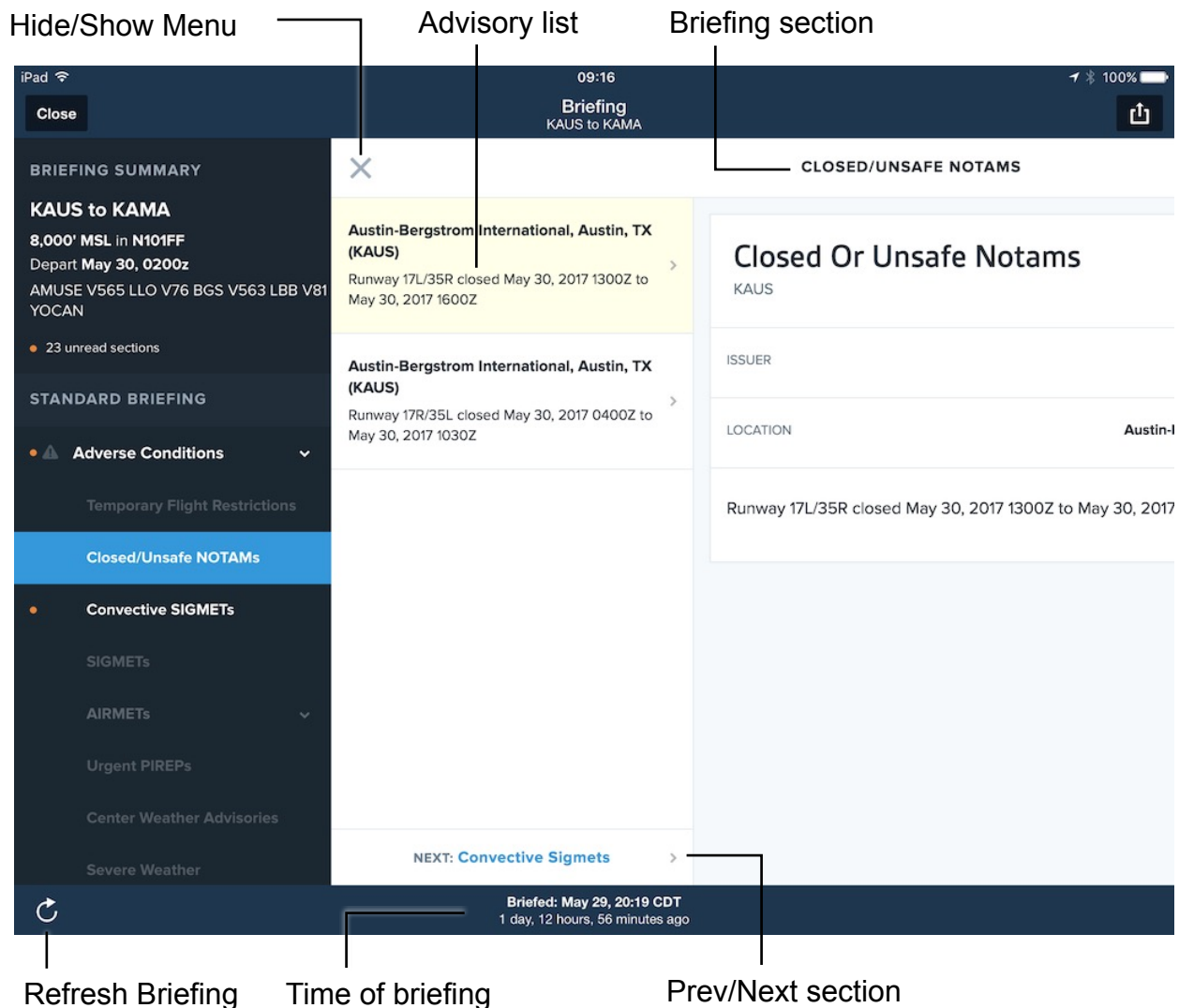
. 0

Close

Tap “Clear Time” to remove a time from an entry. If both times required to calculate a value have not been entered, the time will show as “Logged”

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.

13. BRIEFING

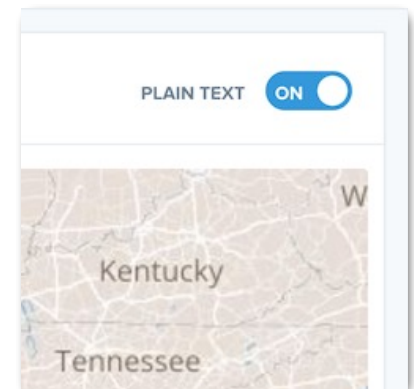
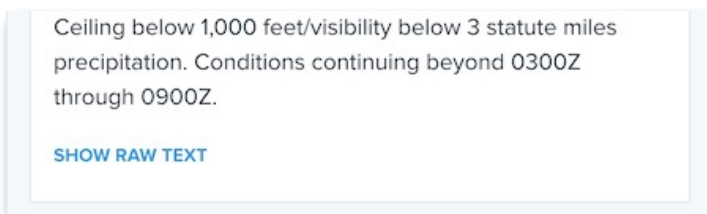
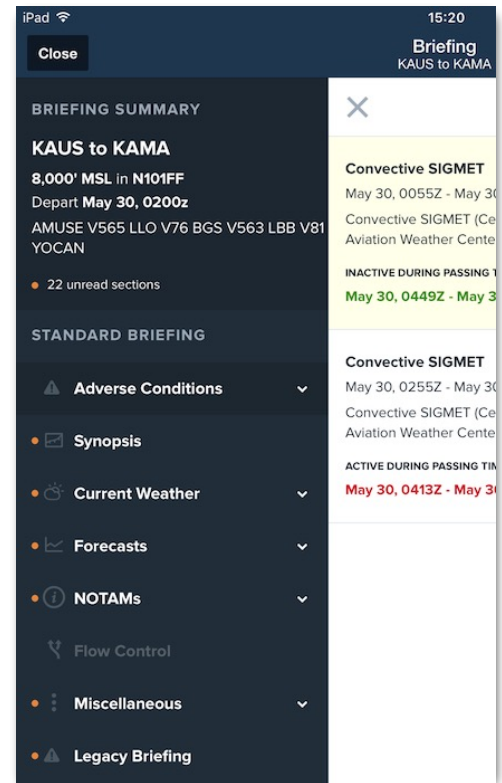
13.1 About the Design

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.

13.1.1 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.



13. BRIEFING

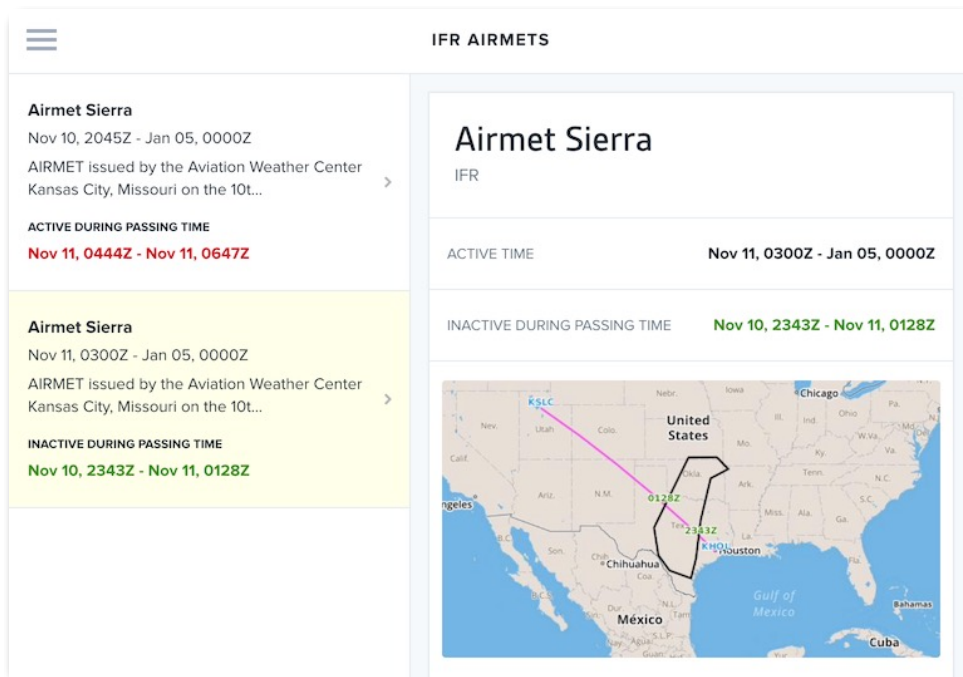
13.2 Briefing Sections

The following sections are included in a ForeFlight Briefing

13.2.1 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.

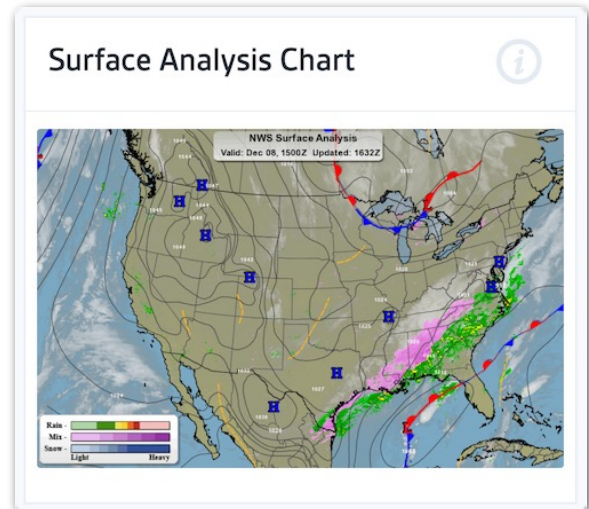


The time at which the advisory is active is shown at the top, and below that is the time interval during which you will pass the advisory. This interval is color-coded based on how close your passing time is to the time at which the advisory is active: **Green** means the advisory won't be active during 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.

13. BRIEFING

13.2.2 Synopsis

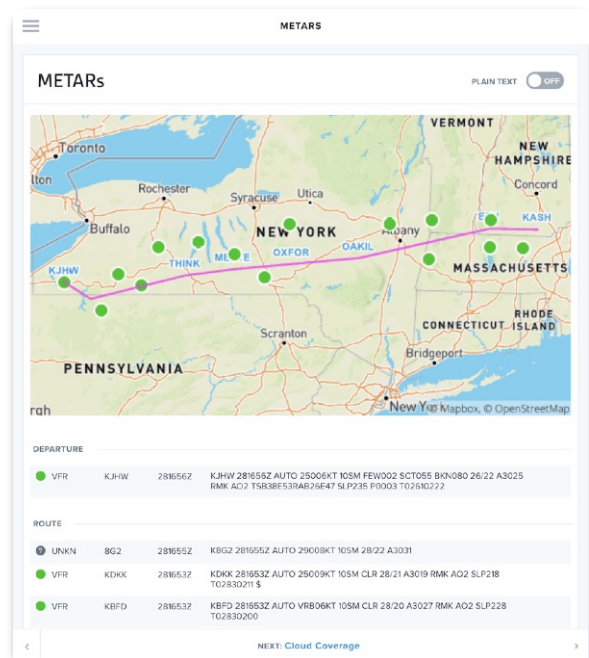
The Synopsis page provides an overview of the weather trends for each geographical area through which your route passes. As with the Adverse Conditions section, you can select each area's forecast from a list on the left, and read the translated text of that forecast on the right. At the top of the left column is the most recent Surface Analysis Chart for the Continental US published by the National Weather Service.



13.2.3 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.



13. BRIEFING

13.2.4 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

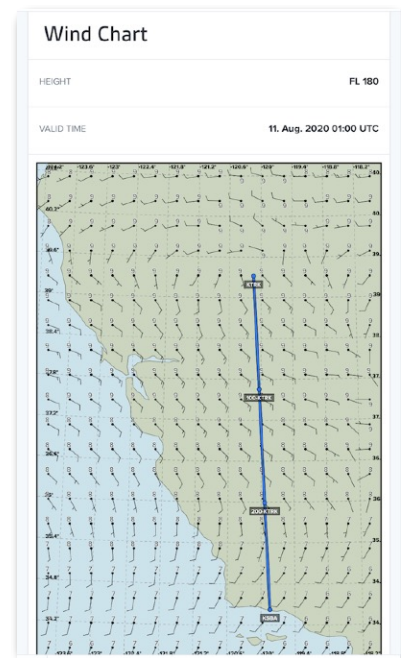
13. BRIEFING

13.2.5 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.

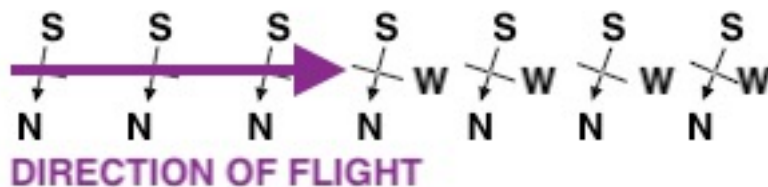
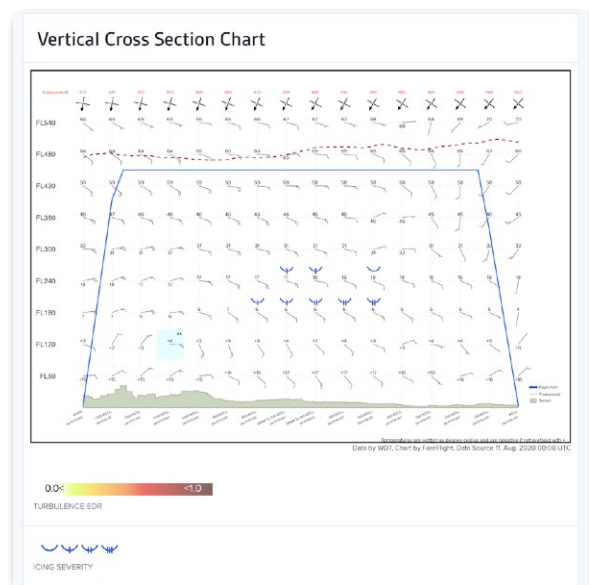
The digit next to each wind barb is the temperature in Celsius and is negative unless a "+" is noted next to the number.



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.

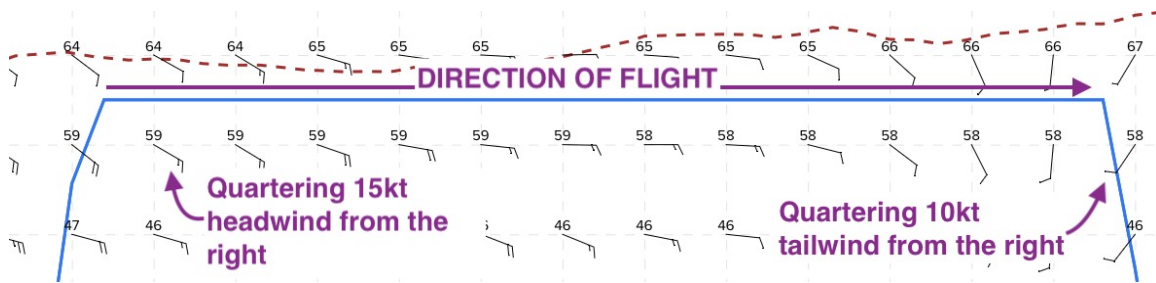
The Tropopause altitude is shown in red numbers at the top of the chart, and if the chart scale permits, as a dashed red line.

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:



13. 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.

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.

Winds Aloft					
ONLY ALTITUDES WITHIN 4,000FT <input checked="" type="checkbox"/>					
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

13. BRIEFING

13.2.6 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.

PACK

Pack supplements your **Downloads** by running a preflight check to ensure you have the information you need for a trip downloaded to your device for offline (inflight) use.

14.1 Design

Packed data is not saved somewhere different than you're used to, but is seamlessly integrated with the rest of the data you already have downloaded or are viewing over the Internet. You view the Packed charts, plates, and data as you are used to doing: on the Maps page, Plates page, Airports page, etc...

Charts and plates downloaded using Pack are for the current data cycle only and will not automatically update at the next data cycle.

Pack analyzes your route on the Maps or Flights views by looking at a corridor 50 NM wide (25 NM on each side of your route) and 100 NM in diameter around your departure and destination airports (50 NM from each). Pack will download charts and plates for any states that fall inside the boundary. The Pack popup shows a map with the details of the corridor showing the extent of data that will be downloaded.

IMPORTANT: Pack only analyzes the charts along your route based on the chart type selections you made in the Downloads view. So for example if you are planning a flight above 18,000' be sure you have IFR High Charts turned ON.

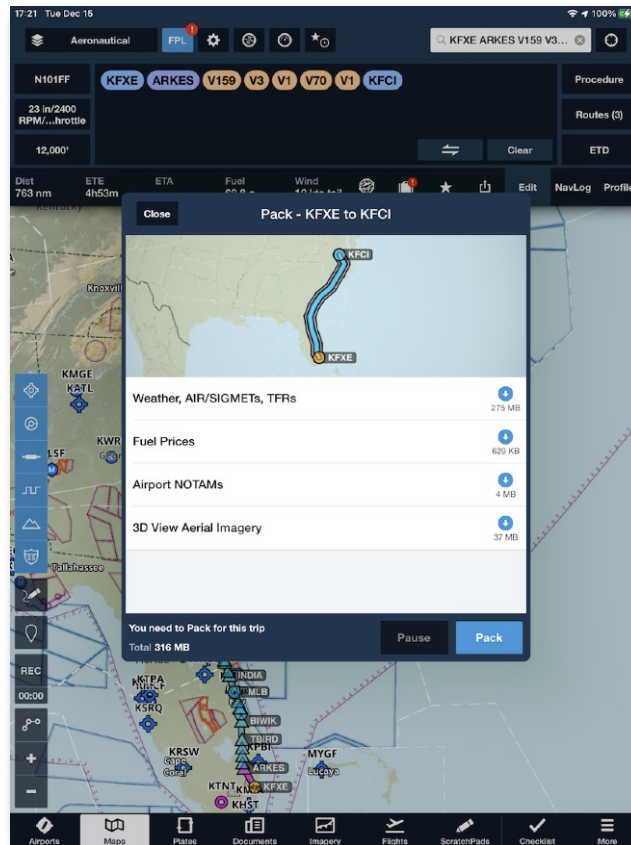
Pack also downloads any Weather (METAR, TAF, and MOS), AIR/SIGMETs, TFRs and fuel price data inside the 50 NM route corridor and 100 NM diameters around departure & destination airports. Daily Weather forecasts are downloaded ONLY for airports included in your route, but not for airports within the route corridor.


If you have a Pro Plus plan, Pack will download forecast data for the Icing, Turbulence, and Surface Analysis layers. If your route of flight stays within the bounds of the U.S.-only layers for icing and turbulence, Pack will only download data for those layers.

If your route of flight stays entirely outside the bounds of the U.S.-only layers, Pack will only download data for the Global layers. If your route of flight crosses the boundary, Pack will download data for both the U.S. and Global icing and turbulence layers.

If you have a Performance Plus, or Business Performance subscription plan, Pack will download 3D aerial imagery and Dynamic Winds for your route.

14. PACK



Pack will automatically analyze your route if the **Pack > Enable Auto Check** is ON in **More > Settings**. If it is OFF, Pack will analyze your route only when you tap the Pack button  in the bottom right of the Flight Plan Editor, or tap the Pack line at the bottom of the Flights view.

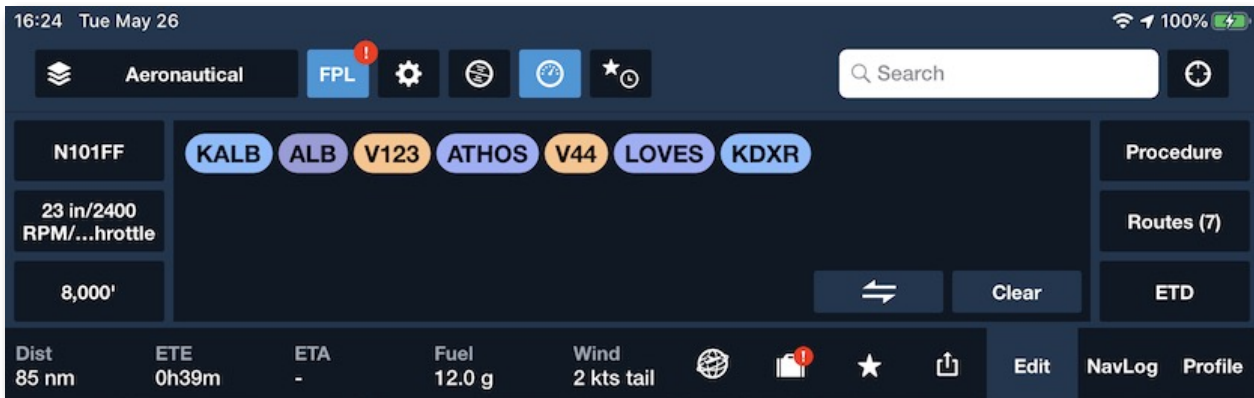
If Enable Auto Check is ON, Pack periodically re-analyzes the route and will alert you if new items become available. Once you Pack for the trip METAR, TAF and TFR updates will be downloaded automatically, provided the route has not been changed.

Even with Pack, it is a recommended best practice to check that the desired areas have been selected on the Downloads page. If your route includes states you have not selected to download in **More > Downloads > United States**, Pack will download that state's data but the state will not be selected for ongoing downloads (in future data cycles) in **More > Downloads > United States**. This means that when the next data cycle goes live, the states that were Packed will show as Expired. Clear the message by tapping **More > Downloads > Delete > Delete Expired**.

14. PACK

14.2 Pack for a Flight

After entering a route on the Maps view, Pack analyzes the route to determine if any data needs to be downloaded. If data does need to be downloaded, a red “!” is displayed on both the Pack (suitcase) button and the FPL hide/show button.



Tap the Pack (suitcase) button in the bottom right of the Flight Plan Editor to open the Pack popup and review the list of needed downloads. On iPhone, the Pack button is located at the bottom of the FPL drawer. An estimate of the amount of data to be downloaded is shown in the lower left corner.

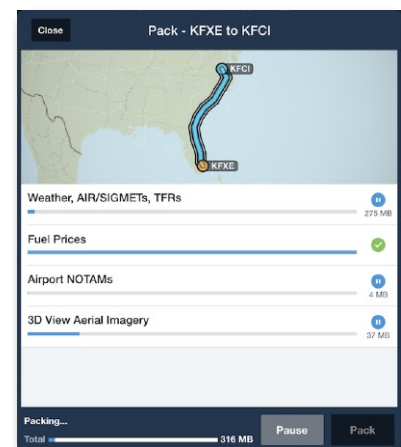
You can also access Pack on the Flights view, near the bottom of the Flight Planning form.

Tap the blue Pack button to download all listed items. If you are short on time and only want to download a few items, instead of tapping the Pack button, tap on the blue download arrow next to each item(s) you want to download. **REMEMBER:** Information you don't download will not be available in flight.

Tap outside the Pack popup to close the popup and continue using ForeFlight while the Pack data is downloading. Tap the Pack button again to open the popup to check Pack status. When Pack has finished downloading the ! will disappear on the Maps view.

If the route is changed significantly while Packing a route on the Maps view, the Pack downloads will stop automatically.

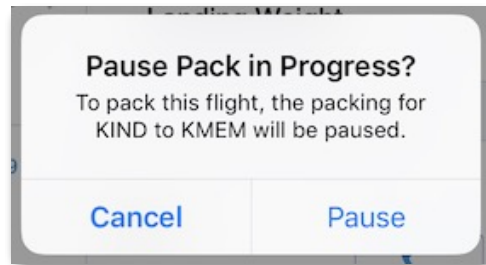
When Packing on the Flights view you can create other routes on Flights or Maps, and even make changes to the route being Packed without interrupting it. However, the



14. PACK

charts and data being Packed will not update automatically if you make any major changes to the route, so you will need to open Pack for it to re-analyze the route and update the list of items to download.

If you tap “Pack” on Flights while Packing a different flight plan, the a pop-up will open to ask you to confirm whether to pause the Pack in Progress. Tap “Cancel” to allow the Pack in Progress to complete, or tap “Pause” to pause it.



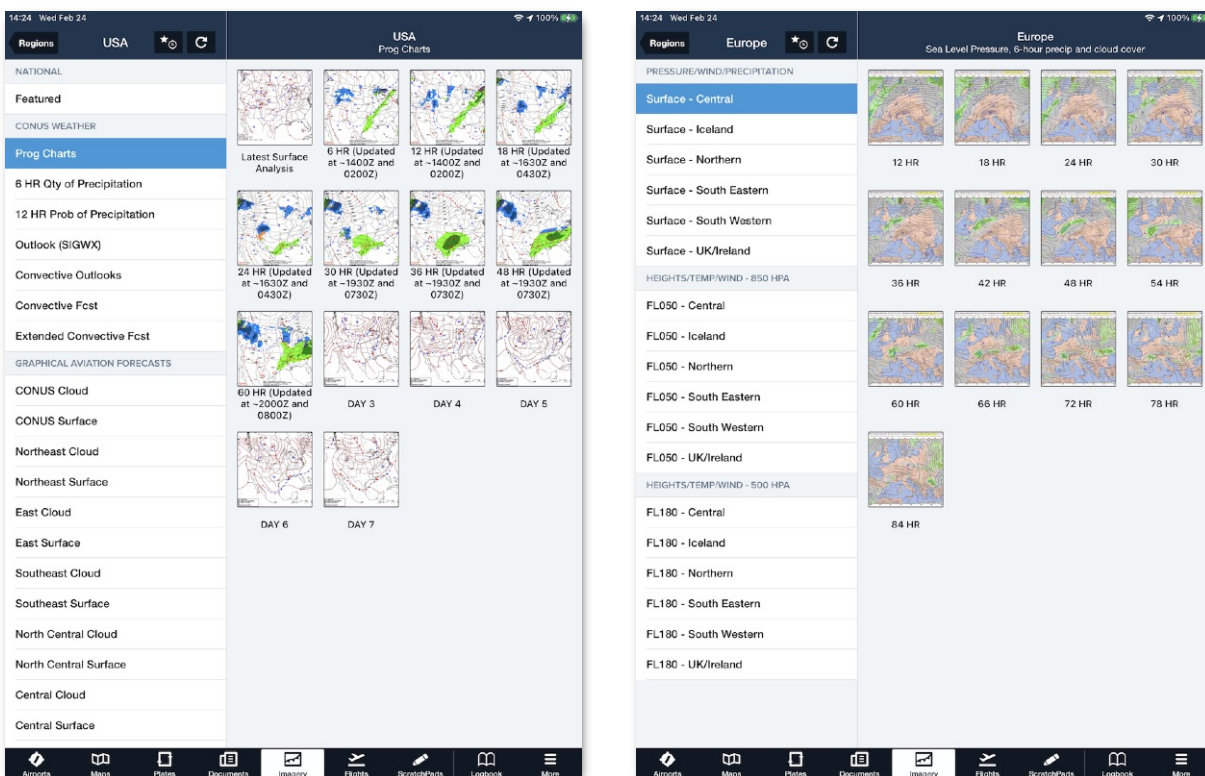
IMAGERY

The Imagery view provides collections of weather images from around the globe.

15.1 About the Design

Images are divided into categories by type. When viewing a category a current thumbnail image is shown for each available image.

Full size images are displayed full screen and support standard pinch and expand zooming, and panning touch gestures.



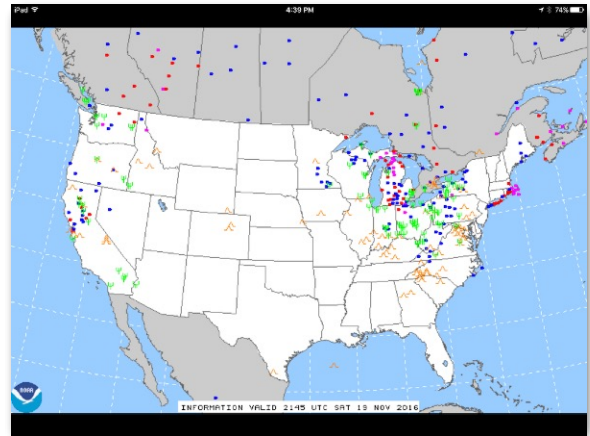
15. IMAGERY

15.2 Selecting a Collection

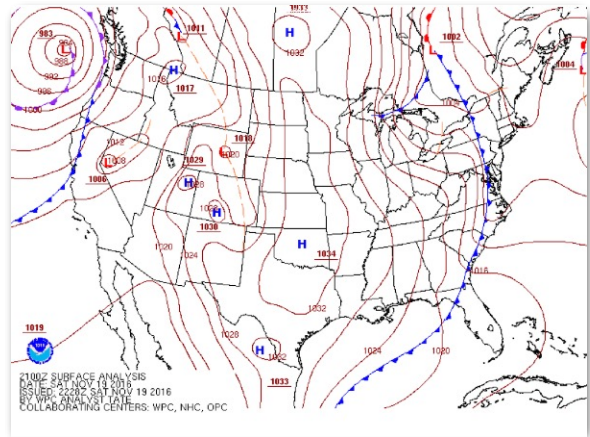
Tap a collection in the left-side list to show thumbnails from that set on the right side. Other collections are available by tapping the USA/Global geography selector at the bottom of the list.

15.2.1 NATIONAL - Featured

Flight Category - Updated once every 30 minutes, the flight category chart highlights adverse flight conditions affecting the conterminous U.S. and southern Canada. Using colored dots this chart depicts the lowest flight category considering both ceiling and visibility for stations reporting marginal VFR (blue), IFR (red) or low IFR (magenta). Also included are recent pilot weather reports of moderate or greater turbulence (tan) and moderate or greater icing (green) using standard pilot report symbology.

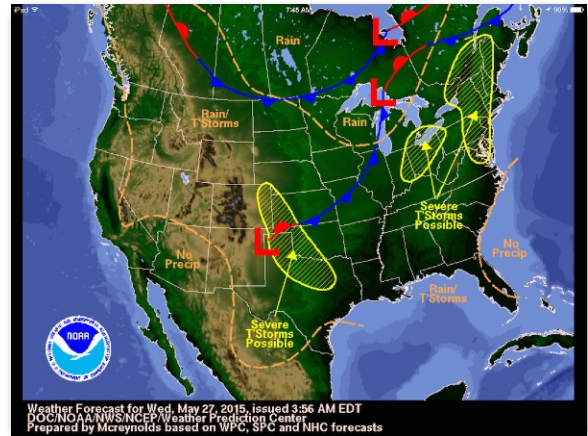


Latest Surface Analysis - The mean sea level (MSL) surface analysis chart is issued every three hours by a forecaster at the Weather Prediction Center (WPC). This chart depicts the synoptic and sub-synoptic/mesoscale features including the location of high and low pressure centers, fronts, troughs, outflow boundaries, squall lines, dry lines and an isobaric analysis. The domain includes much of North America, the Western Atlantic and Eastern Pacific oceans and the Gulf of Mexico. This analysis is valid at the synoptic times of 0000 UTC, 0300 UTC, 0600 UTC, ..., 2100 UTC. The latest surface analysis becomes available approximately 1 hour and 30 minutes after these synoptic times.



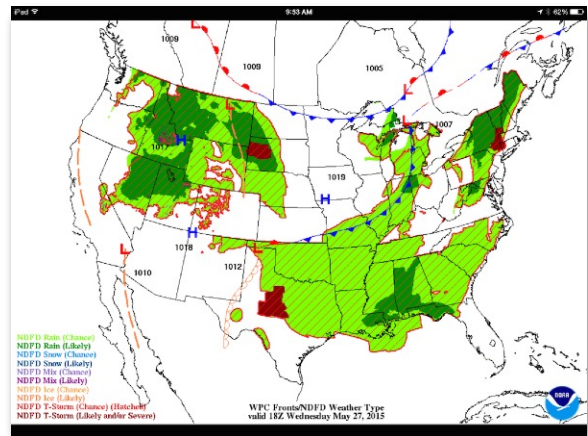
15. IMAGERY

Today's Forecast - The Weather Prediction Center (WPC) National Forecast Chart provides an overview of expected weather for today, with emphasis on certain hazardous and significant weather. They summarize forecasts from several of the National Centers for Environmental Prediction (NCEP) Service Centers including the Storm Prediction Center (for severe thunderstorm and tornado outlooks), the National Hurricane Center (for tropical storm and hurricane forecasts), and the Weather Prediction Center (for information concerning heavy rainfall, flooding, winter weather, and general weather). With overlaid frontal forecasts, these displays serve as a good overview of the expected weather for today.



15.2.2 CONUS WEATHER

Prog Charts - The Prog Chart collection contains the latest surface analysis chart which is updated once every three hours. This is not a forecast, but represents the latest surface conditions valid in the recent past. This collection also contains short and extended range forecasts that are also known as "prog" charts. Short range forecasts are updated at various times throughout the day as labeled below each thumbnail image.



The primary goal of the short range forecasts are to depict the evolution of major weather systems that will affect the conterminous U.S. during the next 60 hours. These forecasts combine the Weather Prediction Center (WPC) forecasts of surface fronts, MSL pressure (isobars) and high/low circulation centers along with a depiction of the expected weather type (precipitation). The precipitation forecast shown on this chart defines expected coverage and is valid at the time on the chart (not over a range of time).

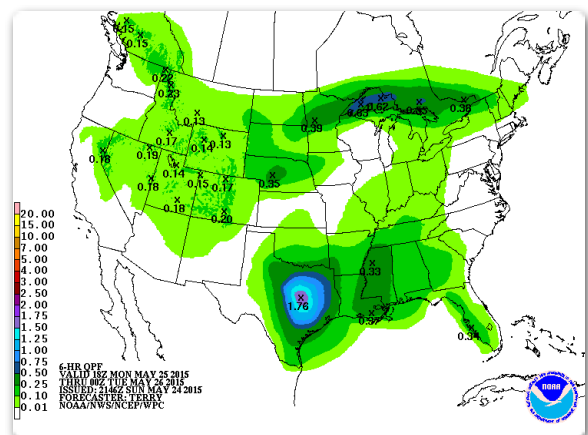
15. IMAGERY

Prog charts use the following colors to depict different weather types (precipitation):

- **Rain (Chance)** - There is chance of measurable rain (≥ 0.01 "") at the valid time.
- **Rain (Likely)** - Measurable rain (≥ 0.01 "") is likely at the valid time.
- **Snow (Chance)** - There is chance of measurable snowfall (≥ 0.01 " liquid equivalent) at the valid time.
- **Snow (Likely)** - Measurable snow (≥ 0.01 " liquid equivalent) is likely at the valid time.
- **Mix (Chance)** - There is a chance of measurable mixed precipitation (≥ 0.01 " liquid equivalent) at the valid time. "Mixed" can refer to precipitation where a combination of rain and snow, rain and sleet, or snow and sleet are forecast.
- **Mix (Likely)** - Measurable mixed precipitation (≥ 0.01 " liquid equivalent) is likely at the valid time. "Mixed" can refer to precipitation where a combination of rain and snow, rain and sleet, or snow and sleet are forecast.
- **Ice (Chance)** - There is a chance of measurable freezing rain (≥ 0.01 "") at the valid time.
- **Ice (Likely)** - Measurable freezing rain (≥ 0.01 "") is likely at the valid time.
- **T-Storm (Chance)** - There is a chance of thunderstorms at the valid time. Areas are displayed with diagonal hatching enclosed in a dark red border.
- **T-Storm (Likely and/or Severe)** - Thunderstorms are likely and/or the potential exists for some storms to reach severe levels at the valid time.

Extended range Progs are also prepared by forecasters at the WPC. A new extended range forecast is issued daily around 0330 UTC and updated again at 1500 and 1900 UTC. Only surface fronts, MSL pressure (isobars) and high/low circulation centers are depicted from 72 hours (Day 3) through 168 hours (Day 7). Each forecast is valid at 1200 UTC. A forecast of instantaneous precipitation is not depicted on extended range Progs.

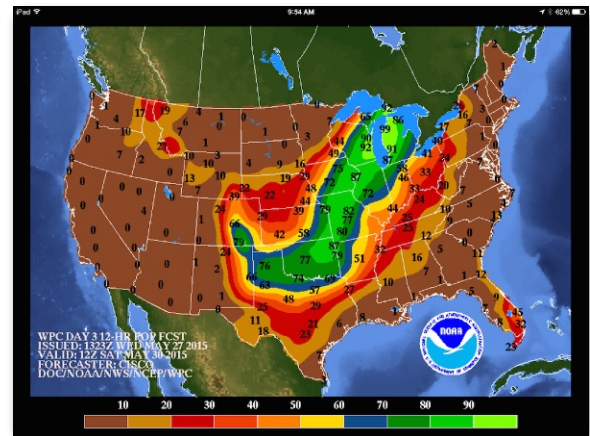
6 HR Quantity of Precipitation - Quantitative Precipitation Forecasts, or QPFs, issued by forecasters at the Weather Prediction Center (WPC) depict the amount of liquid precipitation expected to fall in a defined period of time, in this case, six hours. Valid times are shown in the lower left. In the case of snow or ice, QPF represents the amount of liquid that will be measured when the precipitation is melted. It is important to recognize that QPF does not forecast the precipitation type or whether or not the precipitation will be from convection. It is solely used to forecast the amount of precipitation over a given location in inches using solid colored contours based on the



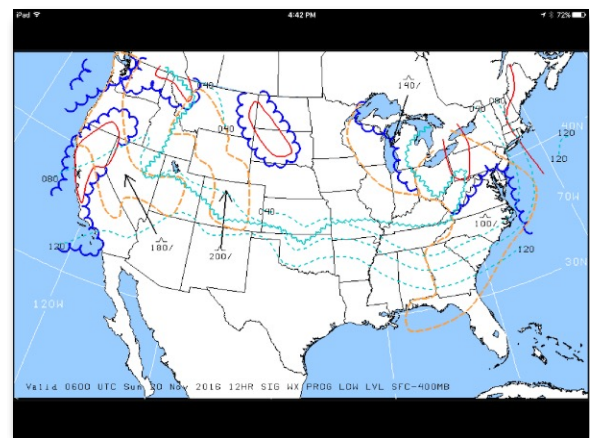
15. IMAGERY

legend on the lower left of the chart. An “X” on the chart simply defines a local maximum precipitation amount within a contoured area. Keep in mind that precipitation amounts can vary significantly over short distances, especially when thunderstorms occur, and for this reason QPFs issued by the Weather Prediction Center (WPC) are defined as the expected "areal average."

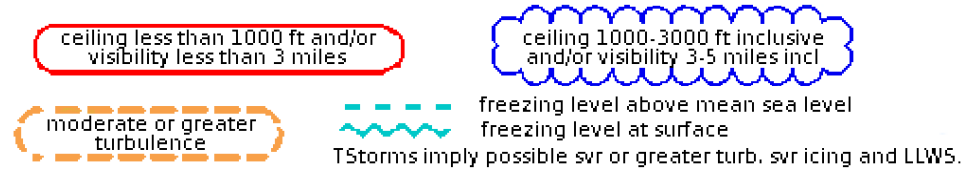
12 HR Probability of Precipitation - The Probability of Precipitation (PoP) forecast issued by forecasters at the Weather Prediction Center (WPC) depicts the chances of precipitation over a 12 hour forecast period for the next three to seven days. Probabilities are contoured using solid colors as shown in the legend at the bottom of the chart. Numbers shown on the map represent a probability for a particular city over the valid forecast period. Important: The valid time in the lower left defines the ending time of the 12 hour forecast period. For example, a forecast valid at 00Z on February 13th would include the period from 12Z February 12th to 00Z February 13th.



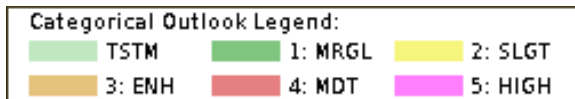
Outlook (SIGWX) - The low-level SIGWX graphics is a forecast of aviation weather hazards, primarily intended to be used as a guidance product for briefing VFR pilots. The forecast domain covers the conterminous U.S. for altitudes below 24,000 feet (400 mb). These charts are issued four times a day and are valid at 0000 UTC, 0600 UTC, 1200 UTC and 1800 UTC. Each issuance includes both a 12 and 24 hour forecast depicting the freezing levels (dashed cyan), turbulence (dashed orange), and low cloud ceilings and/or restrictions to visibility shown as contoured areas of marginal VFR (blue) and IFR conditions (red). A two-panel chart is also provided that presents the 12 and 24 hour forecasts in the same image.



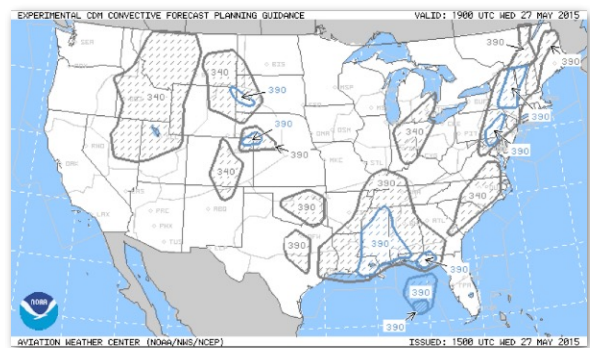
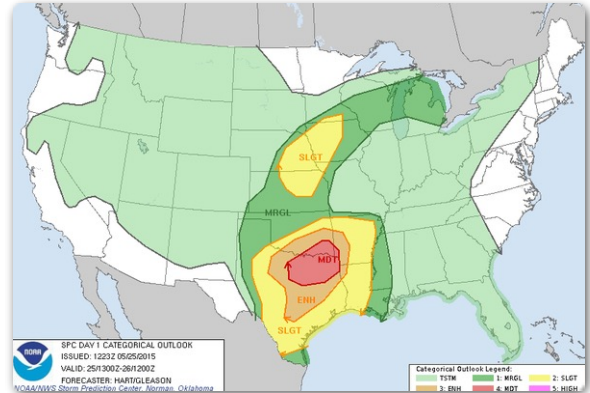
15. IMAGERY



Convective Outlooks - The convective outlooks issued by forecasters at the Storm Prediction Center (SPC) provide an overview of areas that may experience thunderstorms over the next eight days with emphasis on the location of severe convection. Included in this collection are the latest severe thunderstorm (blue) and tornado (red) watch areas along with categorical and probabilistic forecasts for Day 1 (today), Day 2 (tomorrow), Day 3 (the day after tomorrow) and a categorical forecast for severe thunderstorms only for Day 4 through Day 8. Colored contours are shown to depict the threat risk of severe thunderstorms as shown in the legend below. Additionally for Day 1, a probabilistic forecast for tornadoes, large and damaging hail and strong and gusty winds is included.

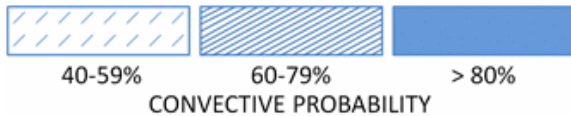


Convective Forecast - The Collaborative Decision Making (CDM) Convective Forecast Planning (CCFP) guidance is a graphical representation of convection meeting specific criteria of coverage, intensity, echo height, and confidence. CCFP graphics are produced every two hours and is valid at 2-, 4-, 6-, and 8-hours after issuance time. This forecast is generated automatically and does not use the same criteria as is used for issuing convective SIGMETs. Hatched contours include sparse coverage-low confidence, sparse coverage-high confidence and medium coverage-high confidence. A forecast for echo tops is also included. Keep in mind this is not a maximum tops forecast. This is best used for strategic planning purposes for aircraft making longer flights at altitudes above FL250.



15. IMAGERY

Extended Convective Forecast- The Extended CDM Convective Forecast Planning (CCFP) planning tool is a graphical representation of the forecast probability of thunderstorms. This forecast is automatically generated and identifies where thunderstorms are likely over the next 78 hours. It is important to note that this is not a precipitation forecast. Areas outside of the shaded contours could contain areas of precipitation that are not as likely to be convective. Contours are shaded on based on convective probability as shown in the legend below.



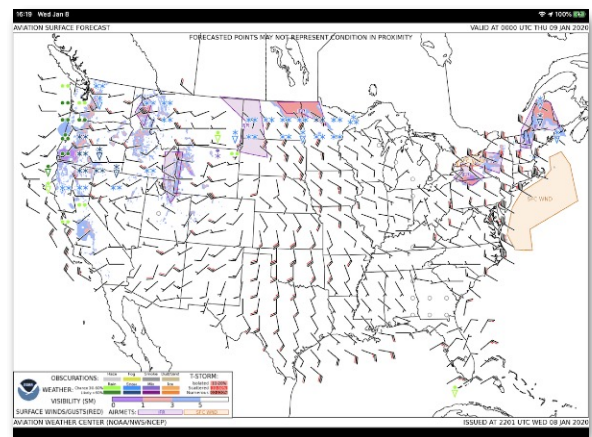
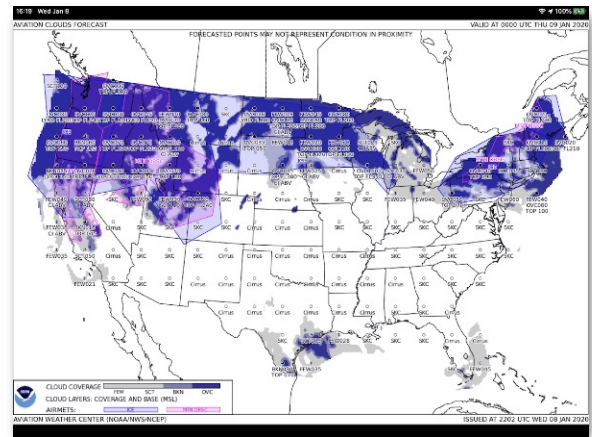
15.2.3 GRAPHICAL AVIATION FORECASTS

In late 2019 NOAA discontinued distribution of the **GFS MOS Ceiling Forecast** and **Visibility Forecast** Graphical products.

ForeFlight now provides the Graphical Aviation Forecasts for Cloud Coverage and Surface Conditions. The forecasts are provided for CONUS and nine additional regions, for 6 forecast periods up to 18 hours in the future.









The Cloud Coverage product depicts the degree of cloud coverage (few, scattered, broken, or overcast) as well as cloud top altitudes and icing or mountain obscuration AIRMETs.

The Surface product depicts obscuration hazards and types (haze, fog, smoke, or dust/sand), weather conditions with color-coded probabilities (rain, snow, mix, or ice), thunderstorm probabilities, surface visibility, IFR or surface wind AIRMETs, and surface wind barbs with gust speeds indicated by red extensions on each barb's tail.



15. IMAGERY

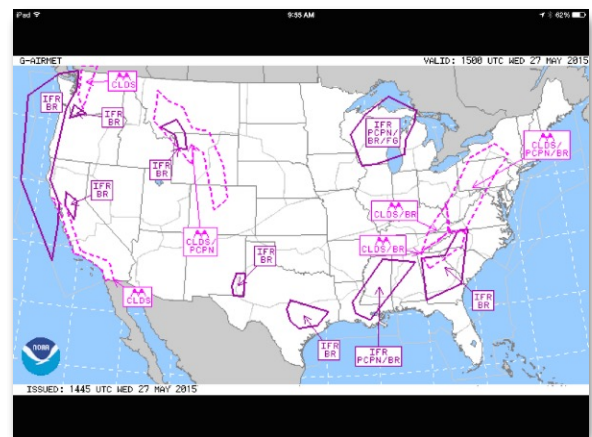
The Surface product utilizes the METAR weather symbols; a few common ones are listed here for quick reference. For a complete list, see the “Weather Legends in ForeFlight Mobile” in Documents > ForeFlight.

	BR: Mist or light fog		VCSH: Vicinity Showers
	DZ: Moderate drizzle		SHRA: Moderate rain showers
	SN: Moderate snow		RA: Moderate Rain
	-FZRA: Light freezing rain		TSRA: Light to Moderate thunderstorm with rain

15.2.4 Advisories

Graphical AIRMETs - Also known as G-AIRMETs, Graphical AIRMETs provide a graphical representation of en route advisories for adverse weather including IFR conditions and mountain obscuration, turbulence, icing and freezing level. Graphical AIRMETs are issued by the same forecasters at the Aviation Weather Center (AWC) that issue the legacy AIRMET and Area Forecast (FA). Forecasts are issued four times daily at 0245Z, 0845Z, 1445Z and 2045Z. Graphical are amended as necessary.

Unlike the legacy AIRMET that is valid over a six hour period with a six hour outlook, the Graphical AIRMET consists of five snapshots valid at three hour intervals out to twelve hours. The first three Graphical AIRMET snapshots including the Initial, 3 HR and 6 HR make up the same area as included in the legacy AIRMET.



15. IMAGERY

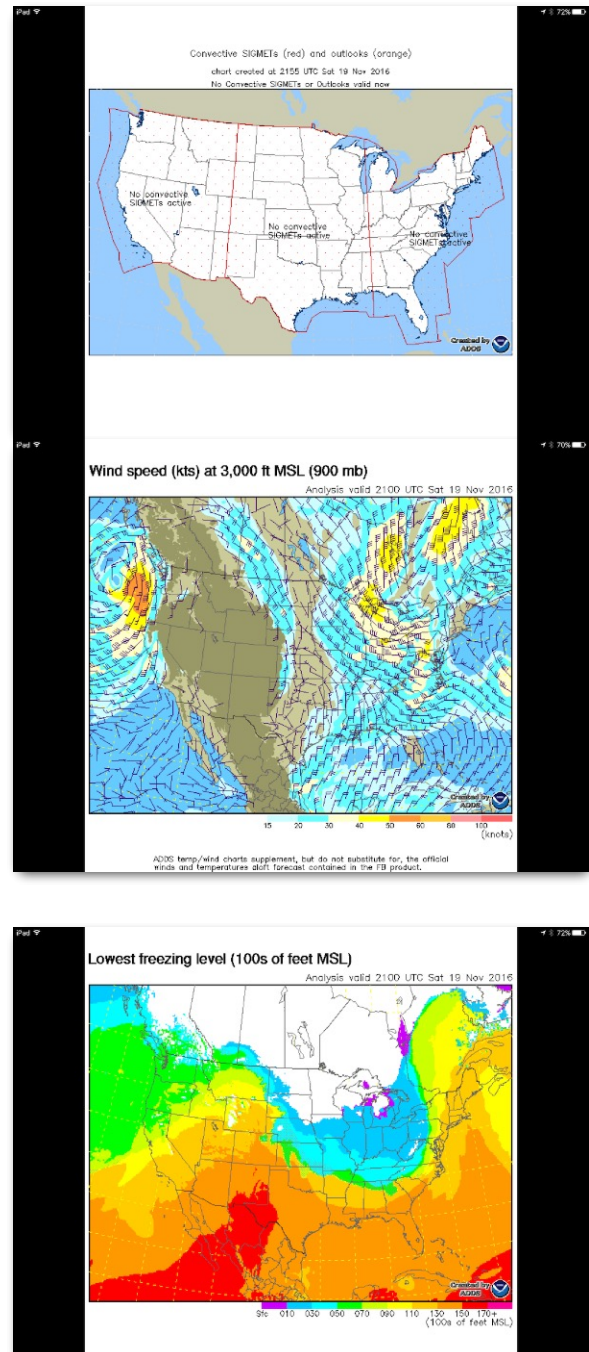
SIGMETs - These en route advisories are issued on an as-needed basis by forecasters at the Aviation Weather Center (AWC). They include advisories for convection, non-convective severe or extreme turbulence, non-convective severe icing, dust storms and sandstorms lowering visibility to below 3 miles and volcanic ash. When issued, these advisories are valid for a four hour period.

WINDS ALOFT

The winds aloft section provides two-dimensional graphics of winds at a multitude of altitudes from the initial time (analysis) with a lead time out to 48 hours. Standard wind barbs (direction and speed) are shown on each chart with the highest winds color contoured in knots using the legend at the bottom of the chart.

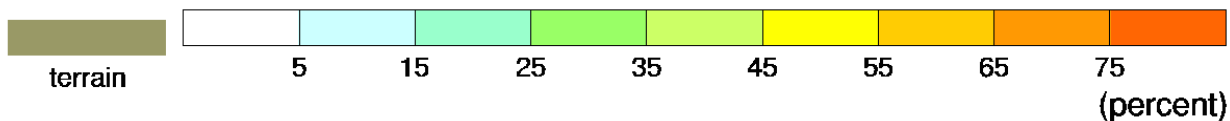
15.2.5 ICING

Lowest Freezing Level - Updated hourly, this includes both an analysis and forecast of the height of the lowest freezing level through the next 18 hours. The lowest freezing level is depicted at 2,000 ft increments in hundreds of feet above mean sea level (MSL) using the color scale at the bottom of the chart. Areas depicted in white consist of regions where the entire temperature profile above the surface is below 0 degrees Celsius. Hatched or stippled areas imply there are multiple freezing levels with the color presented in the hatched areas being the lowest of the multiple freezing levels.

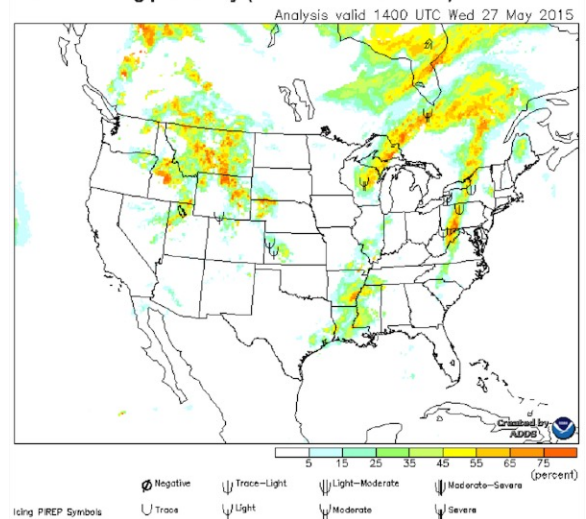


15. IMAGERY

Icing Probability Analysis (CIP) - The Current Icing Product (CIP) combines a Rapid Refresh model forecast with the latest surface observations, visible and IR satellite, NEXRAD, lightning as well as pilot icing weather reports to describe an hourly, three-dimensional analysis of the icing environment using a calibrated probability. Probabilities are shown as percentages using the scale below. A new CIP analysis is generated hourly every 2,000 feet for altitudes from 1,000 feet MSL to FL290. Also a Maximum Icing Probability analysis is provided that is a composite of the maximum probability of all altitudes up to and including FL300. The hourly analysis becomes available about 20 minutes past each hour. Note that this is not a forecast, but a peek in to the recent past.

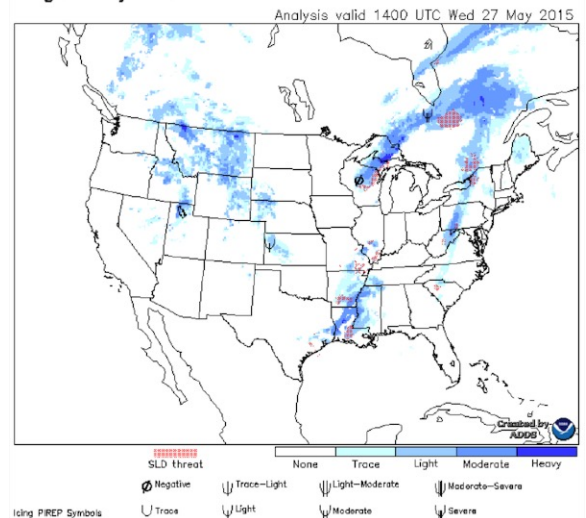


Maximum icing probability (1000 ft. MSL to FL300)



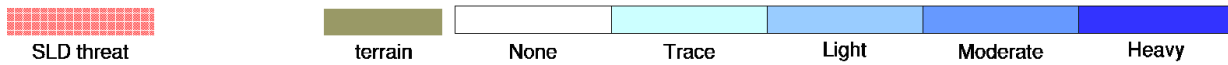
Icing Severity Analysis (CIP) - The Current Icing Product (CIP) combines a Rapid Refresh model forecast with the latest surface observations, visible and IR satellite, NEXRAD, lightning as well as pilot icing weather reports to describe an hourly, three-dimensional analysis of the icing environment using icing intensities. CIP Severity encompasses five categories represented by shades of blue to include trace, light, moderate and heavy as shown in the legend below. Additionally, overlaid on the severity chart is an analysis of the Supercooled Large Drop (SLD) potential shown in red hatching. A new CIP analysis is generated hourly every 2,000 feet for altitudes from 1,000 feet MSL to FL290. Also a Maximum Icing Severity analysis is provided that is a composite of the maximum intensity for all altitudes up to and including FL300.

Icing severity at 15000 ft. MSL

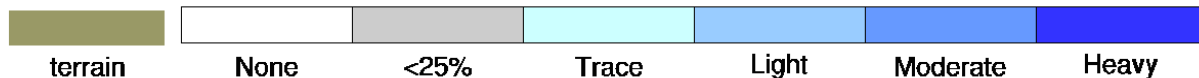
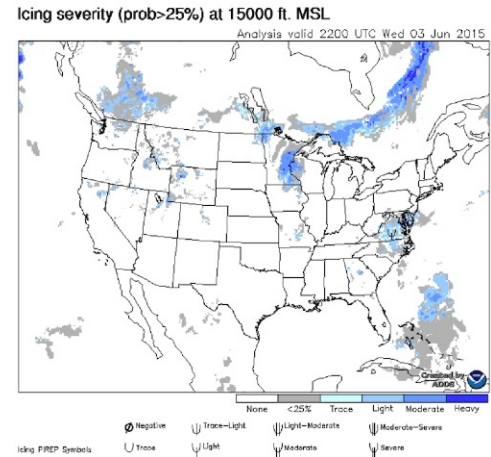


15. IMAGERY

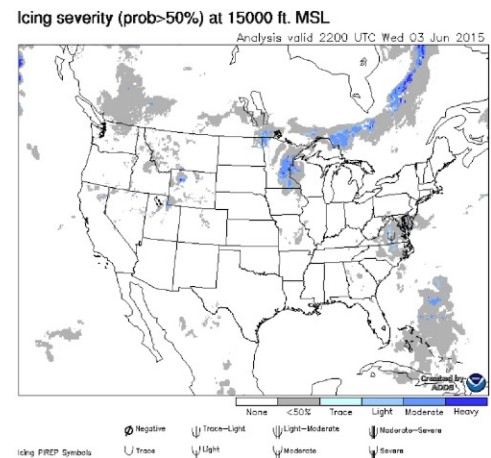
The hourly analysis becomes available about 20 minutes past each hour. Note that this is not a forecast, but a peek in to the recent past.



Masked Icing Severity > 25% (CIP) - The Current Icing Product (CIP) masked severity combines the CIP Probability and CIP Severity analyses. Shown in shades of blue are icing intensities with probabilities greater than 25 percent. Icing intensities in areas with less than or equal to 25 percent probability are masked and show up as light gray as shown in the legend below. This allows pilots to visualize the intensities for the icing environment with the highest probability. Note that Supercooled Large Drop (SLD) potential is not shown on this analysis.



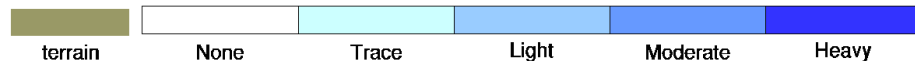
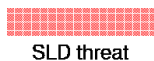
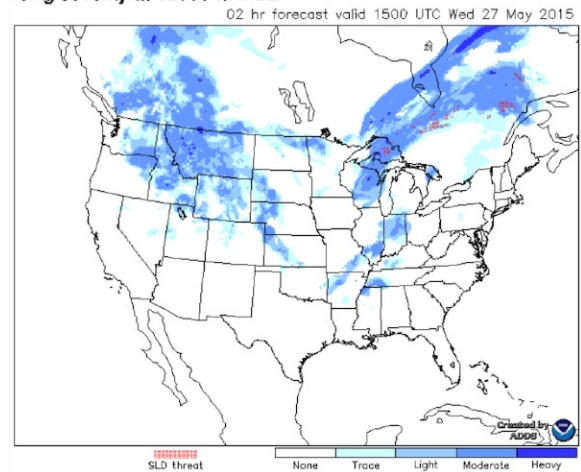
Masked Icing Severity > 50% (CIP) - The Current Icing Product (CIP) masked severity combines the CIP Probability and CIP Severity analyses. Shown in shades of blue are icing intensities with probabilities greater than 50 percent. Icing intensities in areas with less than or equal to 50 percent probability are masked and show up as light gray as shown in the legend below. Note that Supercooled Large Drop (SLD) potential is not shown on this analysis.



15. IMAGERY

2, 3 and 6 HR Icing Severity Forecast - The Forecast Icing Product (FIP) uses the Rapid Refresh model forecast to describe a three-dimensional forecast of the icing environment using icing intensities. FIP Severity encompasses five categories represented by shades of blue to include trace, light, moderate and heavy as shown in the legend below. Additionally, overlaid on the severity chart is a forecast of the Supercooled Large Drop (SLD) potential shown in red hatching. Forecasts are provide for 2, 3 and 6 hours.

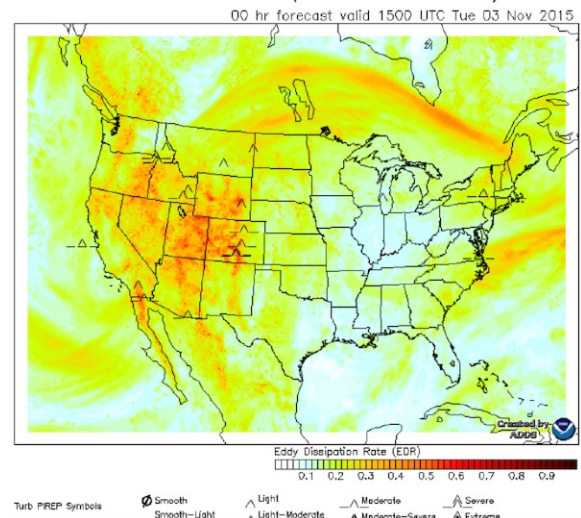
Icing severity at 13000 ft. MSL



15.2.6 Turbulence

Graphical Turbulence Guidance - The Graphical Turbulence Guidance (GTG-3) includes an analysis and forecast for both clear air turbulence (CAT) and mountain wave turbulence (MTW), as well as an (All) section that combines them, with a new forecast updated every hour. The GTG includes turbulence from 1,000' to FL450 with a vertical resolution of 2,000'. Turbulence is measured in eddy dissipation rate (EDR), which is an objective measure of atmospheric energy dissipation, with larger numbers indicating a more turbulent atmosphere.

GTG - Max clear air turbulence (1000 ft. MSL to FL500)



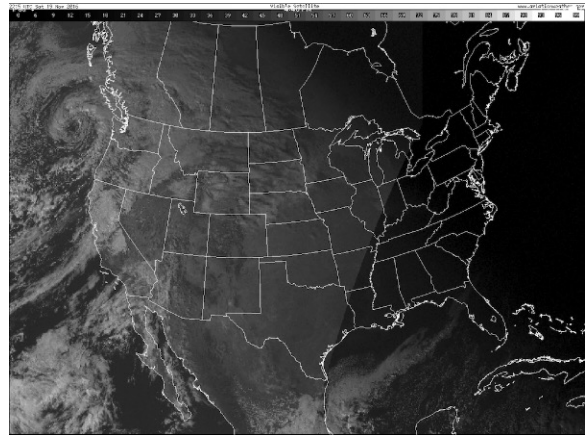
Eddy Dissipation Rate (EDR)



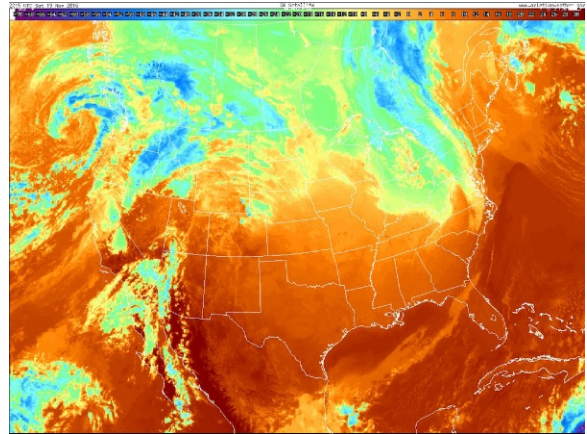
15. IMAGERY

15.2.7 SATELLITE

Visible - The satellite imagery contains national and regional satellite images from the GOES-15 (West) and GOES-13 (East) satellites. These images are updated every 15 minutes. On the visible images clouds and snow appear bright white, but oceans, lakes and trees are much dimmer. After the sun has set and before the sun has risen, these images will be totally black leaving just the geopolitical boundaries.



Infrared - The infrared satellite is a colorized depiction of temperature in degrees Celsius and is available during both the daytime and nighttime hours. The data measured by the satellite are calibrated and colorized according to this temperature with red shades representing warmer temperatures and blue shades representing cooler temperatures. Typically the temperature of the atmosphere decreases with increasing height. Therefore, using this depiction can give you an idea of which clouds are high-level and which are low-level based on the cloud top temperature. Keep in mind that with low-topped clouds near the surface, the temperature of the cloud tops can be actually a warmer than the temperature of the surface. Therefore, this depicts the temperature of the surface of the earth during clear skies or the temperature of the cloud tops.

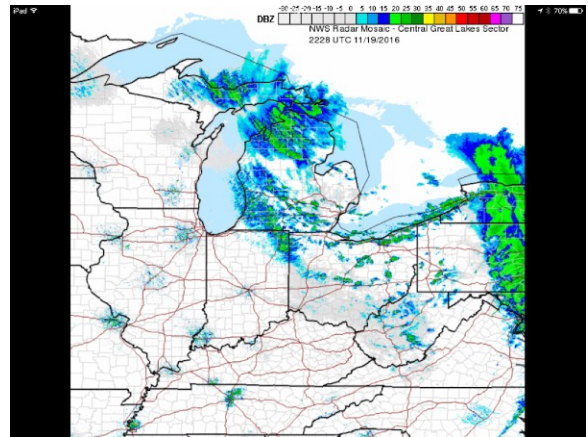


Additionally, cloud top temperatures of -15 degrees Celsius and warmer are typically dominated by liquid water. So temperatures that are in the range of yellow, pale green and sometimes light blue imply the potential for supercooled liquid water to exist in the clouds below, representing a significant airframe icing hazard.

15. IMAGERY

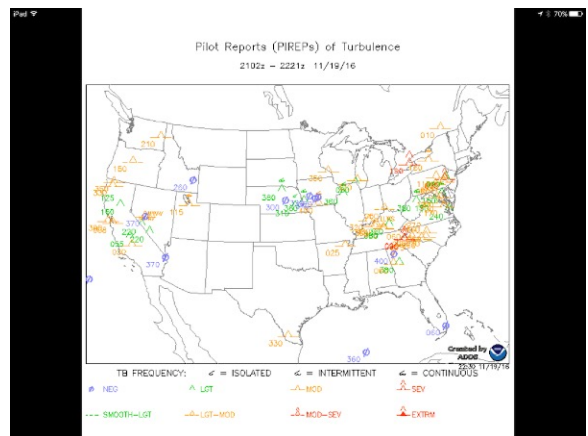
15.2.8 DOPPLER RADAR

The Doppler radar static images and loops are regional/sector depictions of the national NEXRAD mosaic built from the lowest elevation angle base reflectivity data. Looped images are 10 minutes apart over the most recent one hour period. The reflectivity presented on these images has limited filtering to remove non-precipitation returns. As a result, during the early morning and overnight hours, it is quite common to see a significant amount of ground clutter and anomalous propagation depicted on these images and loops.




15.2.9 PILOT WEATHER REPORTS

This includes the most recent pilot weather reports (PIREPs) of icing, turbulence and sky and weather over the conterminous U.S. using standard symbology. National and regional views are available for each of these three pilot weather report categories.




15. IMAGERY

15.3 Viewing an Image

View a image full screen by tapping on its thumbnail. View a list of recently-viewed images by tapping the **Favorites/Recents** button  and tapping the Recents tab. The full screen view supports all the standard zoom and pan gestures, as well as rotation.

Dismiss the full screen image by tapping the **Close** button at the top left.

Tap the star at the top right to add the current image as a favorite. 

15.4 Favorite Images


View all favorite images by tapping the **Favorites/Recents** button  and tapping the Favorites tab.

Tap an image in the list to view it full screen.

The favorites list can be re-ordered by tapping the **Edit** button. Once in Edit mode, a three-bar icon is displayed to the right of each image in the list. Tap-and-hold on the three bar icon until the image row appears to lift up, then drag the row to the desired location in the list.

Delete an image from the favorites list using swipe-to-delete. Or, tap the **Edit** button and then the red circle icon beside the image. Then, tap the **Delete** button.

15.5 Sharing Images

Tap the Send To button  in the bottom-right corner while viewing an image to save, email, or copy the image to your device's clipboard. Saving the image adds it to your device's Photos app so you can view it offline.

SYNC

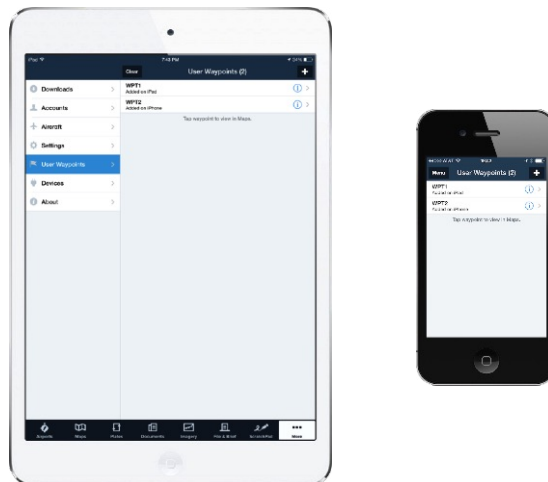
Sync is a fast, cloud-based system that works in the background to synchronize Recent and Favorite Airports, Routes, Weather Imagery, User Waypoints, Aircraft, ScratchPads, Flight Plans (both filed and un-filed), Navlogs, Briefings, Documents and annotations, and Weight & Balance profiles between all devices signed-in to your ForeFlight account. Because synced information is stored in the cloud, changes made on one device will automatically be delivered to your other internet-connected devices.

16.1 About the Design

Activate Sync on each device in More > Settings by turning **Synchronize User Data** ON. Once turned on, Recent and Favorite Airports, Routes, Weather Imagery, User Waypoints, Aircraft, ScratchPads, Flight Plans, Navlogs, Briefings, and Weight & Balance profiles, and Imported Documents are synchronized to all devices and where available, to ForeFlight Web

If you change the order of items in a Favorites or Recents list on one device, the order of the items in the list will be synchronized to all other devices.

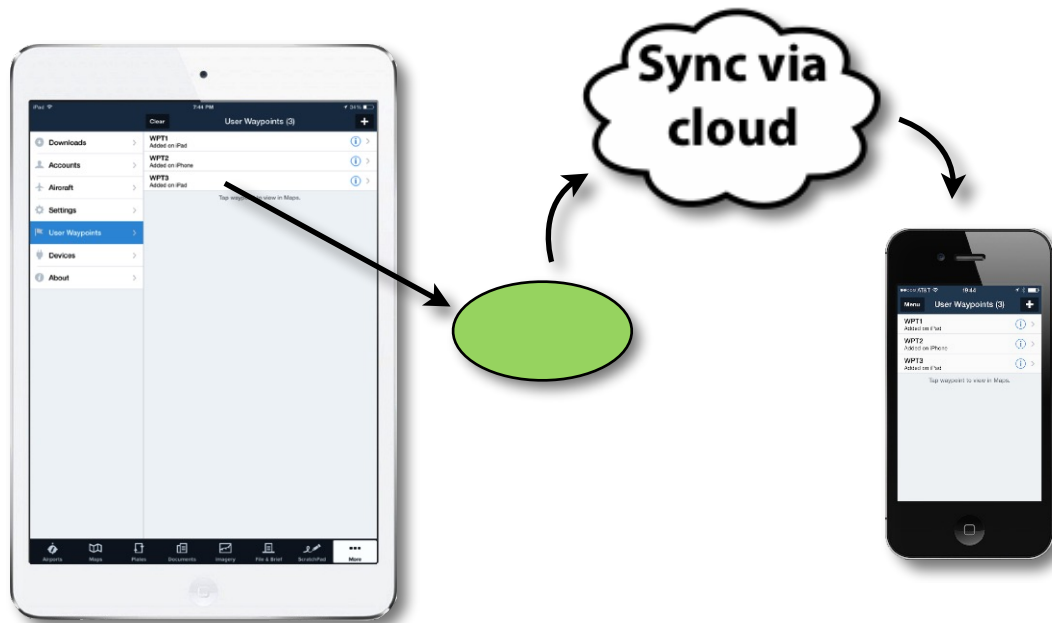
For example, suppose you have an iPad and an iPhone signed-in to your account, and two User Waypoints: WPT1 and WPT2 on your devices:



When you add a new User Waypoint WPT3 on the iPad, Sync will add WPT3 to the iPhone via the cloud:

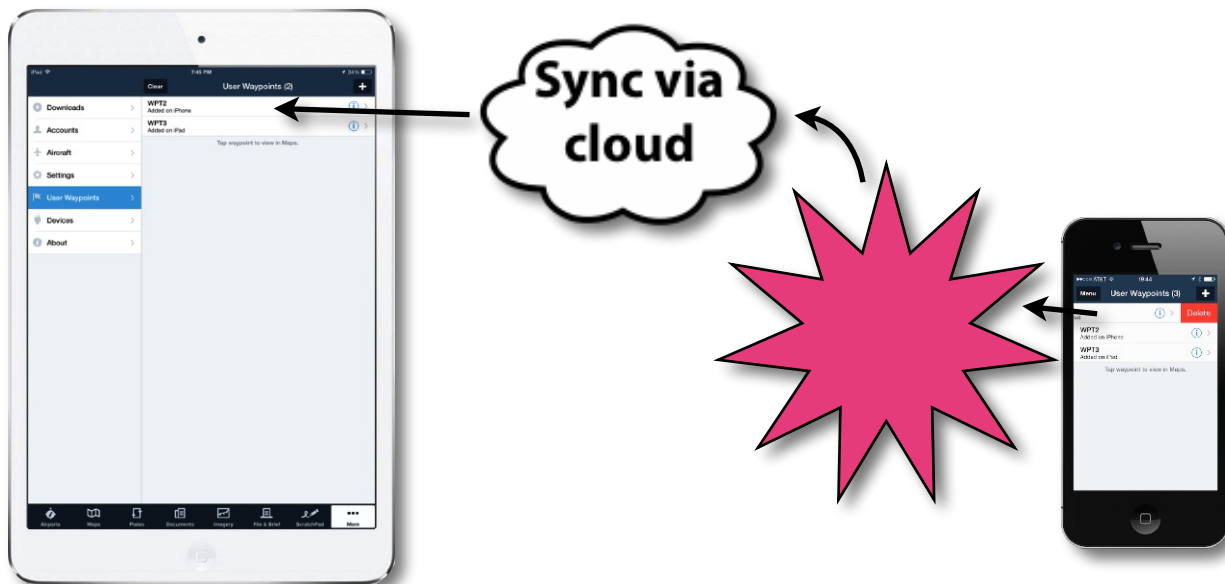
If you make changes on one device while it is not connected to the Internet, the next time that device goes online Sync will send those same changes to the other device(s)

16. SYNC



via the cloud. **IMPORTANT:** Sync is disabled by default for multi-pilot accounts with a shared single login.

IMPORTANT: If you delete a synced data from one device, Sync will also delete it from ALL other devices on which Synchronize User Data is ON. For example, if you delete WPT1 from the iPhone, Sync will delete the waypoint from the iPad via the cloud:



16. SYNC

If Synchronize User Data is OFF on one device, as soon as you turn it ON, the item that was deleted from the first device will then be deleted from the other device.

NOTE: If you sign-out of the ForeFlight account on a device, ALL synced data is also removed from that device. Then when you sign back in to your account, all synced data is restored to that device.

NOTE: If a User Waypoint with the same name is manually created on two devices while one or more of the device(s) is offline, or while Synchronize User Data is OFF on one or more of the device(s), then when the devices are online or Synchronize User Data is turned ON, two User Waypoints will be shown with the same name on each device. Resolve this by changing the name of one of the same-named User Waypoints, or by deleting one of the same-named User Waypoints.


Cockpit Sharing allows you to share a route with another device running ForeFlight Mobile, provided both devices are on the same Wi-Fi network: either an Internet-connected Wi-Fi-hotspot on the ground or a Wi-Fi-equipped ADS-B receiver like the Sentry family of portable ADS-B receivers.

16. SYNC

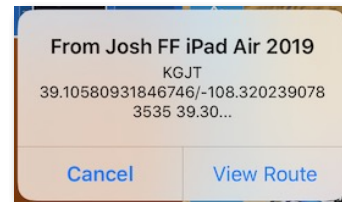
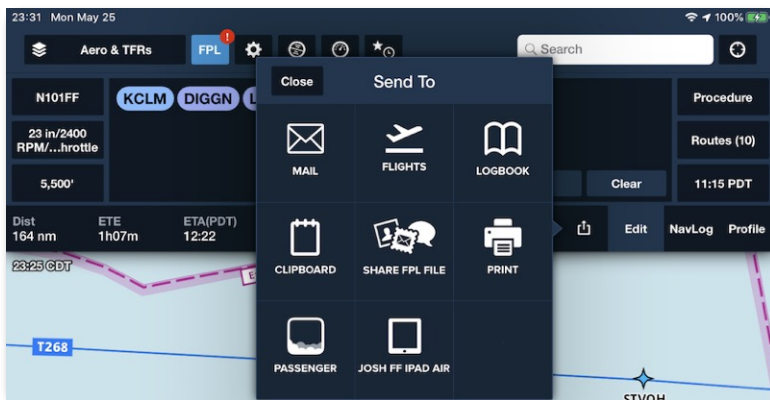
16.2 Cockpit Sharing

Activate Cockpit Sharing on each device by tapping on **More > Settings** and turning “Cockpit Sharing” **ON**.

Send from an iPad: Tap the **Send To** button  on the Flight Plan Editor to see a list of all possible destinations. Tap the desired destination to send the route.

Send from an iPhone: Open the FPL drawer and tap the **Send To** button  to see a list of all possible destinations. Tap the desired destination to send the route.

On the receiving device, tap **View Route** on the popup to load the route, or tap **Cancel** to ignore the route sharing request.



ALERTS

ForeFlight Mobile provides a number of in-app audio and visual alerts that help to keep pilots aware of potential hazards and improve situational awareness in flight and on the ground.

17.1 About The Design

Alerts appear in red or beige rectangles in the upper third of the screen and persist for several seconds; they can be dismissed more quickly by tapping on them. Audio alerts can be silenced, and individual alerts disabled entirely in **More > Settings > Alerts**.

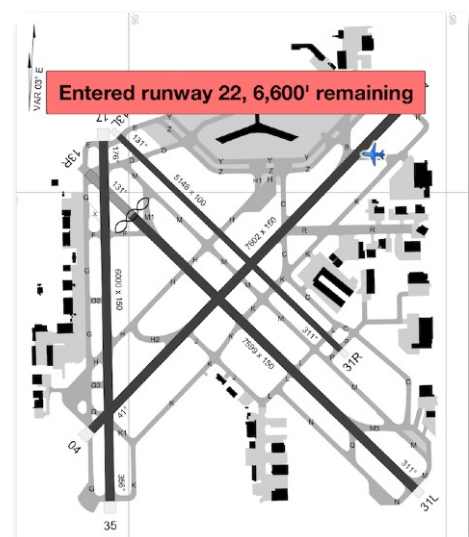
17.2 Runway Proximity Advisor

ForeFlight Mobile has a visual and audio alert system that triggers when you taxi near or onto a runway. This system uses GPS and geographic runway safety areas to alert pilots as they approach or enter a runway environment. This feature is available for all ForeFlight subscriptions.

The system runs automatically in the background, regardless of which part of the app is currently visible. ForeFlight Mobile must be running and visible on the iPad screen for the system to function. Essentially all airports in the USA are supported.

As you near the runway the system will provide an “Approaching” alert which includes the name of the runway. Upon entering the runway itself, the system will provide an “Entered” alert, which includes both the name of the runway and the length of runway remaining in feet, rounded to the nearest hundred. If the aircraft is not clearly at one particular end of the runway, the system will alert with both runway end names and will not include a length remaining upon entering the runway. For instance, it will say “02-20” instead of just “02.”

To receive audio alerts in your headset, use a bluetooth-capable headset and connect it to the iPad. Ensure that the iPad volume is set to an appropriate and safe level.



17. ALERTS

If you are using a vibration-capable device, like the iPhone, the device will vibrate when audio alerts are given.

Alerts are automatically disabled when the aircraft is stopped or traveling faster than 40kts. Note that you may receive an alert on take-off if you cross a different runway early in the take-off roll. Similarly, on landing you may receive an alert if you cross another runway while rolling out. You will not be alerted about entering your landing runway when landing - you have to *taxi* onto or near a runway to get an alert.

17.3 Cabin Altitude Advisor

If your iPad/iPhone is equipped with a barometric pressure sensor, or is connected to an external device that provides that capability (such as a Sentry or Garmin Flight Stream 210), ForeFlight will monitor your cabin's pressure altitude and provide alerts when you pass 12,000' MSL and 25,000' MSL. Each alert will sound no more than once every 30 minutes.

Caution, cabin altitude above 12,000'

Alert, cabin altitude above 25,000'

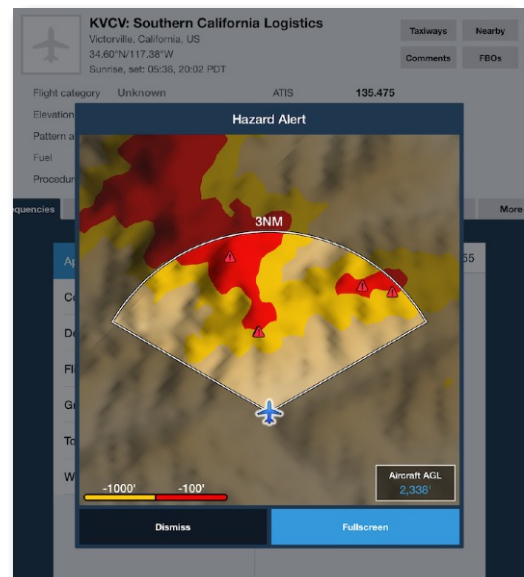
17.4 Terrain/Obstacle Alerts

Terrain/Obstacle Alerts warn of obstacles and terrain within 60 seconds and 120 degrees of your track. Terrain/Obstacle alerts provide visual and audio alerts that display app-wide.

When within two miles of a final approach path, the alert sensitivity automatically adjusts to reduce nuisance alerts.

Tap **Fullscreen** and ForeFlight will automatically jump to your position on the Maps view with the Hazard Advisor layer enabled.

Alerts dismiss automatically ten seconds after the hazard is no longer a threat. The **Dismiss** button manually clears the alert.



Terrain/Obstacle Alerts

17. ALERTS

Terrain/Obstacle alerts require a Pro Plus, Performance Plus, Business Pro, or Business Performance subscription. Obstacle data and Terrain data must be downloaded for this feature to work. You can enable Terrain/Obstacle Alerts in **More > Settings > Alerts**.

17.5 Traffic Alerts

When connected to an external device that provides ADS-B traffic data (such as a Sentry), ForeFlight can issue alerts when another aircraft passes within 1.2NM horizontally and +/- 1,200' vertically of your aircraft's position (or will do so within 25 seconds). Traffic alerts will not sound when ForeFlight detects you are below 250' AGL, even if Speak All Alerts is enabled.

17.6 Overheat Alerts

If your iPad or iPhone is in danger of overheating the alert is displayed so you can take steps to cool the device and potentially avert a shutdown during a flight.

Recommended steps for cooling an iPad or iPhone including positioning it so it is out of direct sunlight, lowering the screen brightness, removing the iPad or iPhone from any case, and directing a vent or other cooling airflow onto it.

The device temperature data is supplied by iOS so it is possible that your iPad or iPhone may still overheat and shut down before ForeFlight can display the alert.



The alert will only sound once per hour, even if your device returns to a high temperature state after initially cooling down.

17. ALERTS

17.7 TFR Alerts

TFR Alerts monitor your GPS position and track for nearby known TFRs and provide visual and/or audio alerts to warn you if your present track will take you inside (or over/under) a known TFR within the next 5 minutes, even if you don't have the TFR map layer turned on. TFR alerts will not sound when ForeFlight detects you are below 250' AGL, even if Speak All Alerts is enabled.

Four different alerts are possible based on your position relative to the TFR: "TFR Ahead", "TFR Below", "TFR Above", and "Inside TFR."

TFR ALERTS IMPORTANT NOTICE:

TFR alerts are provided **only** as a tool to increase situational awareness in flight. They **do not** replace conventional tools and practices for avoiding TFRs and should not be used as such.

ForeFlight can only provide alerts for TFRs that it has information for, which requires you to download that information before flying. Failing to do so may prevent ForeFlight from displaying alerts for active or soon-to-be-active TFRs.

Immediately before your flight: While still connected to the Internet, use the [Pack](#) feature to ensure all relevant TFR and weather data is downloaded. Alerts for TFRs issued **after** you Pack will not be shown, unless you are using an ADS-B or XM in-flight weather receiver.

If ForeFlight detects that you will enter or pass within three nautical miles of an active (or soon-to-be active) TFR within the next five minutes it will issue a "TFR Ahead" alert, or "Upcoming TFR Ahead" if the TFR is not yet active.

A TFR's altitude (MSL or AGL) is taken into account when determining if you will enter it, and an adjustable altitude buffer is provided in **More > Settings > Alerts** so you can customize how close your altitude must be to the TFR for the alert to activate.

The altitude buffer has settings for 500', 1000', 2000', and 5000'. If you are outside a TFR's altitude but within the selected buffer altitude, ForeFlight will issue "TFR Below" or "TFR Above" alerts as you pass respectively above or below the TFR. If you enter a TFR within its altitude range ForeFlight will issue an "Inside TFR" alert.

17. ALERTS

17.8 Sink Rate

The Sink Rate alert warns you when your downward vertical speed exceeds a certain amount, which varies based on your height above ground so as to warn you sooner at lower altitudes.



At all altitudes, the descent rate required to trigger the alert must be maintained for five seconds, and the alert will only sound once every 30 seconds. This alert is automatically disabled if your groundspeed is less than 40kts.

Above 2,500' AGL (or when AGL is not known), the alert is triggered if your descent rate exceeds -3,500' per minute.

Between 2,500' AGL and 500' AGL the descent rate required to trigger the alert decreases linearly along with altitude, down to a threshold of -1,500' per minute.

At 500' AGL the alert is triggered if your descent rate exceeds -1,500' per minute.

17. ALERTS

17.9 Runway Final Approach

The Runway Final Approach alert triggers when you are lined up with (meaning your actual track is within $\pm 15^\circ$ of the runway heading) and descending towards a runway, even if the airport isn't in your route. The Runway Final Approach alert will only trigger once every 10 minutes, so may not trigger after the first alert if you're flying multiple approaches in a short traffic pattern.



17. ALERTS

17.10 500' AGL

The 500' AGL alert is a simple callout that triggers when you descend through 500' AGL after having been above 1,000' AGL. The alert will only sound once every 60 seconds, and is automatically disabled if your groundspeed is less than 40kts.



17.11 Device Disconnect

The Device Disconnect alert is 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. The alert is only triggered if your groundspeed is above 40 knots or if your device does not have a GPS fix.

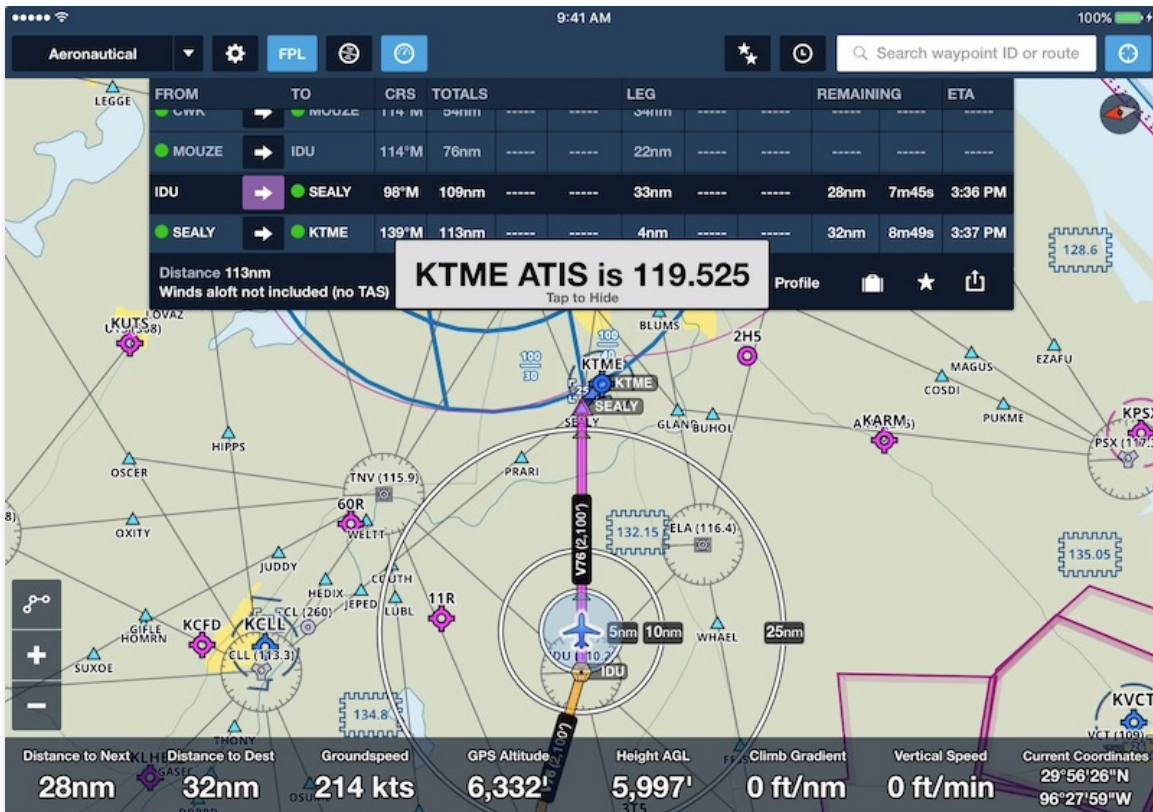


17. ALERTS

17.12 Destination Weather Frequency

The destination weather frequency callout provides you with your destination airport's weather frequency (whether ATIS, AWOS, or ASOS) as you near the airport.

The callout requires that the last item in your route be an airport (there must be more than one item in your route) and that the airport has a weather frequency. The callout occurs at a certain distance from the airport, which is greater at higher altitudes - at 5,000 feet or below the callout occurs at 20nm from the airport.



Unlike other alerts, the weather frequency popup does not disappear after a few seconds - it will remain on the screen until you dismiss it by tapping on it.

The callout will not occur more than once every 20 minutes for the same airport, but if you change the destination airport then the callout can occur again in less time for the new airport.

17. ALERTS

17.13 Transition Altitude

The Transition Altitude alert provides an audio and visual callout when you climb or descend through 18,000 feet in the U.S. or Canada (or local transition altitude in Europe). If up-to-date weather data is being received in-flight via ADS-B or XM, the alert also includes the nearest altimeter setting on descent.

17.14 New Flight Plan Loaded From Panel

If connected to installed avionics that can send flight plans to ForeFlight (such as Garmin Connex devices), and “Auto-Receive Panel Flight Plans” is enabled in More > Settings, any time ForeFlight receives and loads a new flight plan from the panel it will display a “New Flight Plan Loaded From Panel” message.



New Flight Plan Loaded From Panel

A screenshot of a rectangular alert box with a light gray background and a thin black border. The text inside is bold and black.

17.15 Low Battery

If connected to a supported portable device (Sentry, Stratus, all supported Garmin portables, and the SiriusXM SXAR1) a Low Battery alert will be displayed when the device’s battery level reaches 20%.



Sentry Battery low: 20%

A screenshot of a rectangular alert box with a light gray background and a thin black border. The text inside is bold and black.

PLATES

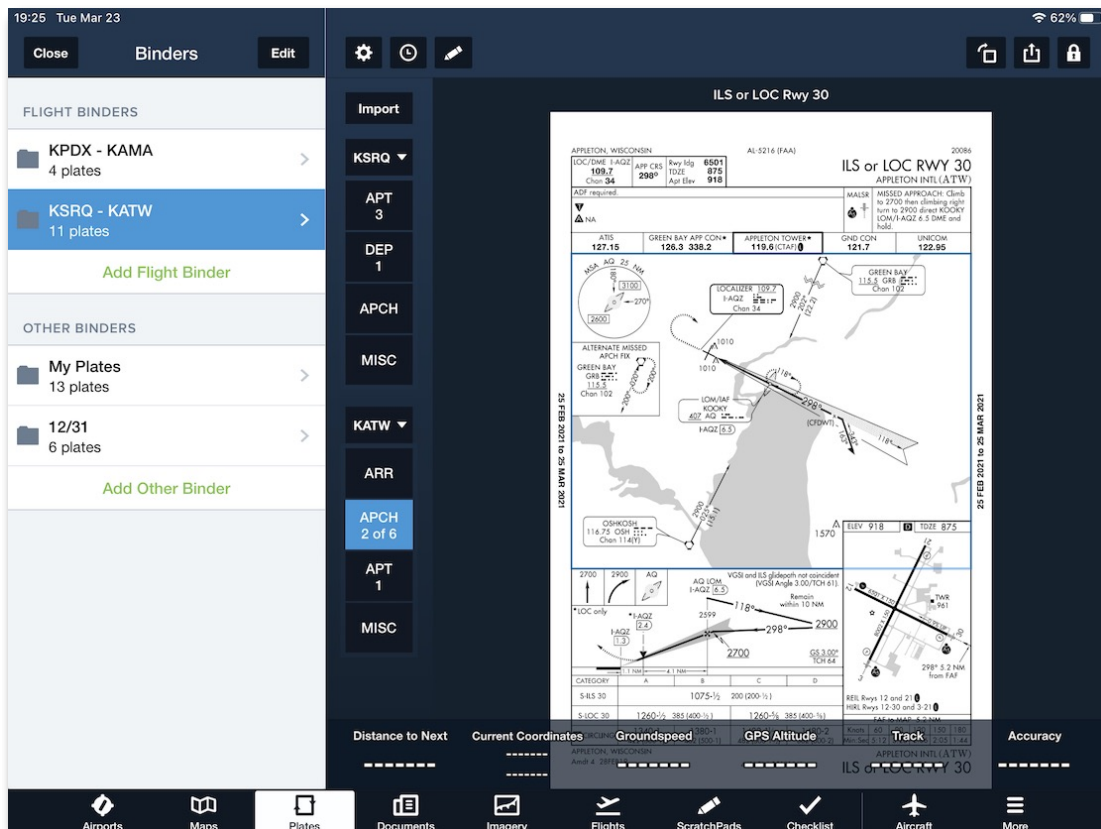
The Plates view provides access to approach plates, taxiway diagrams, and arrival and departure procedures, via Flight Binders (based on departure & destination airports) or “traditional” Other Binders.

18.1 About the Design

Flight Binders are automatically populated based on a route on the Maps page or a route in a Flight. Other Binders can be created with plates from one or many airports, including airports not in the route.

18.2 Flight Binders

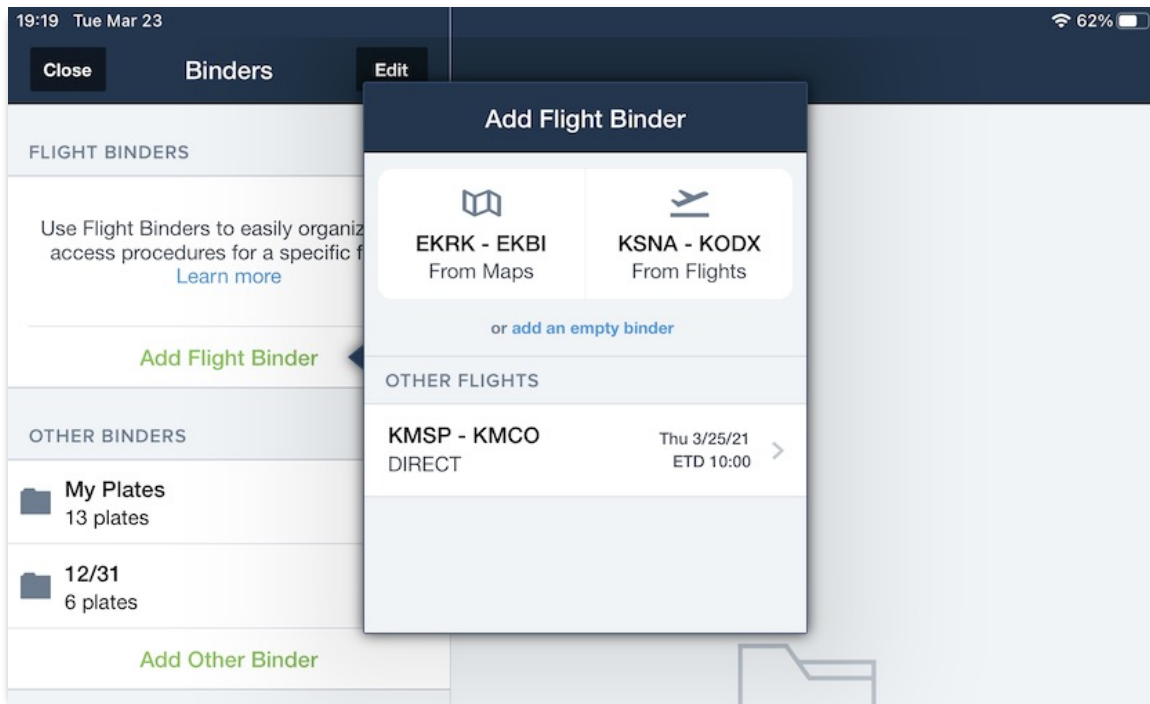
Open the Binders Drawer by tapping the “Binders” button in the upper-left corner of the Plates page. Existing Flight Binders are shown at the top, and Other Binders in the “OTHER BINDERS” section below. Tap any binder to see its contents:



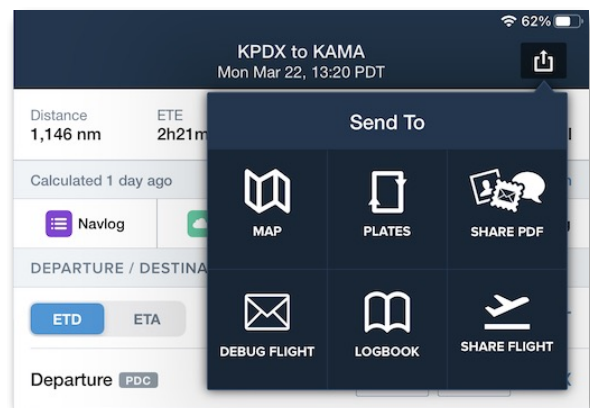
18. PLATES

18.2.1 Creating Binders

To create a new Flight Binder from the Plates page, tap **Add Flight Binder**. ForeFlight will automatically show airport pairs based on the currently-entered route on Maps, as well as on the nearest upcoming route planned on Flights. Additional future flights are listed below. To create a Flight Binder for other airports, tap **add an empty binder** below the first 2 suggested options.



To create a Flight Binder from a Flight on the Flights page, tap the flight, then tap the **Send To** button in the upper right and choose **PLATES**.



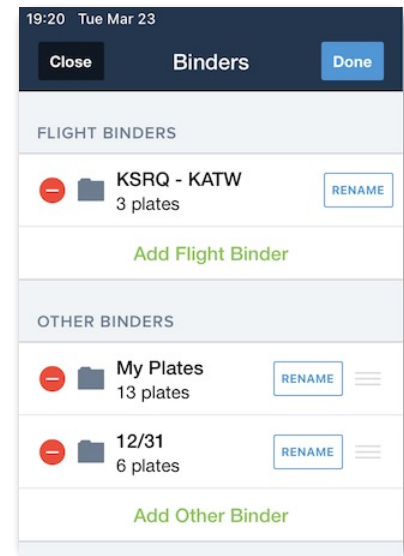
18. PLATES

18.2.2 Editing Binder Names

Once a Flight Binder has been created, the name can be edited by tapping **Edit** at the top right of the Binders Drawer. Tap **RENAME** and edit the binders name in the pop up, then tap **Save**.

Or to delete a Flight Binder, tap the red delete circle, tap **Delete**, to delete it, then tap **Save** or a Flight Binder can also be deleted without tapping **Edit** by swiping from right to left across the Flight Binder name and tapping **Delete**.

Tap **Close** in the upper left corner of the Binder Drawer to expand the view for the Flight Binder.



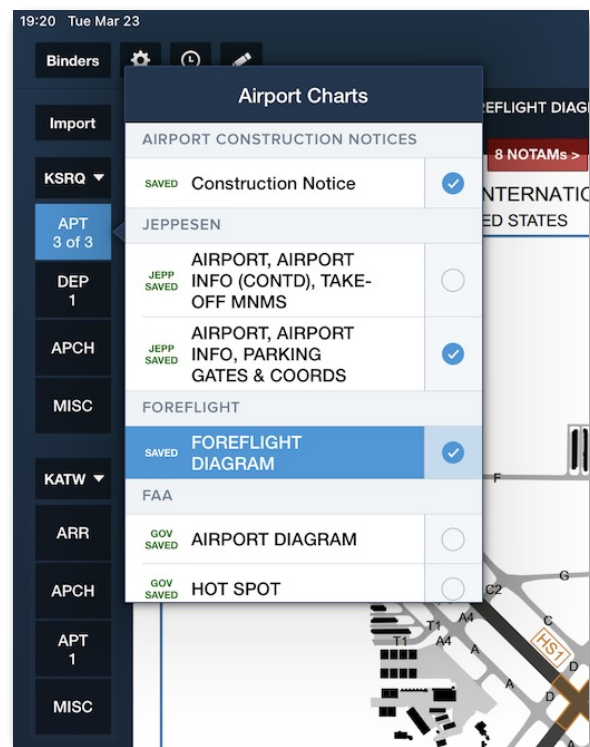
18.2.3 Binder Structure

The Flight Binder layout is structured and consistent, grouping plates of the same type together for each of the selected airports. The plate groups below each airport follow a roughly chronological order: for the departure airport: airport and taxi diagrams, departure plates, approach plates for a return to base scenario, and miscellaneous plates. For the destination airport: arrival plates, approach plates, airport and taxi diagrams, and miscellaneous plates.

Tap on any empty group or **tap twice** on a non-empty group to review and add plates within that group.

The number shown on each plate group represents how many plates have been added to the Flight Binder for that group; those without a number have no plates added. In the APT example above, three plates have been added and the third plate is being viewed.

With the plate group pop-up open, tap on any plate name to view it without adding it, or tap the circle on the right to both view and add it to the binder. Tap the circle on the right again to remove a plate from the binder.



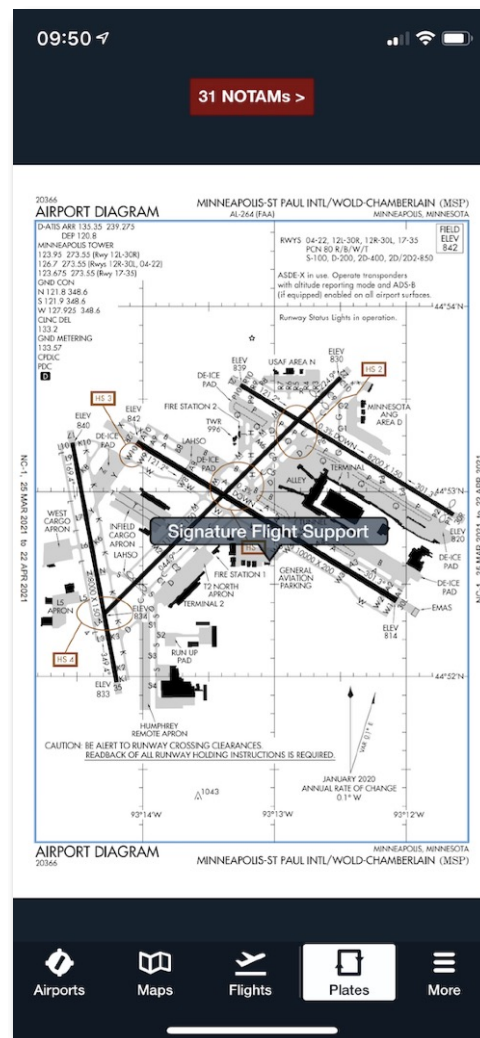
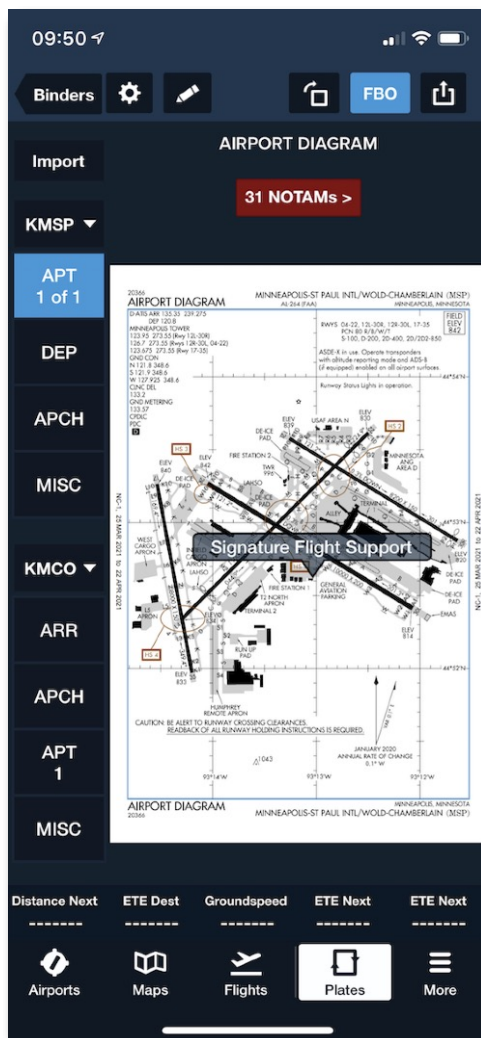
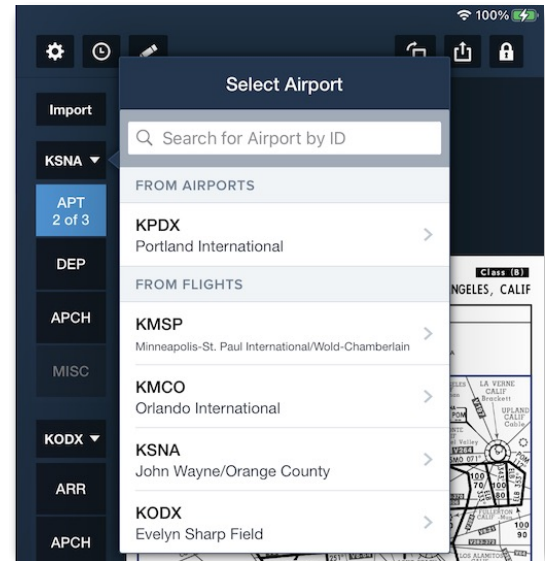
18. PLATES

Swiping Across Plates

After adding all the plates you want within each group, use a 3-finger swipe left or right to move through them plate-by-plate and group-by-group.

To select or search for a different airport in the Flight Binder, tap either of the Airport buttons on the left.

Single-tap on a plate to hide the top menu, and on an iPhone or an iPad in narrow split-screen, to hide or show the Plate Groups buttons on the left:

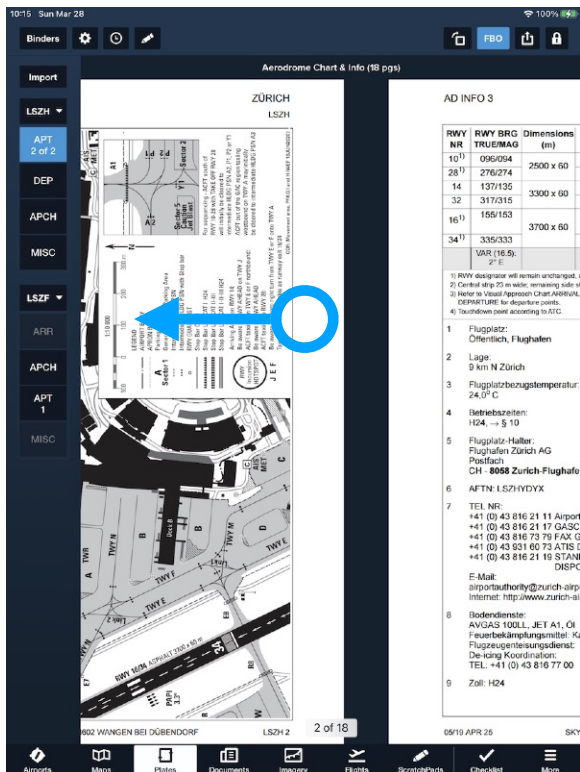


18. PLATES

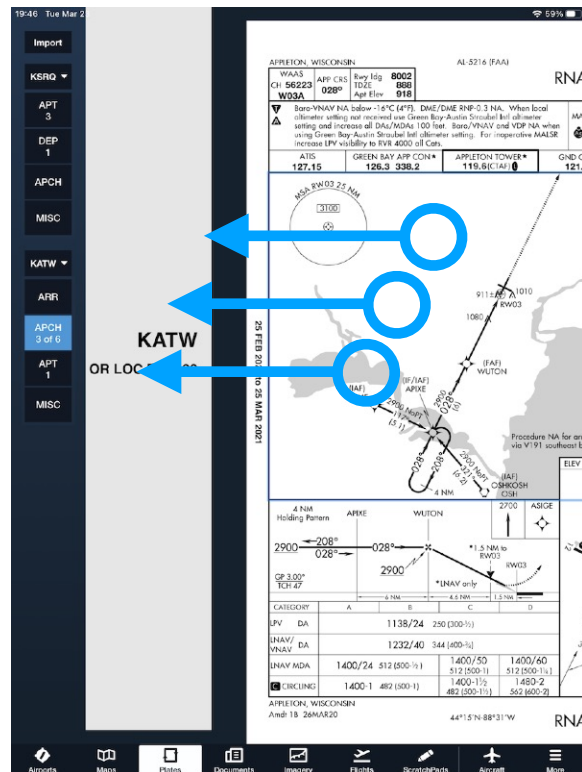
To change between the plates in a Flight Binder or Other binder, use a 3-finger swipe left/right across the plate:

To change between pages of a multi-page plate, use a 1-finger swipe left/right across the plate:

NOTE: For a multi-page plate, the total number of pages is shown at the top (in this example: “Aerodrome Chart & Info (18 pgs)”) and the current “Page # of n” is shown at the bottom (in this example, “2 of 18.”)



Single Finger Page Turn



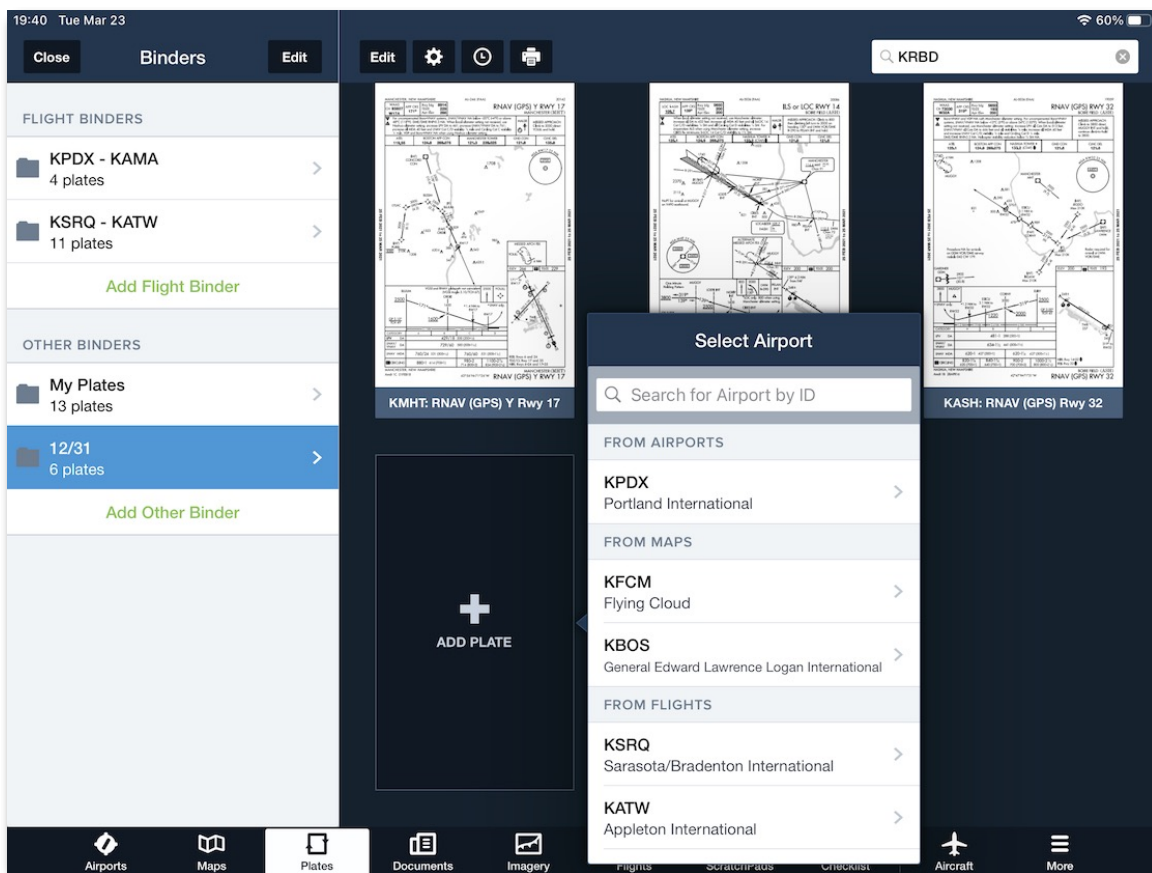
Three Finger Plate Swipe

18. PLATES

18.3 Other Binders

Open the Binders Drawer by tapping **Binders** in the upper-left corner of the Plates page. Other Binders are shown below Flight Binders. Tap any binder to see its contents. To create a new Other Binder, tap **Add Other Binder** then enter the name of the new binder.

When viewing plates in an Other Binder you can use a 3-finger swipe left or right to move between all the plates in the Binder.



Other Binders

18. PLATES

18.3.1 Managing Plates in Other Binders

To add a plate to an Other Binder, tap the **+ ADD PLATE** thumbnail, or tap in the search box in the upper-right of the screen, enter the desired search term, then scroll to select the desired plate.



The *Plate Search* box in the top toolbar allows you to search for a plate by airport, or by a specific procedure.

Example Searches:

- **KJFK** - Lists all procedures associated with the JFK airport
- **RHV GPS** - Lists the RNAV (GPS) approaches to the RHV airport

Open the plate, then tap **Add to Binder** in the top menu. Or, tap the **+ ADD PLATE** thumbnail to display an intelligent list of airports gathered from airports you've used in other parts of ForeFlight Mobile. Tap an airport to see the available plates, or enter the airport you want to add. Then tap the procedure name or **+** icon to add it to the current plate binder.

Reordering Plates

To reorder or delete plates in an Other binder, tap **Edit** on the left side of the top toolbar. Then hold and drag the plate to the new location. Note that you can add the same plate to the same binder more than once. For example, you might create a binder that contains plates for three local airports. You could elect to include each airport's taxiway diagram both before each airport's departure procedures *and* after each airport's approach plates, making it easier to find the diagram in context during both arrival and departure operations.

Removing Plates

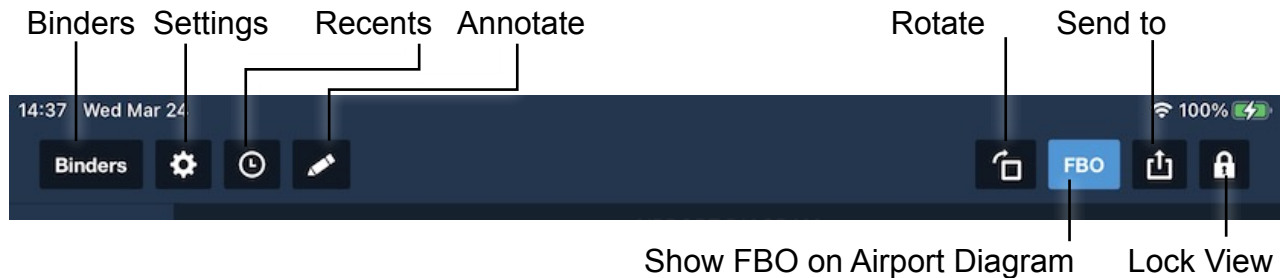
To remove a plate from the binder tap the **X** icon in the upper left of the plate thumbnail. When done editing, tap **Done**.

18. PLATES

18.4 Controls

Single-tap on the plate to hide/show the plate controls across the top of the plate and the Instrument view across the bottom of the plate.

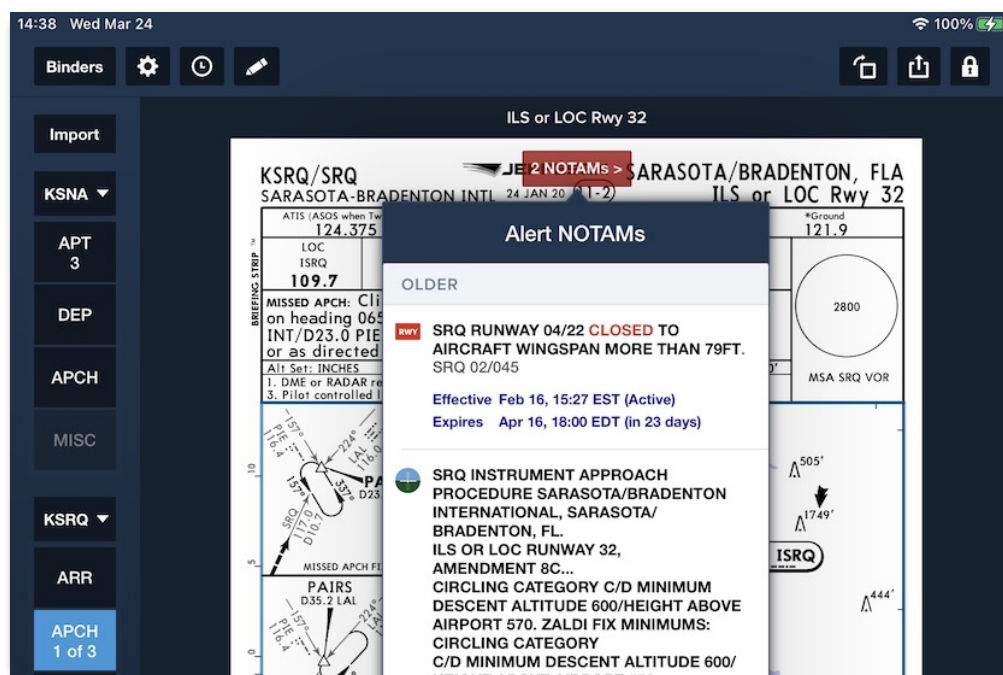
Invert Plate Colors & Brightness are found under “Settings”:



18.5 NOTAM Advisor

When you display an Approach Plate or Airport Diagram on the Plates page, ForeFlight cross checks downloaded NOTAMs and displays a warning banner at the top of the plate showing a count of relevant NOTAMs related to that plate or diagram.

Tap the red banner to view the NOTAMs that are associated with the airport diagram or instrument procedure. Tap again anywhere off of the popup to close it.



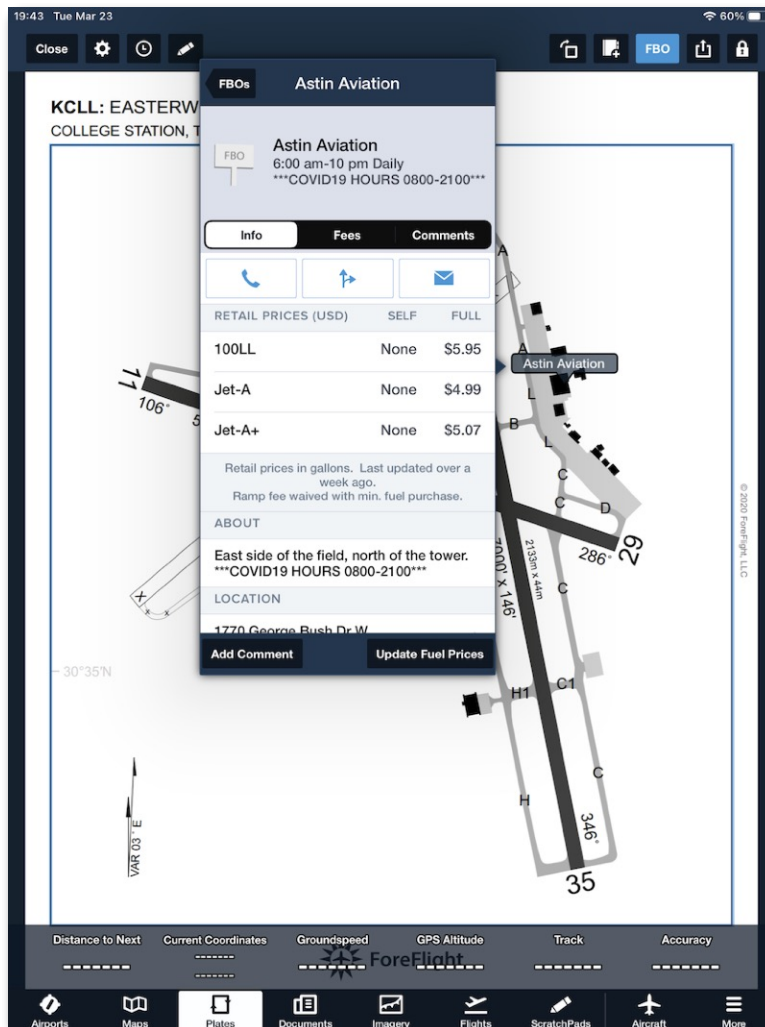
Alert NOTAMS

18. PLATES

18.6 FBOs on Airport Diagrams

When viewing an Airport Diagram (either FAA or ForeFlight) tap **FBO** at the top of the Plates menu to show/hide the location of FBOs that are known to sell fuel at that airport.

FBOs can also be shown when the Airport Diagram is displayed on the Map (Pro Plus, Performance Plus, Business Pro, or Business Performance subscription required). Featured FBOs are shown with a yellow flag; other FBOs are shown with a grey flag. Tap an FBO's flag to open the FBO popup with details about the FBO including fuel prices.



18. PLATES

18.7 Printing Plates

Tap the **Print** button in the top toolbar of the *Plates* view. The *Printer Options* dialog box is displayed. From here, select a printer and a number of copies. Tap **Print** to send the selected number of copies of *ALL* plates in the binder to your printer.



To print only *one* procedure, tap the plate's thumbnail to display it in the procedure viewer, then tap the **Send To** button and choose **Printer**. Printing requires an AirPrint capable printer.

18.8 Ensuring Your Plates Don't Expire

When you view a plate or add it to your binder, ForeFlight uses either a copy of the plate stored locally on your iPad (by virtue of the fact that you've already downloaded it), or uses your iPad's Internet connection to fetch the plate and store it locally on your iPad. In either case, the plates are viewable *until they expire* - whether you have an Internet connection at the time you view them or not.

When these plates expire, *they are only automatically replaced if you have used the Downloads view to download new terminal procedures for the states/regions associated with the plates in your binder*. Otherwise, the plates are only replaced when you open the binder *and* have an Internet connection. In-flight is not the time to discover this.

Be sure to check your selections in **More > Downloads** to ensure ForeFlight is set to download terminal procedures for all states covered in your binders and that all requested data has been downloaded. This ensures all plates in your binder will be current and available to you at any time - on the ground or in the air.

18. PLATES

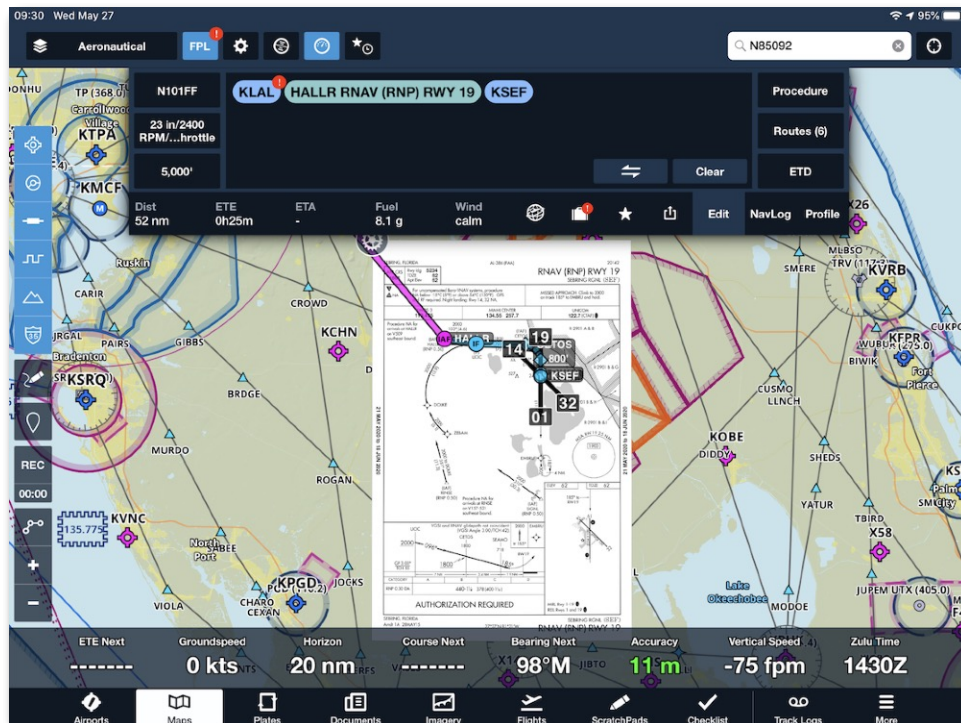
18.9 Plates on a Map

This feature allows you to overlay geo-referenced plates or airport diagrams on the Maps view. Viewing plates and taxi diagrams on a Map requires an active ForeFlight Pro Plus, Performance Plus, Business Pro, or Business Performance subscription. To upgrade, visit <https://www.foreflight.com/buy>.

In North-up mode, the plate or airport diagram is displayed on the chart right-side-up; in Track-up mode, the plate rotates along with the chart so that your ground track is towards the top of the map.

Using in-flight ADS-B or XM weather, radar and other weather information can also be displayed on the Map with the plate. Radar or Satellite can be displayed while on the ground and connected to the Internet.

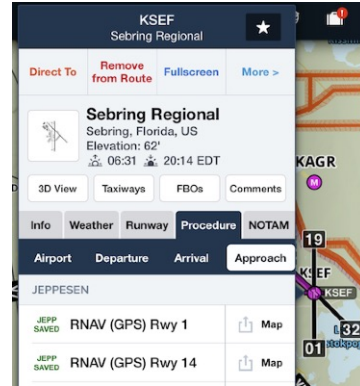
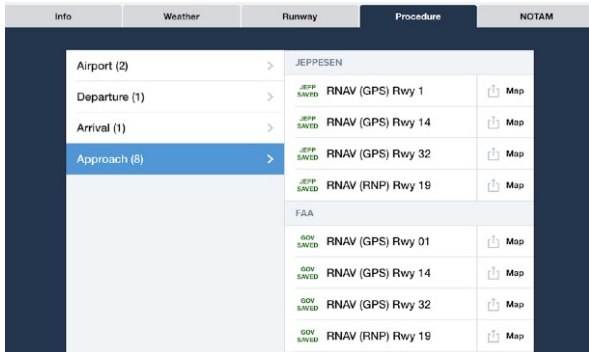
You can add the waypoints on the approach by rubber-banding your route: for each waypoint, touch-hold the route line, then drag it to the waypoint and release to display the waypoint popup. Choose the waypoint name to add that point.



18. PLATES

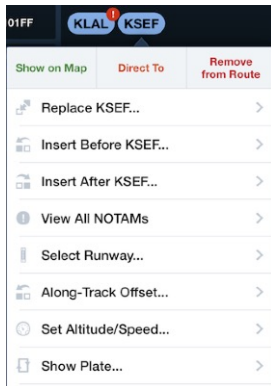
18.9.1 Displaying a Plate on a Map

You can display a plate on the map in five ways:

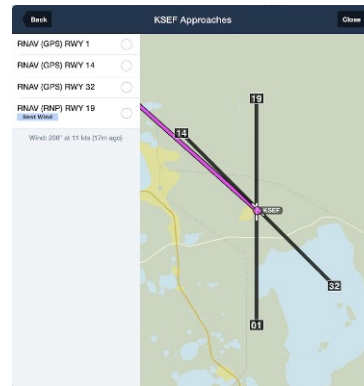


1. From the **Airports** page, tap the **Map** button next to the desired approach in the Procedures list.

2. On the **Maps** page, touch-hold the airport, tap the the grey **More** button, then the **Details** button in the pop-up (or tap the airport on the Aeronautical layer) then choose the Procedure tab and tap Approach. Tap the **Map** button next to the desired approach.



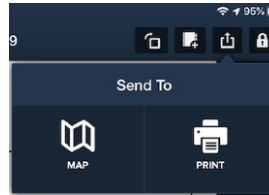
3. From the Route Editor tap the colored bubble and choose “**Show Plate...**”




4. From the Flight Plan editor, tap the Procedure button to open the Procedure Advisor, then select the approach.

18. PLATES

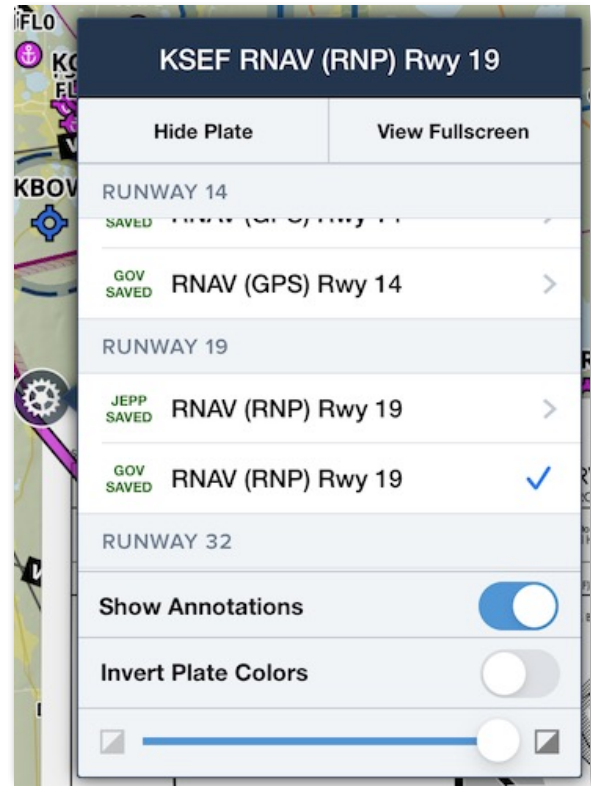
5. From the Plates page tap the **Send-to** button and choose “**Map**”



18.9.2 Changing or Hiding the Plate on a Map

Once you have displayed an approach plate or airport diagram on the map, you can change or hide it by tapping the gear button  or by tapping on the plate itself to display the popup. There you will see the selected plate (highlighted in yellow with the check-mark) and you can scroll through the list of available plates to select a different plate. Tap a different plate to display it on the Map.

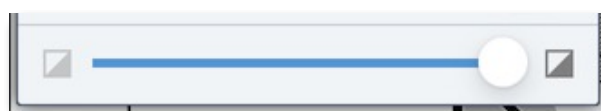
You can also tap **Hide Plate** to remove the plate from the Map, or tap **View Fullscreen** to open the plate on the Plates page. Turn **Show Annotations** OFF to hide any annotations you made to the plate. Turn **Invert Plate Colors** ON for easier viewing in low-light situations, and you can adjust the transparency of the Plate on the chart using the slider.



Plates Menu

18.9.3 Plate Transparency

Once you have displayed an approach plate or airport diagram on the map, tap the Map Settings “gear” button to adjust the transparency of the plate from the slider to the right for fully opaque (completely covers the underlying map) to the slider to the left for more transparent so the underlying map shows through. You can also adjust the transparency of the Radar layer (if selected).



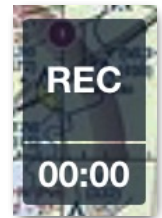
Transparency Slider

TRACK LOGS

Track Logs record details about your flight including track and altitude using any compatible GPS, such as an external device like a Sentry, or your iOS device's internal GPS. Track Logs are synchronized across your devices using Sync. Track Logs can be sent via email, are available for viewing and downloading at the ForeFlight website, and can be exported to apps like CloudAhoy and Google Earth, as well as to KML and GPX files. Track Logs can also be imported to ForeFlight Logbook as new entries if it is part of your subscription. Track Log files require less than 300KB per hour recorded.

19.1 Enabling Track Logging

Track Logs can be enabled for either manual or automatic recording. Tap **More > Settings**, then scroll to the **Track Log** section. To enable manual recording, switch **Enable Start/Stop Control** to *ON*. When this setting is *ON*, the **REC** button and a timer indicating the length of the current recording are shown in the lower-left corner of the Maps view above the zoom buttons. To enable automatic recording, switch **Enable Auto Start/Stop** to *ON*.



19.2 Start/Stop Logging

When automatic recording is enabled, a new Track Log is started as soon as the app detects a takeoff, which corresponds with a certain speed threshold. A new Track Log can also be started at any speed by tapping the REC button. In either case the REC button turns blue and the timer starts counting up, indicating the length of log file. The recording continues until the REC button is tapped again, or until the app detects a landing, which is also associated with a speed threshold.



With automatic recording, your location data prior to takeoff and after landing are added to the front and back of the Track Log, respectively, to account for taxiing. This extra recording time at the front of a Track Log is reflected in the timer upon takeoff.

When using the built-in GPS or a Bluetooth GPS, the recording will continue even if you switch to another app. **NOTE:** background recording is not currently available when using a Sentry or other Wi-Fi connected device for GPS. If you put ForeFlight Mobile in the background or quit it completely while recording a track log, the recording will stop or be incomplete.

19. TRACK LOGS

If you put ForeFlight Mobile into the background while logging, verify that the REC button is still blue (Recording) when you re-open ForeFlight Mobile.

19.3 Flight Time Instrument

Flight Time can be used in conjunction with track logging to display actual flight time. When Track Log recording is enabled, either manually or automatically, the Flight Time instrument will begin counting up from zero after you take off and continue counting until you land or the Track Log recording is stopped.



19.4 Track Log Listings

Tap **More > Track Logs** to see your list of recorded Track Logs. Each entry shows the date and length of the recording, the GPS source used when the Track Log was started, and the aircraft's tail number. The aircraft's tail number is determined by the following logic:

- ADS-B ownship detection (correlation between an ADS-B broadcast and matching GPS position).
- If no ownship is detected, the default aircraft profile.
- If ownship was not detected and no default aircraft is specified, the aircraft that is selected the most. If there is no commonly selected aircraft, Track Log will not auto-populate the tail number field.



Track Log Listings

19. TRACK LOGS

If a Track Log was used to create a Logbook entry, a small book icon is shown next to the name of the device that recorded the Track Log. You can search by departure or destination, aircraft, GPS source, and device name.

You can delete a Track Log using swipe-delete (swipe your finger from right to left across the listing). Once a Track Log is deleted, it is no longer available via Sync or on the ForeFlight website and cannot be recovered. Edits made to a Track Log are synced to the other devices on your account.

19.5 Graphical Track Log view

The Graphical Track Log view is a new, full-screen interactive view of a saved Track Log. Tap a Track Log to open the Graphical Track Log view.







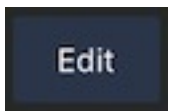

The top of the Graphical view shows a map of the track log, that can be panned & zoomed.

The bottom shows a timeline-based graph with selectable information including Altitude, Speed, and if your Track Log was recorded with an AHRS-capable device like a Sentry: Pitch, and Bank. 2 combinations are selectable at a time.



19. TRACK LOGS

19.6 Track Log Control Buttons

	Tap to hide/show the graph.
	Tap to start/pause the replay of the flight (at 20 times actual speed).
	Tap “Fit to route” button to display the entire route.
	Tap to return to the Track Log list.
	Tap for text information about the Track Log.
	Tap the “Send to” button to share or export the Track Log, or create a Logbook entry.
	Tap to Edit the Track Log by non-destructively trimming (adjusting) either or both of the start & end points.
	Tap to open the 3D review of the Track Log (requires a Performance plan)

When viewing a Track Log, you can use two fingers to pinch-zoom (left-right) inside the Graph area to zoom-in on a particular area of the Track Log, and use one finger to scrub left or right in the Graph area to focus on different areas of the track log.

The area of track log in-view on the Graph area is shown on the map with a thicker blue line, and the areas outside of that area are shown with a thinner orange line.

Use 1 finger to scrub along the timeline to change the location of the aircraft and the corresponding vertical line in the Graph view.

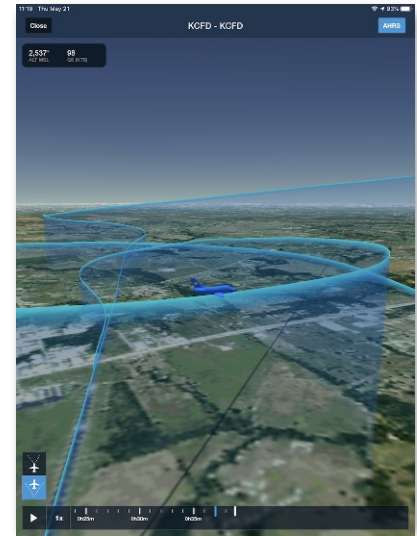
Tap the “Info” button to open a pop-up where you can view and edit additional information about the track log, including a more descriptive name, the Pilot’s Name, the Tail Number, and Notes. If ForeFlight detects ADS-B Out capability for your aircraft it will automatically capture the tail number and add it to the Track Log.

19. TRACK LOGS

If you have a Performance Plan, tap the 3D button to open a 3D Review of the track log.

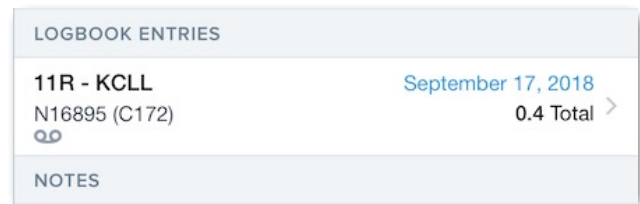
Switch between first person and third person views using the buttons in the lower-left of the screen, and use one finger to pan the view, and use two fingers to pinch-zoom.

Tap the AHRS button to switch between a “straight-and-level” view and a view showing the AHRS data recorded in the track log by a compatible device such as a Sentry.



19.7 Logbook Entries

If a Logbook entry was created from the track log, you can tap the row in the Logbook Entries section to display a popup with details of the Logbook entry.



19.8 Editing a Track Log

Tap the “Edit” button in the bottom-right of the Track Log Graph to enable non-destructive editing of either or both of the start and end of a Track Log. Drag the blue bars on the left and right side of the graph to adjust the track log’s start and end points.

When dragging the blue bars on the side of the graph, the revised start and end points are reflected in the overhead map at the top. The part of the Track Log between the blue bars is shown in blue in the overhead map and time slider, and the part(s) being trimmed are shown in grey, outside of the end markers.



While in Edit mode you can pinch to zoom within the Track Log Graph, and drag left or right to focus on different areas of the track log.

19. TRACK LOGS

Touch-hold on the graph or slide the time slider to display a movable cursor with “Start Here” and “End Here” buttons; tap either one to set the respective end of the track log at that point.

When you have finished editing, tap **Done** to confirm the new end points and update the Track Log Graph, overhead map, and track log metrics in the top-right menu.

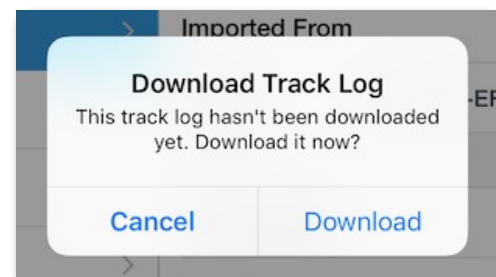
If a Track Log is associated with a Logbook draft entry, trimming the Track Log will automatically update the auto-filled fields in the Logbook entry. Sending a trimmed Track Log to Logbook will use times based on the new end points for auto-filled fields.

To undo any edits, tap **Edit**, slide the blue bars to the far left & right of the graph, then tap **Done**.

19.9 Track Log Sync

Newly-recorded Track Logs are automatically uploaded to the ForeFlight Cloud when your device connects to the internet after a flight. You can then view and edit the Track Log’s information on other devices on your account, as well as import it to ForeFlight Logbook, share it on social media, view it on ForeFlight’s site, and email a link to the Track Log.


Emailing the full Track Log or opening it in another app on your device require that you download the Track Log’s file; a popup when selecting one of these options prompts you to download the Track Log.

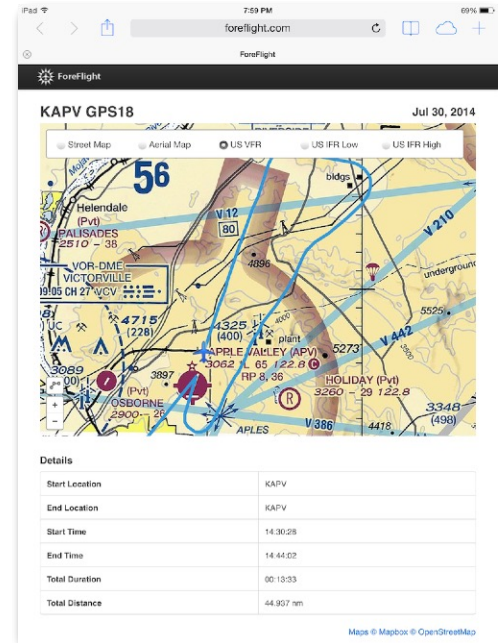


19. TRACK LOGS

19.10 Internet Browser Summary

When viewing a Track Log's details, tap the Send To button in the upper-right corner and tap the "foreflight.com" button to open Safari and view a summary of the flight on the internet browser.

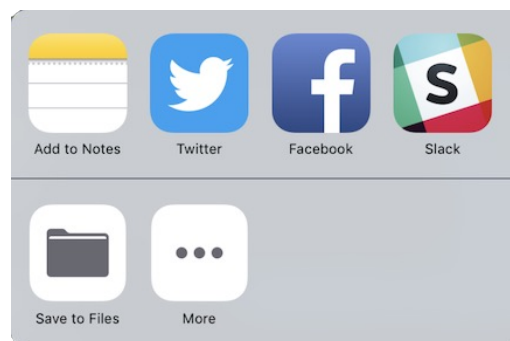
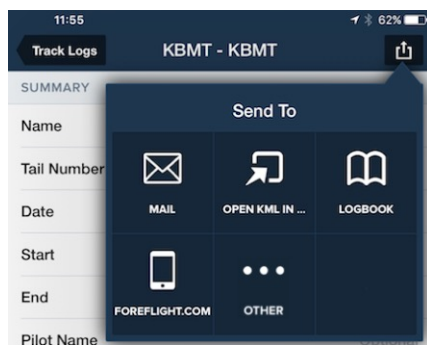
Tap the Chart selection button  in the upper-left corner of the map to choose between Street Map, Aerial (Satellite) Map, US VFR charts, and US IFR Low and High charts.



19.11 Sharing Track Logs

Track Log details can be shared via email, Twitter, and Facebook (provided you have set up your accounts in Apple Settings). Tap the Track Log entry, then tap the Send to button in the upper-right of the screen and choose how you would like to share the Track Log. You can also send the Track Log to your logbook, which creates a new entry and auto-populates it with the Track Log's details.

NOTE: iOS 10 and earlier show Facebook and Twitter as separate items in the Send To menu; iOS 11 and later show an "Other" option which includes Facebook, Twitter, and others.



When sharing the full Track Log via email, a KML file of the Track Log is attached to the email, along with the a link to view basic information about the Track Log on the ForeFlight website.

19. TRACK LOGS

19.12 Exporting Track Logs to other Apps

Tap the Track Log entry, then tap the Send To button in the upper-right corner and tap “Open KML In...” to export the data to CloudAhoy, Google Earth, or other compatible apps.

Google Earth is an useful resource for viewing the 3-D view of the Track Log on your device.

19.13 Importing G1000 Track Logs

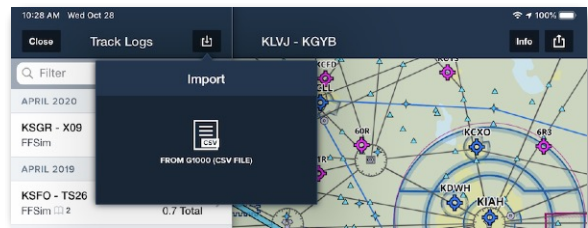
ForeFlight Mobile can import track logs recorded by a suitably-configured Garmin G1000, to simplify how you organize and access your recorded flights.

A suitably configured G1000 can save recorded track logs as CSV files on an SD card inserted into the top slot of the MFD. If you’ve already extracted these files onto your home computer or laptop, you can transfer them to ForeFlight Mobile via AirDrop, iTunes file transfer, or by sharing through email or other apps that you can access on your iOS device.

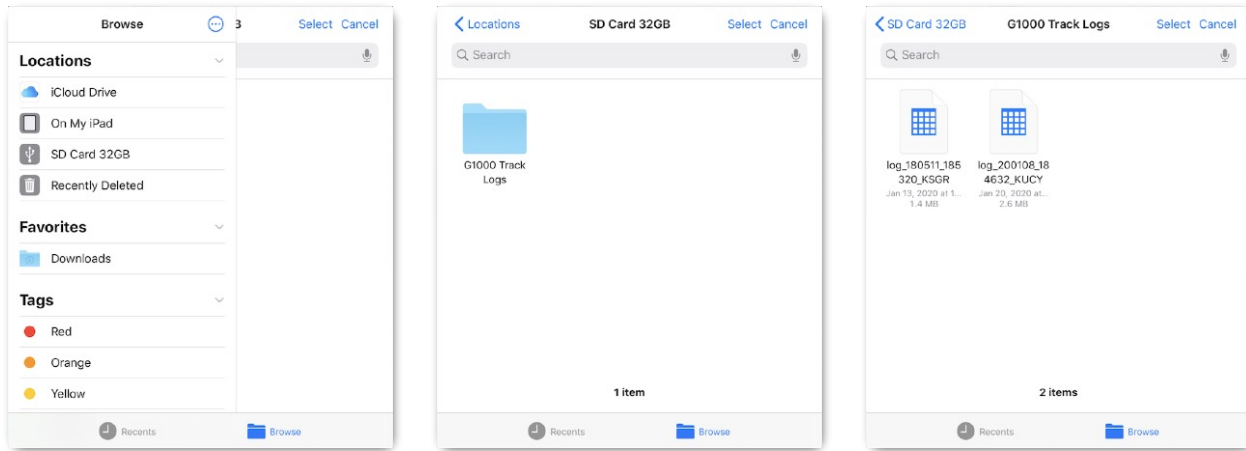
If your iOS device has iOS/iPadOS 13 or later you can also transfer track logs from an SD card using an adapter that matches your device’s data and charging port (Lightning or USB-C).

Insert the SD card from the *top slot* of the G1000 MFD into the SD card reader, then plug it into your iOS device. Then in **More > Track Logs**, tap the Import button in the center-top of the Track Logs page (on the right of the Track Log list) and tap “From G1000 (CSV File)”.

When the iOS Files view opens, tap Browse, then choose the USB icon to open the SD card, which will likely be named GARMIN. Tap the “data_log” folder, then tap on the track log you want to import.

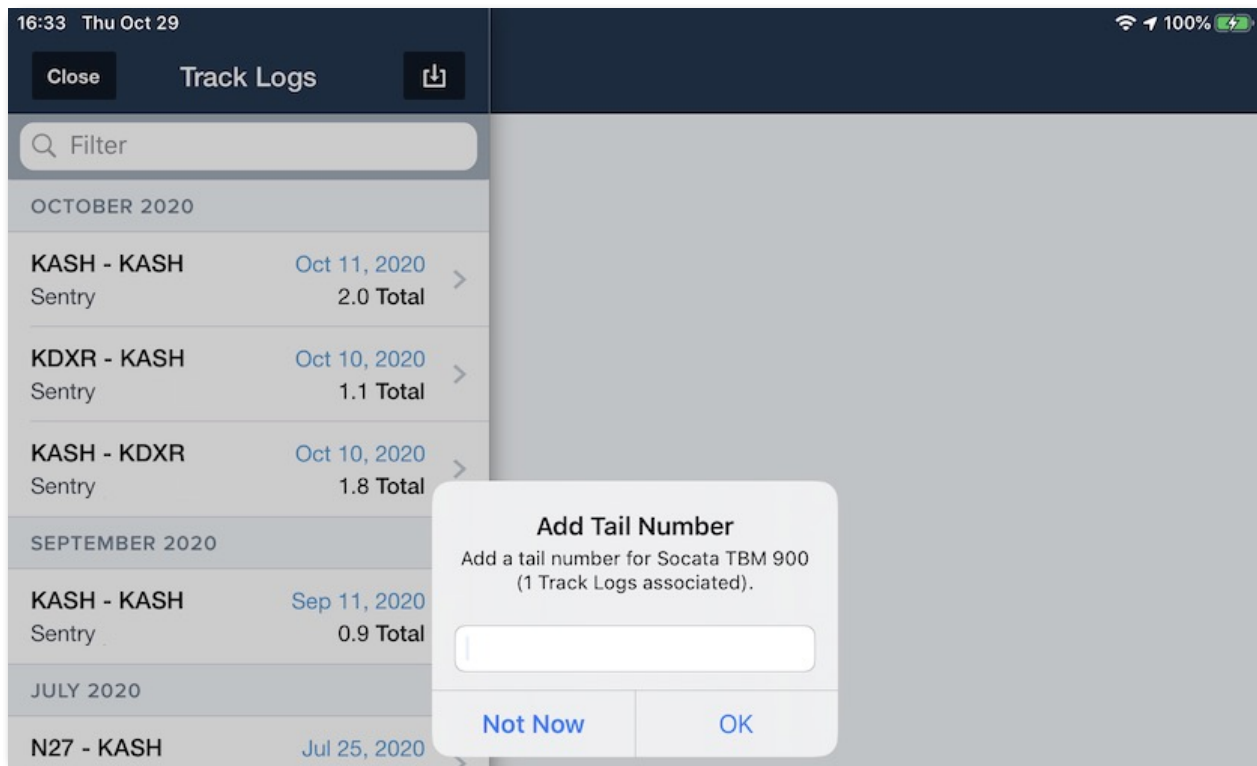


19. TRACK LOGS



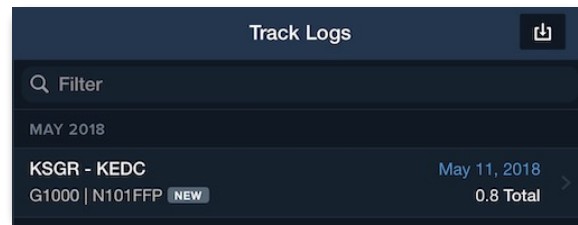
NOTE: If ForeFlight Mobile cannot successfully import a G1000 track log for any reason it will generate a text file explaining the error, along with the original track log in a zip file. Tap Export Now to share the zip file via AirDrop or other apps.

After tapping the track log to import, if you haven't imported flights from that aircraft before, ForeFlight will prompt you to enter the tail number to associate with the track log. Future imports of G1000 track logs from that aircraft will not prompt for the tail number.



19. TRACK LOGS

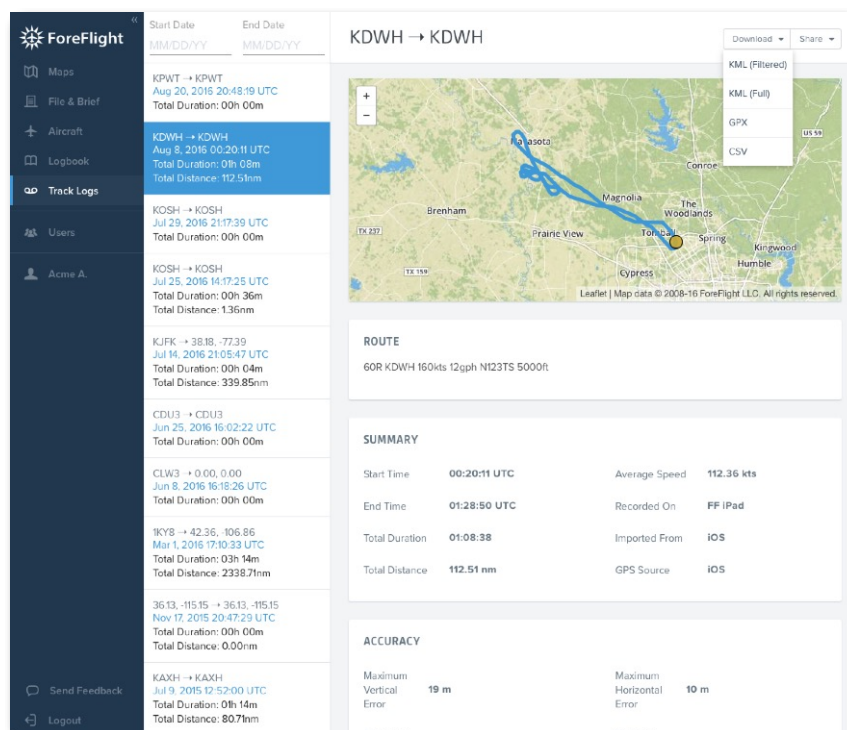
After importing the track log, a “NEW” flag shows until you change away from the Track Logs page.



See all G1000 track logs that have been imported by entering G1000 in the Track Log “Filter”.

19.14 Track Logs on ForeFlight Web

Sign in to your ForeFlight account by clicking the Login button at www.foreflight.com, then click **Track Log** from the sidebar to view all of the Track Logs on your account. Click the track log you want to view from the list on the left.



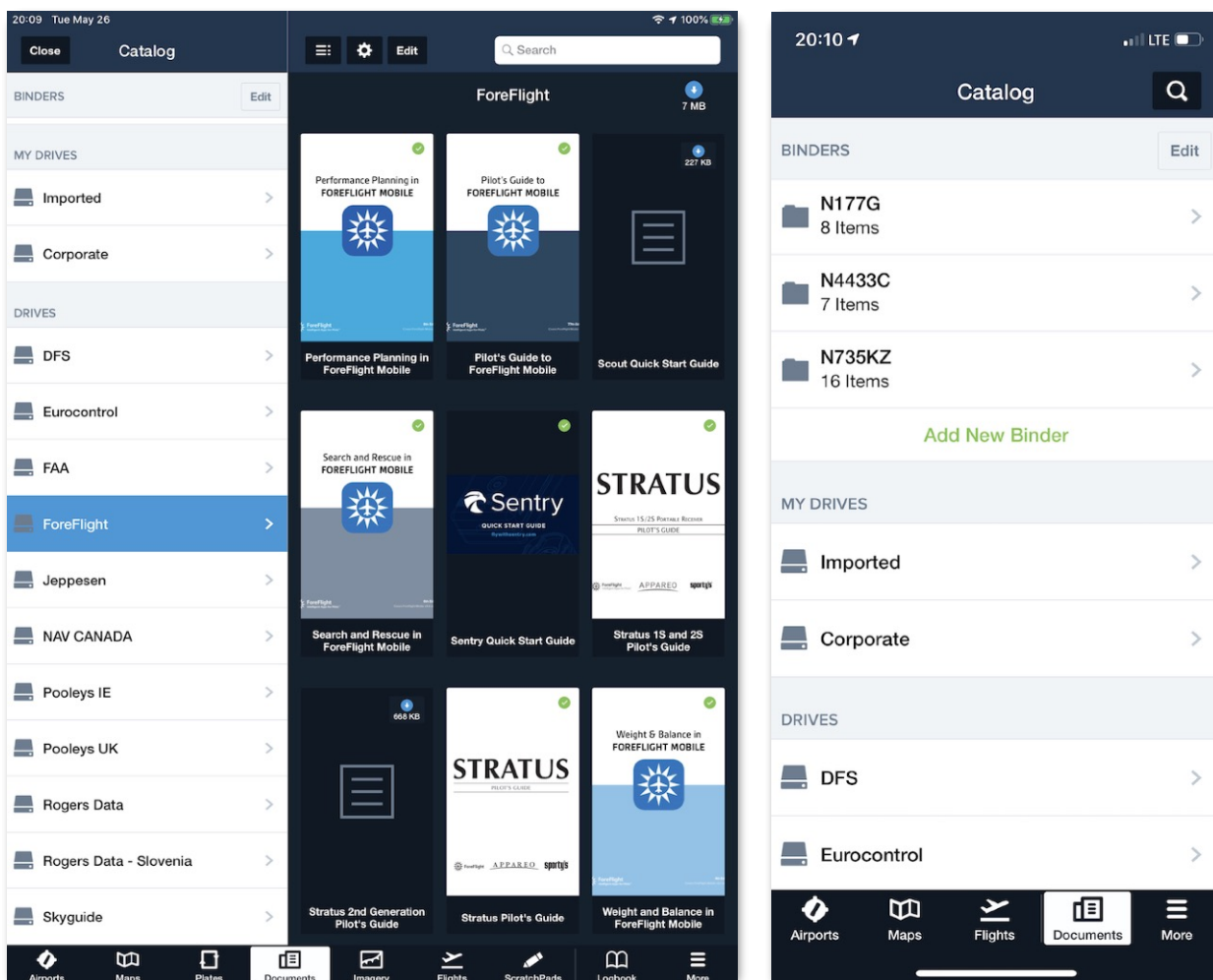
Click on the **Download** button in the upper-right then choose one of the KML options, GPX, or CSV to download the Track Log file in that format.

DOCUMENTS

The Documents view lets you download, import, view, and annotate PDF, image, Office (Word, Excel), Pages, Keynote, Numbers, and text documents. When Sync is activated for your account, documents, annotations, bookmarks, binders, and a document's position in a binder are synced across all of your devices and are backed-up to the ForeFlight Cloud.

20.1 About the 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.



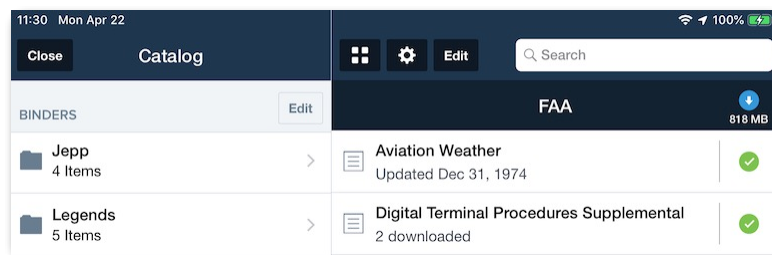
20. DOCUMENTS

20.2 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, 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.



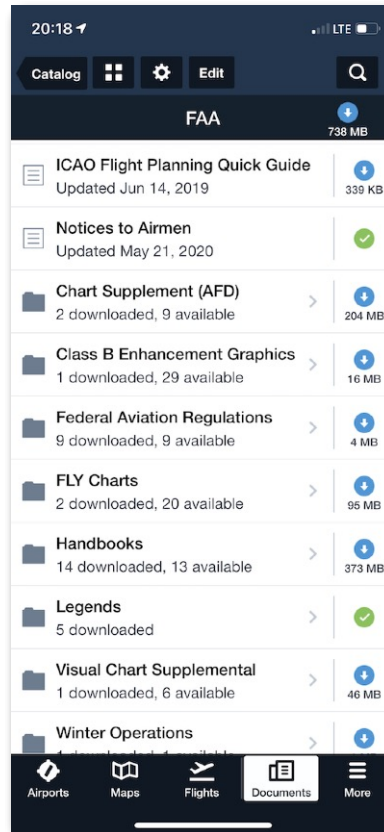
In the iPhone the Catalog view is always shown, and you can navigate into a Drive or Binder, then back to the Catalog view using the **Catalog** button in the upper-left.

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.

20. DOCUMENTS

20.2.1 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.



20. DOCUMENTS

20.3 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.

20.4 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.

20. DOCUMENTS

20.5 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.

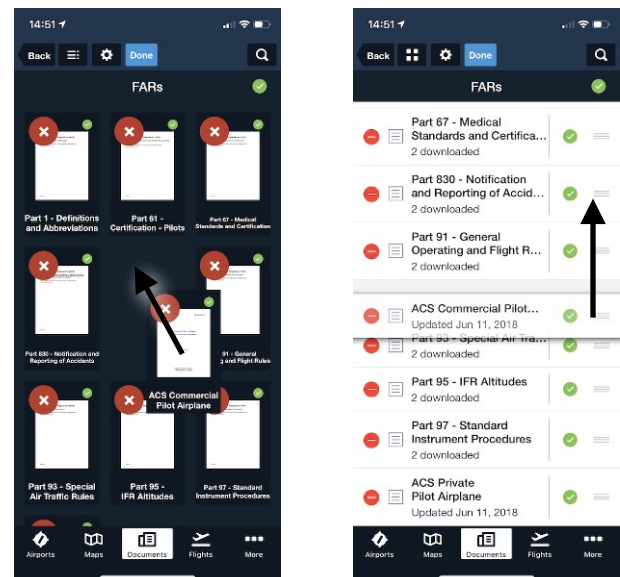


A Binder created on one device is automatically synced to your other devices, and if you change that Binder’s name **or delete it from one device**, that change is also automatically synced to your other devices. But because documents are stored in Drives, deleting a Binder does not delete the documents it contained.

20.5.1 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.



20. DOCUMENTS

20.6 Deleting a Document

You can delete a document in several ways, depending on the view.

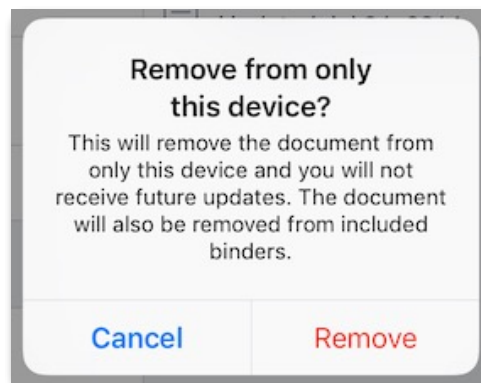
In List view swipe-delete (swipe your finger from right to left, then tap the red “Delete” button) or tap Edit, then tap the red circular button followed by the red “Delete” button.

In Thumbnail view, tap “Edit” then tap the red “X”.

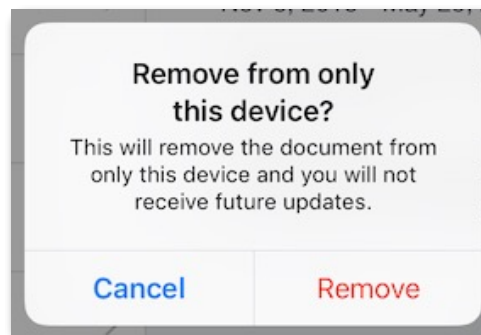
If you delete a document from a Binder it will be immediately removed from the Binder on all devices. **However the document will still be on the device, accessible in the source Drive.**

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:

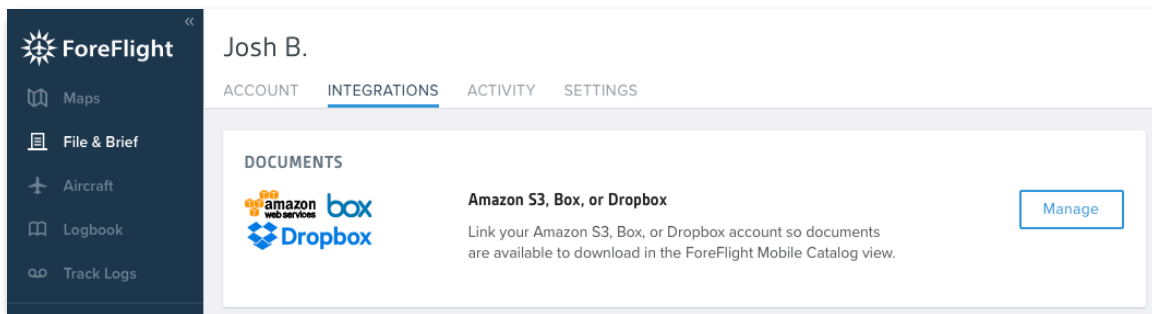


20. DOCUMENTS

20.7 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.”

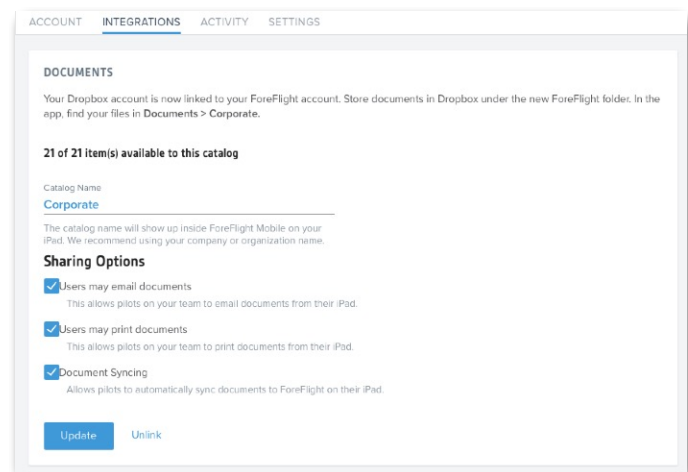


Click the “Connect” button (which shows if there is not yet a connected account) to link your document storage account to your ForeFlight account.

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”, “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



20. DOCUMENTS

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.

20.7.1 Cloud Document Folder Structure



NOTE: These folder locations are created automatically when you link your account to your ForeFlight account.

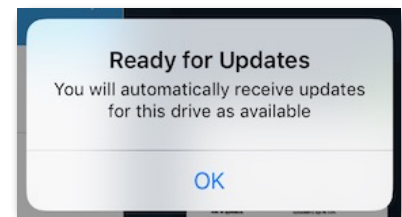
- Dropbox: /Dropbox/Apps/ForeFlight
- Box: /Box Sync/ForeFlight




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.


20.7.2 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.

20. DOCUMENTS

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.

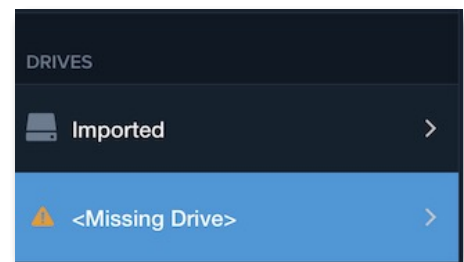
20.7.3 Downloading Individual Documents



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.

20.7.4 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.



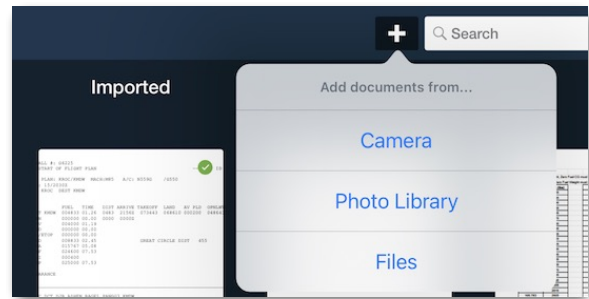
To delete all documents from a Cloud Drive on the device, first tap the blue “Download All”  button or the green check  in the upper right. Then tap “Edit”, and finally tap the large red “X” button. If a Cloud Drive account is un-linked but then re-linked with a different Catalog Name than before, a new Cloud Drive name will be created on all signed-in iPads.

20. DOCUMENTS

20.8 Importing Documents

In version 13.3 and later, quickly import documents from iOS Files, Photos, or the Camera, to the Imported drive by tapping the “+” button at the top of Imported drive, and choosing the desired source.

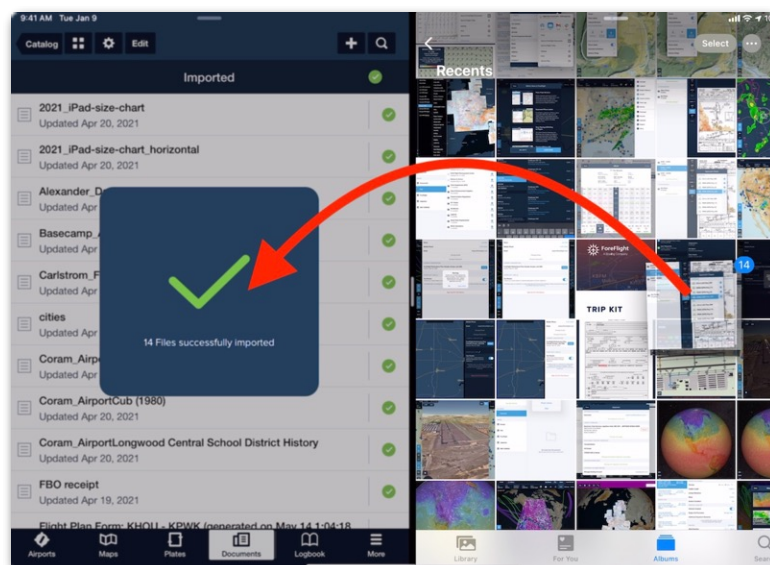
To import multiple documents from Files, when the pop-up is open, tap the circular Options button in the upper-right of the pop-up and choose “Select”. Then select the documents and tap "Done" to import.



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.

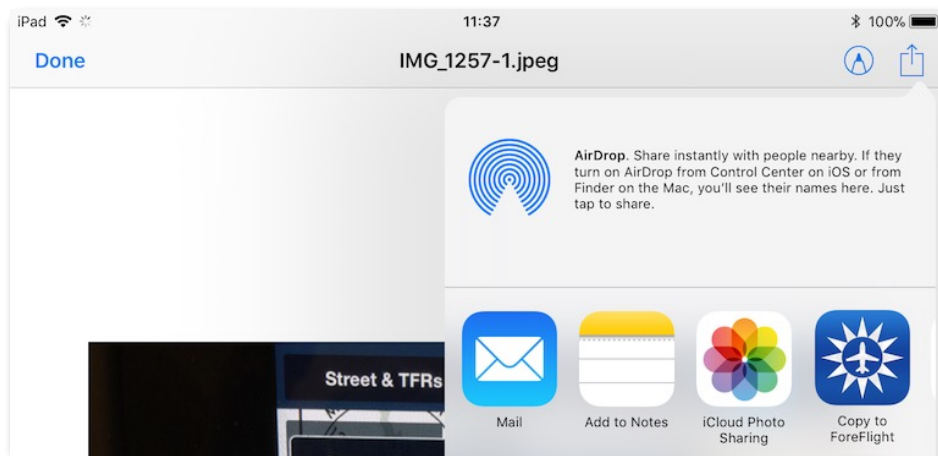


20. DOCUMENTS

20.8.1 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”

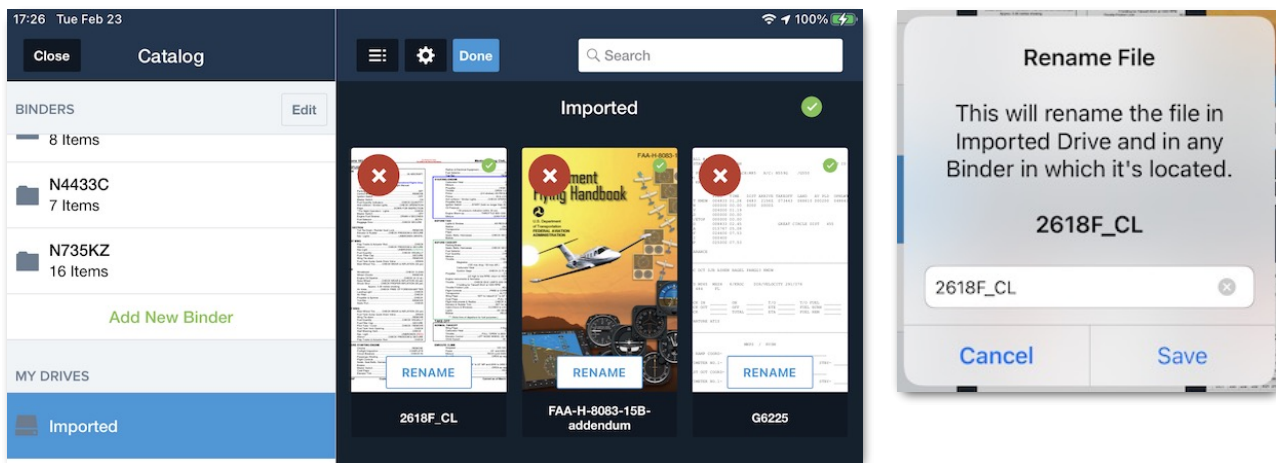
20. DOCUMENTS

If a document does not import, make sure it is a supported file format: PDF, JPG, TIF, PNG, GIF, or Microsoft Office. Very large image files or PDF files containing scanned images may open slowly, especially on earlier iPad models.

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.

20.8.2 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.

20. DOCUMENTS

20.9 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.

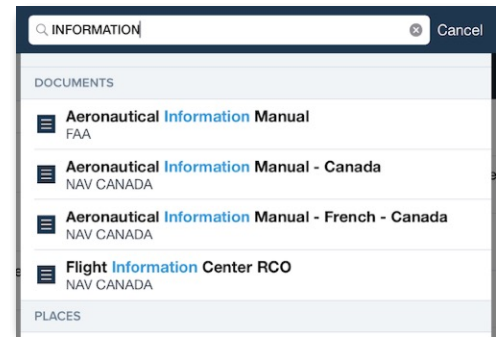
Tap once on a document page to bring up the toolbar at the top and page scrubber at the bottom. Tap again on the document to hide these overlays.

	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").


20. DOCUMENTS

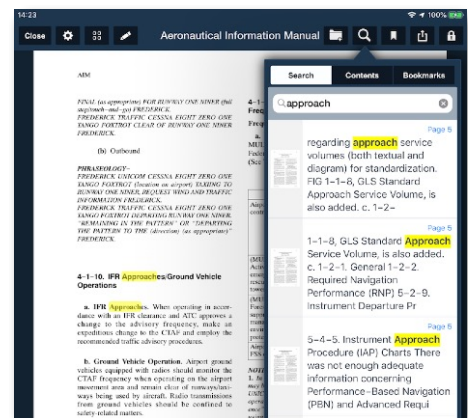
20.10 Searching for a Document

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).



20.10.1 Searching in a Document

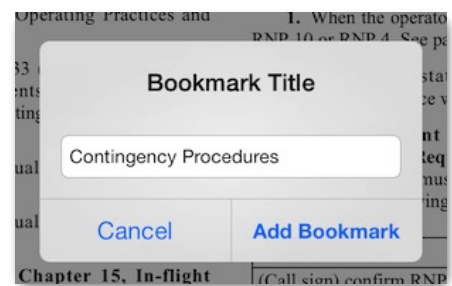
Tap the Search button  to display the search box, then enter your search term(s). All matches will be shown in the scrollable expanding list. Tap the entry to jump to the desired page, where the search term(s) will be highlighted in yellow.



20.10.2 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.



20. DOCUMENTS

20.11 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, and Eurocontrol, 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.

ANNOTATIONS

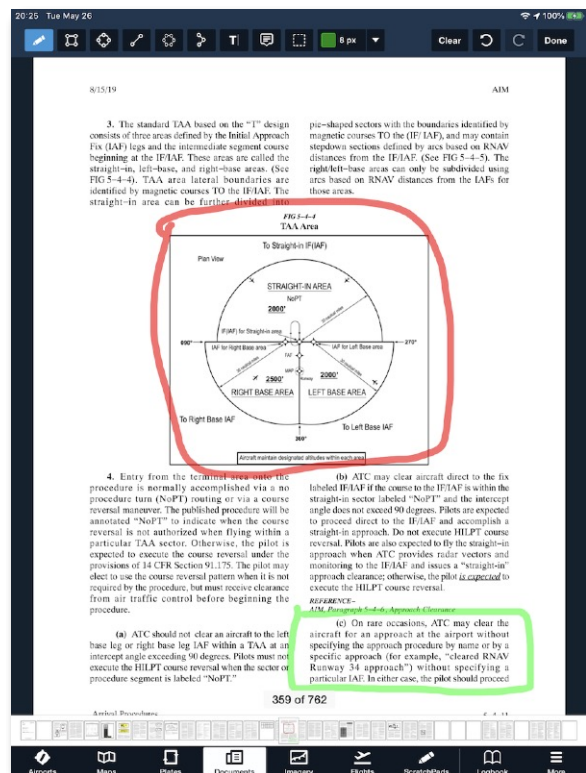
ForeFlight annotations allow you to add your own full-color annotations to approach plates, SIDs, STARs, airport diagrams and PDF documents. This can be useful for highlighting important elements such as crossing altitudes or taxi instructions, or adding notes to your PDF documents.

21.1 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 TEXXN5 STAR becomes TEXXN6, 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.



21. ANNOTATIONS







21.2 Annotation Types

There are 8 kinds of annotations available on the iPad:

Drawing 		Text Box 	
Rectangle 		Ellipse 	
Line 		Polygon 	
Polyline 		Sticky-note 	


21.2.1 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 			

21. ANNOTATIONS

21.3 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:

21.3.1 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.

21.3.2 iPhone

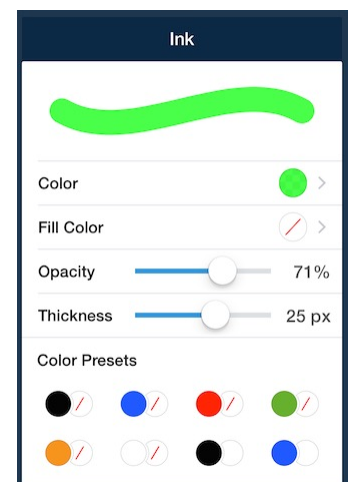
The iPhone allows you create freehand drawings, rectangles, and text-box annotations, but you can view all annotations created on an iPad.

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.

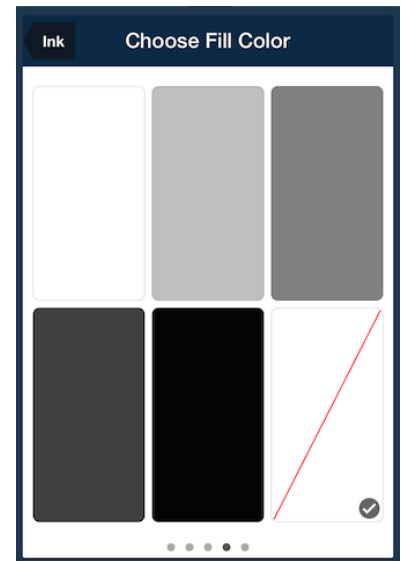
Or tap the Color button to display the color picker. Change between the 5 color selection pages by swiping from left to right. When using the color “circle”, touch in the circle to choose the color you want, then slide the horizontal slider below the circle to adjust the brightness of the color.



21. ANNOTATIONS

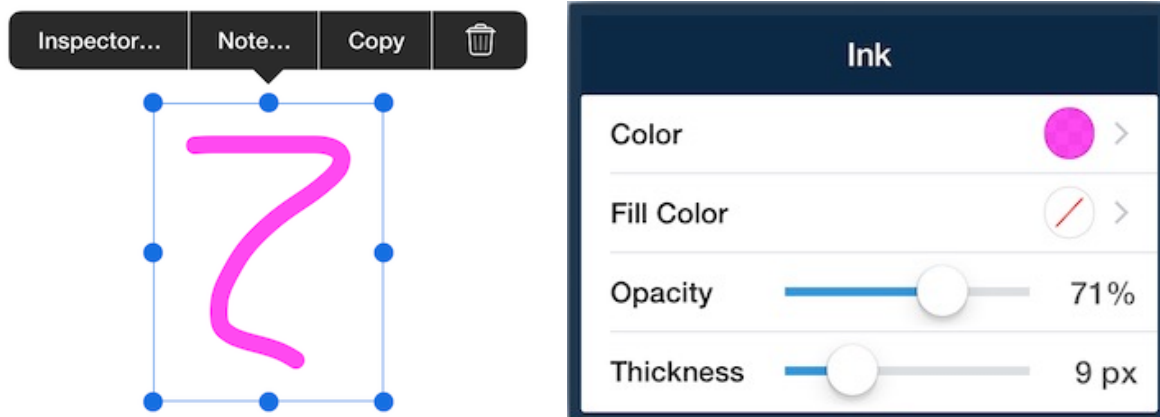
Fill Color: Transparent or “No Fill”

To choose a transparent or “no fill” color, select the Fill Color box with the red diagonal line.



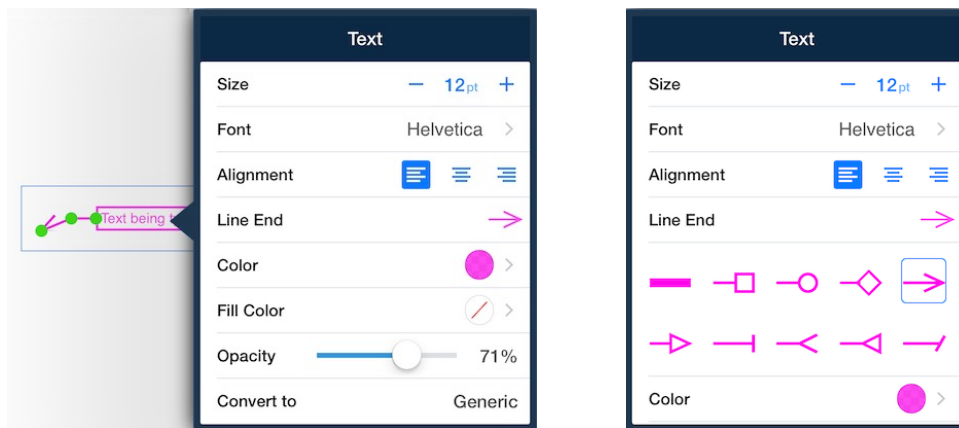
Drawing/Ink

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.



21. ANNOTATIONS

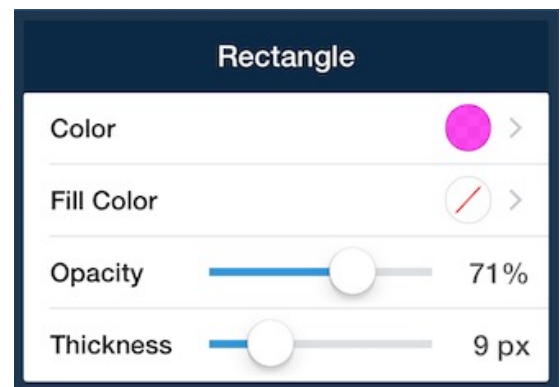
If converting the Text Box to include a Callout line + arrow, tap “Callout” in the Convert to line, then choose the Line End type.



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)

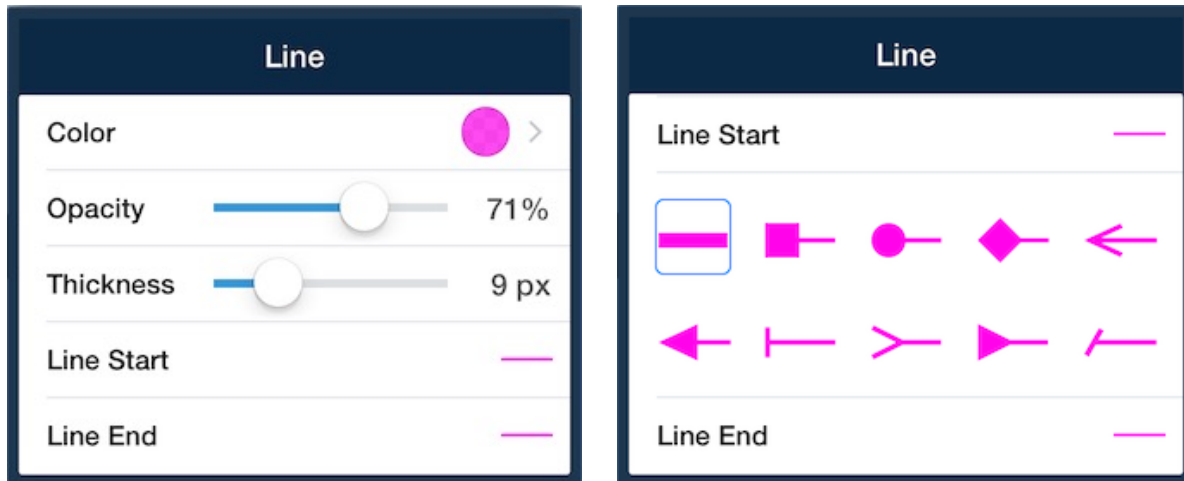
The Ellipse tool allows you to choose the line and Fill Color, ellipse Opacity and line Thickness. To draw an ellipse, touch-hold then drag your finger to make the ellipse. Lift your finger to complete the drawing. To edit a previously drawn ellipse, tap it, then choose the “Inspector” menu.



21. ANNOTATIONS

Line

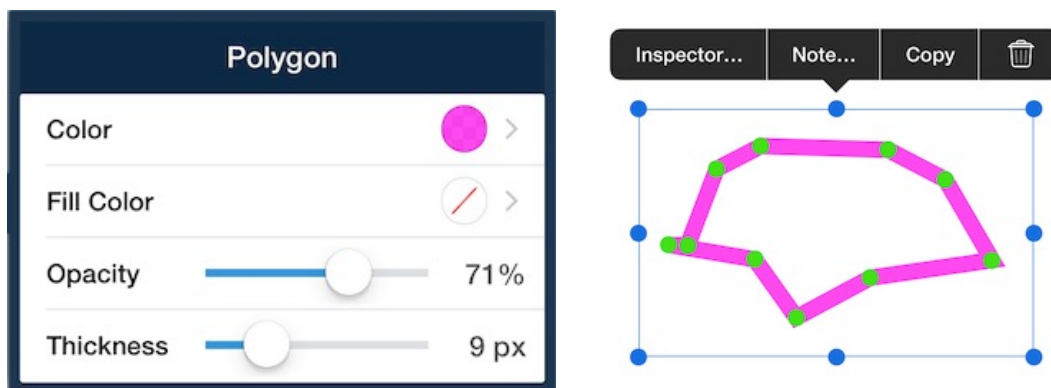
The Line tool allows you to choose the line Color, Opacity, Thickness as well as start and end-point type (e.g., arrow, dot, diamond, etc...). To draw a line, touch-hold then drag your finger to make the line. Lift your finger to complete the drawing. To edit a previously drawn line, tap it, then choose 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.

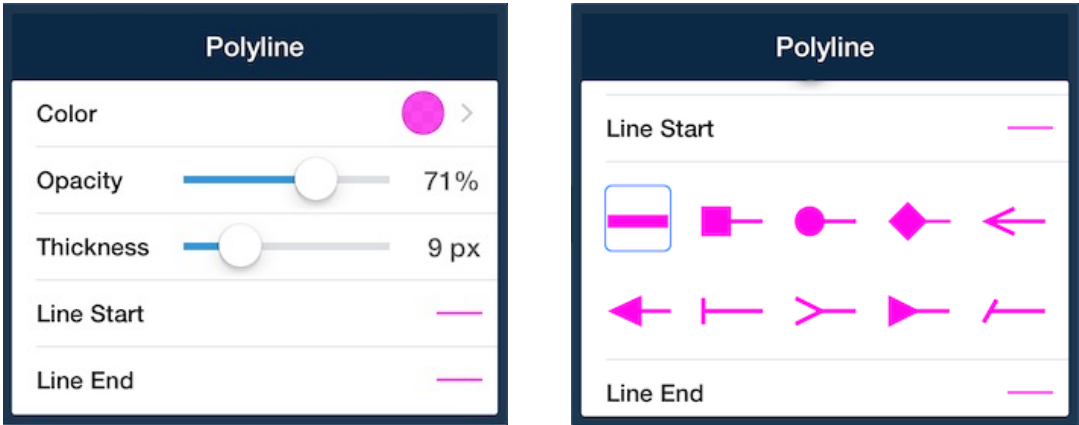


21. ANNOTATIONS

You can edit the corners of the polygon by touch-dragging the green “corner” point handle to the desired corner position.

Polyline

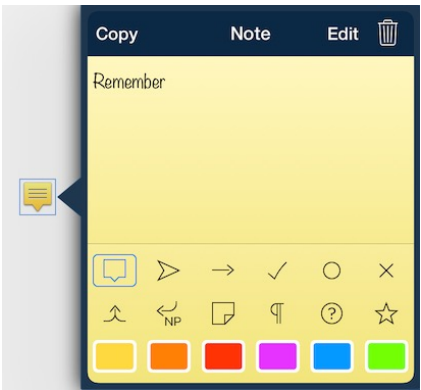
The Polyline tool is similar to the Polygon tool, except that the shape is not automatically “closed” when you tap “Done”, and like the Line tool you can choose the start and end-point types (e.g., arrow, dot, diamond, etc...).



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.



21. ANNOTATIONS

21.4 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.

21.5 Copying and Pasting an Annotation

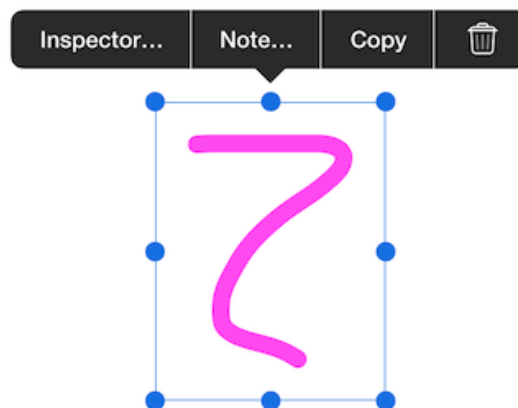
Tap a previously added annotation to select the annotation and display the edit popup menu, then tap the Copy button.




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.

21.6 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.

SCRATCHPADS

ScratchPad lets you choose from six different Scratch Pad templates to quickly record useful information. Any changes you make to a ScratchPad are automatically Synced to any other iPads signed-in to your account (ScratchPads are not currently available on the iPhone). Tap the “+” button (upper-right) or “+ NEW SCRATCHPAD” rectangle to open the ScratchPad template chooser, or tap an existing ScratchPad thumbnail to open it. **NOTE:** If the Scratchpad tab is not shown, tap More to find it in the list.

22.1 ScratchPad Templates

When creating a new ScratchPad page, there are nine templates to choose from:

DRAW: Freehand drawing using the selected Pen type & color.

TYPE: Text ScratchPad for typing using the on-screen keyboard.

GRID: Freehand drawing with underlying grid.

CRAFT: For IFR pilots: Cleared-to, Route, Altitude, Frequency, Transponder.

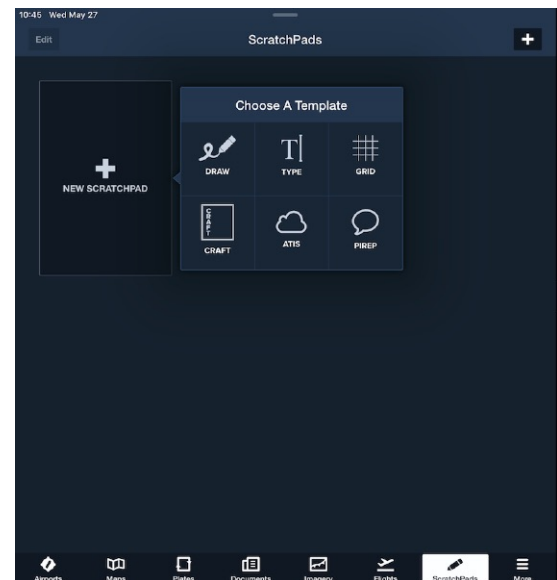
ATIS: Fields for ATIS information using freehand drawing.

PIREP: Fields for required and optional PIREP information using freehand drawing.

TAKEOFF: Fields including V-speeds, departure clearance, and runway details.

LANDING: Fields including V-speeds, local conditions, and clearance information.

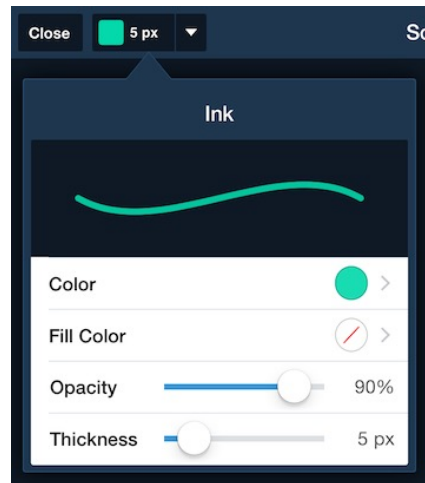
HOLDING: Fields including location, direction, and altitude of the hold, and EFC.



22. SCRATCHPADS

22.2 Change Pen Size, Color, Opacity

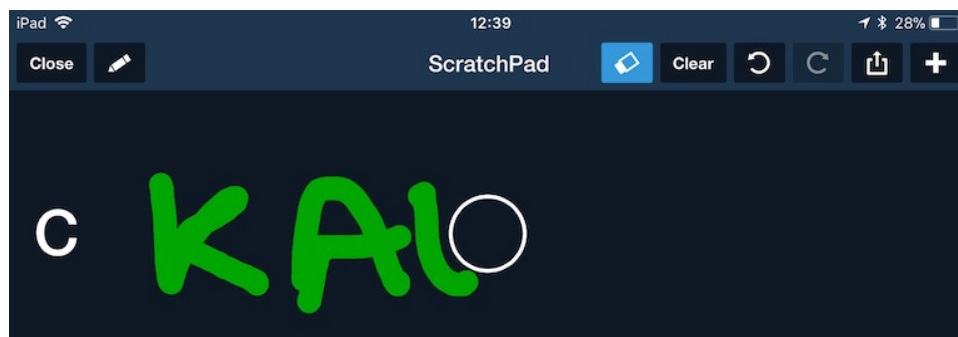
Tap the **Pen Settings** button at the top-left to change the size of the pen used for drawing on the ScratchPad. Choose the Color, Opacity and Thickness as desired.



IMPORTANT: Leave Fill Color as transparent (white background with a red slash)

22.2.1 Undo/Redo/Eraser

While editing a Scratchpad, tap the Undo button one or more times to undo recent changes. Tap the Redo button one or more time to redo changes that were recently undone. If you have drawn on a Scratchpad you can also tap the Eraser button then touch and move your finger over any mistakes you want to erase.



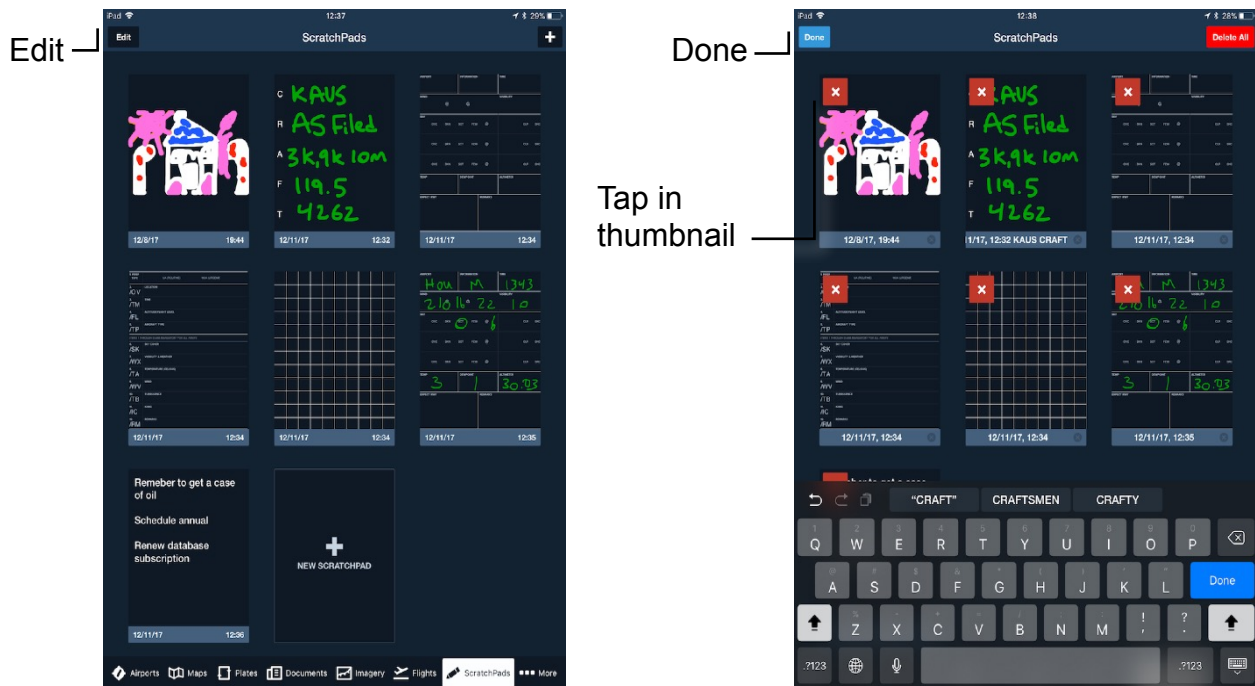
22. SCRATCHPADS

22.2.2 Clear ScratchPad Content

When viewing a ScratchPad, tap the **Clear** button near the top-right to clear all information you have entered on the ScratchPad. A confirmation window will appear to confirm that you really want to clear everything.

22.2.3 Edit a ScratchPad Name

The default name for a ScratchPad is the date and time that the ScratchPad was created or last edited.



To rename a ScratchPad, close any ScratchPad so you're viewing the main ScratchPad page. Tap the "Edit" button in the upper-left corner of the screen, then tap the text you would like to edit in the blue area at the bottom of the ScratchPad. Type the new name, then tap "Done" in the upper left corner or on the keyboard.

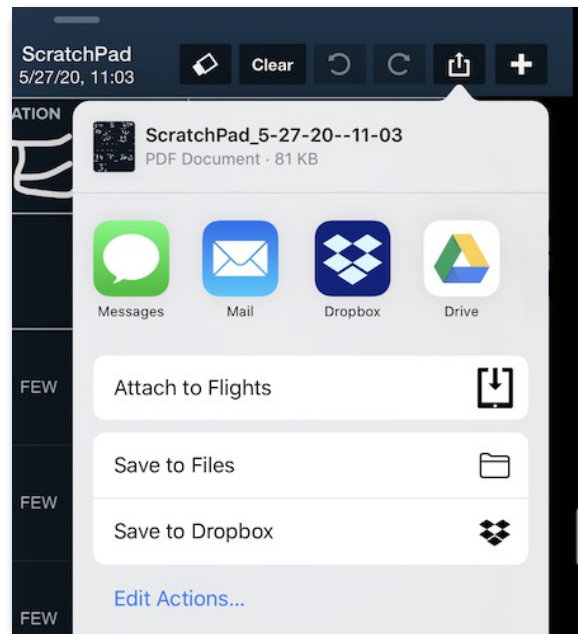
22.3 Reposition ScratchPad Thumbnails

To change the position of ScratchPads thumbnails, tap the "Edit" button in the upper-left corner of the screen, then touch-hold on a ScratchPad thumbnail and drag it to the new position. Tap "Done" when you have finished repositioning the ScratchPad thumbnails.

22. SCRATCHPADS

22.4 Send a ScratchPad

Tap Send-To button to send a PDF copy of a ScratchPad via email or Message.



22.5 Delete a ScratchPad

From the main ScratchPads page, tap the “Edit” button (upper left) then tap the “X” button in the upper left corner of the thumbnail of the ScratchPad you want to delete.

IMPORTANT: ScratchPads are deleted immediately when you tap the “X.”

Or tap the “Delete All” button in the upper right to Delete All ScratchPads, then tap the button to confirm deletion.

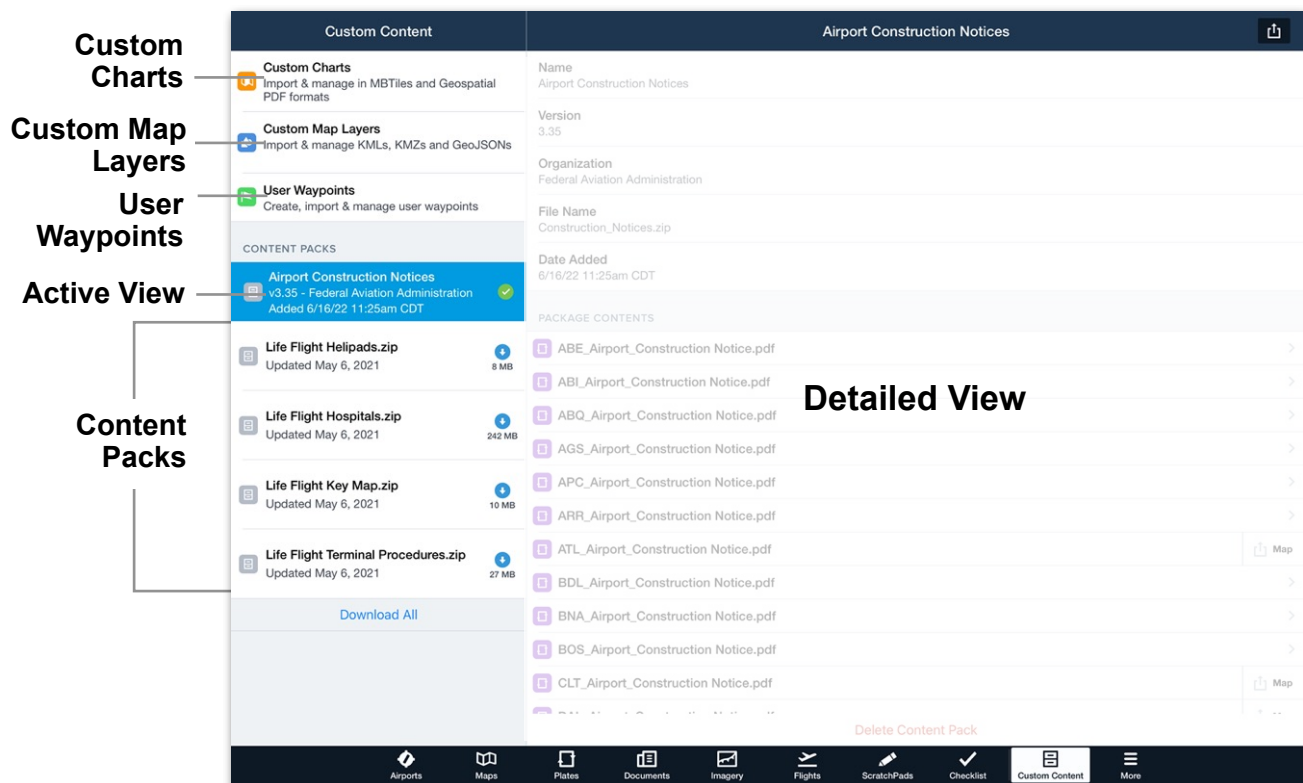
CUSTOM CONTENT

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

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

23. CUSTOM CONTENT

23.1 Creating Custom Content

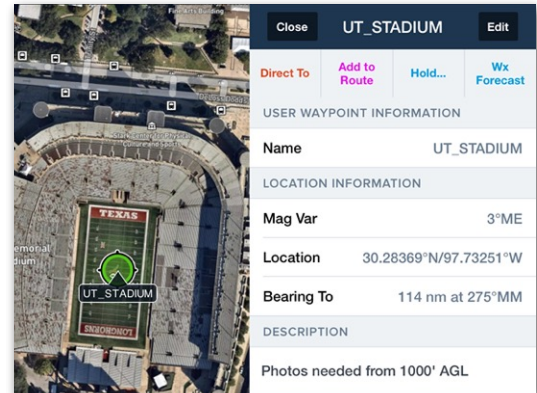
Custom Content can not be created in ForeFlight (with the exception of user waypoints). Custom content must be created with a 3rd-party program and imported to ForeFlight. This chapter provides a basic overview of creating and importing custom content.

23.2 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

23.2.1 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.

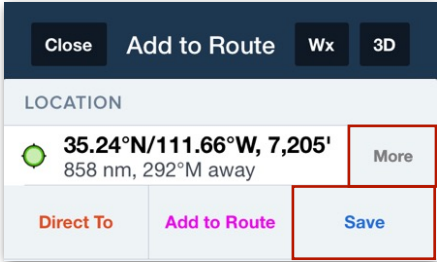
23. CUSTOM CONTENT

23.2.2 Creating User Waypoints - Maps View

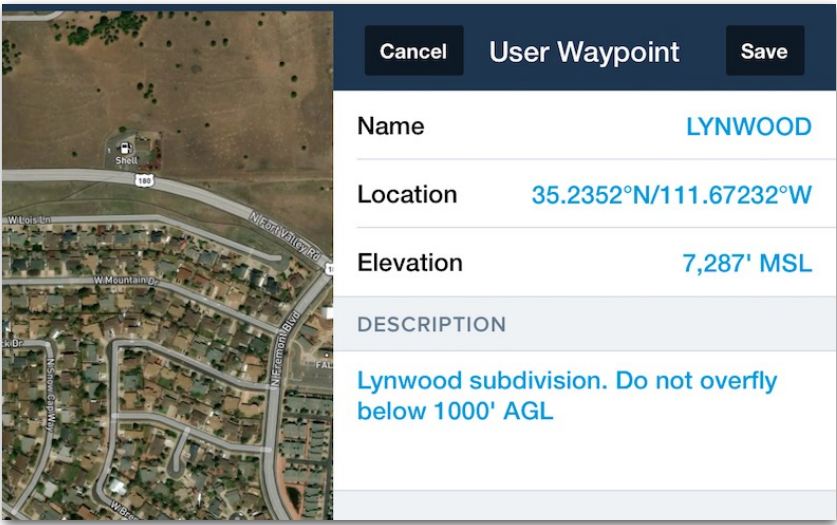
User waypoints can be created on the Maps and Custom Content views. If a user waypoint's coordinates are unknown, creating the user waypoint with the Maps view is recommended.

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



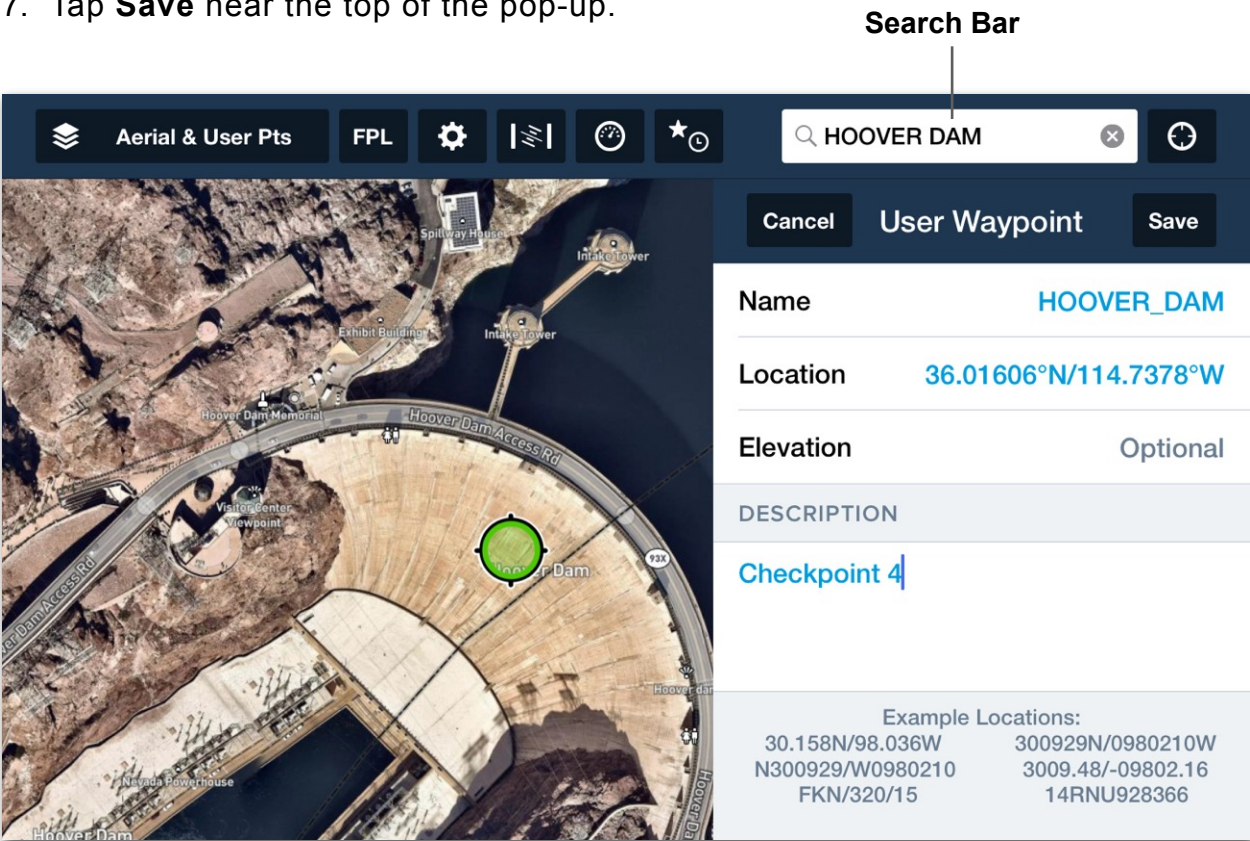
Creating a user waypoint - Maps View

23. CUSTOM CONTENT

23.2.3 Creating User Waypoints - Map Search

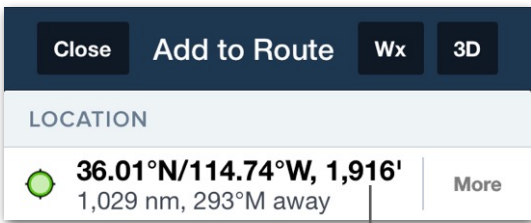
To create a user waypoint with search:

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.



23. CUSTOM CONTENT

23.2.4 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

Custom Content	Cancel	User Waypoint	Save
Custom Charts Import & manage in MBTiles, Geospatial PDF and GeoTIFF formats		Name CHECKPOINT_7	
		Location 293345N/0891236W	
		Elevation 1,277' MSL	
Custom Map Layers Import & manage KMLs, KMZs and GeoJSONs		DESCRIPTION Highway overpass	
User Waypoints Create, import & manage user waypoints			

Creating User Waypoints - Custom Content View

23. CUSTOM CONTENT

23.3 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.

23.4 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

23. CUSTOM CONTENT

23.4.1 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.

23.4.2 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.

23. CUSTOM CONTENT

23.5 KML User Waypoints

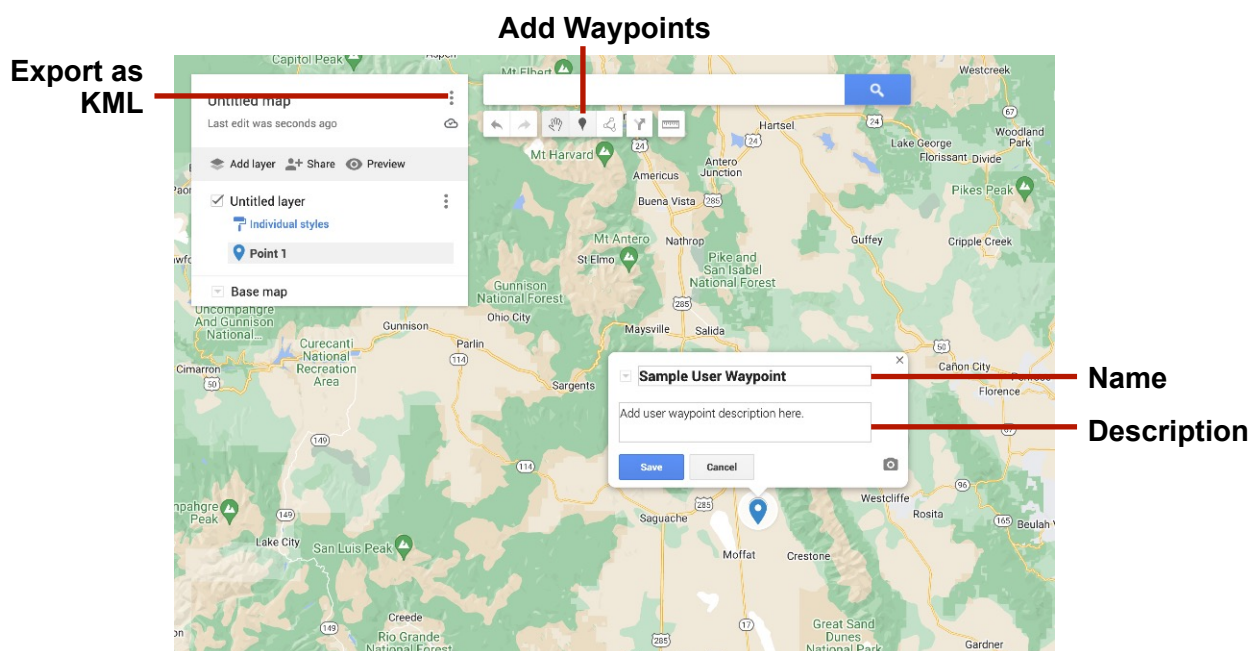
KML is a robust mapping language used to display geographic data in a browser such as Google Earth. If you're new to KML, ForeFlight recommends the following resource: [Google KML Tutorial](#).

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.

23.5.1 Creating KML User Waypoint Files

To create a KML user waypoint file, ForeFlight recommends using Google My Maps. Google My Maps is a simple, web-based mapping program www.mymaps.google.com.

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

23. 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.

23.6 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.

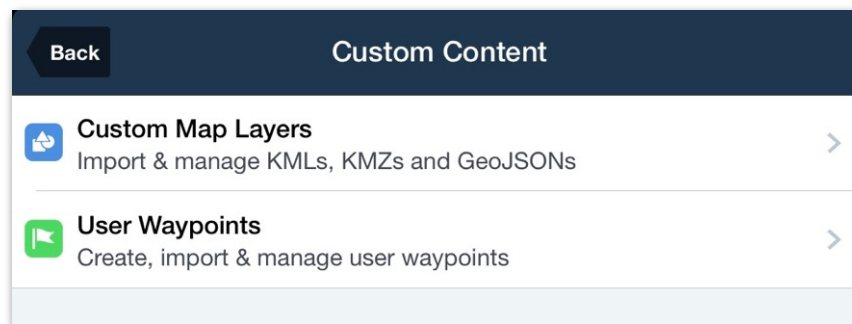
23. CUSTOM CONTENT

23.6.1 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

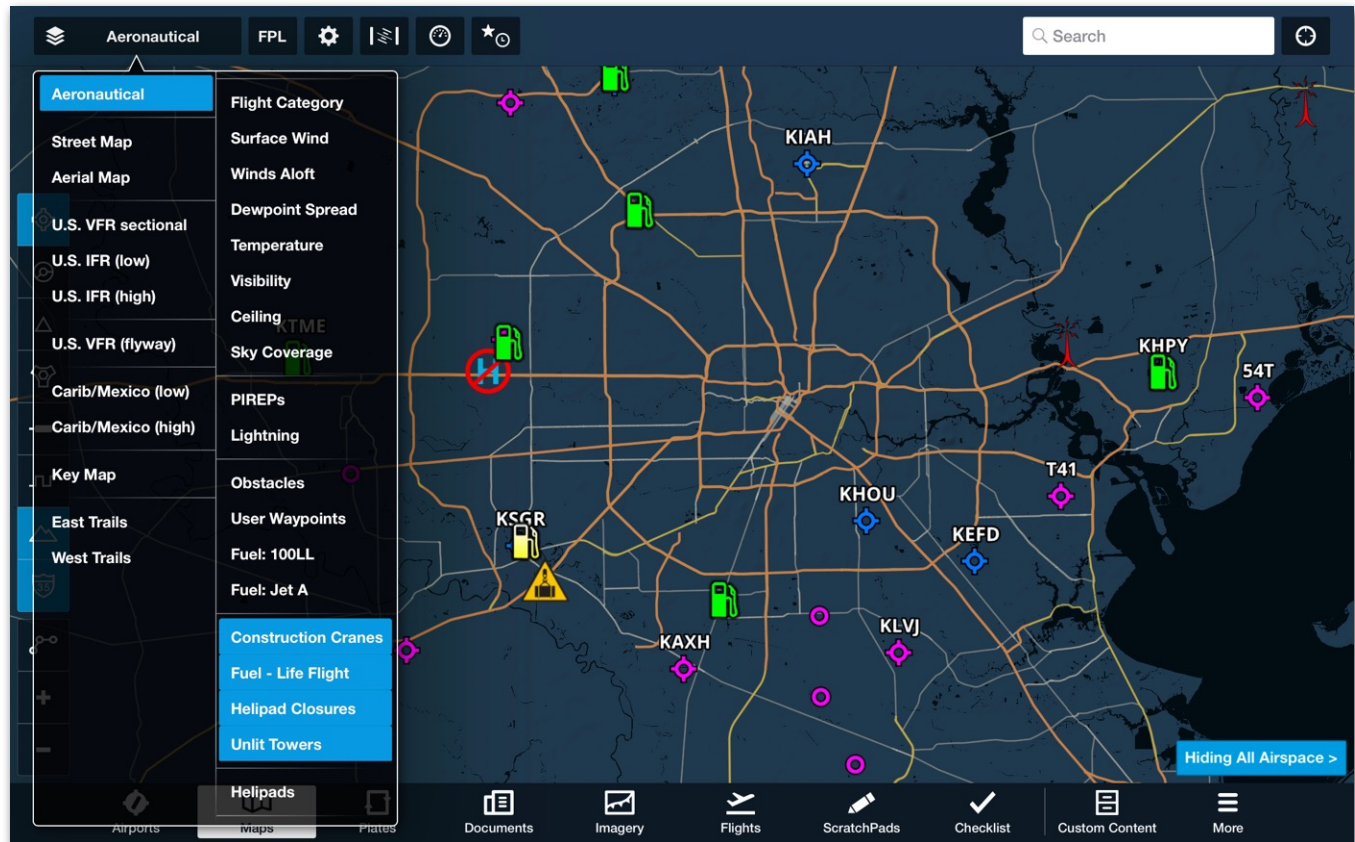
If a KML/KMZ file with lines or shapes is imported, Custom Map Layer will be the only option. If a CSV user waypoint file is imported, User Waypoints will be the only option.

Once the file has been imported, the waypoints can be displayed on the map by selecting **User Waypoints** from the map drop-down menu.

23. CUSTOM CONTENT

23.7 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

23.7.1 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.

23. CUSTOM CONTENT

23.7.2 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.

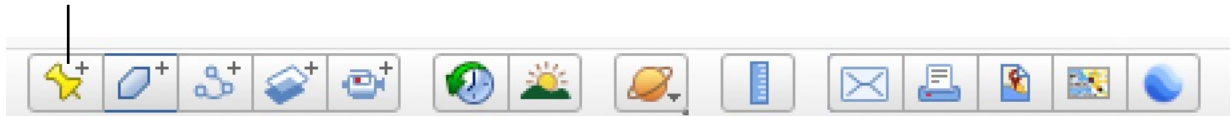
If you import a file that includes a KML feature that is not listed below, the unsupported feature is ignored by ForeFlight. ForeFlight supports the following KML features.

- Waypoint
- LineString
- LinearRing
- Polygon
- MultiGeometry
- Style
- StyleMap (normal)
- LineStyle
- PolyStyle
- IconStyle
- gx:LabelVisibility

23.7.3 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.

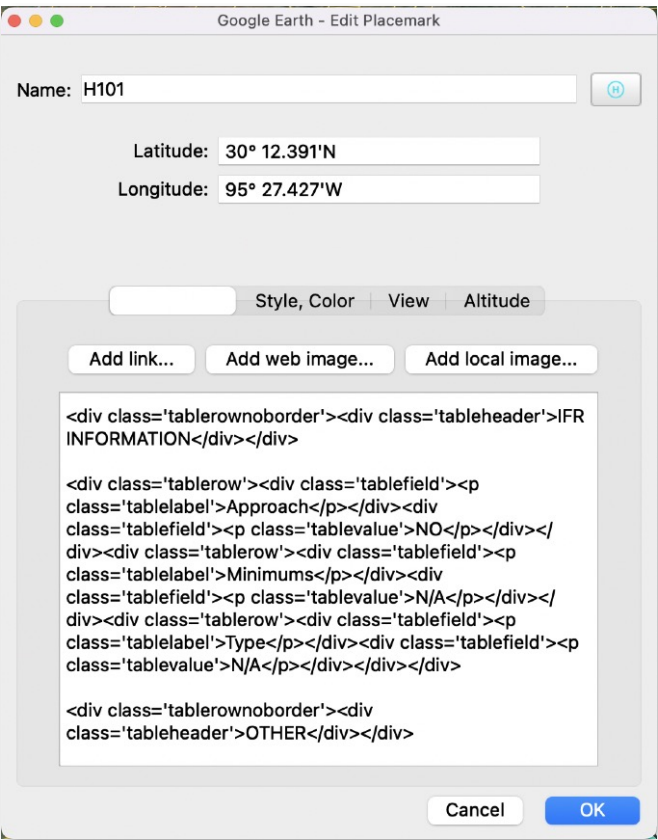
23. CUSTOM CONTENT

Waypoint Descriptions

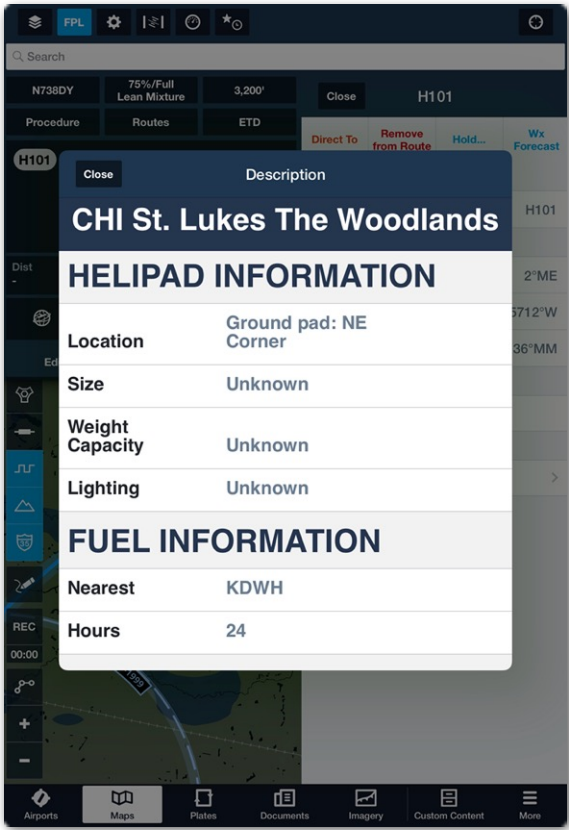
The waypoint description field in ForeFlight supports text and basic HTML formatting. HTML is not required, however when it's used, it allows the look of the description field to be customized. HTML elements such as links, line breaks, headings, font color, and size are supported.

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

23. CUSTOM CONTENT

Waypoint Icons

ForeFlight only supports select Google Earth waypoint icons. If an unsupported icon is selected, the default icon is used.

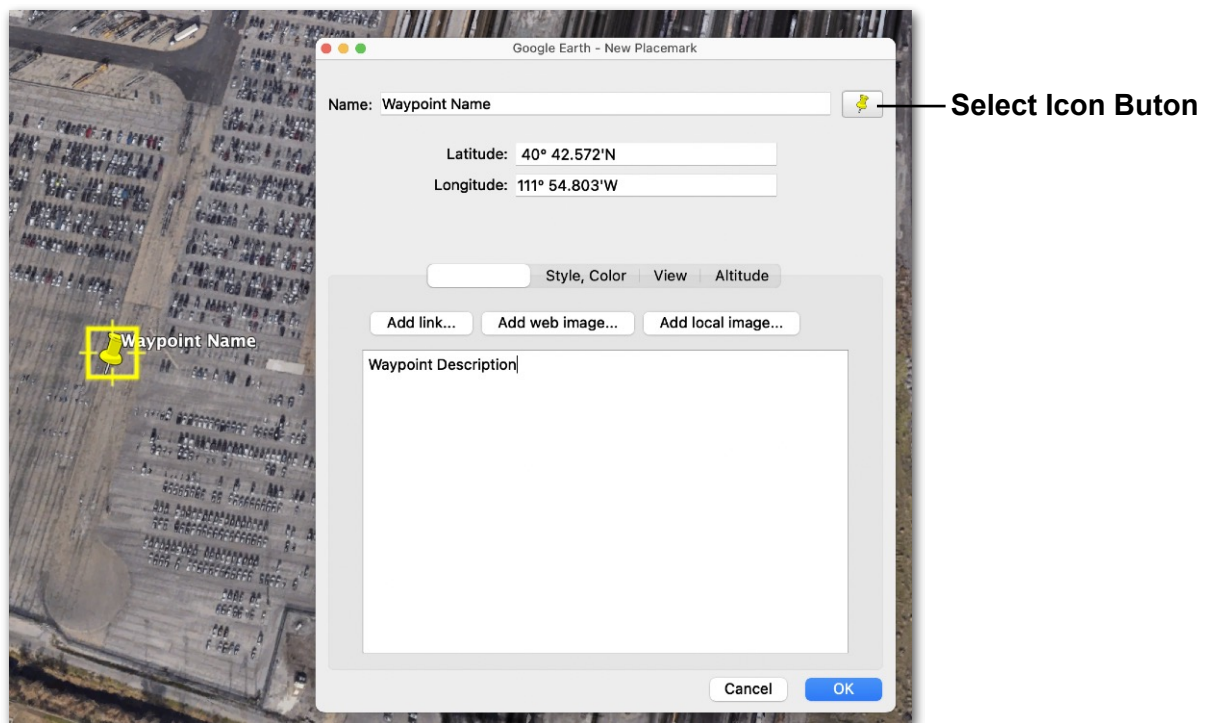
When choosing a waypoint icon, select a supported icon or use the **Add Custom Icon...** option at the bottom of the icon menu.

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

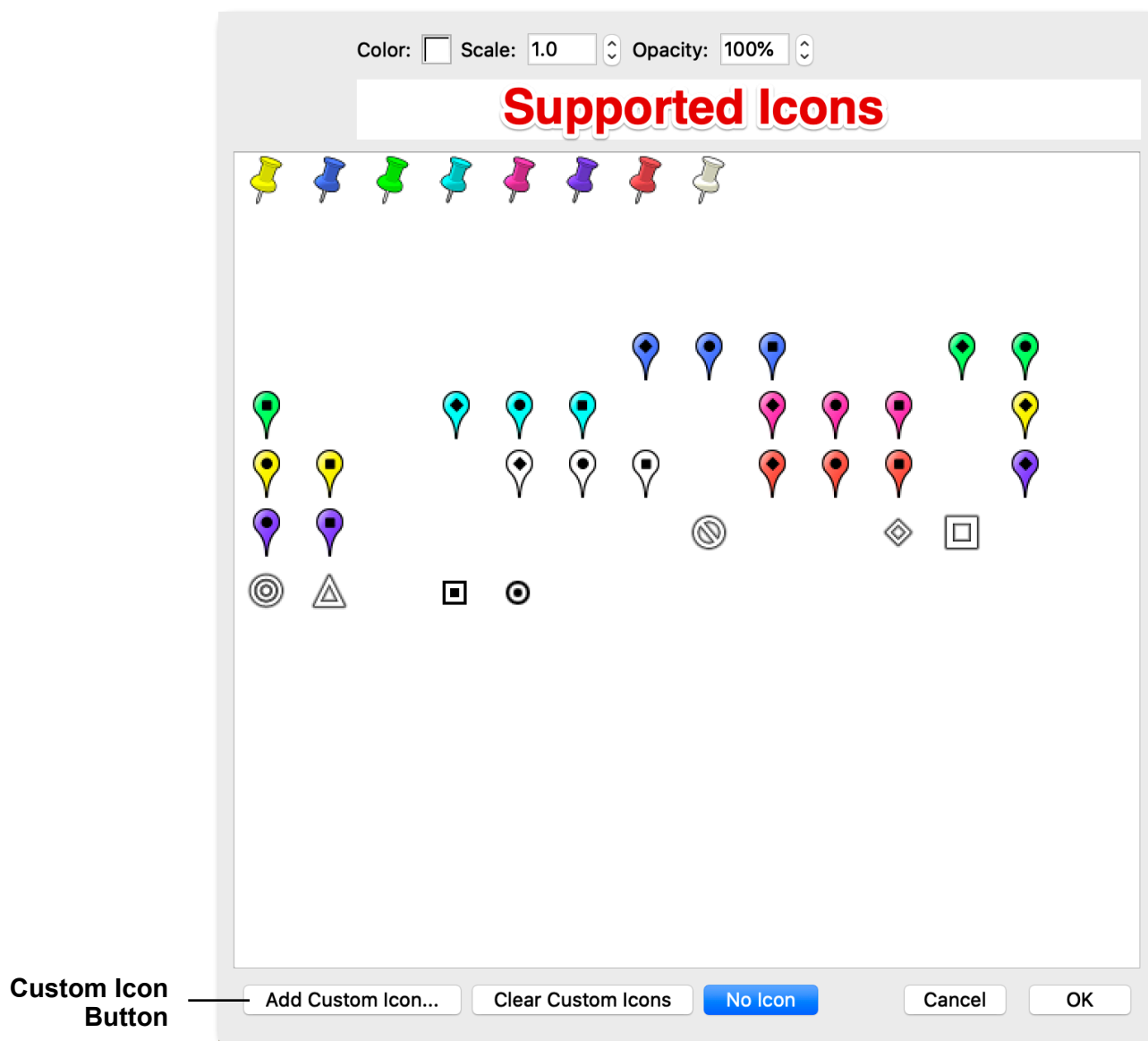


Adding Waypoints with Google Earth Pro

23. 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

23. CUSTOM CONTENT

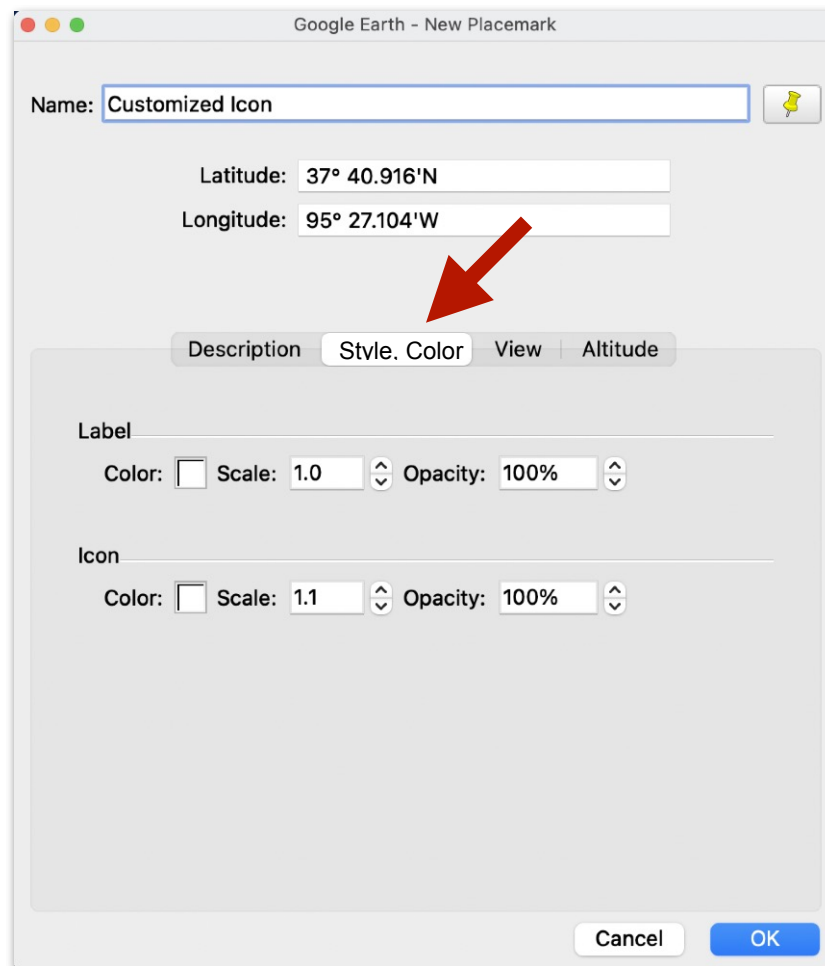
Custom Icons

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.

23.7.4 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.

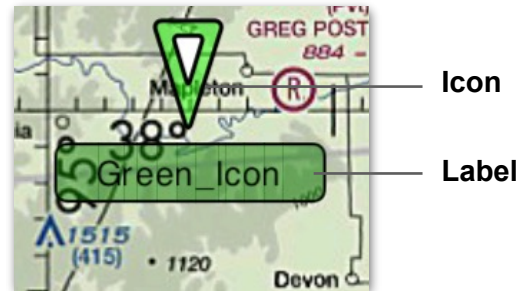


Customizing Waypoints

23. 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.



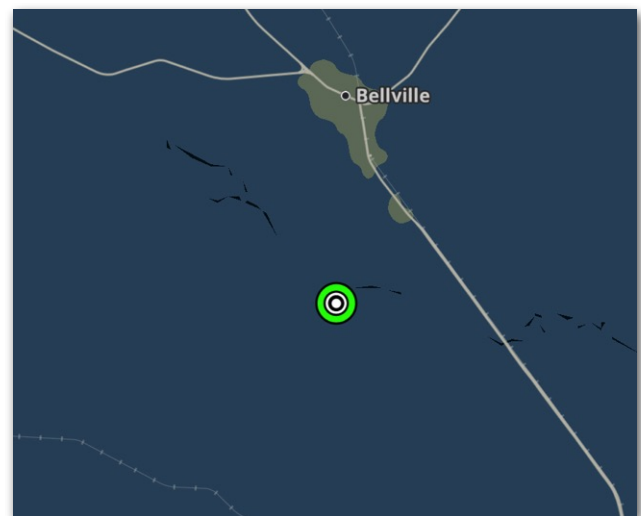
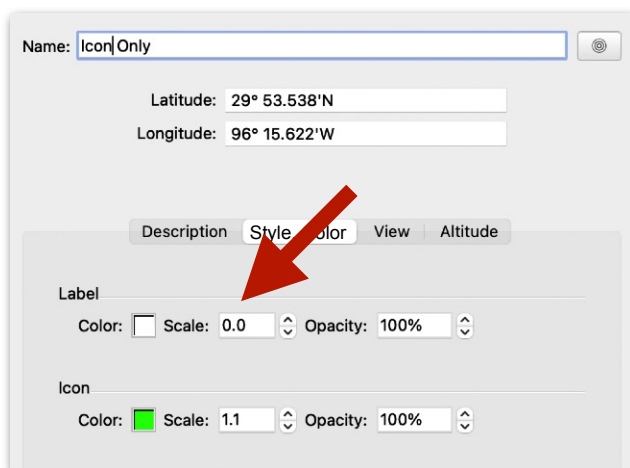
Green icon and label with 50% opacity

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.

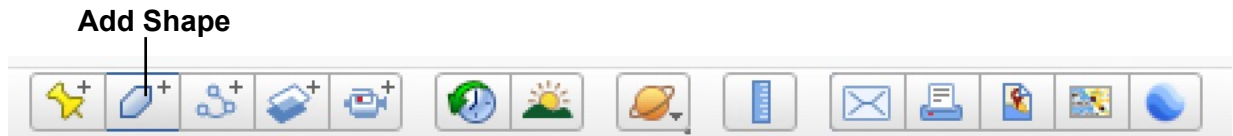


Icon Only Waypoint - Label scale equal to zero

23. CUSTOM CONTENT

23.7.6 Shapes

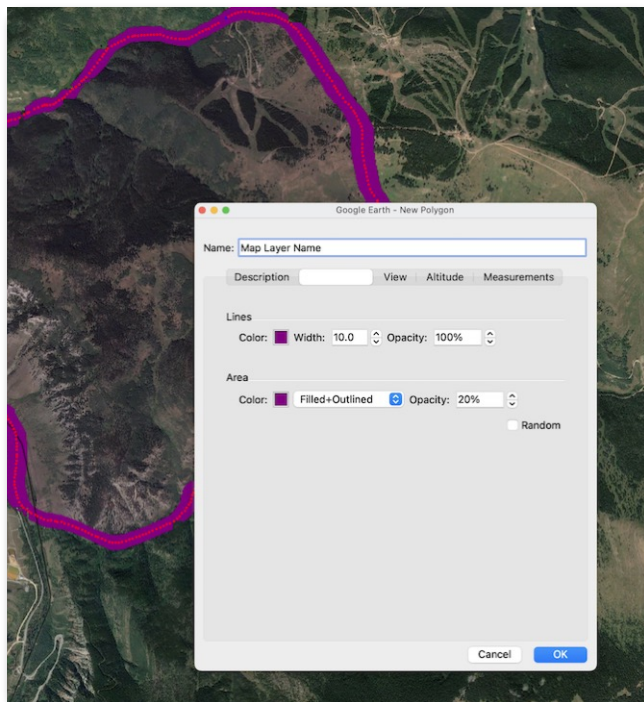
Custom map layers can depict shapes. Shapes can be included in the same file as waypoints and lines. To add shapes (Google Earth Polygons), select the **Add Shape** button in the Google Earth Pro upper toolbar.



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

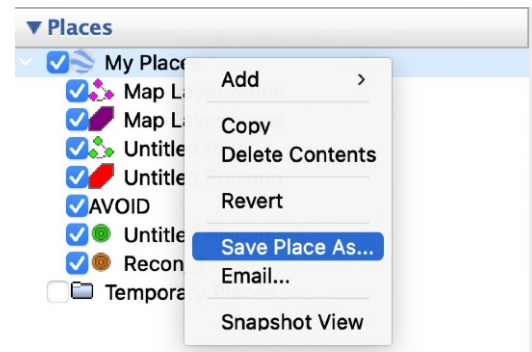
23. CUSTOM CONTENT

23.8 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.

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.

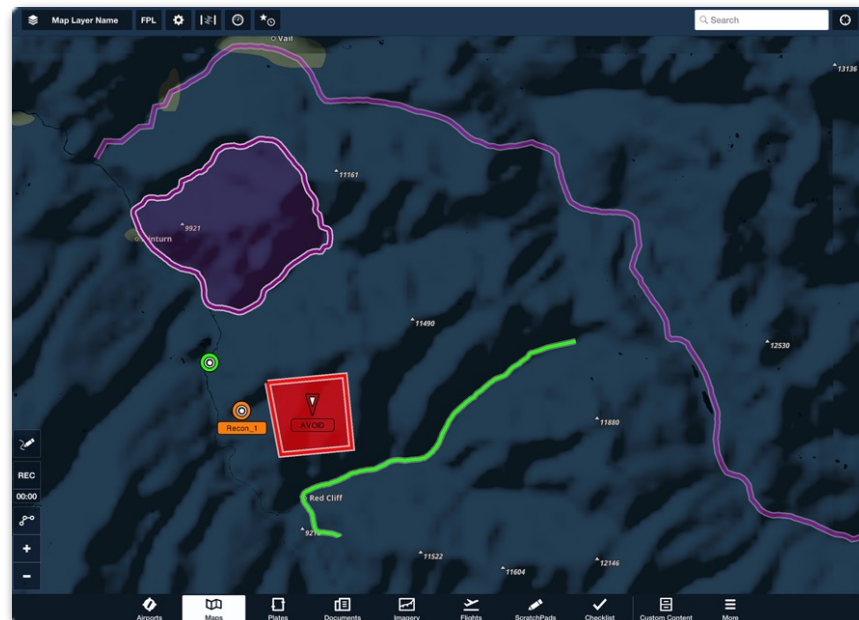


Save Place As....

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.

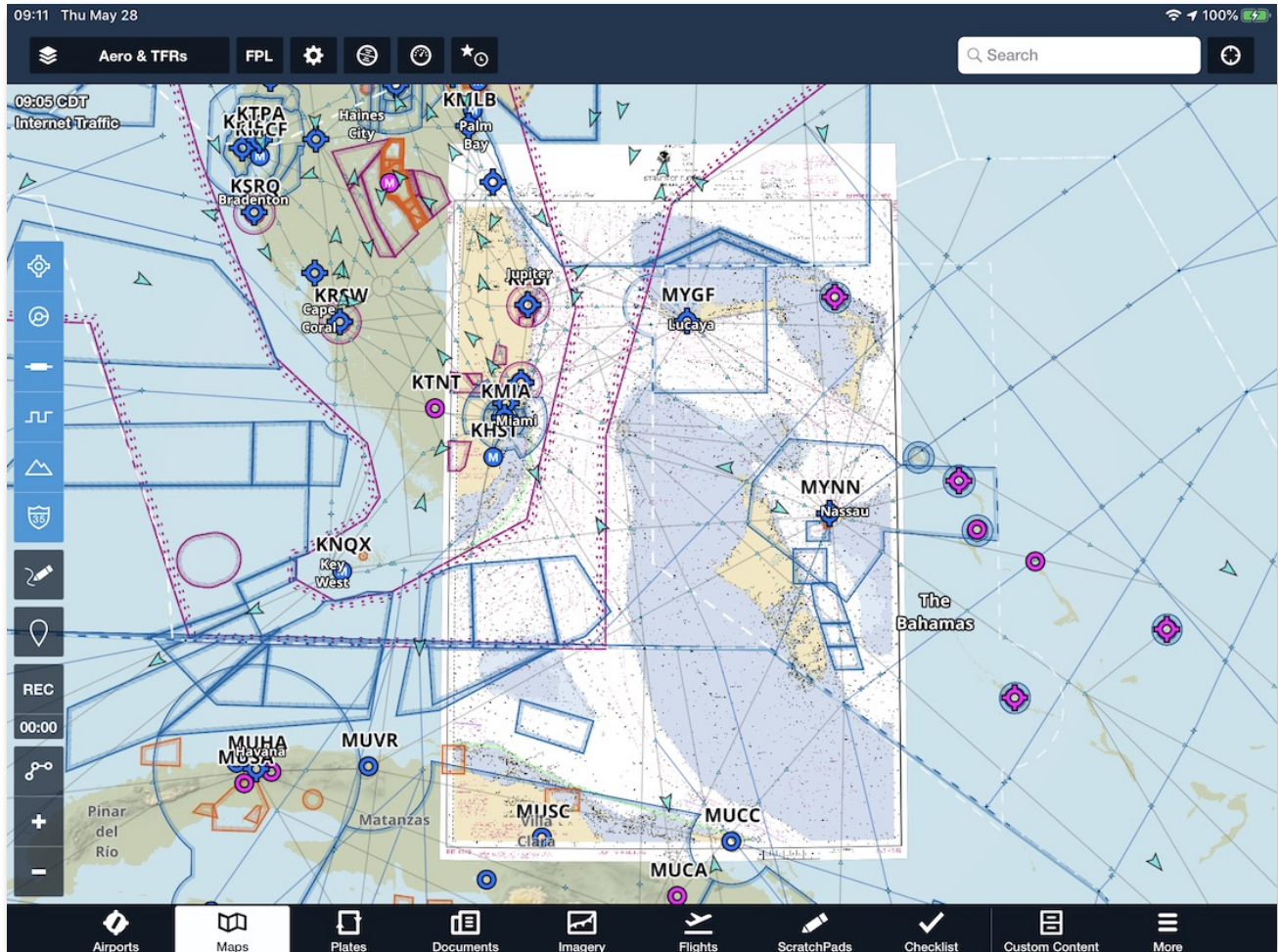


Custom Map Layer with Waypoints, Lines, and Shapes

23. CUSTOM CONTENT

23.9 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](#).

23. CUSTOM CONTENT

23.10 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.

23.10.1 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.

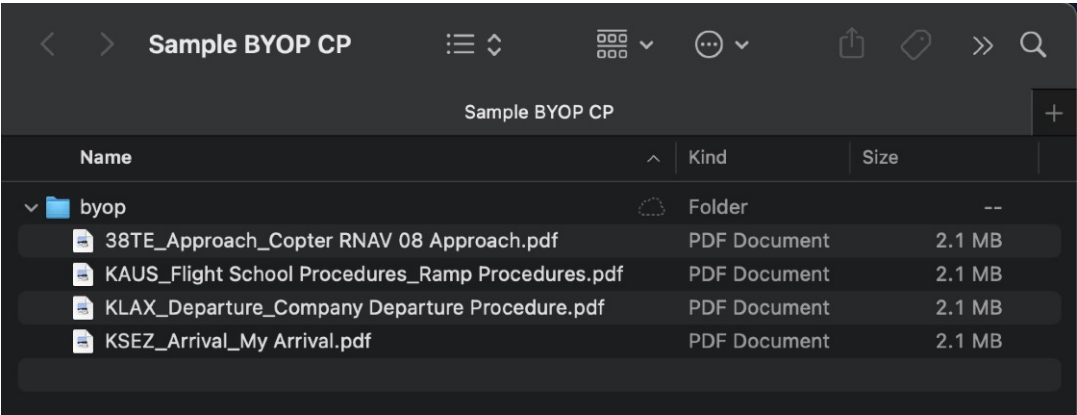
- **Procedure Name:** The procedure name supports letters, numbers, and special characters. The procedure name should be entered exactly as it is to appear in ForeFlight (e.g., COPTER RNAV 09 APPROACH, Ramp Operations).

23. CUSTOM CONTENT

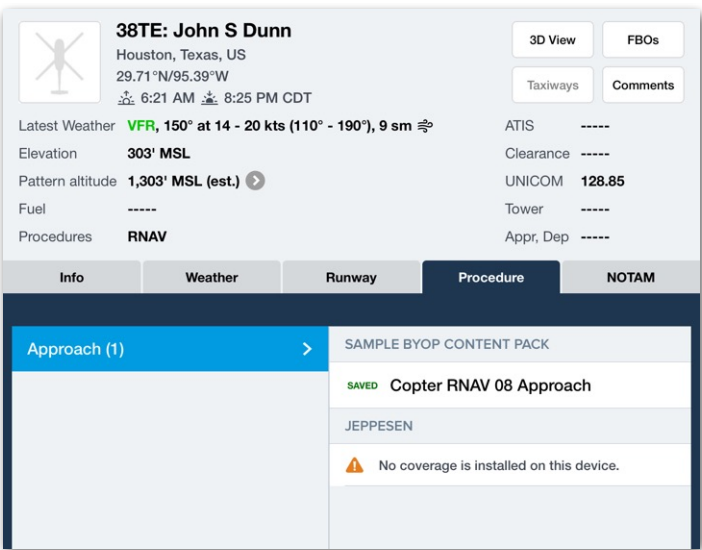
BYOP Examples

In the example below, the first plate (38TE_Approach_Copter RNAV 08 Approach) is added to the existing *Approach* category (left image).

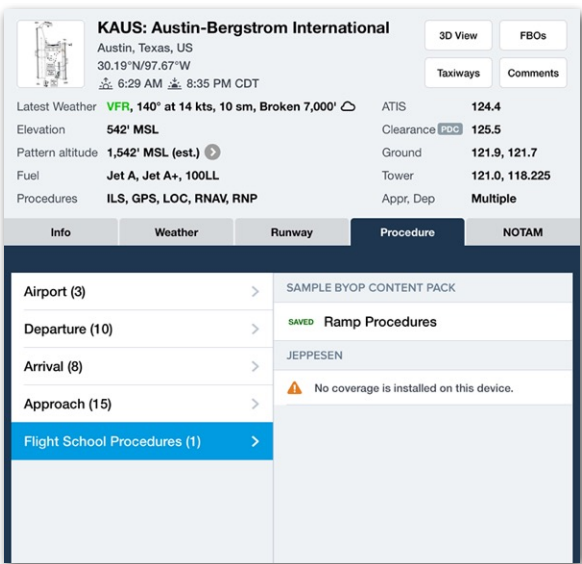
The second plate (KAUS_Flight School Procedures_Ramp Procedures) creates a custom category for Austin International Airport (right page) and adds the Ramp Procedures plate to the category.



BYOP Subfolder



38TE Copter Approach



KAUS Flight School Procedures

23. CUSTOM CONTENT

23.10.2 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**.

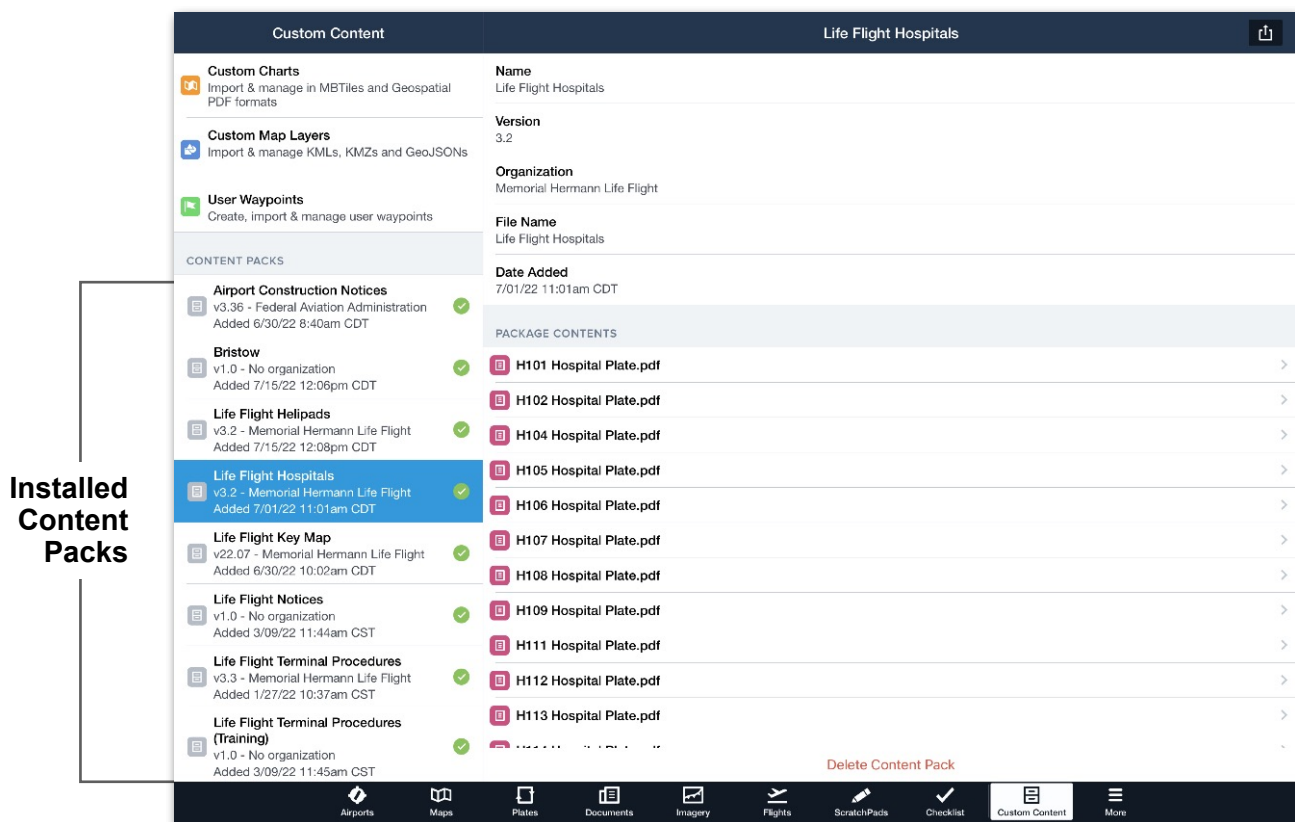
23. CUSTOM CONTENT

23.11 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

23. CUSTOM CONTENT

23.11.1 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

23.11.2 Creating Content Packs

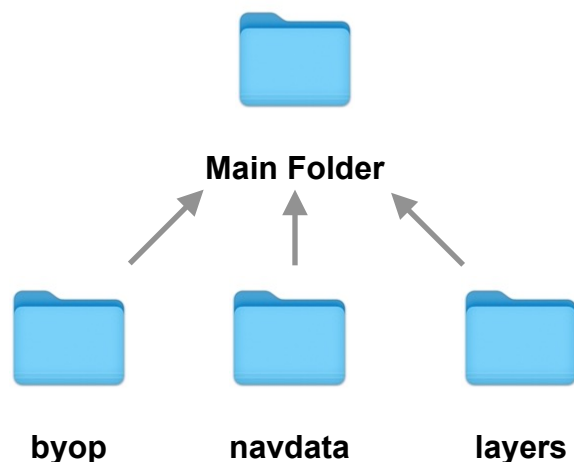
Content Packs can not be created with ForeFlight. To create a Content Pack, you'll need to use a computer. To create a Content Pack, begin by dragging and dropping custom content to the appropriate subfolder as described in this section.

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

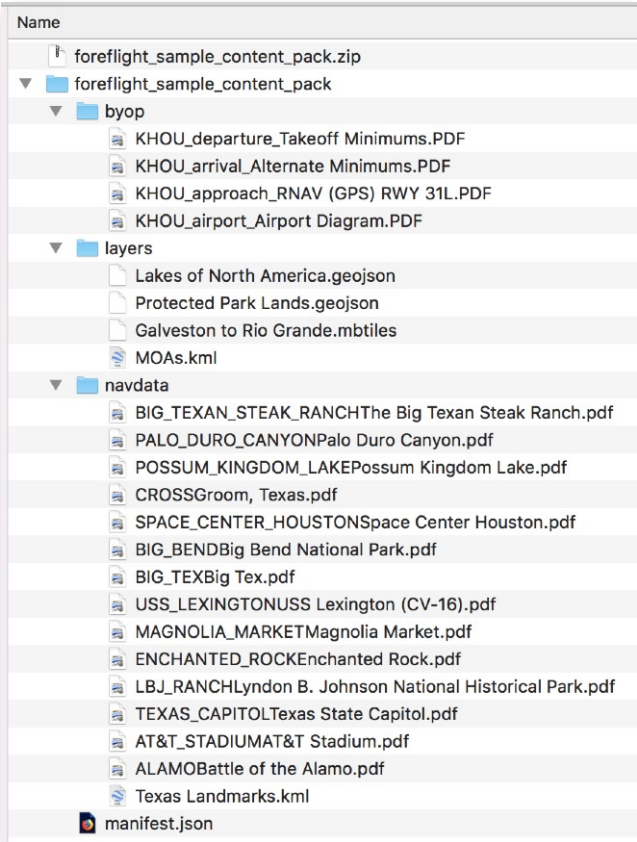


23. CUSTOM CONTENT

23.11.3 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 which contains custom content should be placed in the main Content Pack folder.

	<ul style="list-style-type: none">• Custom Plates
byop	
	<ul style="list-style-type: none">• MBTile Custom Charts• GeoPDF Custom Charts• GeoJson Custom Charts
layers	
	<ul style="list-style-type: none">• Map Layers (KML/KMZ)• GeoJson Map Layers• Associated Files• User Waypoints
navdata	



Content Pack Folder Structure

23.11.4 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. 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.

23. CUSTOM CONTENT

Manifest Structure

The manifest JSON file has the following structure:

```
{  
  
"name": "Sample Content Pack",  
"abbreviation": "FFCP.V2",  
"version": 2.0,  
"expirationDate": "20230101T00:00:00",  
"effectiveDate": "20220101T00:00:00",  
"organizationName": "ForeFlight"  
}
```

Effective & Expiration Dates

You may specify effective and expiration dates in 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.

23. CUSTOM CONTENT

23.11.5 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”.

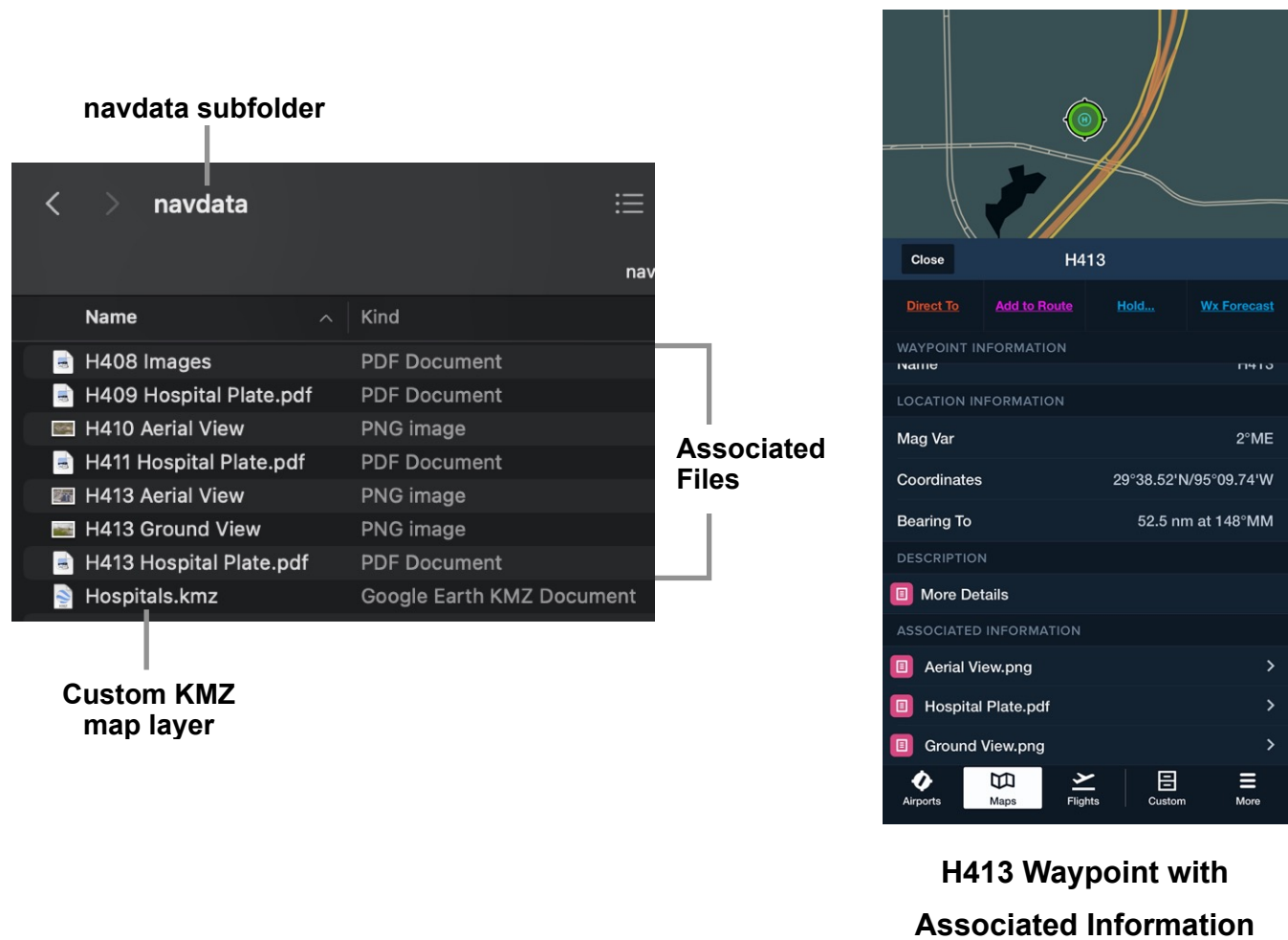
The waypoint name and document description are separated by a space. For example, a document named “H413 Aerial View” links the “Aerial View” file to the H413 waypoint.

23. 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.



23. CUSTOM CONTENT

23.11.6 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.

23.11.7 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 the 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>".

When someone long-presses on this link on a device with ForeFlight installed, the option to open ForeFlight appears and automatically adds the content pack as a new download in More > Downloads.

To see this in action, long-press on [this link](#) on an iOS 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.

23. CUSTOM CONTENT

23.11.8 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.

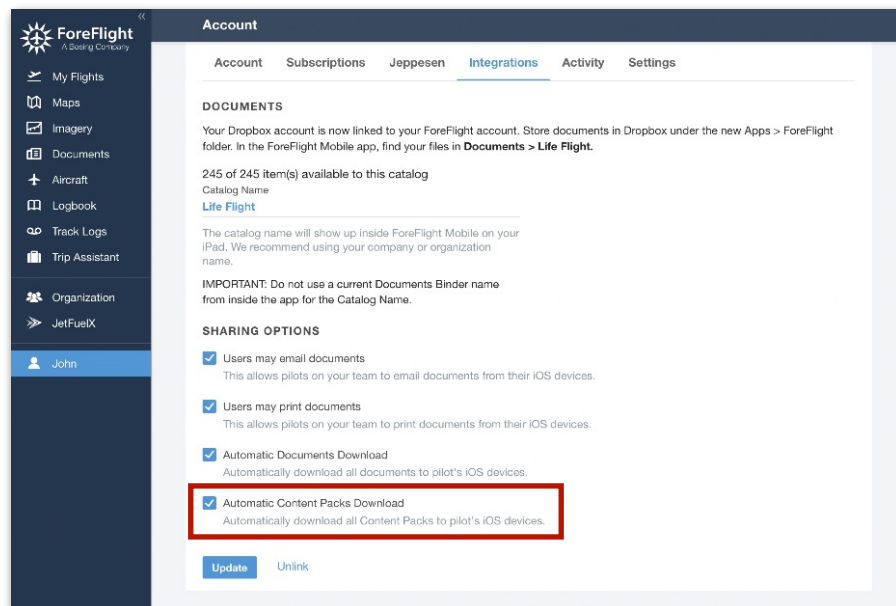
To import Content Packs via Cloud Documents, add a folder named “contentpack” to the folder you use to import documents. The content pack subfolder must be located in the root folder as depicted below.

- **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.

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

23. 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.

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.

FOREFLIGHT CONNECT

ForeFlight Connect allows ForeFlight Mobile to wirelessly connect to and exchange information with portable devices as well as panel-mount avionics to make flying easier, safer and more efficient.

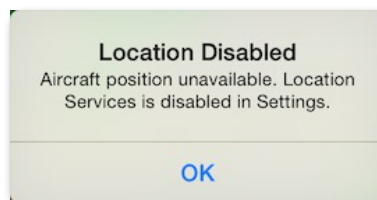
24.1 Devices

The Devices view shows any connected devices explicitly supported by ForeFlight. The box for Sentry or other ADS-B receivers, Garmin Connex, and Flight Simulator data connections can be tapped for additional information.

The box for Bluetooth GPSs like the Bad Elf Pro, DUAL, and Garmin GLO indicates that the GPS is connected, but no additional information about the GPS, such as # of satellites or battery % is available. For that information, use the helper app provided by the GPS manufacturer.

24.1.1 Location Disabled / Troubleshooting GPS position issues

Check the following if your GPS position does not show in ForeFlight Mobile or if the “Location Disabled” popup displays:



Open Apple Settings, tap **Privacy**, then **Location Services**; or open Apple Settings, scroll down on the left to the list of apps, and tap ForeFlight.

Confirm that Location Services are ON, and the setting for ForeFlight is **Always**.

The recommended setting for ForeFlight is “**Always**” because this allows the app to function as designed if the iPad or iPhone is slept or ForeFlight Mobile is put into the background (eg: so track logs can continue to record). If you choose “While Using the App” there may be a delay updating your position after the app is reopened.

Then open ForeFlight Mobile, tap **More**, then **Settings**. Confirm that Enable Ownship is set to: **Always**.

24. FOREFLIGHT CONNECT

24.2 Sentry

Sentry is a compact, high-performance portable dual-band ADS-B receiver developed by ForeFlight and uAvionix that enables the display of inflight weather and traffic in ForeFlight Mobile.

Sentry also includes an integrated Carbon Monoxide (CO) monitor with in-app alert and loud audio alarm, 12 hours of continuous battery life, built-in WAAS GPS, backup attitude (AHRS), a barometric pressure sensor, onboard memory for Weather Replay™, supports simultaneous connection via Wi-Fi to up to 5 devices, and comes with a RAM® suction-cup mount with quick release.



For additional details, see the Sentry Pilot's Guide in Documents > ForeFlight.

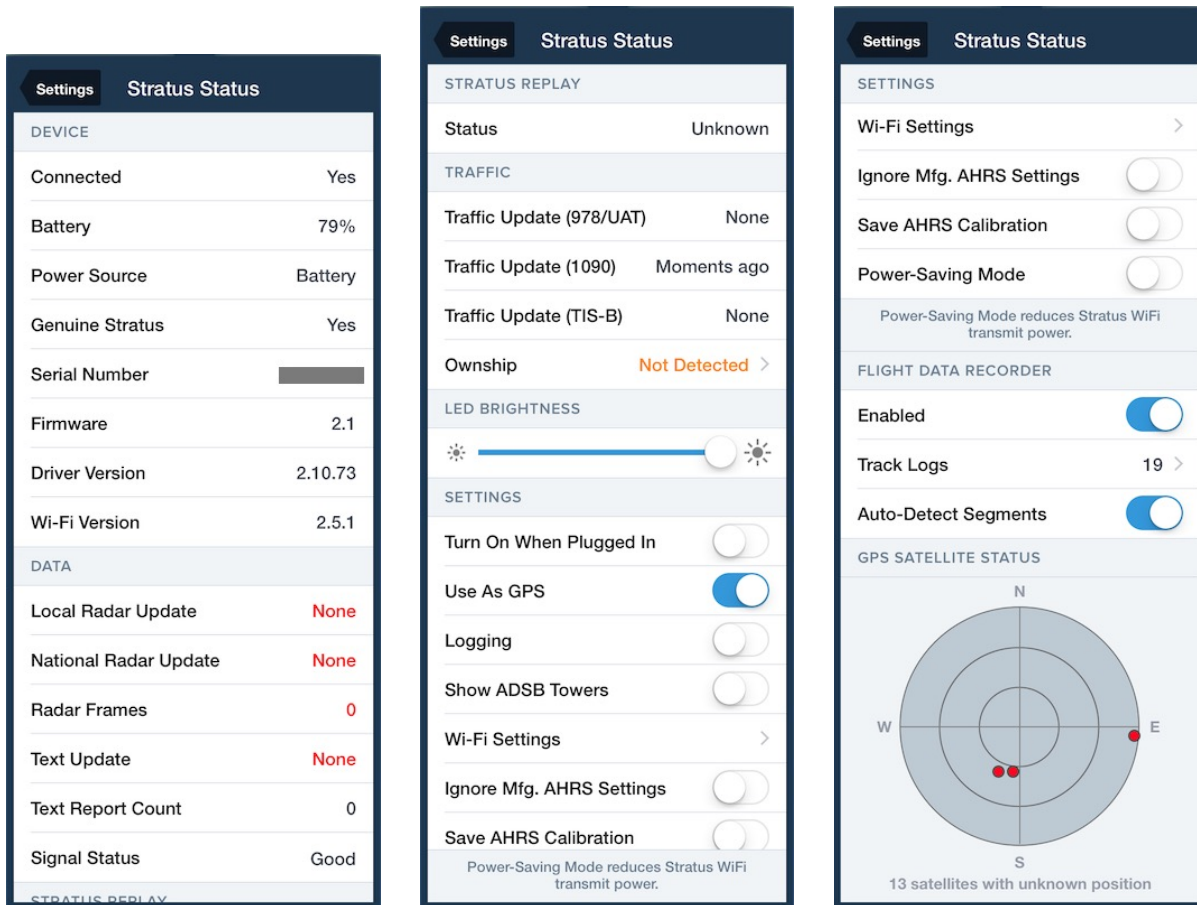
24.3 Stratus

ForeFlight Mobile supports the Stratus family of ADS-B receivers. These devices provide ForeFlight Mobile with the ability to access ADS-B weather and TIS-B (traffic) data from the network of ADS-B ground stations. Multiple iPads or iPhones running ForeFlight Mobile can simultaneously connect to a Stratus using Wi-Fi. There is no significant practical limit to the number of iOS devices that can be connected to Stratus at once. It is recommended that cellular data be turned OFF when using a Stratus ADS-B receiver.

24.3.1 Stratus Status Information

To see more detailed Stratus status information, tap the Map Settings “gear” button and then tap the Stratus entry, or tap on **More > Devices > Stratus > Status**. Scroll down to see additional data and Settings.

24. FOREFLIGHT CONNECT



The following details and Settings are provided on the Status view:

- Connected - shows “Yes” if a Stratus is connected via Wi-Fi.
- Battery - indicates remaining battery life in percent remaining. Not shown when charging Stratus.
- Power Source - indicates whether Stratus is being charged.
- Serial Number - Stratus serial number, only needed for technical support concerns.
- Firmware, Driver, and Wi-Fi versions - current versions of firmware installed on Stratus.
- Local/National Update - date of most recent radar data, local data is generally < 5m old, national is generally < 15m old.
- Text Update - last time a new text report was downloaded (ex. METAR, TAF, Winds Aloft).
- Text Report Count - number of ADS-B-provided text reports in ForeFlight Mobile.

24. FOREFLIGHT CONNECT

- Signal Status - No Towers, Marginal, or Good.
- Stratus Replay Status (Stratus 3/2S/2/1S Only) - indicates if the ADS-B data saved by Stratus, while ForeFlight Mobile was in the background or the iPad was sleeping, has been sent to ForeFlight Mobile. Up to 30 minutes of data is saved.
- Traffic Update (978/UAT) and (1090) - when traffic data was received on either band (1090 requires Stratus 3/2S/2).
- Ownship - if your aircraft is equipped with ADS-B Out, tap this entry to display the information detected by the Stratus about your ADS-B Out transmissions.
- LED Brightness - used to adjust brightness of LEDs on Stratus.
- Turn On When Plugged In - when ON the Stratus will turn on when power is provided over the USB cable and turn OFF when power is removed. When power is removed the Stratus will turn OFF in 2 minutes only if the speed is < 5 knots. If speed is > 5 knots, the Stratus will not turn off until the speed drops below 5 knots, or the power button is pressed.
- Use As GPS - when ON, the Maps and other views will use GPS fix info from Stratus.
- Logging - used only for diagnosing problems, this manages logging of ADS-B data stream received by Stratus. Leave this OFF normally, as it reduces app performance.
- Show ADS-B Towers - show the location on the Map of the ADS-B Towers currently being received.
- Wi-Fi Settings - implements Wi-Fi security for the Stratus local network. Disabling SSID Broadcast makes your network's name invisible to other iPads/iPhones, preventing them from joining your Stratus network unless they know the name of the network. **WPA2 Security should NOT be enabled.** Changes to the Stratus Wi-Fi Settings require that the device be restarted. **NOTE:** If you forget the Network name or WPA2 passcode you set for your device, perform a factory reset to return it to default conditions: SSID Broadcast - Enabled, WPA Security - OFF, and no passcode. You can perform a factory reset by holding the Stratus power button for 30 seconds
- Ignore Mfg. AHRS Settings (Stratus 3, 2S, and 2) - when ON, Stratus will automatically reinitialize its AHRS every time it is powered on. **It is recommended that this setting remain OFF** unless the Stratus is providing subpar AHRS readings, which could happen after the Stratus is dropped or is subjected to very large temperature variations. If you are receiving subpar AHRS

24. FOREFLIGHT CONNECT

readings, turn this setting *ON* and power cycle the Stratus while keeping the device as stationary as possible for at least 10 seconds after power-up is complete.

- Save AHRS Calibration (Stratus 3, 2S, and 2) - when *ON*, Stratus will save a manual AHRS calibration between power cycles so it does not automatically re-adjust to straight and level every time it is turned back on. This setting is useful for pilots who cannot calibrate the Stratus on the ground due to their aircraft (or Stratus device) not being straight and level, such as with tail dragger aircraft.

NOTE: The use of this feature depends on the Stratus not being repositioned after it is calibrated; repositioning the Stratus between flights will cause the saved calibration to become inaccurate, requiring a re-calibration during the next flight.

- Cabin is pressurized - (Stratus 3 and 2S) turn *ON* if flying in a pressurized aircraft.
- Power-Saving mode - reduces the Wi-Fi transmit power to increase battery life.
- Auto Shutoff mode (Stratus 3 only) - turn *ON* have the Stratus 3 shut-down automatically if no GPS lock is received within 30 minutes, or if the Stratus 3 is moving at <5 knots for 30 minutes. This setting helps prevent the Stratus 3 battery from draining if it is inadvertently turned on or is left on after a flight.
- Flight Data Recorder (Stratus 3, 2S, and 2) - when “Enabled “ is *ON*, Stratus will begin recording a track log as soon as it is turned on and the GPS senses motion (see [Stratus Flight Data Recorder](#) for more information)
- Track Logs (Stratus 3, 2S, and 2) - tap to view any track logs recorded by Stratus.
- Auto-Detect Segments (Stratus 3 and 2S) - when *ON*, Stratus will automatically detect trip segments based on your ground speed and create a separate track log for each segment.
- GPS Satellite Status - shows location and signal lock for GPS satellites currently visible.

24.3.2 Stratus ESG (Stratus 1S/2/2S/3 Only)

Stratus ESG is Appareo’s all-in-one certified ADS-B Out transponder solution. The Stratus 1S, 2, 2S, or 3 can connect to Stratus ESG via USB cable (included in the Stratus ESG installation kit provided by the avionics dealer) to take advantage of the

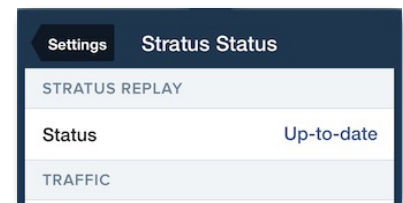
24. FOREFLIGHT CONNECT

Stratus ESG's certified WAAS GPS receiver and aircraft-mounted ADS-B antenna to boost GPS accuracy and provide improved ADS-B In tower reception. When connected via the USB cable, the Stratus ESG also supplies power to the Stratus 1S, 2, 2S, or 3 to keep the battery charged.

When a Stratus 1S, 2, 2S, or 3 is connected to the Stratus ESG, the Accuracy instrument in ForeFlight's **Instrument Panel** will show "Accuracy (ESG)" to indicate that it is receiving GPS position data from the ESG.

24.3.3 Stratus Replay

Stratus Replay saves the last 30 minutes of ADS-B weather information received by the device, including NEXRAD Radar, METARs, TAFs, etc. Stratus Replay automatically sends saved data to ForeFlight when you reopen the app after sleeping the iPad or iPhone, or switching from another app. This allows you to conserve battery life by opening ForeFlight only when needed without fear of missing useful ADS-B weather information.



Stratus Replay requires that the device be updated to Firmware v1.4 or later for a Stratus 2 and v1.0 or later for a 1S/2S. See **Stratus Firmware Update** for instructions on updating the Stratus firmware.

NOTE: Stratus Replay is not available with the Stratus 1.

You can check the Stratus Replay status by tapping the Map Settings "gear" button and then choosing Stratus, or on **More > Devices > Stratus > Status**.

24.3.4 Stratus Flight Data Recorder

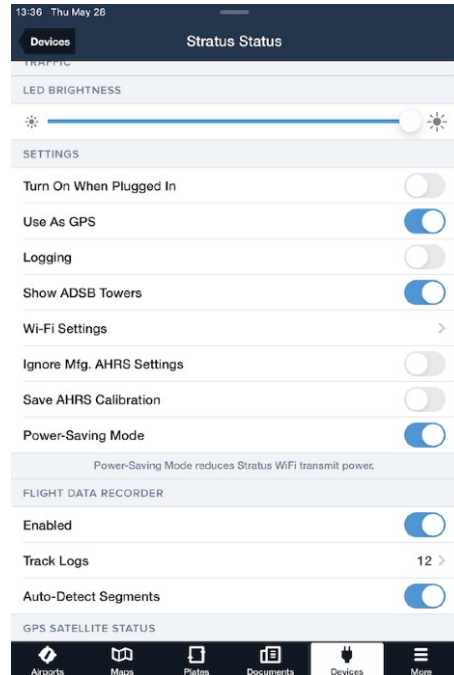
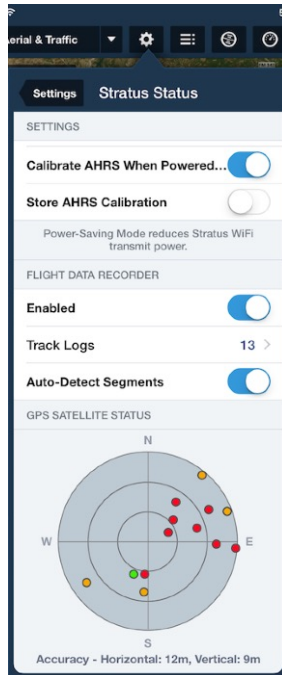
The Flight Data Recorder feature allows a Stratus 2/2S to save a Track Log file of your flights. The Track Log file includes your position, speed and altitude data throughout each of your flights, and it can be saved regardless of whether you record a **Track Log** in ForeFlight Mobile.

When activated, the Flight Data Recorder will save up to approximately 20 hours of data, and will automatically delete the oldest track log file from the device to make room to record the new track log file..

24. FOREFLIGHT CONNECT

24.3.5 Flight Data Recorder

Turn on the Flight Data Recorder on the Maps page by tapping the **Maps Settings** (gear button) then tapping **Stratus Status**. Alternatively you can tap **More > Devices > Stratus > Status** and slide the “Enabled” switch to ON.



Track log files will begin recording automatically as soon as the Stratus 2/2S/3 is turned on and the GPS senses motion.

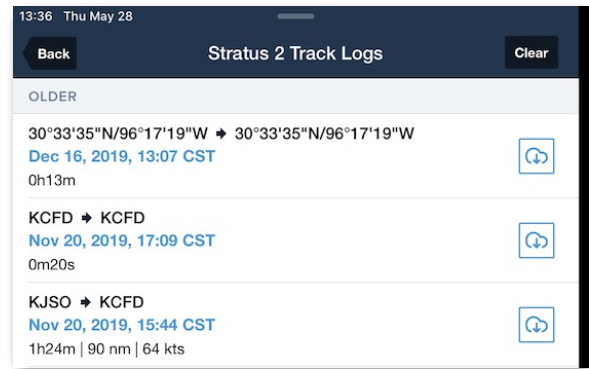
The Track Log file will record until the device is turned off, unless “Auto-Detect Segments” is turned ON, in which case a Track Log will stop recording when Stratus detects a full-stop landing, and another Track Log will be started. Once the device is turned back on, the most recent Track Log file or files will be shown in the “Track Logs” count on the **More > Devices > Stratus > Status > Track Logs** view.

When connected to a Stratus 2/2S or 3, Track Logs can be accessed by tapping **More > Devices > Stratus > Status > Track Logs**.

To save a Track Log to ForeFlight Mobile, tap the “Cloud” icon next to the Track Log.

24. FOREFLIGHT CONNECT

Once that Track Log has been saved to ForeFlight Mobile, you can transfer it to your ForeFlight account where it can be viewed and shared like other Track Logs. Disconnect your iPad from the Stratus 2/2S/3 Wi-Fi network, connect to the Internet, then tap **More > Track Logs** and tap the “Cloud” icon next to that Track log. See [Viewing Track Logs on your ForeFlight Account](#) for more details.




24.3.6 Firmware Update

Appareo, the manufacturer of the Stratus ADS-B receivers, periodically releases updated firmware to activate new capabilities or fix issues.

Before beginning the update process, make sure that your iPad or iPhone AND the Stratus each have enough battery power to run for at least 15 minutes. If you are unsure, plug each device in to an appropriate charger.

Turn the Stratus ON, then open Apple Settings, tap Wi-Fi and connect your iPad or iPhone to the Stratus Wi-Fi network.

Open ForeFlight Mobile, then go to the Devices view and tap the Stratus button. Then tap the “Tap to Update” on the Firmware row:  to begin the update. Once the update is complete, tap the “Close” button to return to ForeFlight Mobile.

IMPORTANT: The Stratus will reboot during the firmware update process. When this happens, if there is a known Wi-Fi network in range your iPad or iPhone will reconnect to the other Wi-Fi network. This will cause an error message at the end of the update process since ForeFlight Mobile is no longer connected to the Stratus Wi-Fi network and cannot verify the firmware update.

If this happens, simply quit ForeFlight Mobile, re-connect your iPad or iPhone to the Stratus Wi-Fi network, re-open ForeFlight Mobile and go to the Devices, Stratus page. Verify that the new Stratus Firmware version is listed.

You can avoid this error message either by doing the update in an area with no other Wi-Fi networks, or by, before starting the update, opening Apple Settings, tapping Wi-Fi and “forgetting” any Wi-Fi networks to which your iPad or iPhone may automatically connect.

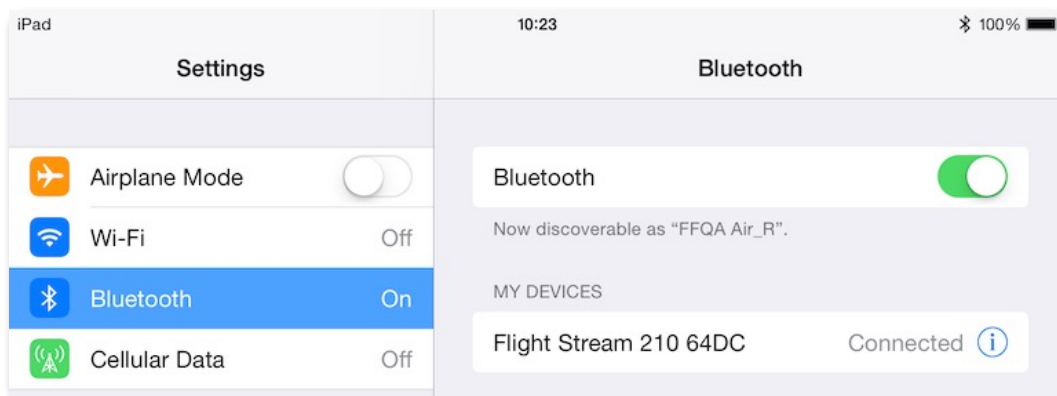
24. FOREFLIGHT CONNECT

24.4 Garmin Connex

The Garmin Connex system allows ForeFlight Mobile to receive GPS position data, ADS-B weather and ADS-B traffic from select Garmin avionics by connecting to a Garmin Flight Stream 110, 210, or 510 bluetooth gateway, or to Garmin navigator with built-in Connex Bluetooth. The Flight Stream 210 also includes an AHRS sensor, providing pitch and bank information to the attitude display in ForeFlight Mobile, and the Flight Stream 210 & 510 support two-way flight plan transfer between ForeFlight Mobile and select Garmin navigation displays. ForeFlight Mobile does not currently support receiving XM Weather or music through a Flight Stream.

24.4.1 Pairing with Flight Stream

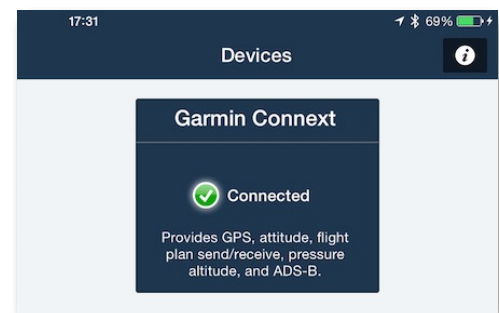
Once a Garmin avionics dealer has correctly installed a Flight Stream 110, 210, or 510 and connected it to your Garmin avionics, open Apple Settings and tap the Bluetooth tab on the left. If your Flight Stream is already in Bluetooth pairing mode it will appear in the list of available Bluetooth devices and you can tap on the entry to connect. If it doesn't appear, follow the instructions provided with the Flight Stream to enable Bluetooth pairing mode, then tap the Flight Stream entry to pair it with your device.



24.4.2 Using Connex

After pairing with the Flight Stream, open ForeFlight Mobile and tap on More > Devices. You should see a box for Garmin Connex indicating that the connection is established and listing the data being received through the Flight Stream.

Tapping this box will open the device's status page,

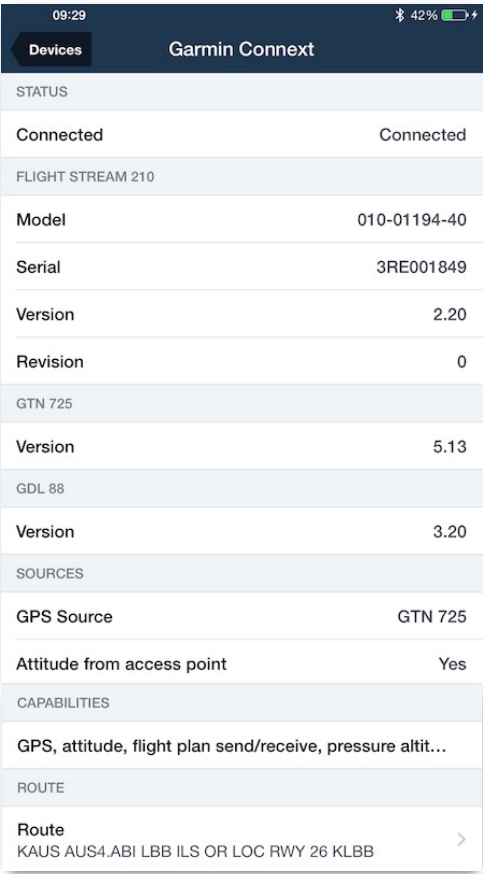


24. FOREFLIGHT CONNECT

providing detailed information about the device and the data being received from it. In addition to the Flight Stream, the status page will also show any Garmin avionics that are connected to the Flight Stream.

“Attitude from access point” indicates whether AHRS data is being provided by the Flight Stream 210 (the “access point” to the chain of Connex devices) or from another device in the chain.

If connected to a GNS or GTN unit with a route loaded, the details of that route will also be displayed. Tap on the route to load it into ForeFlight Mobile’s Route Editor.



Reset AHRS

IMPORTANT: DO NOT PRESS the **Reset AHRS** at the bottom of the Settings page unless specifically directed to by the ForeFlight Pilot Support Team or your Garmin Avionics dealer.

24. FOREFLIGHT CONNECT

GPS and ADS-B from Connex

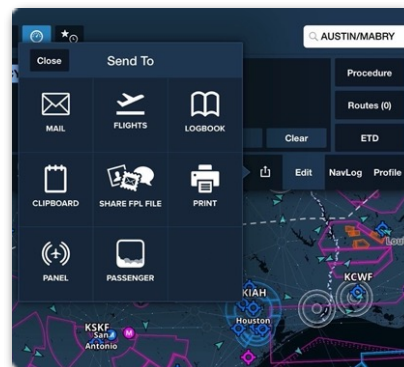
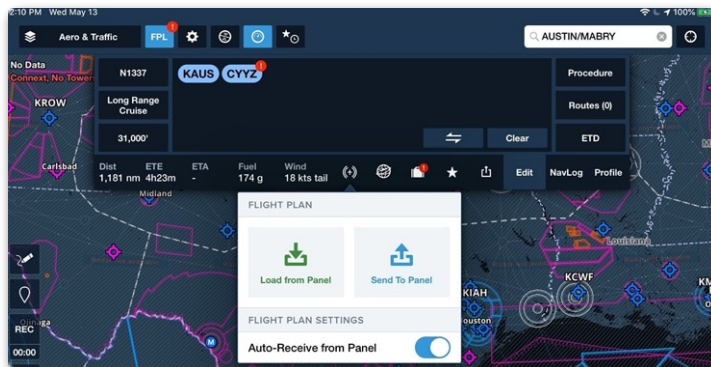
When GPS data is being sent from the Flight Stream to ForeFlight Mobile, the Accuracy instrument will show “Accuracy (Connex).”



When an ADS-B weather or traffic layer is selected on the Maps view, the quality of the ADS-B signal being received (No Towers, Marginal, Good) is shown in the upper-left corner of the view below the timestamp indicating when the last update was received.

24.4.3 Flight Plan Transfer

The Panel button is shown **at the bottom of the FPL view** when your device is connected via Bluetooth to a compatible Flight Stream or Connex-equipped device. On an iPad, tap the Panel button at the bottom of the FPL view and tap “Send to Panel”, or tap the Send To button in the bottom-right corner of the Flight Plan Editor and tap the Panel button to send a route to a GNS 430W/530W, GTN 600/700 series GPS navigator, GNX 375 / GNC 355 / GPS 175, or G3X Touch. **NOTE:** Flight Stream 510 only supports route transfer to GTN 600/700 series GPS navigators.



Because Garmin panels require that a runway be specified for most procedures, ForeFlight will prompt you to select a runway before sending to a supported Garmin navigator.

After sending the route a popup will open in ForeFlight confirming that the route has been successfully sent to the panel. Tap “OK” to dismiss the popup.

Different Garmin GPS navigators support different numbers of waypoints per route. If you attempt to send a route with a too many waypoints for the installed Garmin GPS, the transfer will be rejected. A possible solution for this is to go to More > Settings > Route View and change the Airway Decoding setting to “Bends Only”, which will remove any waypoints that do not result in a change in course.

24. FOREFLIGHT CONNECT

ForeFlight does not send altitude or speed changes via flight plan transfer.

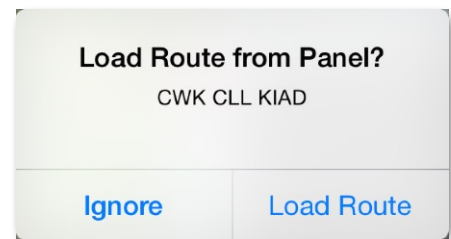
Troubleshooting Unable to Send Route

If you are unable to send a route to the Garmin panel or navigator, but are able to receive a route in ForeFlight Mobile from that device, in the panel or navigator check:

- Connex Setup, to confirm “Flight Plan Import” is enabled.
- “Flight Catalog” to confirm that it is not full. If the catalog is full, delete the unneeded flights from the catalog.

Getting a Route from Connex

Tap the “Panel” ((+)) button at the bottom of the FPL view and tap “Load from Panel” to load a route from your Connex navigator to the ForeFlight Mobile Route Editor.

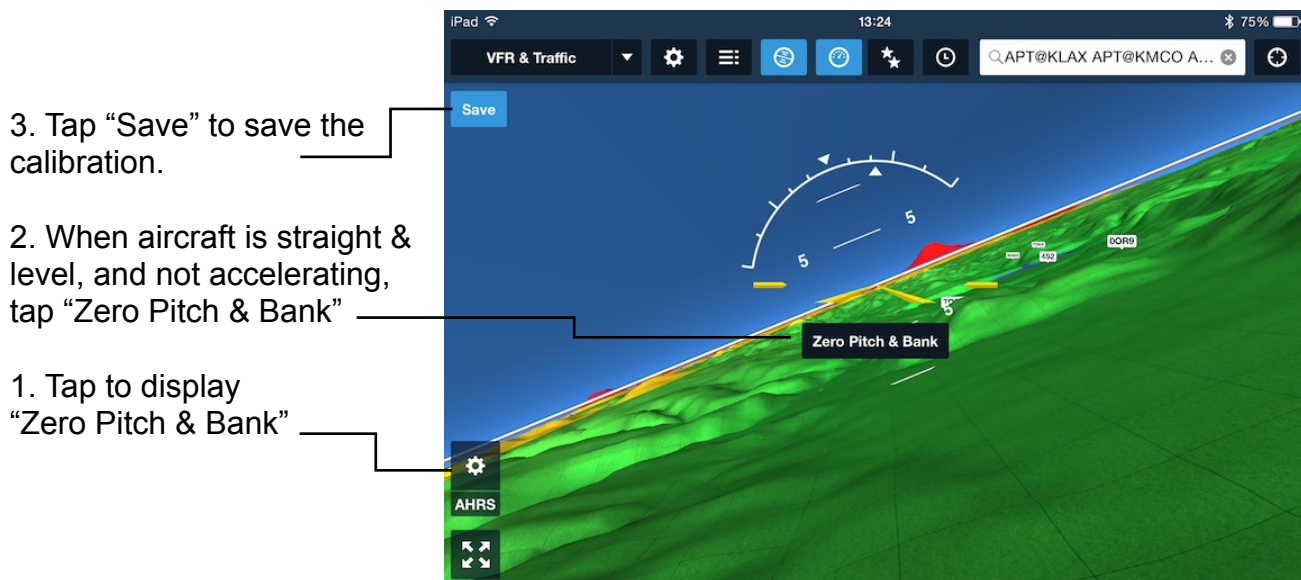


When “Auto-Receive from Panel” is enabled, changes to your route in the Connex device produce a notification in ForeFlight Mobile prompting you to load the modified route into your Route Editor, with options to Load Route or Ignore. When “Auto-Receive from Panel” is disabled, changes to your route in the Connex device do not produce a notification. This setting is also available in More > Settings > Map View as “Auto-Receive Panel Flight Plans.”

24. FOREFLIGHT CONNECT

24.4.4 Calibrating Flight Stream 210 AHRS

The FlightStream 210 AHRS can be calibrated by tapping the AHRS Setting button in the attitude display, above the fullscreen button. This will activate Zero Pitch & Bank mode and a blue Save button will appear in the upper left corner of the display. Adjust your aircraft so that it is straight and level, tap the Zero Pitch & Bank button to zero the display, and tap the Save button to save the AHRS calibration.



NOTE: AHRS calibration should only be performed while in level, unaccelerated flight, or while stationary and level on the ground. Calibrating the device while accelerating or decelerating may result in errors in pitch and bank information.

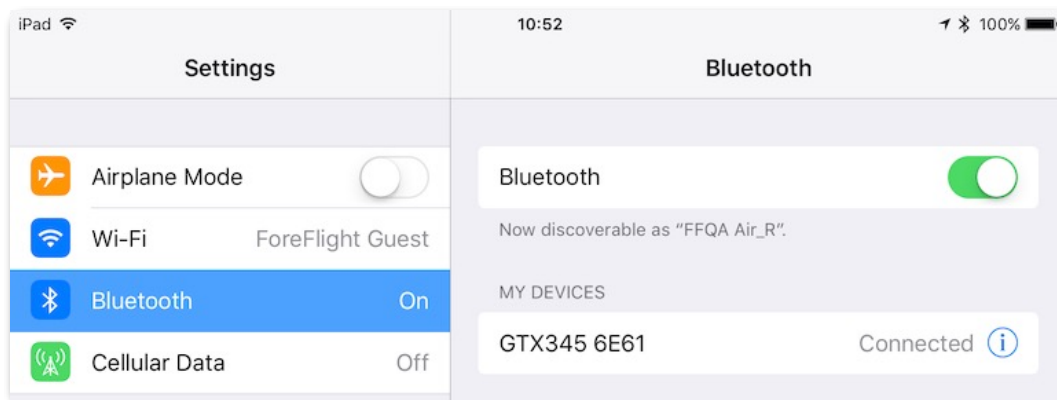
24. FOREFLIGHT CONNECT

24.4.5 Garmin GTX 345

Garmin's GTX 345 ADS-B Out/In transponder can provide ForeFlight with WAAS GPS position data, ADS-B weather and traffic, pressure altitude, and AHRS information to drive ForeFlight's attitude indicator and Synthetic Vision. The GTX 345 appears in More > Devices as "Garmin Connex", although it can connect directly to ForeFlight via Bluetooth and does not require a separate Flight Stream.

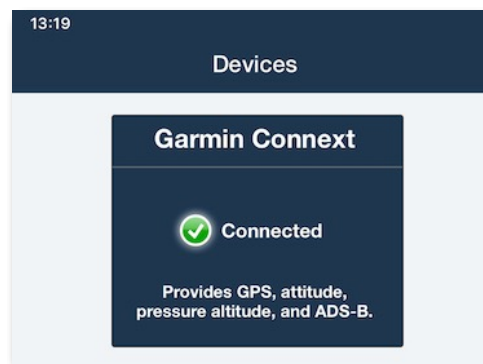
Connecting to GTX 345

After your GTX 345 is installed in your aircraft by a certified Garmin avionics dealer, follow the instructions included with it to enable Bluetooth pairing mode. On your mobile device, open **Apple Settings > Bluetooth** and select the GTX 345 from the list of available devices. The GTX 345 can pair with up to two devices at once.



Using GTX 345

Once you've paired with the GTX 345 via Bluetooth, open ForeFlight and tap **More > Devices** to confirm the connection was recognized by ForeFlight and see what information is being received from the GTX 345. GPS is only shown here when a location fix has been established, so it may take a minute to appear immediately after the GTX 345 is powered on.



24. FOREFLIGHT CONNECT

Tap the box to view the details of the GTX 345 and the data being received from it.

There are two settings that can be adjusted at the top of the GTX 345 status page:

- Use as Pressure Altitude - turn this switch ON to show the pressure altitude data from the GTX 345 on the Maps page as Pressure Altitude.
- Use as Cabin Pressure Altitude - turn this switch ON to show the pressure altitude data from the GTX345 on the Maps page as Cabin Pressure altitude. Generally this switch should be OFF in a pressurized aircraft.

There are two settings that can be adjusted at the bottom of the GTX 345 status page:

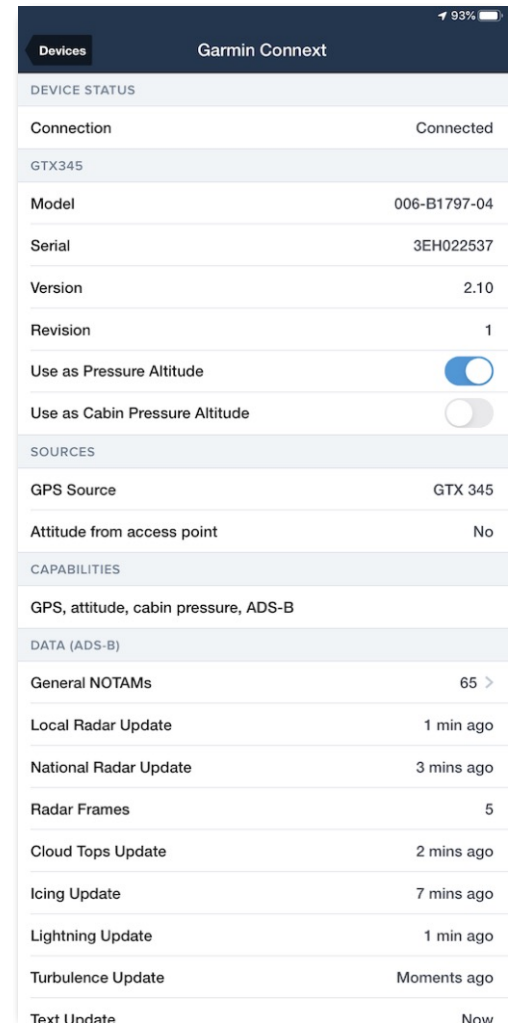
- Logging - used only for diagnosing problems, this manages logging of ADS-B data stream received by GTX 345. Leave this OFF normally, as it reduces app performance.
- Show ADS-B Towers - show the location on the Map of the ADS-B Towers currently being received.

The GTX 345 ARHS pitch/roll values (used to drive the Synthetic Vision display) must be initially calibrated by your avionics shop at the time of installation.

GPS and ADS-B from GTX 345

When GPS data is being sent from the GTX 345 to ForeFlight, the Accuracy instrument will show “Accuracy (Connex).”

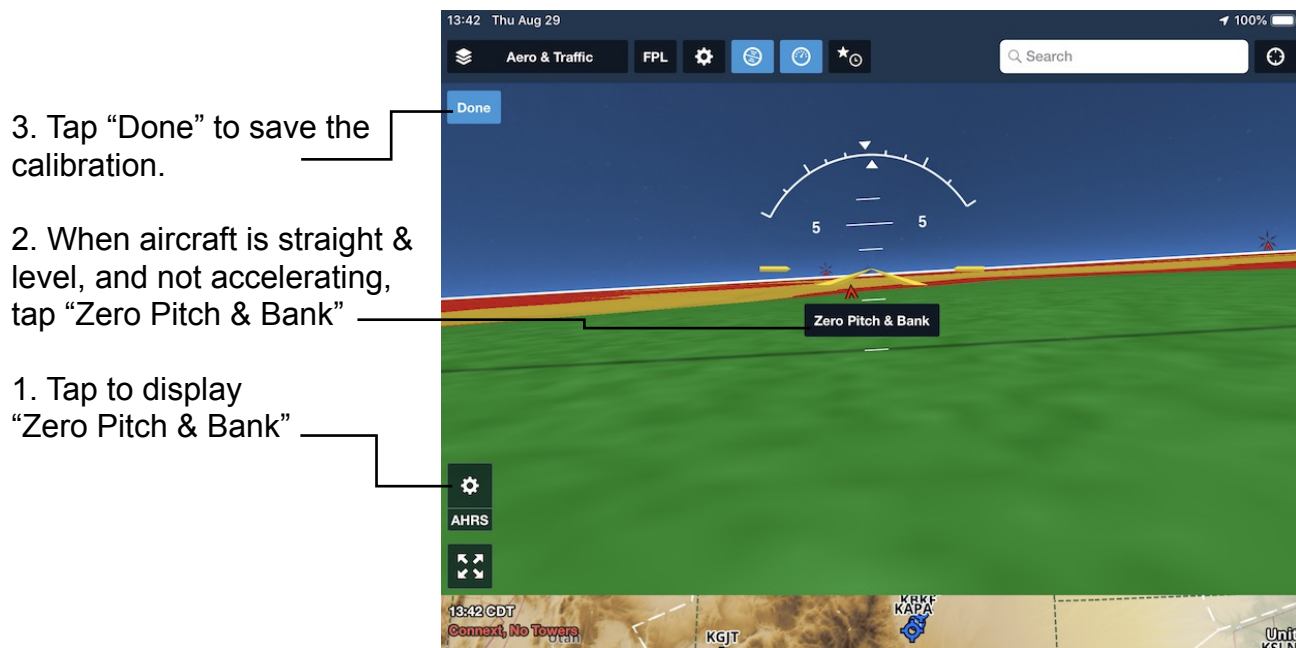
When an ADS-B weather or traffic layer is selected on the Maps view, the **quality of the ADS-B signal being received** (No Towers, Marginal, Good) is shown in the upper-left corner of the view below the timestamp indicating when the last update was received.



24. FOREFLIGHT CONNECT

24.4.6 Calibrating the GTX 345 AHRS

The GTX 345 AHRS can be calibrated by tapping the AHRS Setting button in the attitude display, above the fullscreen button. This will activate Zero Pitch & Bank mode and a blue Done button will appear in the upper left corner of the display. Adjust your aircraft so that it is straight and level, tap the Zero Pitch & Bank button to zero the display, and tap the Done button to save the AHRS calibration.



NOTE: AHRS calibration should only be performed while in level, unaccelerated flight, or while stationary and level on the ground. Calibrating the device while accelerating or decelerating may result in errors in pitch and bank information.

24. FOREFLIGHT CONNECT

24.4.7 Garmin GDL 39, GDL 50, GDL 51 GDL 52

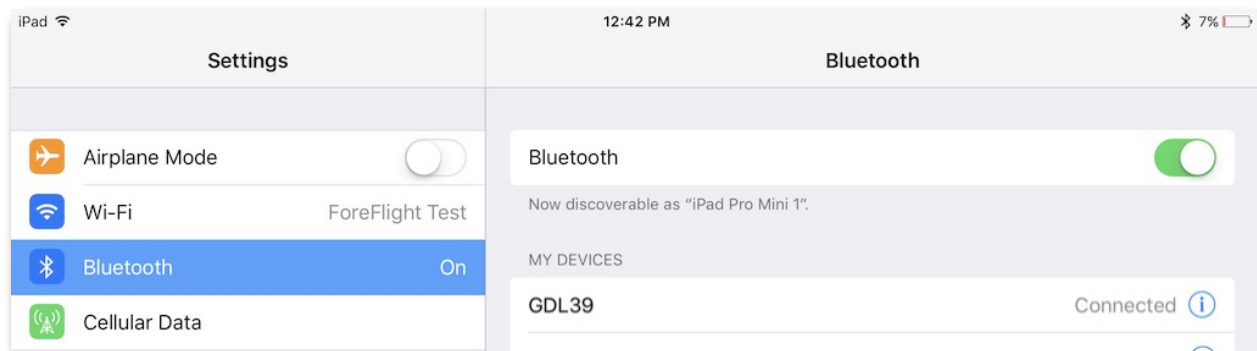
ForeFlight can connect to Garmin’s GDL 39, GDL 51, GDL 50, and GDL 52 portable (and remote-mount) receivers. All of the receiver include GPS, and their other features are listed below:

Receiver	ADS-B weather & traffic	XM weather	AHRS
GDL 39	X		
GDL 39-3D	X		X
GDL 50	X		X
GDL 51		X	X
GDL 52	X	X	X

The receiver appears in More > Devices as “Garmin Connex”, although it can connect directly to ForeFlight via Bluetooth and does not require a separate Flight Stream.

Connecting to GDL 39, GDL 50, GDL 51, or GDL 52

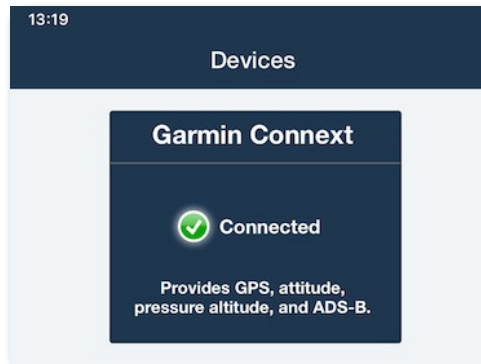
After turning on the GDL 39, open **Apple Settings > Bluetooth** and tap the name to connect to the receiver. ex: “GDL39”:



Using the GDL 39, GDL 50, GDL 51, or GDL 52

Once you’ve paired with the receiver via Bluetooth, open ForeFlight and tap **More > Devices** to confirm the connection was recognized by ForeFlight and see what information is being received from the receiver.

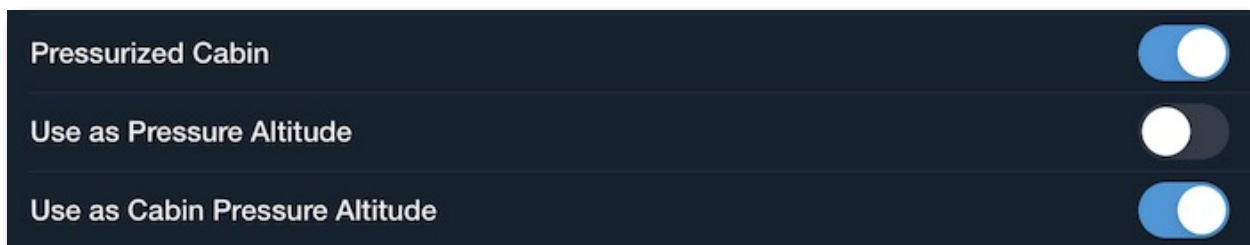
24. FOREFLIGHT CONNECT



Tap the box to view the details of the receiver and the data being received from it.

There are three settings that can be adjusted at the top of the receiver status page:

- Pressurized Cabin - Turn this switch ON if the aircraft is pressurized and the receiver is INSIDE the pressurized cabin. Turn this switch OFF if the receiver is OUTSIDE the pressurized cabin.
- Use as Pressure Altitude - turn this switch ON to show the pressure altitude data from the receiver on the Maps page as Pressure Altitude.
- Use as Cabin Pressure Altitude - turn this switch ON to show the pressure altitude data from the receiver on the Maps page as Cabin Pressure altitude. Generally this switch should be **OFF in a pressurized aircraft**.



There are three settings that can be adjusted at the bottom of the receiver status page:

- Logging - used only for diagnosing problems, this manages logging of ADS-B data stream. Leave this OFF normally, as it reduces app performance.
- Show ADS-B Towers - show the location on the Map of the ADS-B Towers currently being received.
- Pressurized Cabin - enabling this will cause the receiver to stop sending pressure altitude readings to ForeFlight, since those readings become inaccurate when the device is in a pressurized cabin.

24. FOREFLIGHT CONNECT

IMPORTANT: DO NOT PRESS the “Reset AHRS” button at the bottom of the Settings page unless specifically directed to by the ForeFlight Pilot Support Team or your Garmin Avionics dealer.



GPS and ADS-B

When GPS data is being sent from the receiver to ForeFlight, the Accuracy instrument will show “Accuracy (Connex).”

When an ADS-B weather or traffic layer (or XM weather layer) is selected on the Maps view, the **quality of the ADS-B signal being received** (No Towers, Marginal, Good) is shown in the upper-left corner of the view below the timestamp indicating when the last update was received.



24. FOREFLIGHT CONNECT

Calibrating AHRS

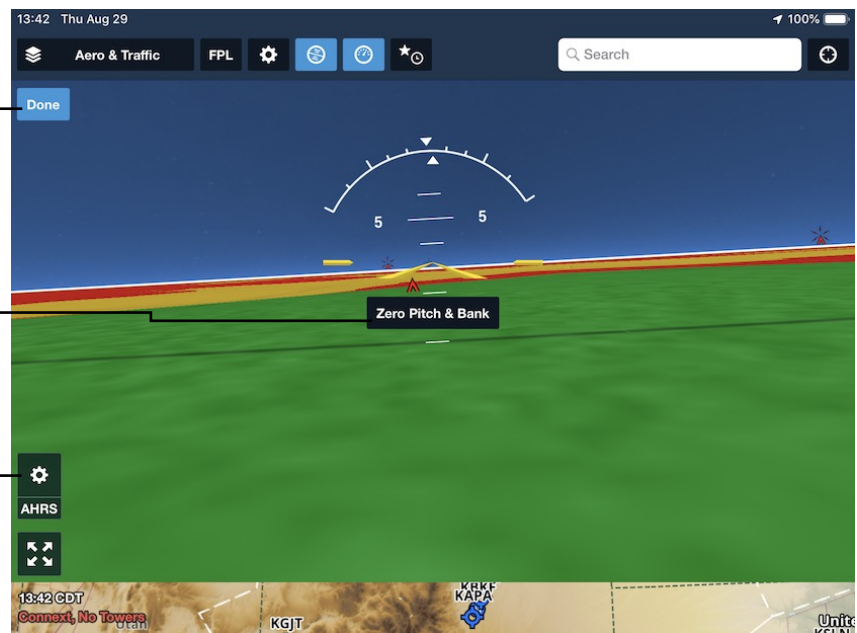
The AHRS can be calibrated by tapping the AHRS Setting button in the attitude display, above the fullscreen button. This will activate Zero Pitch & Bank mode and a blue Save button will appear in the upper left corner of the display. Adjust your aircraft so that it is straight and level, tap the Zero Pitch & Bank button to zero the display, and tap the Save button to save the AHRS calibration.

NOTE: AHRS calibration should only be performed while in level, unaccelerated flight, or while stationary and level on the ground. Calibrating the device while accelerating or decelerating may result in errors in pitch and bank information.

3. Tap “Done” to save the calibration.

2. When aircraft is straight & level, and not accelerating, tap “Zero Pitch & Bank”

1. Tap to display “Zero Pitch & Bank”



24. FOREFLIGHT CONNECT

24.5 XM Weather Data

ForeFlight Mobile can display these weather data items from the Garmin GDL 51, GDL 52, and SiriusXM SXAR1:

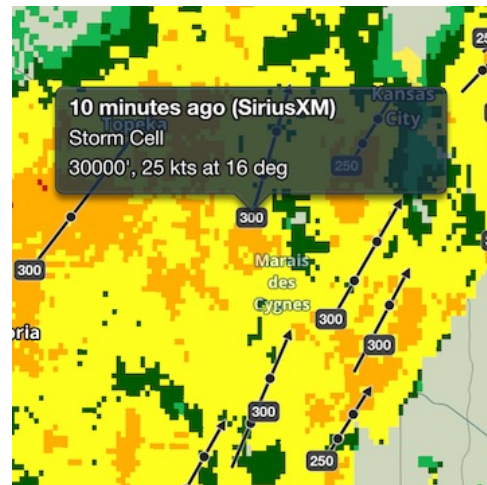
- High Resolution Composite (NEXRAD) Radar, including coverage of areas of southern Canada and northern Mexico
- High Resolution Lowest-tilt (NEXRAD) Radar, including coverage of areas of Canada and northern Mexico
- NEXRAD Storm Cell Attributes and track markers.
- Echo Tops, covering CONUS, northern Mexico, and southern Canada.
- Cloud Tops, covering CONUS, northern Mexico, and southern Canada.
- Icing NOWcast, covering CONUS, northern Mexico, and southern Canada.
- Freezing Level, covering CONUS, northern Mexico, and southern Canada.
- Turbulence, covering CONUS, northern Mexico, and southern Canada.
- Surface Analysis, covering almost all of North and Central America (excluding northernmost Canada and Alaska) and as far west as Hawaii.
- Surface Wind - derived from METARs at Airports, shows wind speed and direction at those locations only.
- **Surface Wind Analysis** - derived from a forecast model, shows wind speed and direction at 10 meters above the surface at tens of thousands of evenly spaced points across the country.
- **Surface Visibility** - shows near-term forecasts of surface visibility using colors to indicate visibilities ranging from 10 to 0 statute miles.
- Lightning
- Temporary Flight Restrictions (TFRs) on Maps **SEE IMPORTANT NOTICE BELOW**
- Winds Aloft — Graphical
- Temperatures Aloft
- Dewpoint spread
- METARs/TAFs
- AIRMETS/SIGMETs
- PIREPS
- Radar Coverage Map

24. FOREFLIGHT CONNECT

Storm cell attributes show the height of the cell in 100's of feet. Tap the marker to view details about the speed and direction of travel. Storm cell track markers show the projected direction of travel of the cell, and where it is projected to be in 20, 40, and 60 minutes from the time of the Radar update.

The storm cell track markers, storm cell attributes, and other weather symbols (see below) are all based on the latest Radar frame received, so do not animate if you tap the Radar 'play' button.

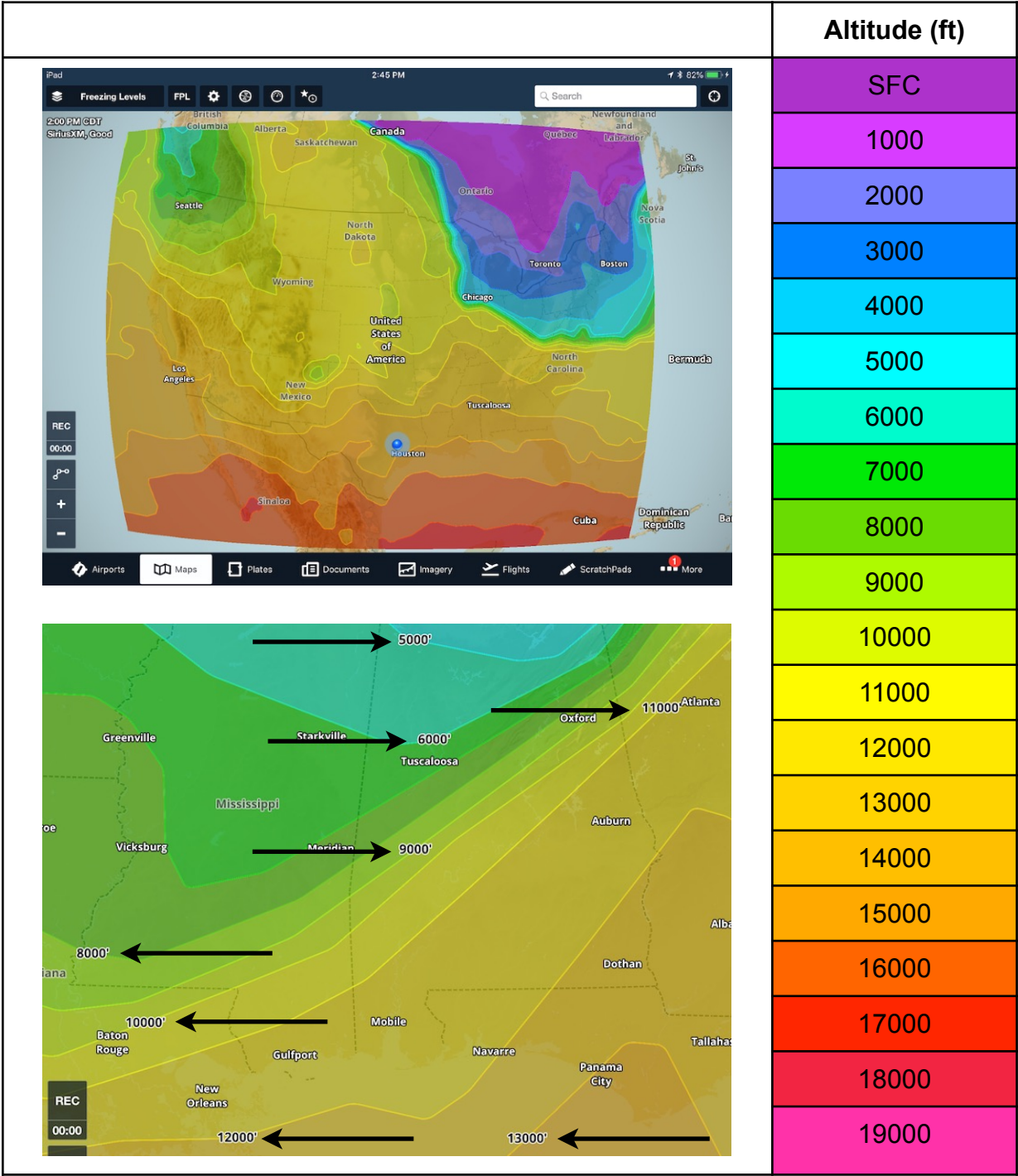
Tap on other weather symbol, such as Hail, to view additional details.



24. FOREFLIGHT CONNECT

24.5.1 XM Freezing Level

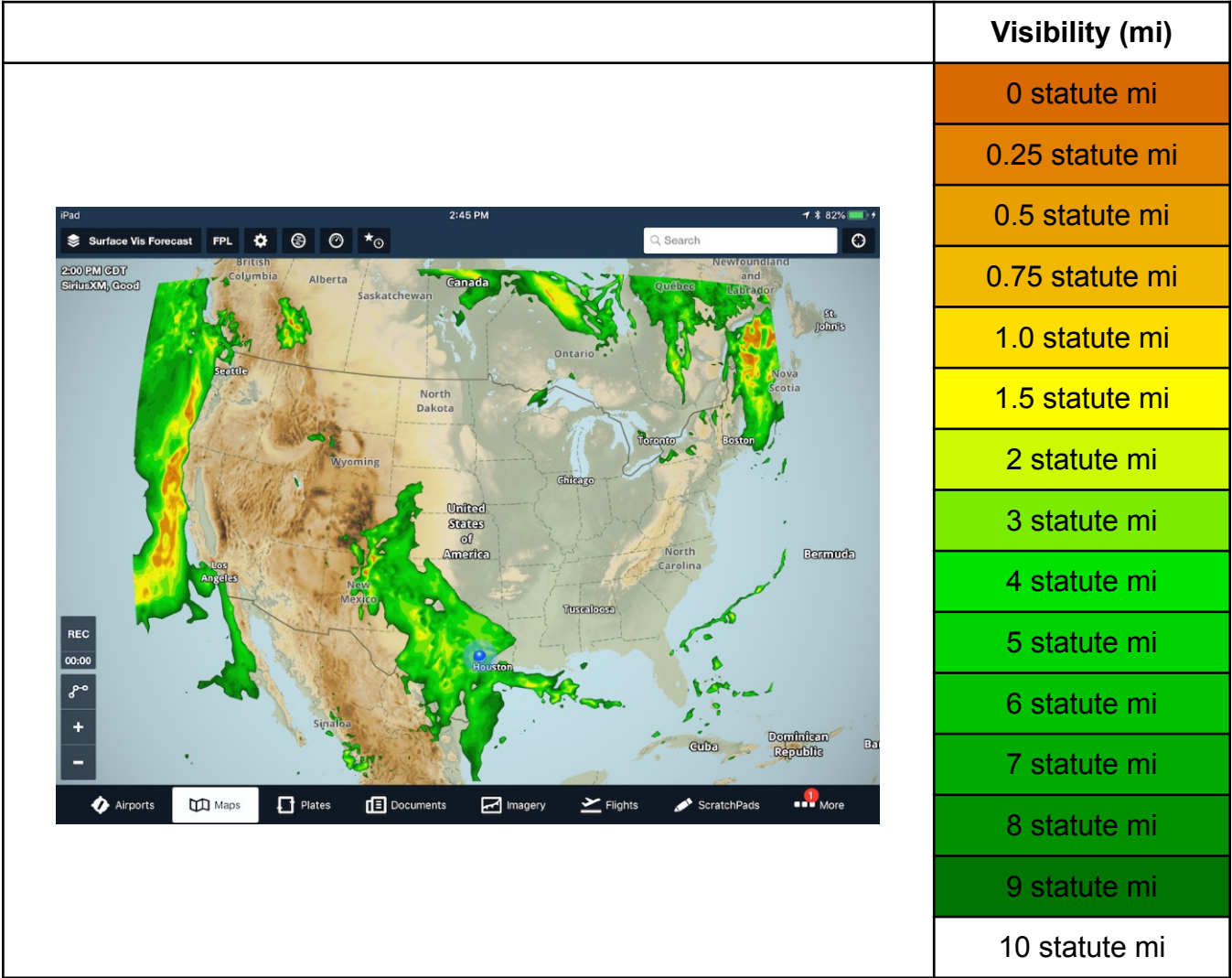
The Freezing Level layer uses colored gradients (and when zoomed-in, altitudes in feet at the color borders) to depict the lowest altitude at which freezing and icing may occur across the continental U.S., southern Canada, and northern Mexico.



24. FOREFLIGHT CONNECT

24.5.2 XM Surface Visibility

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.



24. FOREFLIGHT CONNECT

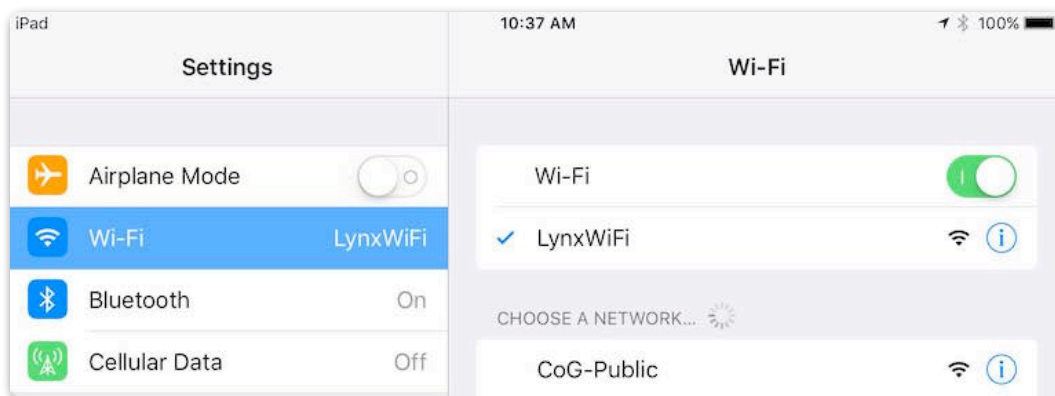
24.6 L-3 Lynx

ForeFlight can connect to L-3's Lynx line of ADS-B transceivers, including the NGT-9000, -2000, and -2500 models to receive ADS-B traffic and weather and GPS position via Wi-Fi in ForeFlight.

24.6.1 Connecting to Lynx

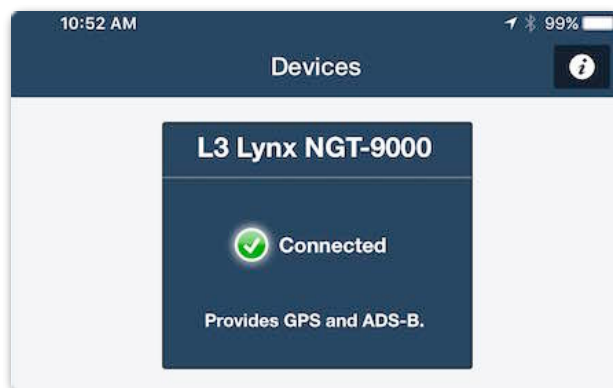
After the Lynx has been installed in your aircraft, open **Apple Settings > Wi-Fi** and select "LynxWi-Fi" to connect to the Lynx's Wi-Fi network.

NOTE: ForeFlight can communicate with the Lynx regardless of the Lynx "Wi-Fi Dongle Application" port setting.



24.6.2 Using Lynx

Once you've joined the Lynx's Wi-Fi network, open ForeFlight and tap **More > Devices** to confirm the connection was recognized by ForeFlight and see what information is being received from the Lynx (see the note above if the Lynx is not appearing on this screen).



Tap the box to view the details of the Lynx and the data being received from it.

24. FOREFLIGHT CONNECT

There are two settings that can be adjusted at the bottom of the Lynx status page:

- Logging - used only for diagnosing problems, this manages logging of the ADS-B data stream received by the Lynx. Leave this OFF normally, as it reduces app performance.
- Show ADS-B Towers - show the location on the Map of the ADS-B Towers currently being received.

GPS and ADS-B from Lynx

When GPS data is being sent from the Lynx to ForeFlight, the Accuracy instrument will show “Accuracy (L3 Lynx).”

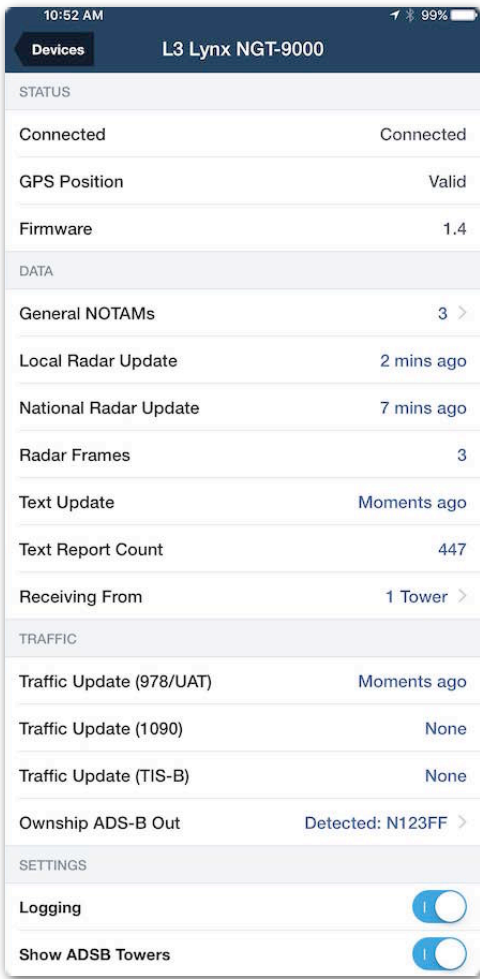
NOTE: Due to how ADS-B GPS accuracy is calculated and reported by the Lynx, the accuracy shown in ForeFlight may be worse than what it actually is. This is because the Lynx uses a limited number of “buckets” to report GPS accuracy to ForeFlight Mobile:

Lynx GPS Accuracy	GPS Accuracy shown in ForeFlight Mobile
Between 30m and >10m	30m
Between 10m and >3m	10m
3m or better	3m

When an ADS-B weather or traffic layer is selected on the Maps view, the **quality of the ADS-B signal being received** (No Towers, Marginal, Good) is shown in the upper-left corner of the view below the timestamp indicating when the last update was



received.



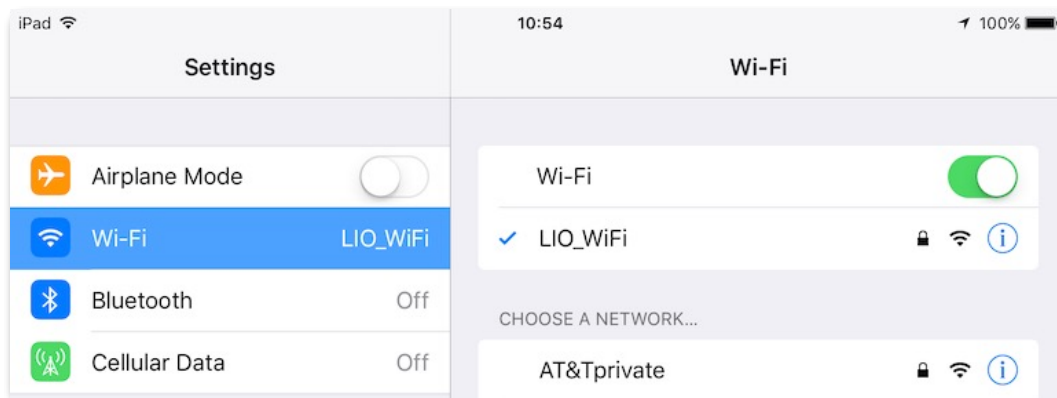
24. FOREFLIGHT CONNECT

24.7 Avidyne IFD 550/540/440

ForeFlight can connect to Avidyne's IFD 550, 540, and 440 panel avionics via Wi-Fi to receive GPS position and flight plans sent to ForeFlight Mobile, and to send flight plans to the IFD 550/540/440. ForeFlight can also receive attitude information from the IFD 550 to power Synthetic Vision. ADS-B Weather and Traffic are supported when the IFD 550 has firmware 10.2.3.1 or later, and an Avidyne-compatible ADS-B receiver is correctly connected to the Avidyne IFD.

24.7.1 Connecting to IFD 550/540/440

After the Avidyne device has been installed in your aircraft and powered on, open Apple Settings > Wi-Fi, select "LIO_Wi-Fi", and enter the password to connect to the Avidyne's Wi-Fi network.



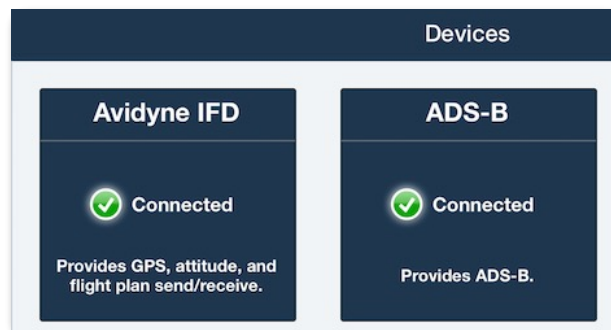
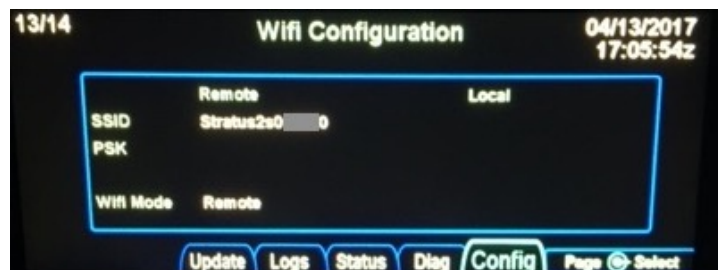
If you also have a Sentry ADS-B receiver (or other portable Wi-Fi-enabled ADS-B receiver) you can configure your IFD 550/540/440 into "Remote" Wi-Fi mode so it connects to the receiver's Wi-Fi network, allowing your iPad to both receive ADS-B weather & traffic data directly from the Sentry, and to exchange flight plans with the IFD.

NOTE: ADS-B data is not provided to the IFD by the portable ADS-B receiver.

24. FOREFLIGHT CONNECT

See the detailed instructions in the IFD 550/540/440 manual; but in general the IFD must be placed into Maintenance mode, then changed to the Wi-Fi Configuration page. Use the knobs on the IFD to Enter the Sentry SSID. **IMPORTANT:** The SSID is case sensitive. To minimize the chance of error when entering the SSID, before starting note the exact spelling and capitalization of the SSID in your iPad's or iPhone's Apple Settings > Wi-Fi menu.

DO NOT enter a PSK. If you have [Stratus WPA2](#) turned ON, you must turn it OFF before completing this setup. Then change the IFD Wi-Fi mode to: Remote.



Devices	
Avidyne IFD	
DEVICE STATUS	
Connection	Connected
AVIDYNE IFD	
Software Version	10.2.3.1
CAPABILITIES	
GPS, attitude, flight plan send/receive	
ROUTE	
Route	<No Route Loaded>

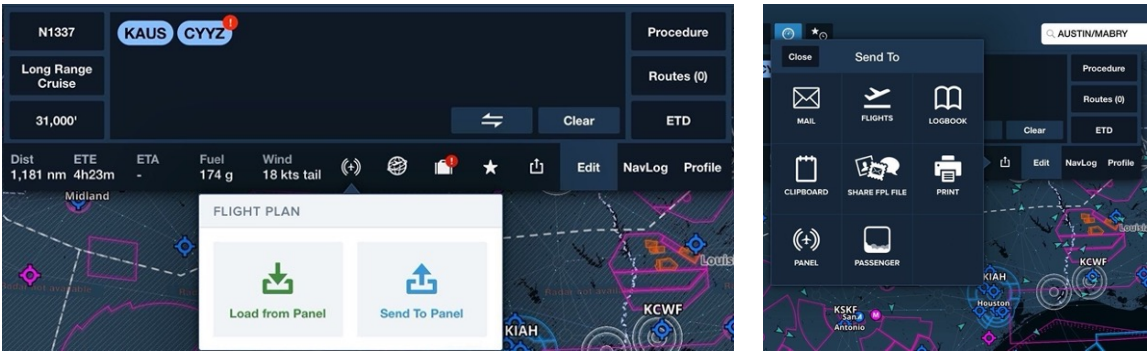
24. FOREFLIGHT CONNECT

24.7.2 Flight Plan Transfer

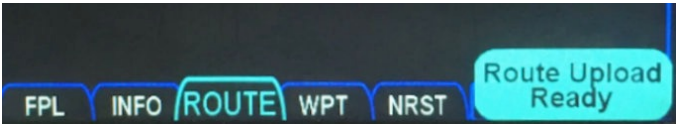
Open ForeFlight and tap More > Devices to see the capabilities being provided by the Avidyne. Tap on the Avidyne IFD tile to open the Avidyne's status page.

If a route is currently loaded in the Avidyne it will appear at the bottom of the status page under Route. Tap on it to load the route into ForeFlight.

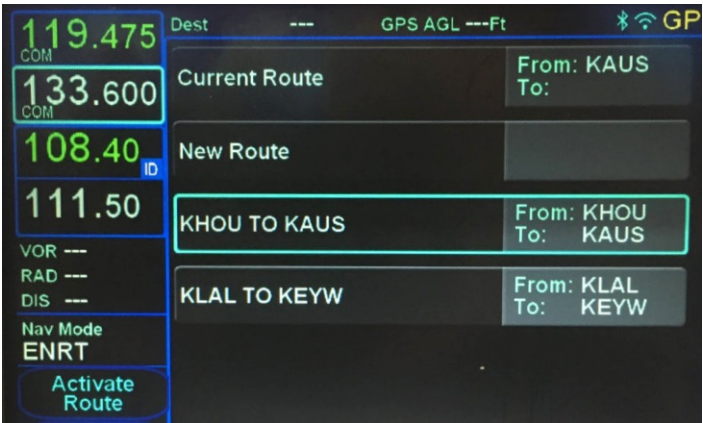
You can also load routes from the Maps view: tap the Panel button ((+)) at the bottom of the FPL view while connected to the Avidyne and tap "Load from Panel" to load the route into ForeFlight, and "Send to Panel" to send a route to the Avidyne. Or tap the "Send to" button and choose "Panel".



After sending the route from ForeFlight Mobile, on the Avidyne screen you will see a "Route Upload Ready" notification appear in the lower-right. Select the ROUTE page.



On the ROUTE page, search for your route in the list. The route may not be at the top of the list since routes are organized alphabetically by the "From" waypoint:



24. FOREFLIGHT CONNECT

Select the route then choose the ACTIVATE ROUTE button on the left side of the screen. Confirm the route if you get a popup. You will now see the chosen route is activated on the Avidyne "FPL" page.

NOTE: If a route sent from the Avidyne contains waypoints not supported by ForeFlight Mobile they will appear in the app as Lat/Long waypoints:

GPS from IFD 550/540/440 and AHRS from IFD 550

When GPS data is being sent from the Avidyne to ForeFlight, the Accuracy instrument will show "Accuracy (Avidyne IFD540/440)", though some text will be cut out due to its length.



The AHRS data received from the IFD 550 can be used to power Synthetic Vision. The AHRS can only be calibrated within the IFD 550.

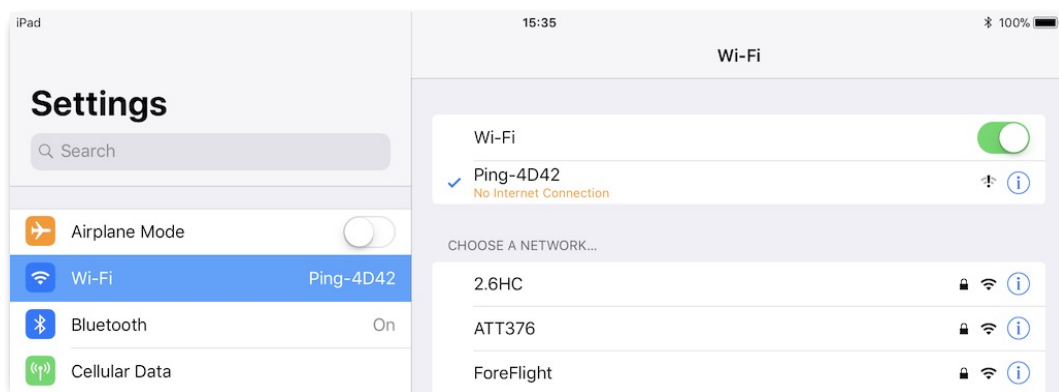
24. FOREFLIGHT CONNECT

24.8 uAvionix echoUAT & SkyEcho

ForeFlight can connect to uAvionix's echoUAT and SkyEcho transceivers via Wi-Fi to receive ADS-B traffic and weather in ForeFlight, and the echoUAT also provides GPS position.

24.8.1 Connecting to echoUAT & SkyEcho

After either device has been installed in your aircraft, open **Apple Settings > Wi-Fi** and select "Ping-XXX" (where "XXXX" is some sequence of numbers and letters) to connect to the device's Wi-Fi network.



24.8.2 Using echoUAT & SkyEcho

Once you've joined the device's Wi-Fi network, open ForeFlight and tap **More > Devices** to confirm the connection was recognized by ForeFlight and see what information is being received from the device (both echoUAT and SkyEcho will appear as "uAvionix" in ForeFlight).

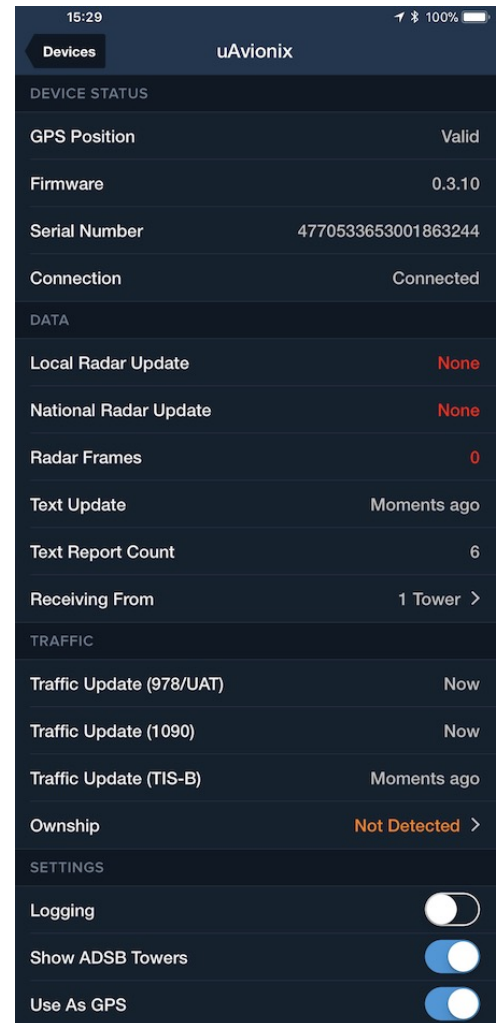


24. FOREFLIGHT CONNECT

Tap the box to view the details of the device and the data being received from it.

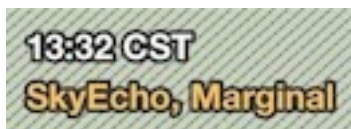
There are three settings that can be adjusted at the bottom of the device's status page:

- **Logging** - used only for diagnosing problems, this manages logging of the ADS-B data stream received by the device. Leave this OFF normally, as it reduces app performance.
- **Show ADS-B Towers** - show the location on the Map of the ADS-B Towers currently being received.
- **Use as GPS** - turn ON to use the device's internal GPS to provide position data to ForeFlight. Turn this OFF if you'd rather receive GPS data from another connected device or from your iPad/iPhone's internal GPS.



GPS and ADS-B from echoUAT & SkyEcho

When GPS data is being sent from the device to ForeFlight, the Accuracy instrument will show "Accuracy (uAvionix)." When an ADS-B layer such as Radar or Traffic is selected on the Maps view, the number of ADS-B towers being received by the device is shown in the upper-left corner of the view below the timestamp indicating when the last update was received.



24. FOREFLIGHT CONNECT

24.9 Dynon SkyView

ForeFlight has partnered with Dynon Avionics to bring secure Wi-Fi connectivity between ForeFlight Mobile and the Dynon SkyView glass panel avionics system. This connectivity allows flight plans to be transferred between ForeFlight Mobile and the SkyView, and for ForeFlight Mobile to receive GPS and AHRS data from the SkyView.

To connect your ForeFlight Mobile with your Dynon SkyView, you will need:

- ❖ A Dynon Wi-Fi adapter for each SkyView screen.
- ❖ SkyView version 12.0 or later in each SkyView screen.
- ❖ ForeFlight Mobile version 6.7 or later.

24.9.1 Configuring SkyView Wi-Fi

See the SkyView documentation for instructions on installing and configuring the SkyView Wi-Fi adapter and setting the network password.

24.9.2 Connecting ForeFlight and SkyView

With the SkyView system ON, open Apple Settings > Wi-Fi and tap the SkyView-XXXXX Wi-Fi network, then enter the password to connect.

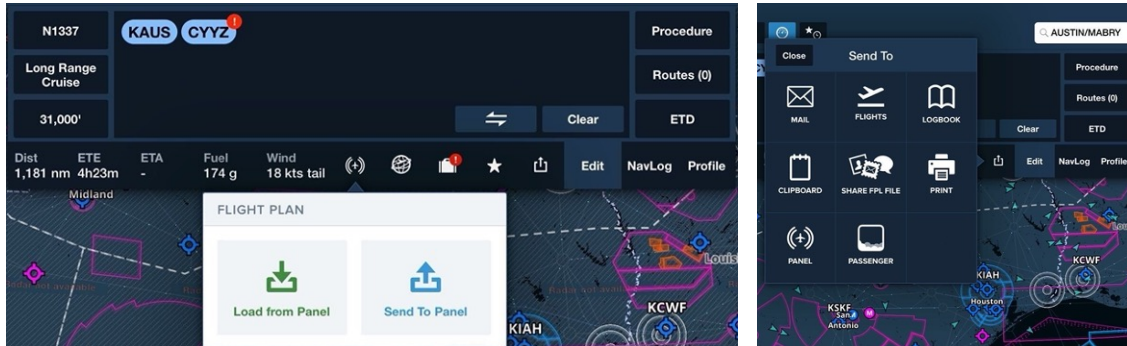


IMPORTANT: If your iPad has the Cellular Data option it should be switched **OFF**. iPhones should have **Airplane Mode** switched **ON**, with **Wi-Fi** then turned back **ON**.

24. FOREFLIGHT CONNECT

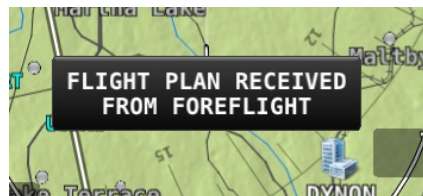
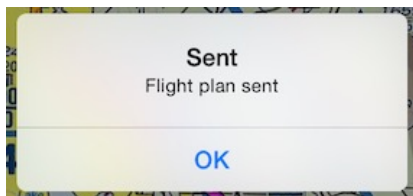
24.9.3 Flight Plan Transfer

Open the Flight Plan Editor, tap the “Send to” button and tap “Panel”, or tap the Panel button ((+)) at the bottom of the FPL view and tap “Send to Panel.”




After sending the route a popup will open in ForeFlight confirming that the route has been successfully sent to the SkyView. Tap “OK” to dismiss the popup.

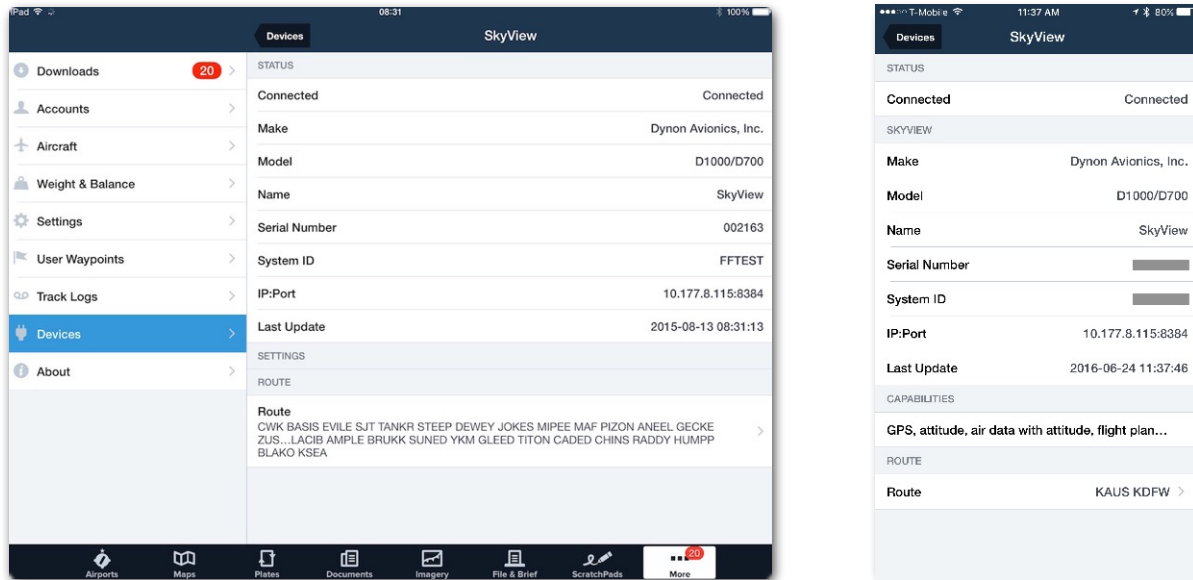
A popup will also open on the SkyView indicating that the route has been successfully received.



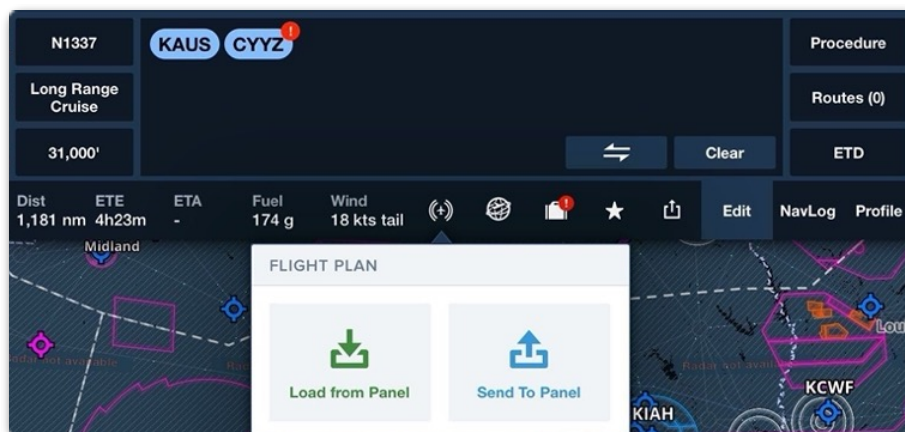
24. FOREFLIGHT CONNECT

Getting a Route from SkyView

You can see if SkyView has a route available to send to ForeFlight Mobile in **More > Devices > SkyView > Route**; or on the Maps view, tap the Maps “Settings” button  and scroll to the bottom of the menu.



To transfer a route from a SkyView to an iPad, tap the “Panel” button at the bottom of the FPL view and tap “Load from Panel.” You can also load a route shown on the SkyView status page in **More > Devices > SkyView** by tapping the route.



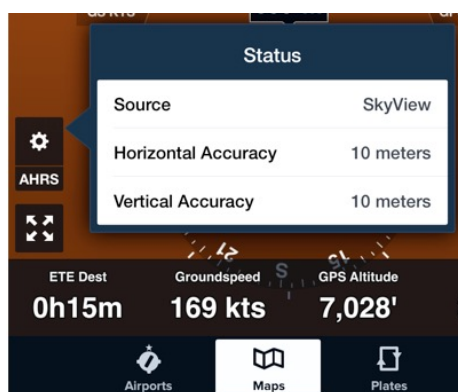
24. FOREFLIGHT CONNECT

GPS and ARHS data from SkyView

When GPS data is being sent from the SkyView to ForeFlight Mobile, the Accuracy instrument will show “Accuracy (SkyView).”



When AHRS data is being sent from SkyView to ForeFlight Mobile, the ARHS source (displayed by tapping the “Gear” button above “AHRS”) will show as SkyView.



ForeFlight Mobile will be receiving the same AHRS data as is displayed on the SkyView screen(s) so no additional AHRS calibration is necessary in ForeFlight Mobile.

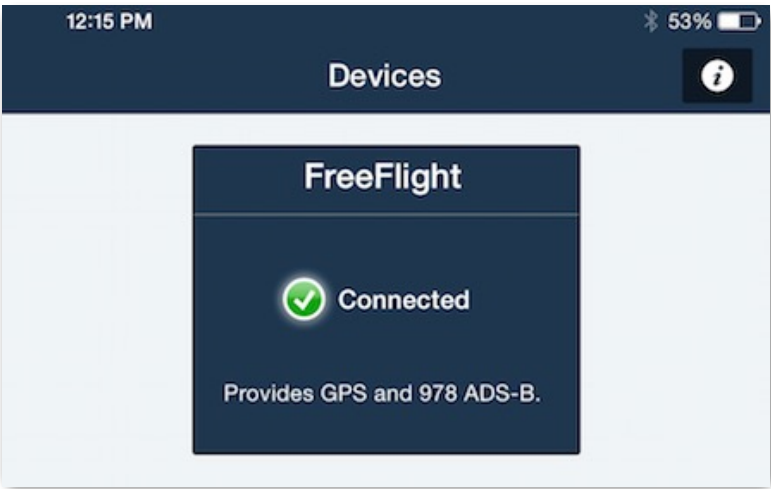
24. FOREFLIGHT CONNECT

24.10 FreeFlight ADS-B

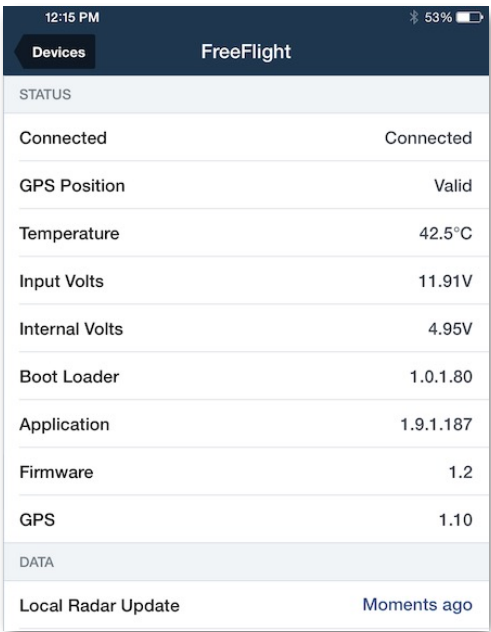
ForeFlight can receive ADS-B weather and Traffic data, as well as GPS position data from appropriately-equipped FreeFlight RANGR ADS-B systems.

24.10.1 Connecting ForeFlight and FreeFlight RANGR

After connecting to the FreeFlight RANGR Wi-Fi network using Apple Settings > Wi-Fi, tap More > Devices to confirm the FreeFlight box is displayed.



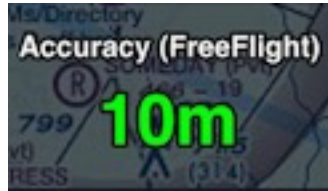
Tap the FreeFlight box to see detailed information and settings for the FreeFlight RANGR.



24. FOREFLIGHT CONNECT

GPS and ADS-B data from FreeFlight RANGR

When GPS data is being provided by the RANGR, the Accuracy instrument will show (FreeFlight).

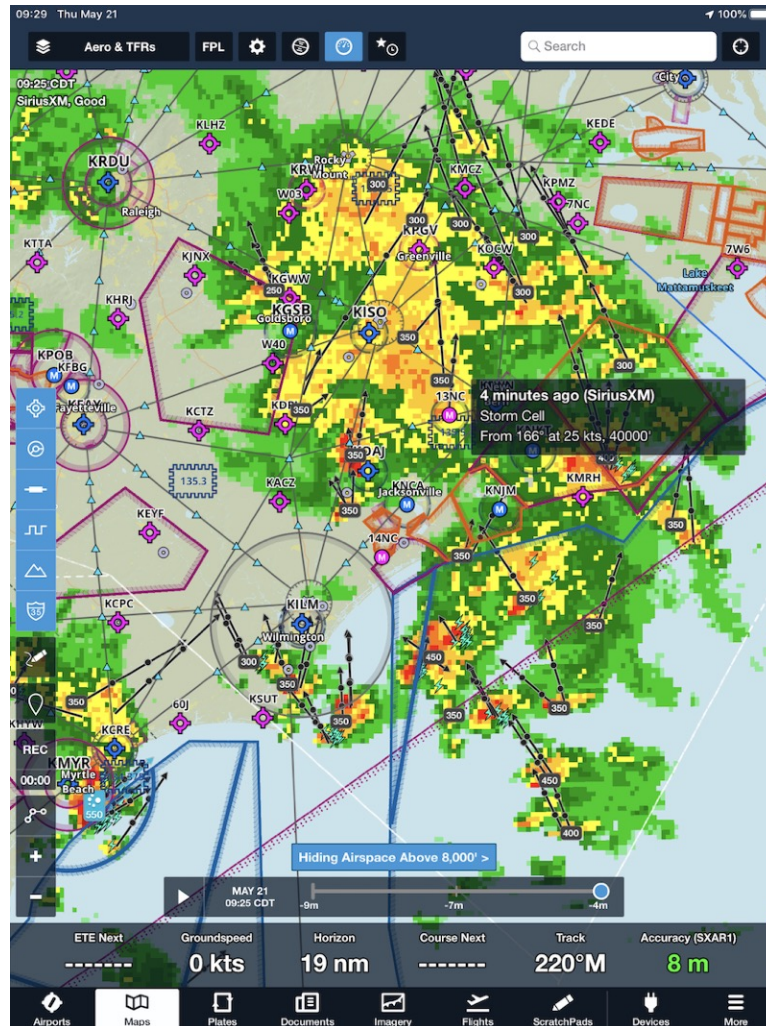


When an ADS-B layer such as Radar or Traffic is selected on the Maps page, the number of ADS-B towers being received by the FreeFlight RANGR is shown in the upper-left corner of the page below the timestamp indicating when the last update was received.

24. FOREFLIGHT CONNECT

24.11 SiriusXM SXAR1

ForeFlight Mobile supports the SiriusXM SXAR1 portable, battery-powered weather receiver when used with a “Pilot for ForeFlight” SiriusXM weather data subscription. To purchase that subscription from SiriusXM, call SiriusXM Aviation at 1-855-838-8563 or visit <https://www.siriusxm.com/aviation/hardware/foreflight>.

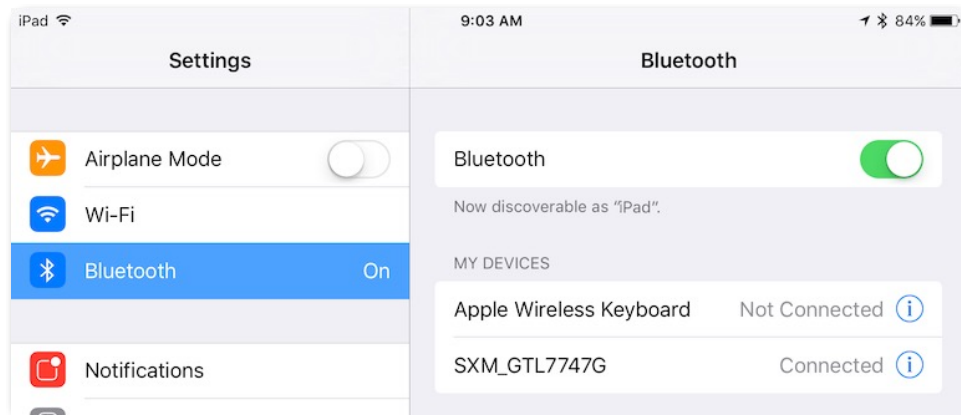


24.11.1 Connecting ForeFlight to the SXAR1

The SXAR1 uses Bluetooth to connect to a single iPad or iPhone at a time; simultaneous connections to multiple iPads or iPhones are not currently supported.

To pair your iPad or iPhone with SXAR1 turn the SXAR1 ON and once the lights on top start to illuminate, open Apple Settings and go to the Bluetooth section.

24. FOREFLIGHT CONNECT



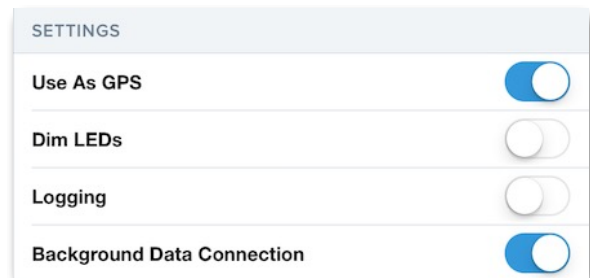
Tap the SXM_##### entry to pair with your iPad.

NOTE: The letters and numbers after “SXM_” in the list of Bluetooth devices are your RadioID, which may be needed when subscribing, re-activating, or resetting your “Pilot for ForeFlight” SiriusXM weather data subscription.

24.11.2 XM Weather Data

Tap More > Devices > SXAR1, or from the Maps page tap the Maps Settings (gear) button and scroll down to SXAR1, to see device status and settings.

There are four settings that can be adjusted at the bottom of the SXAR1 status page:



- Use as GPS - turn ON to use the SXAR1's internal GPS to provide position data to ForeFlight. Turn this OFF if you'd rather receive GPS data from another connected device, such as a Sentry
- Dim LEDs - turn ON to dim the SXAR1's status lights, which helps preserve battery life and reduces brightness when flying at night.
- Logging - used only for diagnosing problems, this manages logging of XM data stream received by SXAR1. Leave this OFF normally, as it reduces app performance.
- Background Data Connection - when ON, SXAR1 will continue to send 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.

24. FOREFLIGHT CONNECT

SiriusXM Satellite Radio

With a SiriusXM Satellite Radio subscription, an add-on to the “Pilot for ForeFlight” SiriusXM weather data subscription, you can listen to SiriusXM radio while in-flight via a Bluetooth audio device. This can be a single headset with Bluetooth audio, or an intercom with Bluetooth audio interface, or a Bluetooth audio adapter plugged-in to a “music-in” jack in your aircraft’s panel and wired-in to the intercom.

IMPORTANT: the SiriusXM satellite radio does NOT play directly through the iPad or iPhone speaker or headphone jack. You MUST connect a Bluetooth audio device per the instructions below.

Playing a satellite radio stream is controlled by the interface in ForeFlight Mobile, but the audio is sent directly from the SXAR1 to the Bluetooth audio device. This means the audio will continue to play if you sleep ForeFlight Mobile.

To add SiriusXM Audio to your existing subscription, call 855-838-8563 or visit https://care.siriusxm.com/login_view.action to upgrade. For more information about the “Pilot for ForeFlight” plan, visit <https://www.siriusxm.com/foreflight>.

After adding the subscription to your plan, you will see “Audio: Active >” below the ForeFlight subscription in More > Devices > SXAR1.

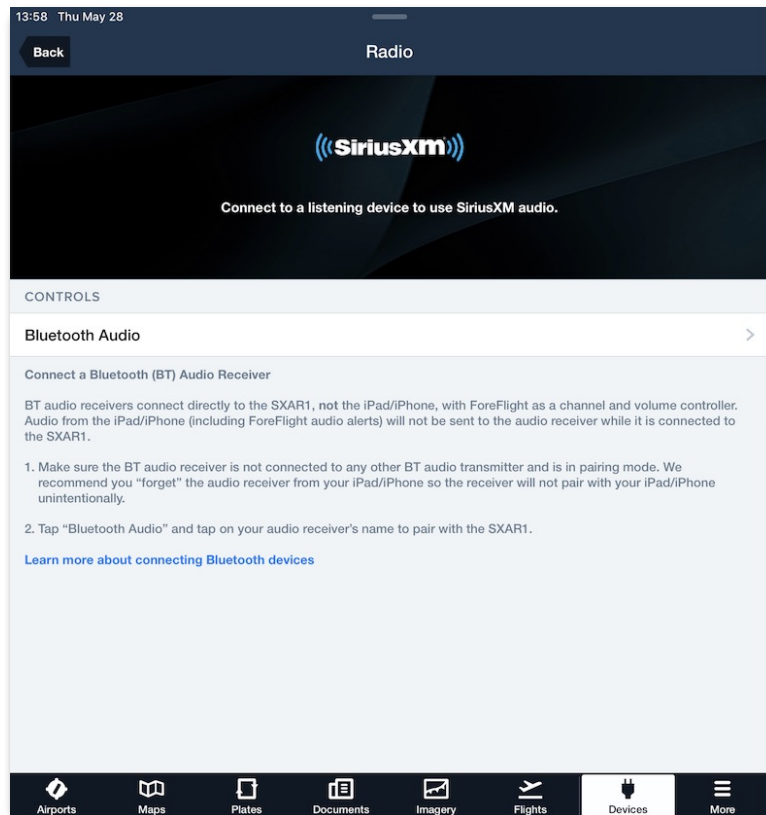
DEVICE INFORMATION	
Radio ID	GTL7747B
Subscription	ForeFlight
Audio	Active >

If “Active” does not show, position the SXAR1 so it has a clear view of the sky, then send a refresh signal to your radio by visiting <http://www.siriusxm.com/refresh>.

24. FOREFLIGHT CONNECT

24.11.3 Bluetooth audio

To listen to satellite radio programming you must connect a Bluetooth audio device to the SXAR1. To begin the connection process, tap More > Devices > SXAR1 > Audio, or on the Maps page tap the Maps Settings button, then scroll down to the SXAR1 and tap the “Audio >” line.

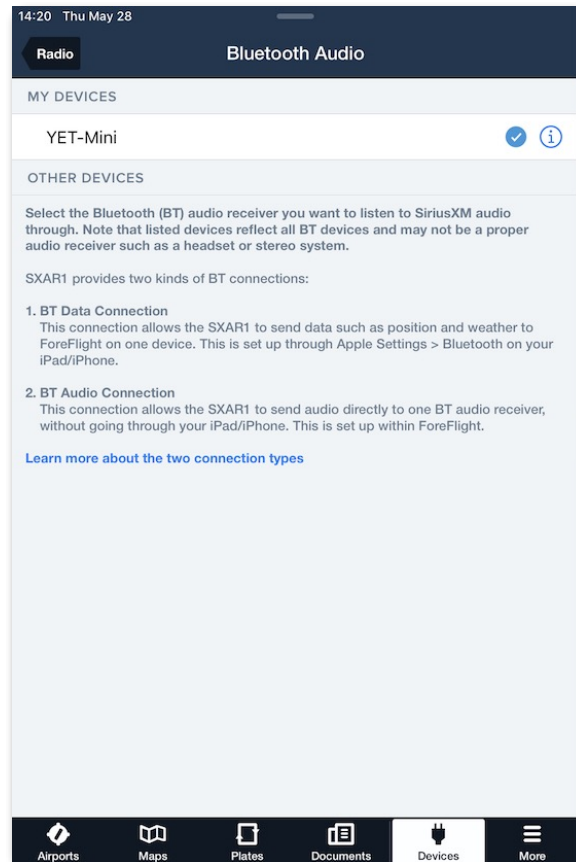


To connect to a Bluetooth audio device for the first time, turn it on and make sure it is in pairing mode. If that Bluetooth audio device was previously paired to your iPad or iPhone, you should “forget” that pairing in Apple Settings so that the device will be available to connect to the SXAR1.

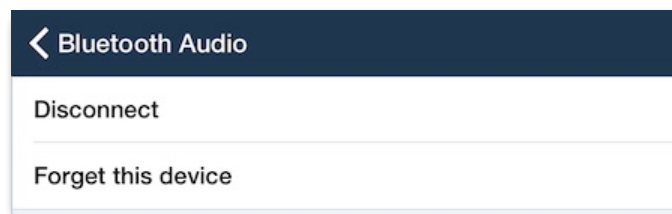
NOTE: many Bluetooth audio devices automatically enter pairing mode when first turned-on, as long as no other previously-paired devices are nearby.

Once the Bluetooth audio device is on and in pairing mode, tap “Bluetooth Audio” to initiate the connection from the SXAR1 to the Bluetooth audio device.

24. FOREFLIGHT CONNECT

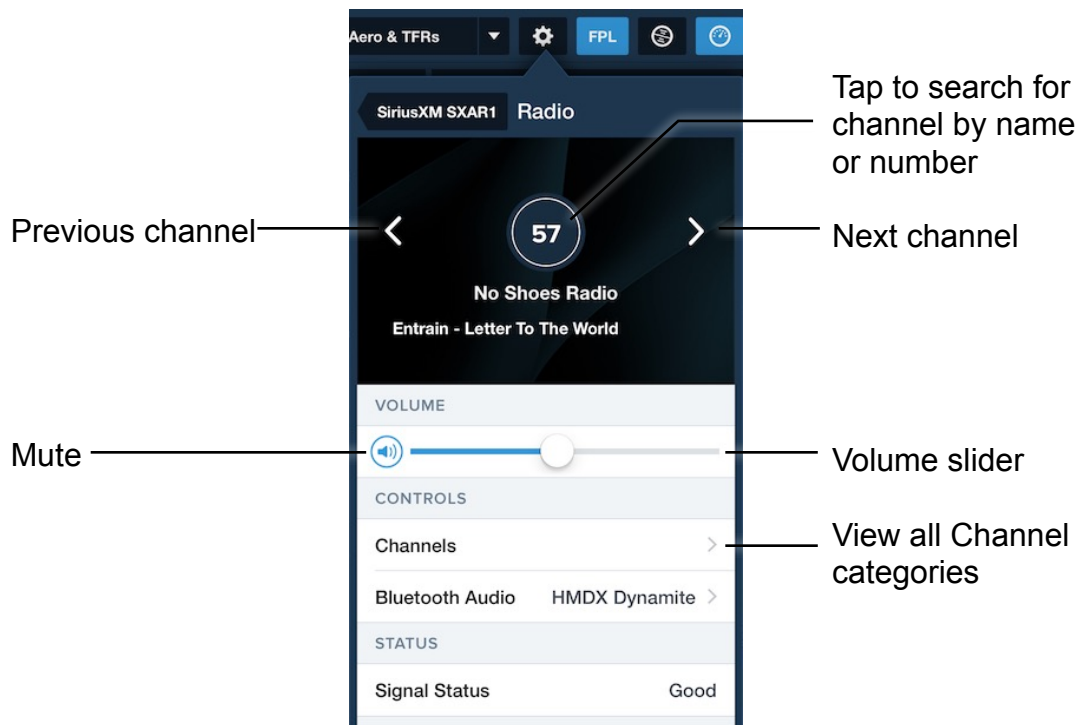


Tap the name of the device to which you would like the SXAR1 to connect. The “spinner” will appear and when the pairing is complete, the connected device will show in the “My Devices” section and audio should begin playing. To disconnect the device, or to forget it completely (which would require re-pairing) tap the “i” next to the device name, then choose the desired option.

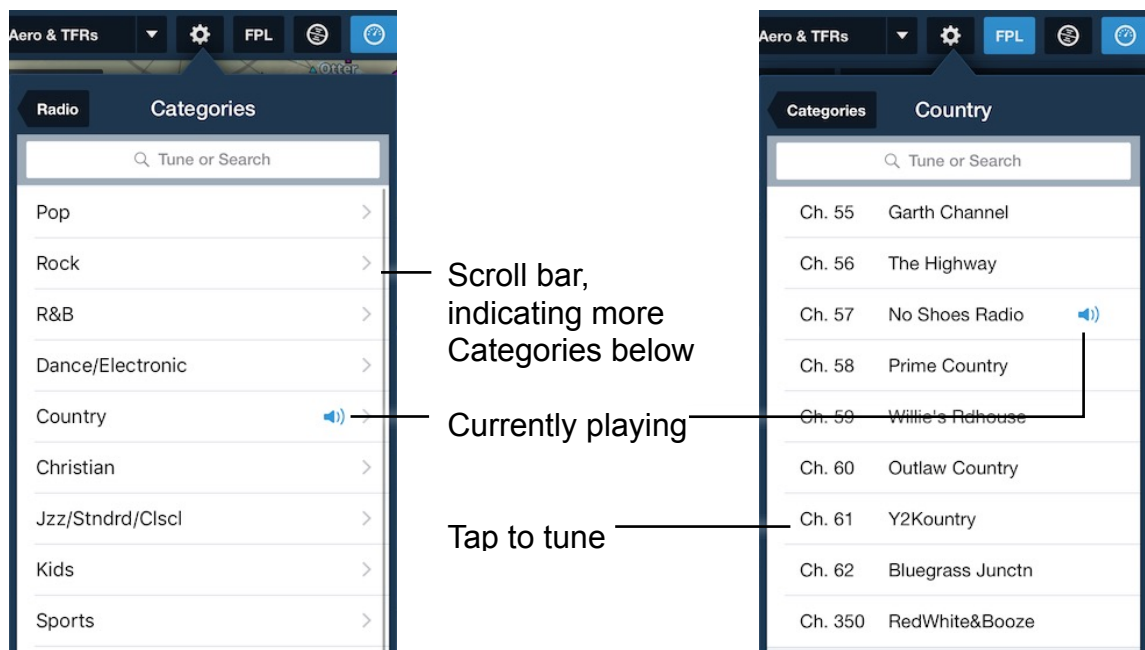


24. FOREFLIGHT CONNECT

24.11.4 SXAR1 Audio Controls

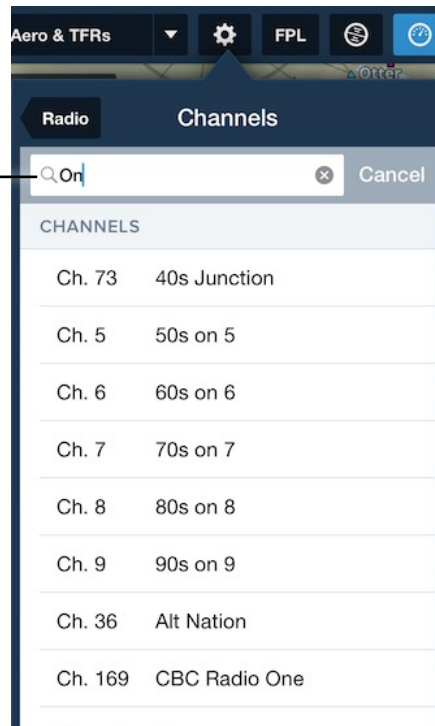


You can tune to a new channel by tapping the Category then Channel, or by typing the Channel number or name (full or partial) in the “Tune or Search” box. A vertical scroll bar shows when there are more Channels or Categories than can be shown, and blue speaker icon shows in the currently-playing Category and Channel.



24. FOREFLIGHT CONNECT

Search by Channel
name or number



For additional information about ForeFlight's support for SiriusXM Satellite Radio and troubleshooting tips, visit <https://foreflight.com/connect/siriusxm/support/>.

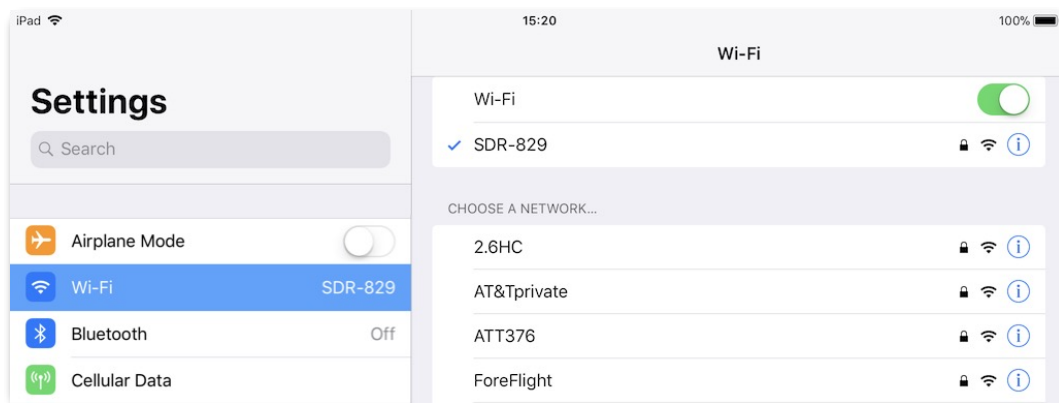
24. FOREFLIGHT CONNECT

24.12 Satcom Direct Router (SDR) or SDR Gateway

All customers can connect to Satcom Direct Router or SDR Gateway to receive in-flight internet data in ForeFlight, but customers with a Performance Plus or Business Performance plan can also receive GPS and indicated altitude, in addition to having more control over the device's internet settings.

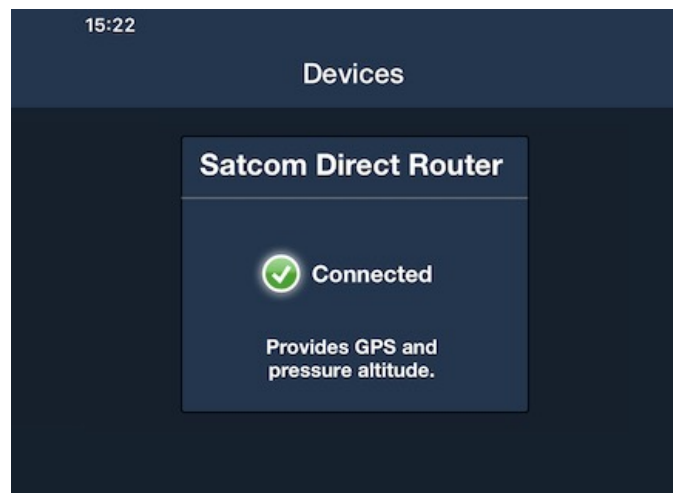
24.12.1 Connecting to Satcom Direct Router or SDR Gateway

To connect to the SDR's Wi-Fi network, open **Apple Settings** > **Wi-Fi** and select "SDR-XXX", where "XXX" is the router's serial number.



24.12.2 Using Satcom Direct Router or SDR Gateway

Once you've joined the Wi-Fi network, open ForeFlight and tap **More** > **Devices** to confirm the connection was recognized by ForeFlight and see what information is being received from the Satcom Direct device.



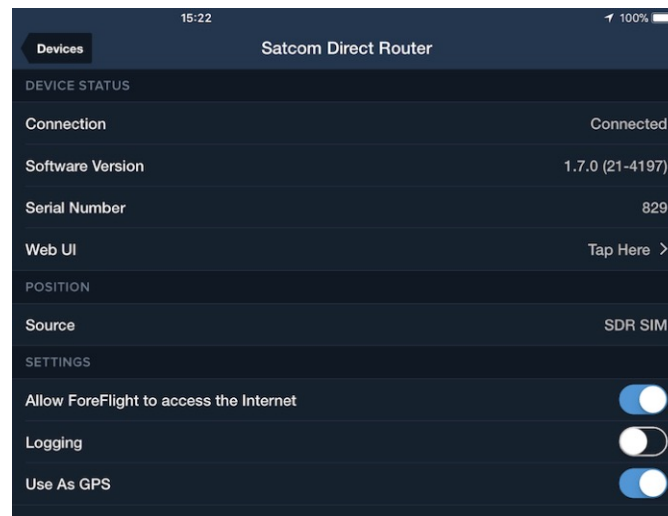
Tap the box to view details about the data being received from it.

24. FOREFLIGHT CONNECT

There are settings that can be adjusted at the bottom of the status page:

- Allow ForeFlight to access the Internet - turn this OFF to prevent ForeFlight from using internet data from the SDR, reducing inflight bandwidth usage and associated costs. This setting is ON by default.
- Logging - used only for diagnosing problems, this manages logging of the data stream received by the SDR. Leave this OFF normally, as it reduces app performance.
- Use as GPS - turn ON to use your aircraft's GPS data routed through the SDR to provide position data to ForeFlight. Turn this OFF if you'd rather receive GPS data from another connected device or from your iPad/iPhone's internal GPS.

NOTE: the SDR supplies GPS lat/long and groundspeed data, but it may not provide GPS altitude or GPS track, depending on the SDR's firmware.



Tap the "Web UI" line to access the SDR LAN network administrator page on Safari.

GPS and Pressure Altitude from SDR

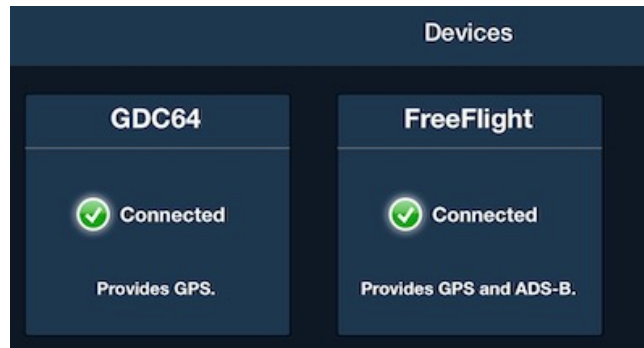
When GPS data is being sent from the SDR to ForeFlight, the Accuracy instrument will show "Accuracy (A429)". When Pressure Altitude data is being sent from the SDR to ForeFlight, the Pressure Altitude instrument will say "Pressure Altitude (A429)", and will have a "Indicated" tag underneath, indicating that the value represents actual indicated altitude.

24. FOREFLIGHT CONNECT

24.13 DAC International GDC64

ForeFlight Mobile 11.10 and later support receiving GPS position and ADS-B data from a properly configured GDC64 with firmware version 7.0.A or later. See <http://dacint.com/products/gdc64> for more information.

The GDC64 will appear with 2 “tiles” in the More > Devices view:



24. FOREFLIGHT CONNECT

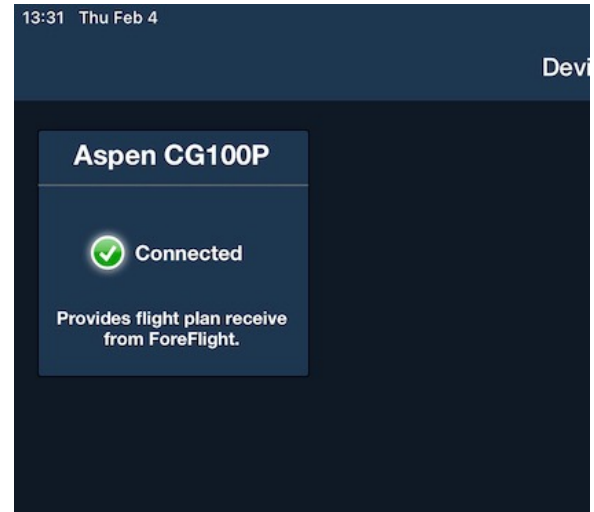
24.14 Pilatus Honeywell Apex & Aspen Connected

Gateway

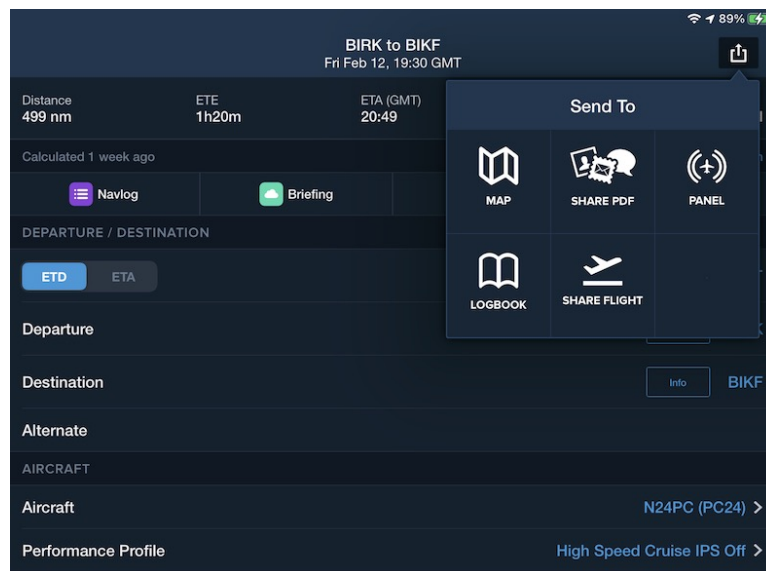
ForeFlight Mobile 13.1 and later with a Performance Plus or Business Performance subscription can send routes to Pilatus PC-12 and PC-24 aircraft that are equipped with both a Honeywell Apex FMS and an Aspen Connected Gateway (CG100P/GC200P).

To send a route the iPad or iPhone must be connected to the Aspen Connected Gateway's Wi-Fi network, via the Apple Settings > Wi-Fi.

After connecting the Aspen GC100P/GC200P "tile" will be shown in More > Devices.

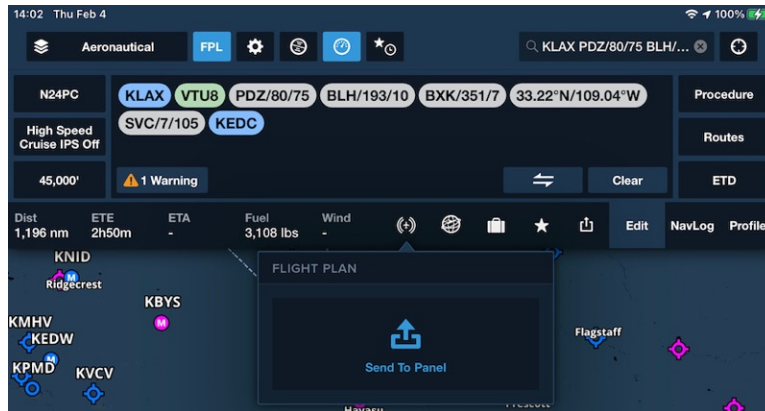


After creating a flight on the Flights page (including passengers and fuel load) you can send the route to the Aspen Connected Gateway by tapping the "Send to" button in the upper-right corner of the Flights page, then choosing "Panel"

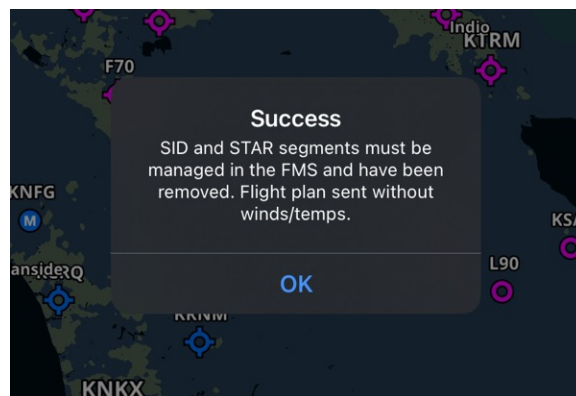


A route can also be sent from the Maps page to the Aspen Connected Gateway by tapping the "FPL" button to open the Flight Plan Editor, entering a route, then tapping the Panel button ((+)) and choosing "SendTo Panel" to send the route.

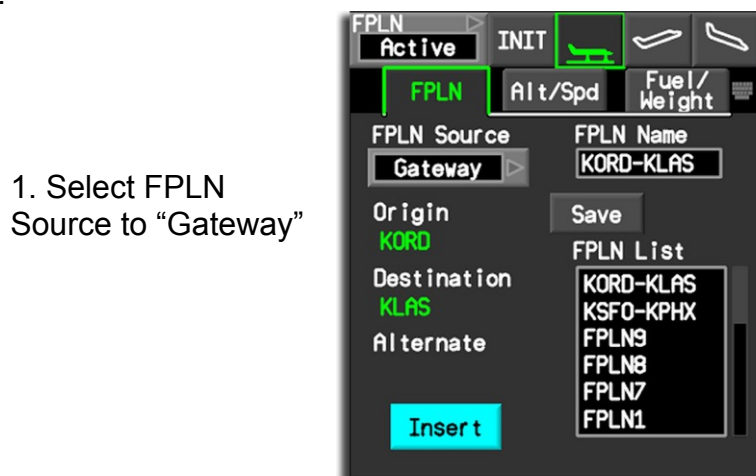
24. FOREFLIGHT CONNECT



IMPORTANT: SIDs/STARs and Approach procedures cannot currently be transferred, so ForeFlight Mobile automatically removes those when sending to the panel. A pop-up message is shown in ForeFlight Mobile after the route is sent, to remind the pilot that the SIDs/STARs and Approach procedures must be managed in the FMS. Also, airways are flattened into individual waypoints when sending to the panel.



After the route is sent to the Aspen Connected Gateway, it must be loaded into the FMS. First, select the FPLN Source to “Gateway” (1) then select the flight from FPLN List (2).



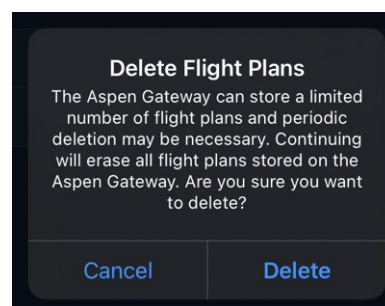
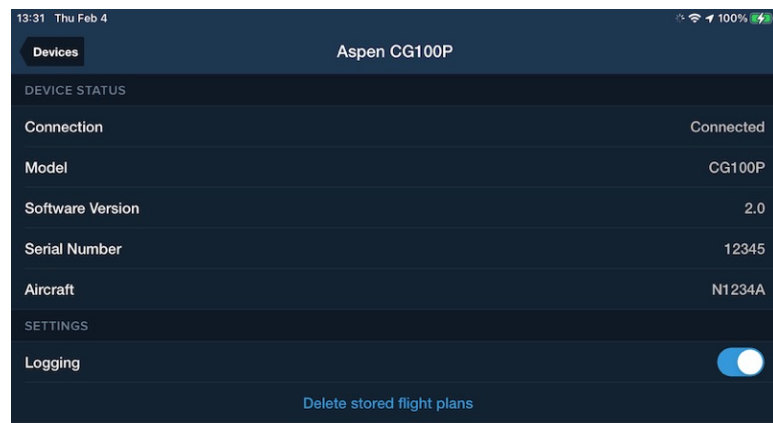
2. Select the flight from the “FPLN List”.

24. FOREFLIGHT CONNECT

Clearing routes from the GC100P/GC200P SD Card

The Aspen GC100P/GC200P 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 GC100P/GC200P “tile” on More > Devices, then tap “Delete stored flight plans”. **IMPORTANT:** Deleting stored flight plans will clear ALL routes that have been sent to the Connected Gateway.



24. FOREFLIGHT CONNECT

24.15 Baron Mobile Link/WXWorx

The Baron Services Mobile Link plugs-in to a WXWorx XM WX receiver, and provides a Wi-Fi connection so that ForeFlight Mobile can access the XM WX data. Please consult the Mobile Link documentation to learn how to setup and connect the device.

The Mobile Link firmware 2.0 or higher allows data access to up to 4 devices at a time. ForeFlight Mobile attempts to get data access whenever it is launched and again any time data is requested by the user. ForeFlight Mobile will release its access when the app is closed via the physical home button.

If a device or app has gained access to the data and does not release it properly, the Mobile Link will automatically release the access for that device after 60 seconds.

The Mobile Link status view in ForeFlight Mobile will state whether data access has been obtained, see the “Status information” section below for more information.

24.15.1 Available Weather

ForeFlight Mobile can display these weather data items from the Baron Mobile Link/WXWorx:

- Radar - for any subscribed region, shown on Maps.
- Satellite - for any subscribed region, shown on Maps
- METARs and METAR-derived data shown on Maps, such as temperature
- TAFs
- Winds Aloft
- TFRs on Maps **SEE IMPORTANT NOTICE BELOW**
- PIREPs on Maps
- AIRMETs/SIGMETs on Maps
- Lightning on Maps (requires Mobile Link firmware version 2.0 or higher)

Data is accessed just as it is when on the ground using an Internet connection. There is no user-configuration required beyond ensuring the Wi-Fi connection to the Mobile Link is properly established.

24. FOREFLIGHT CONNECT

TFRs IMPORTANT NOTICE:

While using a Baron Mobile Link XM WX receiver, up-to-date graphical TFR information is ONLY displayed if you select the TFR Map layer.

However 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 Maps page.

Therefore you should also check the Airports page, under NOTAMs > TFRs for airports along your route, and contact ATC or FSS to confirm that your route does not cross any such TFRs

TFR data may not be updated or displayed if your iPad is “asleep”, is not connected to the Baron Mobile Link, if the Baron Mobile Link receiver is not receiving data from XM satellites, or if the XM satellite data does not include information about that TFR.

Mobile Link Status Information

To learn the status of the Mobile Link connection, subscription, data availability and more, please use the Devices view as described above. When connected to the Mobile Link Wi-Fi access point, Mobile Link will be an option shown in the Devices view. Tap it to see full status information. This information is useful for troubleshooting if you experience problems with the Baron Mobile Link/WXWorx combination.

24. FOREFLIGHT CONNECT

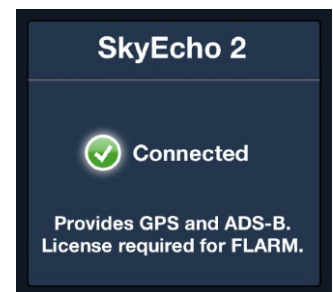
24.16 uAvionix SkyEcho 2 FLARM traffic (Europe-only)

ForeFlight Mobile 11.5 and later support displaying FLARM traffic (available in Europe) from the uAvionix SkyEcho 2. Viewing FLARM traffic in ForeFlight Mobile requires an app-specific FLARM decoding license, which can be purchased as an add-on to your ForeFlight subscription plan. You can add the FLARM license for ForeFlight Mobile at <https://www.foreflight.com/pricing> (enter your email address then proceed to the next page) or sign-in to your account at <https://plan.foreflight.com> and click “Upgrade or Renew My Subscription.”

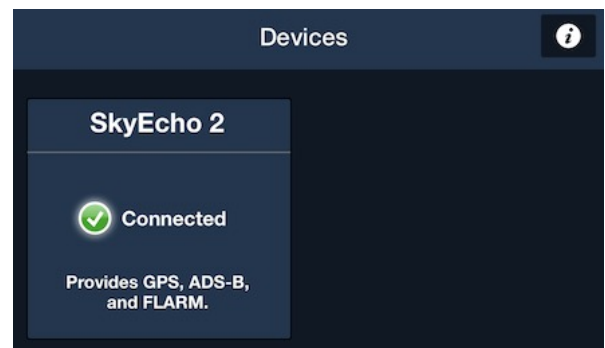


NOTE: FLARM decoding licenses cannot be transferred between devices or apps, so you’ll need a ForeFlight-specific license even if you already have a FLARM license for another app or display.

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 More > Devices 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. You can tap on the “SkyEcho 2” tile to see details about the SkyEcho 2 device and the data being received.



24. FOREFLIGHT CONNECT

24.17 FLARM via NMEA (Europe-only)

Beginning with ForeFlight Mobile 11.7, ForeFlight Mobile 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.

24.18 Other Third-Party Devices (GDL90)

Beginning with ForeFlight Mobile version 10.0, ForeFlight Mobile provides an extension of the industry-standard GDL90 Data Interface Specification for third-party devices to transmit live ADS-B weather and traffic, AHRS, device name, and GPS data to ForeFlight Mobile.

ForeFlight does not test or provide support for devices that use this specification. If you experience problems with a device that uses this specification, please contact the device manufacturer for assistance.

For more information, please see the GDL90 Extended Specification at:
<https://www.foreflight.com/connect/spec/>

ForeFlight Mobile can display ADS-B weather data from a number of supported portable and installed ADS-B receivers. See <https://foreflight.com/connect/> for full details about the currently supported receivers. Please consult your specific device's documentation to learn about how to set up and connect the device.

24.19 ADS-B Weather Products

These are the weather products available from ADS-B:

- **Radar** - local and CONUS, shown on Maps. See radar color vs. intensity legends for [Rain](#).
- **Lightning**
- **Turbulence**
- **Cloud Tops**
- **METARs** and METAR-derived data such as temperature on Maps page.
- **TAFs**
- **Winds Aloft**, at airport locations on Maps page, and Airports page.

24. FOREFLIGHT CONNECT

- **TFRs** on Maps page **SEE IMPORTANT NOTICE BELOW**
- **PIREPs** on Maps page
- **AIRMETs/SIGMETs** (including Graphical AIRMETs) and CWAs on Maps page
- **Special Use Airspace** status - shown on Maps page when viewing airspace details. Hold finger on airspace to view pop-over. Make sure **All** is selected at bottom of pop-over to see airspace details.
- **Outage** messages - messages about outages in ADS-B system can be viewed in More > Devices > status view.

The items listed above are viewed just as they are when on the ground using an Internet connection. There is no user-configuration required beyond ensuring the iPad or iPhone is connected to the ADS-B receiver's Wi-Fi or Bluetooth connection.

24. FOREFLIGHT CONNECT

24.19.1 ADS-B Information

When an ADS-B receiver is connected and a Map layer such as Radar or Traffic that uses ADS-B is selected, a data quality indicator is shown in the upper-left corner of the Map, underneath the timestamp. If known, the name of the receiver (such as “Stratus”) is shown to the left of the data quality indicator.

No Data is shown in White when the ADS-B receiver is receiving data from towers but no ADS-B weather data has yet been received. Typically this will only be shown for a couple of minutes at the beginning of a flight.

No Towers is shown in Red when the ADS-B receiver isn’t receiving data from any ground-based towers;

Marginal is shown in Orange when the ADS-B receiver is receiving data from a small number of towers;

Good is shown in White when data is being received from more towers:



24. FOREFLIGHT CONNECT

24.20 Animated ADS-B Radar

When the Radar layer is selected on the Maps page, the animation play button is displayed in the lower-left corner of the screen. ForeFlight Mobile will animate (loop) up to 5 frames of NEXRAD data. Regional NEXRAD (within ~250 nm of your position) is updated every 5 minutes, while CONUS radar is updated every 15 minutes.

If you tap the play button before 2 or more frames of radar data have been received, you will see a message that the radar cannot be animated until more data is received.



Tap the Maps Settings (gear) button and then select the ADS-B receiver > Status to see how many radar frames have been received, as when other products were updated.

Settings Sentry	
DEVICE STATUS	
Connection	Connected
ADS-B Firmware	2.4.44
Wi-Fi Firmware	0.2.21-Sentry - Tap to Update to 0.2.37 >
Serial Number	398973192
Battery	45%
Carbon Monoxide	Normal
DATA (ADS-B)	
General NOTAMs	145 >
Local Radar Update	Moments ago
National Radar Update	11 mins ago
Radar Frames	5
Cloud Tops Update	7 mins ago
Icing Update	Moments ago
Lightning Update	Moments ago
Turbulence Update	6 mins ago
Text Update	Now
Text Report Count	1,424

24. FOREFLIGHT CONNECT

24.21 ADS-B Tower Location on Map

When **Show ADSB Towers** is **ON** in the [ADS-B receiver] > Status settings menu, the location of each ADS-B Tower currently being received is shown on the Map.



The Lat/Long location of each tower is shown under the tower icon, and the type of tower (Low, Medium, or High) is shown next to the tower. This table from the AIM (available in Documents > Drive > FAA) shows the differences between the weather data sent from each type of ADS-B tower.

TBL 7-1-2
Product Parameters for Low/Medium/High Altitude Tier Radios

Product	Surface Radios	Low Altitude Tier	Medium Altitude Tier	High Altitude Tier
CONUS NEXRAD	N/A	CONUS NEXRAD not provided	CONUS NEXRAD imagery	CONUS NEXRAD imagery
Winds & Temps Aloft	500 NM look-ahead range	500 NM look-ahead range	750 NM look-ahead range	1,000 NM look-ahead range
METAR	100 NM look-ahead range	250 NM look-ahead range	375 NM look-ahead range	CONUS: CONUS Class B & C airport METARs and 500 NM look-ahead range Outside of CONUS: 500 NM look-ahead range
TAF	100 NM look-ahead range	250 NM look-ahead range	375 NM look-ahead range	CONUS: CONUS Class B & C airport TAFs and 500 NM look-ahead range Outside of CONUS: 500 NM look-ahead range
AIRMET, SIGMET, PIREP, and SUA/ SAA	100 NM look-ahead range. PIREP/SUA/ SAA is N/A.	250 NM look-ahead range	375 NM look-ahead range	500 NM look-ahead range
Regional NEXRAD	150 NM look-ahead range	150 NM look-ahead range	200 NM look-ahead range	250 NM look-ahead range
NOTAMs D, FDC, and TFR	100 NM look-ahead range	100 NM look-ahead range	100 NM look-ahead range	100 NM look-ahead range

24. FOREFLIGHT CONNECT

24.22 ADS-B Traffic

ForeFlight Mobile can display ADS-B TIS-B traffic from a number of supported portable and installed ADS-B receivers. See <https://foreflight.com/connect/> for full details about the currently supported receivers. Please consult your specific device's documentation to learn about how to set up and connect the device.

IMPORTANT TRAFFIC NOTICE

TRAFFIC DISPLAY FEATURES MAY NOT SHOW ALL AIRCRAFT IN THE AREA AND ARE NOT TO BE USED AS A PRIMARY MEANS OF AIRCRAFT VISIBILITY, DETECTION OR AVOIDANCE. TRAFFIC DISPLAYED WILL VARY DEPENDING ON ADS-B COVERAGE AREAS AND ON THE TYPE AND VERSION OF ADS-B “IN” AND ADS-B “OUT” EQUIPMENT INSTALLED IN YOUR AIRCRAFT AND OTHER AIRCRAFT.

IF YOUR AIRCRAFT IS NOT EQUIPPED WITH ADS-B “OUT”, YOU WILL NOT RECEIVE A COMPLETE PICTURE OF TRAFFIC. YOU MAY EVEN RECEIVE NO TRAFFIC AT ALL. THIS IS DUE TO THE DESIGN AND IMPLEMENTATION OF THE ADS-B/TIS-B SYSTEM BY THE FAA.

24.22.1 Traffic Access in ForeFlight Mobile

Important Note:

ADS-B traffic data is NOT saved by Weather Replay. ForeFlight Mobile must be running in order for ADS-B traffic to be displayed.

Some ADS-B receivers like the Sentry, include a dual-band 978 MHz UAT + 1090 MHz receiver. ADS-B traffic may be transmitted over one or both bands. Aircraft operating above 18,000' use the 1090ES band, though these aircraft continue to broadcast on 1090ES when descending below 18,000'.

To display Traffic, tap the Maps drop-down and select the Traffic layer. Use the “Hide Distant Traffic” Setting (later in this section) to hide traffic beyond 15nm or +/- 3,500' from your location.

24. FOREFLIGHT CONNECT

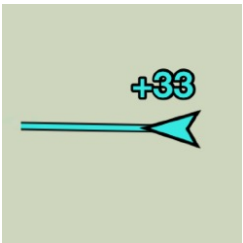

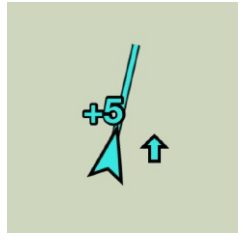
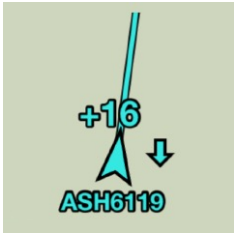
NOTE: While on the ground if your device is connected to the Internet, traffic data streamed from FlightAware can be shown on the Map when the Traffic layer is selected. See [Internet Traffic](#) for more information.

Status Information

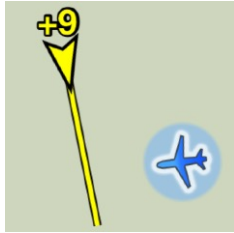
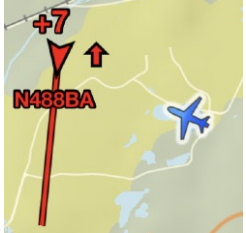
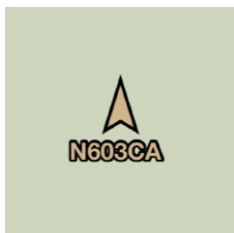
To learn the status of the ADS-B receiver connection, data availability and more, use the Devices view as described above. When connected, the ADS-B receiver will be an option shown in the Devices view. Tap it to see full status information including the traffic updates received from ADS-B ground stations and aircraft on 978/UAT and 1090 bands.

24.22.2 Traffic Symbols

Moving traffic targets are displayed as “arrowheads” pointing in the direction that the target is traveling. Stationary targets, or ones with no direction or speed information, are shown as diamonds. Airborne traffic targets are shown in blue while surface targets are shown in brown. When your aircraft and a traffic target are moving >40kts a traffic target that is within 2.0 NM horizontally and +/- 1,200’ vertically of your current position (**or will be within 45 seconds**) the target’s color changes to **yellow**. When a traffic target is within 1.3 NM horizontally and +/- 1,200’ vertically of your current position (**or will be within 25 seconds**) the target’s color changes to **red**. Red traffic targets that are no longer an immediate hazard remain highlighted for 15 seconds to help locate the target on the map.

Moving target (+33 is 3,300’ above)		Stationary target, or unknown direction/ speed (-30 is 3,000’ below)	
Climbing >500 ft/min (+5 is 500’ above)		Descending >500 ft/min (+16 is 1,600’ above)	

24. FOREFLIGHT CONNECT

<p>Within 2.0 NM and +/- 1,200', or will be within 45 seconds (+9 is 900' above)</p>		<p>Within 1.2 NM and +/- 1,200', or will be within 25 seconds (+7 is 700' above)</p>	
<p>Ground target (brown)</p>			

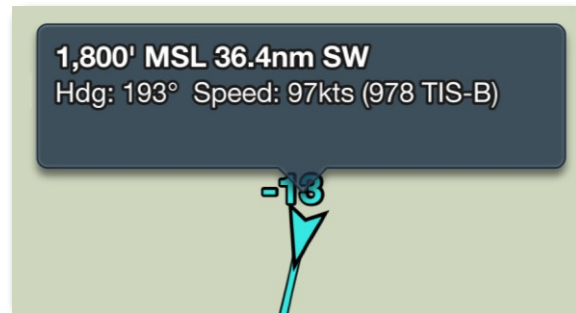
The relative altitude (in 100's of feet) between your current altitude and the target's altitude is shown with a + indicating above and a - indicating below your current altitude. The TrafficTrend™ vector is projected out of the front of the arrowhead to indicate the target's expected position in the next 60 seconds (longer vector = faster speed).

IMPORTANT: Because of the way the ADS-B system (including aircraft ADS-B transmitters & receivers, and ADS-B ground stations) operates, ForeFlight Mobile may at times show relative altitudes of traffic targets based on the pressure altitude detected from your aircraft's ADS-B transmitter, and the pressure altitude read from a traffic target's ADS-B data. As a result of the cumulative inaccuracies in pressure altitude systems, you should consider any target shown to be within 500' vertically as potentially being at the same altitude as your aircraft. Never use ADS-B traffic data from ForeFlight Mobile as the sole means of traffic avoidance; always use "See & Avoid" or direct instructions from ATC.

NOTE: Some transmitted traffic data can be incomplete at times, so aircraft flight/tail number, vertical speed and TrafficTrend vector may not be available for one or more targets.

Aircraft equipped with ADS-B "Out" transmit additional data such as their tail or flight number, which is shown below the target symbol.

24. FOREFLIGHT CONNECT



You

can tap on any target to display a popup with additional information, which can include target tail or flight number, heading, speed, relative direction and altitude vs, your current position, and whether the information was broadcast via 978 or 1090.

NOTE: Garmin ADS-B devices do not specify what frequency a traffic target was broadcast on.

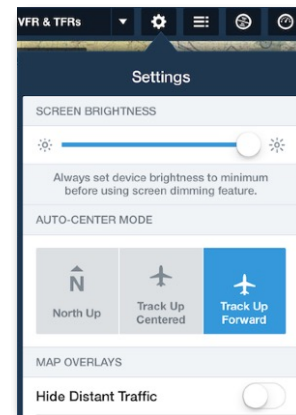
If the traffic target has a three-letter callsign, the popup will also show the phonetic name for that callsign as well as the company name it refers to. Tap anywhere outside the popup to close it.

24. FOREFLIGHT CONNECT

24.22.3 Hide Distant Traffic Setting

The Hide Distant Traffic setting, shown when your iPad or iPhone is connected to an ADS-B receiver, is accessed via “Gear” button on the Maps page or on the More page under Devices > ADS-B receiver > Status.

When switched ON, this hides traffic that is more than 15NM away from your current GPS location and/or more 3,500’ above or below your current altitude, useful if you are flying in busy airspace or near large airports with lots of commercial traffic. When ON, a “Hiding Distant Traffic” reminder is displayed in the bottom right corner of the Maps page. Traffic targets that are yellow or red (see [Traffic Symbols](#) & [Traffic Alerts](#)) will always be displayed even if Hide Distant Traffic is ON.



the

than

Hiding Distant Traffic

24.22.4 Traffic in Synthetic Vision

In ForeFlight Mobile 10.2 and later, traffic targets within 11nm of your current position are shown in the Synthetic Vision view, including the [SV Glance](#). To convey distance,



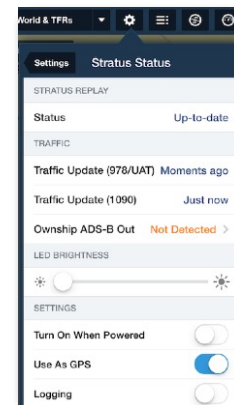
24. FOREFLIGHT CONNECT

traffic targets closer to your position are shown in a larger size, and traffic targets fade out beyond 11nm distance away from your position.

24.22.5 Ownship ADS-B Out Information

If your aircraft is equipped with ADS-B Out that is correctly configured and transmitting, tap the **Ownship ADS-B Out** entry ADS-B Receiver Status to see the tail-number, altitude and location being broadcast by your ADS-B Out equipment.

If your aircraft is not equipped with ADS-B Out, or the ADS-B is improperly configured or is not transmitting, the **Ownship ADS-B Out** entry shows **Not Detected**.



in

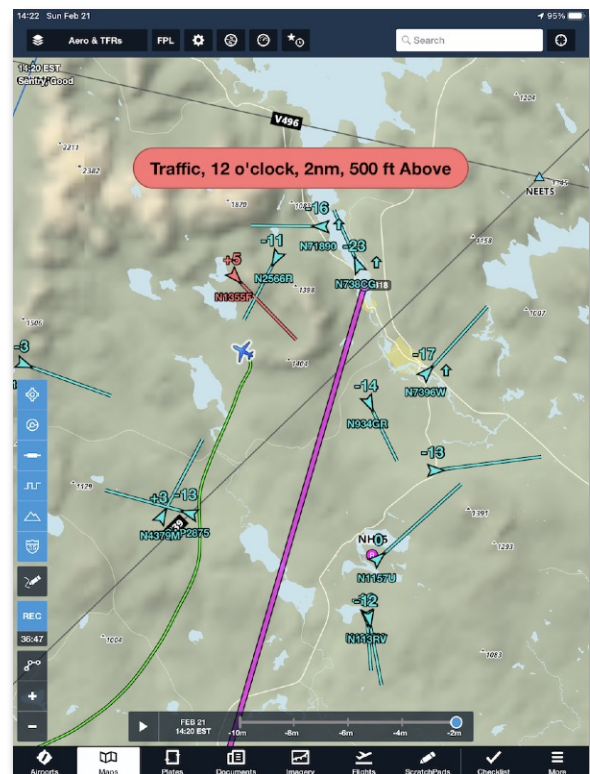
Out

24.22.6 Traffic Alerts

If your aircraft and an ADS-B Traffic target are each moving >40 kts, the traffic target will turn yellow if it is within 2.0 NM horizontally and +/- 1,200' vertically of your current position, **or will be within 45 seconds**.

When the **Traffic Alerts** setting is **ON** in **More > Settings > Alerts**, the traffic target will turn red and a traffic popup will be displayed if an ADS-B traffic target comes within 1.3 NM horizontally and +/- 1,200' vertically of your aircraft's position, **or will be within 25 seconds**. Red traffic targets remain highlighted as red (or yellow if they move more than 1.3 NM away) for 15 seconds to aid in identifying the target on the map.

The popup includes “clock” direction (relative to your aircraft's current track) and relative altitude information to help you locate the target more quickly.



If ForeFlight detects that your aircraft is equipped with ADS-B Out, an audio alert will also be issued with the same information as the visual popup. If no ADS-B Out is detected, **you will not receive traffic audio alerts**.

24. FOREFLIGHT CONNECT

If your aircraft is not equipped with ADS-B Out but you fly within range of the traffic “puck” around another aircraft that is equipped with ADS-B Out, you may see a false target representing your aircraft, and a visual traffic alert may also be displayed.

NOTE: Traffic alerts are **ADVISORY** in nature and are **NOT** a replacement for “See & Avoid” or ATC traffic advisories.

IMPORTANT: Because of the way the ADS-B system (including aircraft ADS-B transmitters & receivers, and ADS-B ground stations) operates, ForeFlight Mobile may at times show relative altitudes of traffic targets based on the pressure altitude detected from your aircraft’s ADS-B transmitter, and the pressure altitude read from a traffic target’s ADS-B data. As a result of the cumulative inaccuracies in pressure altitude systems, you should consider any target shown to be within 500’ vertically as potentially being at the same altitude as your aircraft. Never use ADS-B traffic data from ForeFlight Mobile as the sole means of traffic avoidance; always use “See & Avoid” or direct instructions from ATC.

Like the Runway Proximity Advisor™, the Traffic Alert popup will display on any screen in ForeFlight Mobile. However if ForeFlight Mobile is not displayed on the screen (e.g., if you are viewing another app, or the iPad or iPhone is sleeping) Traffic Alert popups will not be shown.

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.



ForeFlight Checklist Guide

SUPPLEMENTAL GUIDES

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

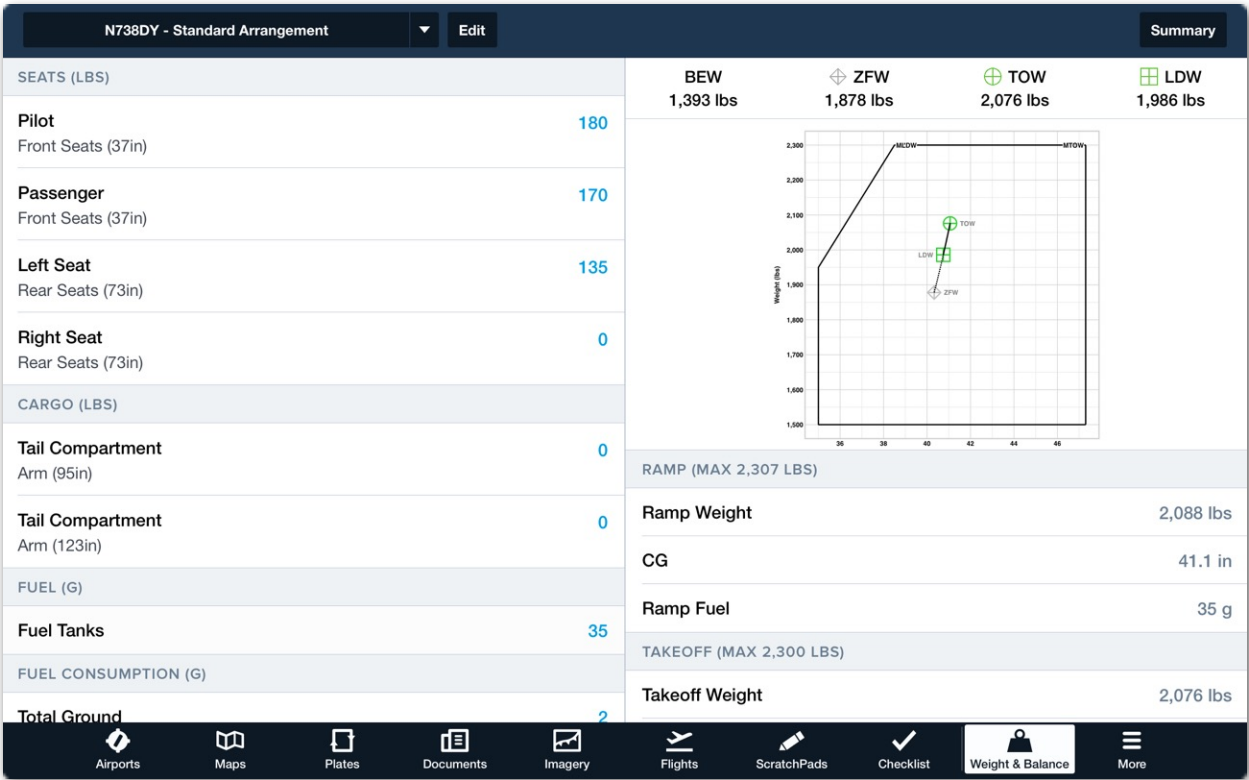
Weight & Balance Guide

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 Synchronize User Data is enabled in **More > Settings**.

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

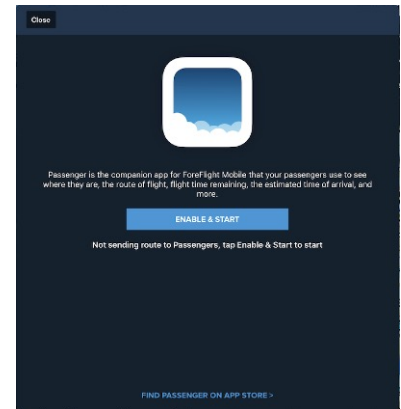


Weight & Balance

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.

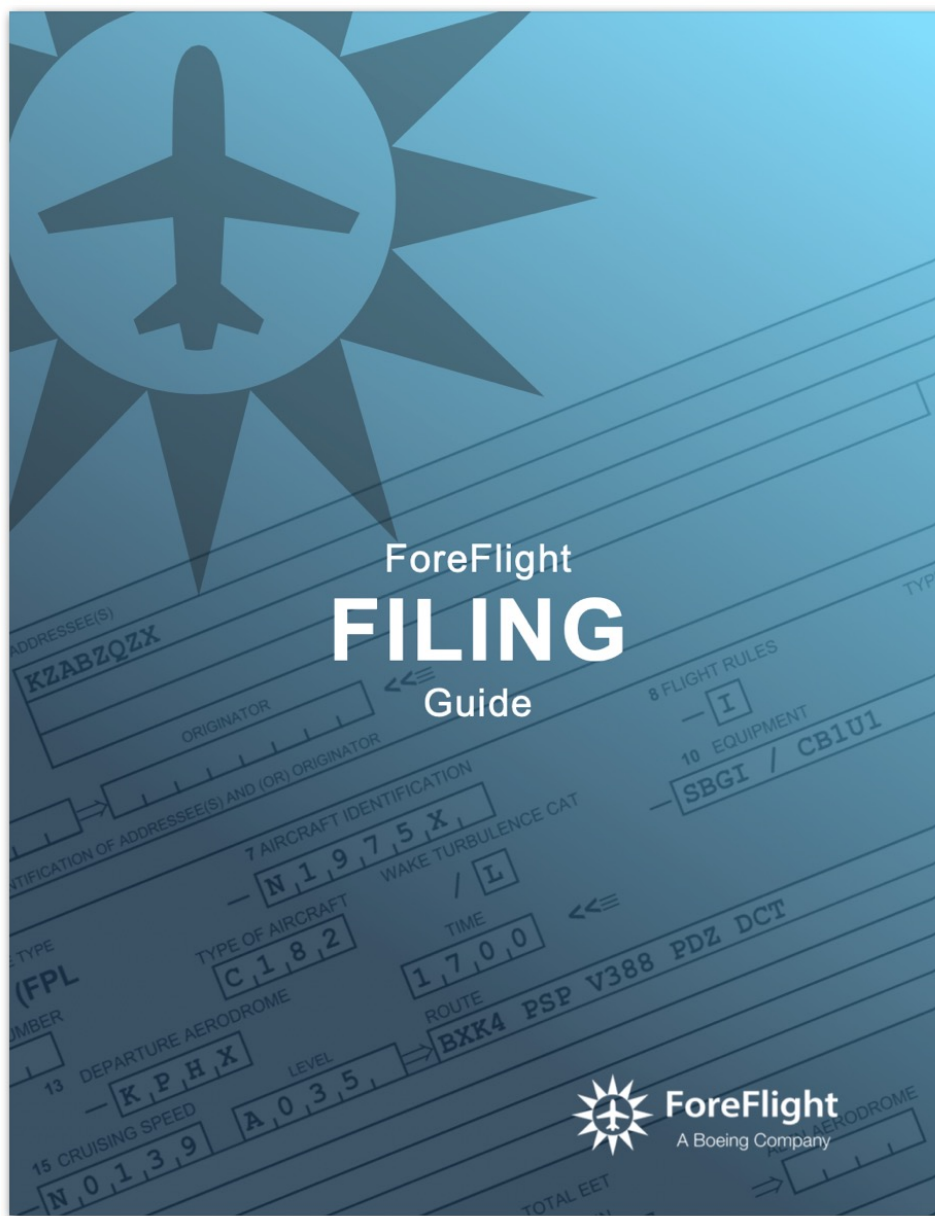
Passenger mode is available in ForeFlight Mobile version 11.2 and later. To activate Passenger mode, first make sure that your iPad's or iPhone's Wi-Fi is ON, and that Wi-Fi is ON in the device(s) being used for Passenger. **NOTE:** Your device does not need to be connected to the same Wi-Fi network 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**.



SUPPLEMENTAL GUIDES

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.



ForeFlight Filing Guide

CHANGE HISTORY

Version	Date	Change Summary
14.6	July 2022	<ul style="list-style-type: none"> • Reorganization of chapters. • New Download setup User Interface. • Update to Aircraft and Maps chapters. • Updates Content Pack content.
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 USA 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



ForeFlight

A Boeing Company

ForeFlight, LLC
2323 S Shepherd Dr, Houston, TX 77019
www.foreflight.com