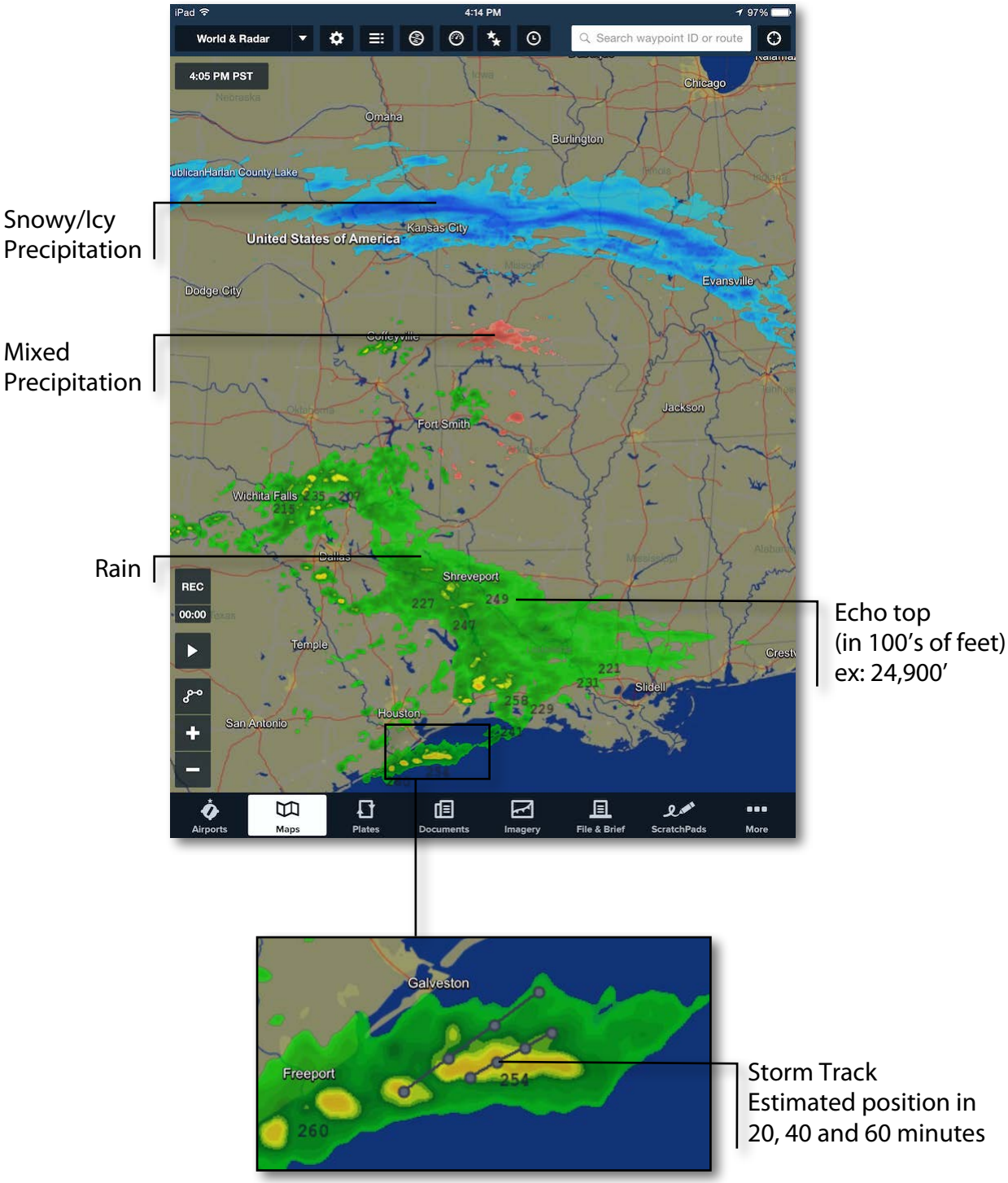
Weather Legends in
FOREFLIGHT MOBILE

ForeFlight
Intelligent Apps for Pilots™

15th Edition

Covers ForeFlight Mobile v9.6 on iPad

Radar Legends (when from Internet)



Rain - Radar Intensity (dBZ) vs. Color

Based on RGB values assigned to dBZ range(s)

dBZ	Internet Color[1]	ADS-B Color[2,4]	SiriusXM Color[3]
5		none shown	none shown
10			
15			
20			
25			
30			
35			
40			
45			
50			
55			
60			
65			
70			
75			
95			

1. Colors are interpolated between levels when rendered on an image.
2. ADS-B (FIS-B) NEXRAD radar is displayed with 6 intensity ranges.
3. Some dBZ intensity/color divisions do not fall exactly on 5 dBZ lines, so are shown as close as possible to specification.

Mixed Rain/Snow - Radar Intensity (dBZ) vs. Color

Based on RGB values assigned to dBZ range(s)

dBZ	Internet Color[1]	ADS-B Color[2,3,5]	SiriusXM Color[4]
5		none shown	none shown
10			
15			
20			
25			
30			
35			
40			
45			
50			
55			
60			
65			
70			
75			

1. Colors are interpolated between levels when rendered on an image.
2. ADS-B (ie: FIS-B) NEXRAD radar is displayed with 6 intensity ranges.
3. FIS-B NEXRAD doesn't include precipitation type, so "Mixed" is displayed at the same reflectivity colors as rain. See AIM Chapter 7: http://tfmlearning.fly.faa.gov/publications/atpubs/aim/chap7/aim0701.html
4. Some dBZ intensity/color divisions do not fall exactly on 5 dBZ lines, so are shown as close as possible to specification.

Snow - Radar Intensity (dBZ) vs. Color

Based on RGB values assigned to dBZ range(s)

dBZ	Internet Color[1]	ADS-B Color[2,3,5]	XM Color[4]
5		none shown	none shown
10			
15			
20			
25			
30			
35			
40			
45			
50			
55			
60			
65			
70			

1. Colors are interpolated between levels when rendered on an image.
2. ADS-B (ie: FIS-B) NEXRAD radar is displayed with 6 intensity ranges.
3. FIS-B NEXRAD doesn't include precipitation type, so "Snow" is displayed at the same reflectivity colors as rain. See AIM Chapter 7: http://tfmlearning.fly.faa.gov/publications/atpubs/aim/chap7/aim0701.html
4. Some dBZ intensity/color divisions do not fall exactly on 5 dBZ lines, so are shown as close as possible to specification.

Four-color Radar - Radar Intensity (dBZ) vs. Color

Based on RGB values assigned to dBZ range(s)

dBZ	Internet Color	ADS-B Color	SiriusXM Color[1]
5	none shown	none shown	none shown
10			
15			
20			
25			
30			
35			
40			
45			
50			
55			
60			
65			
70			
75			
95			

1. Baron Mobile Link/WXWorx radar does not display in 4-color mode. Only available with SiriuxXM when using the SXAR-1 receiver.

Baron Mobile Link/WXWorx XM Radar Intensity (dBZ) vs. Color

Based on RGB values assigned to dBZ range(s)

dBZ	Rain	Mixed Rain/Snow	Snow
5	none shown	none shown	none shown
10			
15			
20			
25			
30			
35			
40			
45			
50			
55			
60			
65			
70			
75			none shown
95		none shown	

1. Some Baron Mobile Link/WXWorx XM dBZ intensity/color divisions do not fall exactly on 5 dBZ lines, so are shown as close as possible to specification.

Icing Legend (Internet & SXAR1)

Icing Intensity	Color
Trace, Light	
Moderate	
Heavy, Severe	
SLD Threat (**SXAR1 only**)	

Note: SLD (supercooled large droplets) Threat indicates the potential presence of large droplets of sub-freezing liquid water, which present a more serious icing hazard than standard icing conditions. See this page for more information on SLD.

Turbulence Legends

Internet Turbulence	
EDR Intensity	**Color**
10	
20	
30	
40	
50	
60	
70	
80	
90	

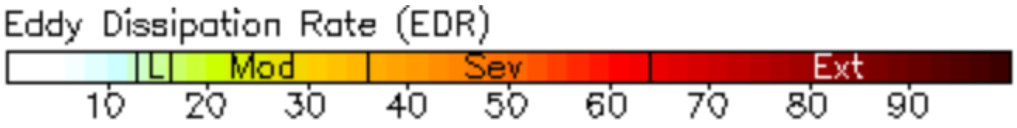
SXAR1 Turbulence	
Turbulence Intensity	**Color**
Light	
Moderate	
Severe	
Extreme	

Turbulence intensity is ultimately based on EDR (eddy dissipation rate), a measure of how quickly the atmosphere is releasing energy; however, how this numerical value translates into inflight turbulence intensity depends on a given aircraft's weight.

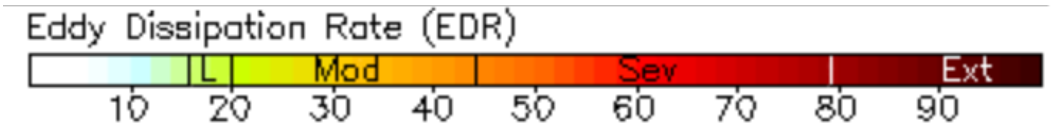
The internet turbulence layer provides an objective (forecast) measure of EDR which will need to be interpreted in the context of a given aircraft's weight category to arrive at an actual turbulence intensity. The SXAR1 turbulence layer, on the other hand, assumes a **medium** aircraft weight category and provides actual turbulence intensity for aircraft in that category; smaller aircraft will experience more severe turbulence at a given intensity and larger aircraft will experience less severe turbulence.

The following graphics correlating EDR with turbulence intensity for each weight category can be used as a rough guide:

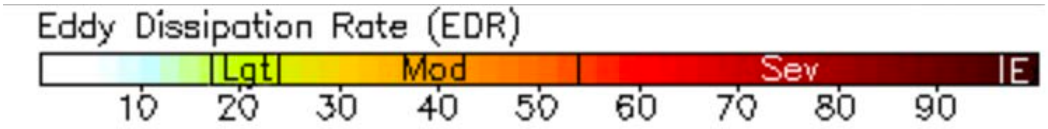
Light Aircraft (takeoff weight of 15,500 lbs or less)



Medium Aircraft (takeoff weight of 15,501 to 299,999 lbs)



Heavy Aircraft (takeoff weight of 300,000 lbs or more)



Surface Analysis Legend (Internet & SXAR1)

Feature	Symbol
Isobars	
Pressure Labels	1080
High Pressure Centers	H
Low Pressure Centers	L
Cold Front	
Warm Front	
Occluded Front	
Stationary Front	
Trough	
Squall Line (XM only)	
Dry Line (XM only)	

Radar Legends (when from Internet)

	Lightning (in last 5 minutes)
	Mesocyclone activity (Vortex of rising , rotating air)
	Tornado
	Hail

PIREP Legend

	Icing PIREPs (increasing severity)
	Turbulence PIREPs (increasing severity)
	Sky & Weather PIREP

Enhanced Satellite

The Enhanced Satellite layer uses a combination of visible and infrared satellite imagery to provide a global image of cloud formations.

Visible satellite images are primarily used during daytime and are “enhanced” with infrared highlights for the highest cloud tops. During the night, when visible satellite images are not available, the layer relies entirely on infrared images.

Shades of gray are used to represent the lowest-topped clouds; the darker the shade of gray, the lower the cloud tops.

Above the lightest shades of gray you may see blueish colors representing still colder and higher tops. Above this, shades of yellow, orange and red represent the coldest and highest cloud tops.

As the temperature of the atmosphere generally decreases with height, a pilot can get a pretty good idea which clouds are high-level and which are low-level based on the color or shades of gray depicted. **Cold cloud tops are often indicative of active thunderstorms that can produce severe or extreme convective turbulence.**

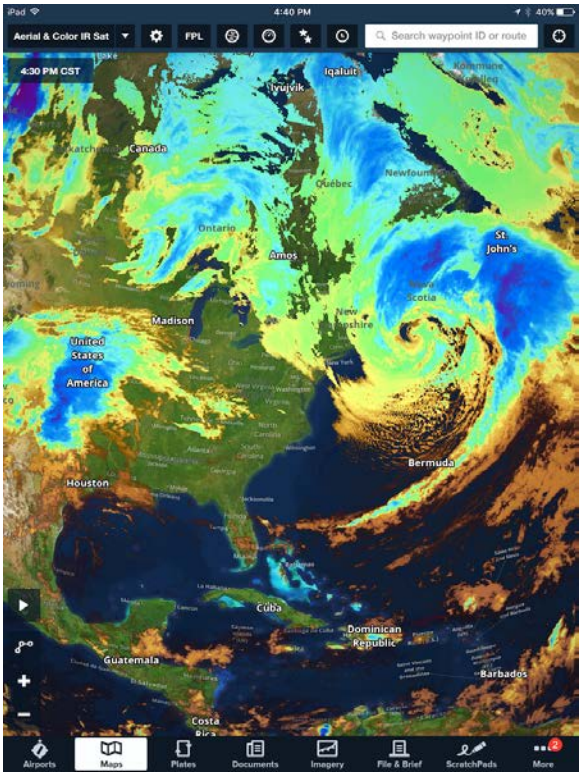
One thing to note is that thick cirrus clouds at very high altitudes will also show up as very cold clouds even though they may not be associated with deep, moist convection. Most of the time these high cirrus clouds do not have the same cellular appearance as convective clouds and thus have very little variation in color.

See the temperatures that correspond to different colors in the table on the next page.

Based on RGB values assigned to temperature range(s)

Temperature ºC	Color	Relative Cloud Top Height
-83		**Higher**
-75		
-70		
-65		
-63		
-54		
-50.2		
-50		
-38		
-28		
+12		**Lower**

Color IR Satellite



Unlike the Enhanced Satellite layer, the Color IR Satellite layer relies solely on infrared satellite imagery to display global cloud coverage, and uses a more refined color scale to represent cloud top temperature.

The IR Satellite layer is a close cousin of the static color IR satellite images found in the Imagery view. The static images show not only the temperature of the cloud tops using the same colors, but also the temperature of the surface of the earth. This can make it difficult to know where clouds exist and where the sky is clear.

The main improvement of the Color IR Satellite layer over the static images is that it attempts to mask out regions where the sky is clear, showing the map background in those regions instead of the surface temperature.

While this masking algorithm works a majority of the time, it can be difficult to get it right every single time simply using temperature alone. For example, anytime there's a shallow low-topped stratus deck, the tops of the clouds may actually be slightly warmer than the surface of the earth courtesy of a surface-based temperature inversion. So the algorithm may have a difficult time discerning where it is cloudy or clear. It's important to always enable the Sky Coverage layer to pick up on these issues when they occur.

You can learn more about the Color IR Satellite layer and how it can be used to gauge cloud height by reading this blog post by weather scientist Scott Dennstaedt.

See the temperatures that correspond to different colors in the table on the next page.

Based on RGB values assigned to temperature range(s)

Temperature ºC	Color	Relative Cloud Top Height
-72		**Higher**
-68		
-64		
-60		
-56		
-52		
-48		
-44		
-40		
-36		
-32		
-28		
-24		
-20		
-16		
-12		
-8		
-4		
0		
4		
8		
12		
16		
20		
24		
28		
32		
47	*Transparent*	**Lower**

Weather Layer Color Coding

Weather Overlay	Color coding	
Flight Category	LIFR: Magenta. Ceiling less than 500 feet and/or visibility less than 1 mile. IFR: Red. Ceiling 500 to less than 1,000 feet and/or visibility 1 to less than 3 miles. MVFR: Blue. Ceiling 1,000 to 3,000 feet and/or visibility 3 to 5 miles inclusive. VFR: Green. Ceiling greater than 3,000 feet and visibility greater than 5 miles; includes sky clear. Unknown: gray question-mark	
Winds Aloft *(wind barb color)*	***Altitudes < 12,000'*** 0-29 knots 30-39 knots 40-49 knots 50-59 knots 60-69 knots ≥70 knots	***Altitudes ≥ 12,000'*** 0-69 knots 70-89 knots 90-109 knots 110-124 knots 125-149 knots ≥150 knots
Surface Wind *(wind barb color)*	**Black:** Peak <20 knots **Orange:** Peak 20-30 knots: **Red:** Peak >30 knots:	

Wind Barb symbology	Wind direction is in “true” degrees depicted by a stem (line) pointed in the direction the winds are coming from. Barbs indicate speed in 5 knot increments. Short barb = 5 kts; Long barb = 10 kts; Flag = 50 kts Examples: Calm 5 kts 15 kts 60 kts
Dew Point Spread	4 0-4° C: Orange 5 ≥5° C: Green
Temperature	2 <3° C: Red 3 3-34° C: Green 35 ≥35° C: Orange
Visibility *(same as Flight Category colors)*	0 <1 SM: Magenta 2 1-2 SM: Red 5 3-5 SM: Blue 6 >5 SM: Green
Ceiling *(same as Flight Category colors)*	1 <500’: Magenta 5 500’-999’: Red 10 1000’-2999’: Blue 31 ≥3000’: Green

Sky Coverage	Sky Clear Few Scattered Broken Overcast
PIREPs	Icing PIREPs Turbulence PIREPs Sky & Weather PIREP

Aeronautical Maps Symbols

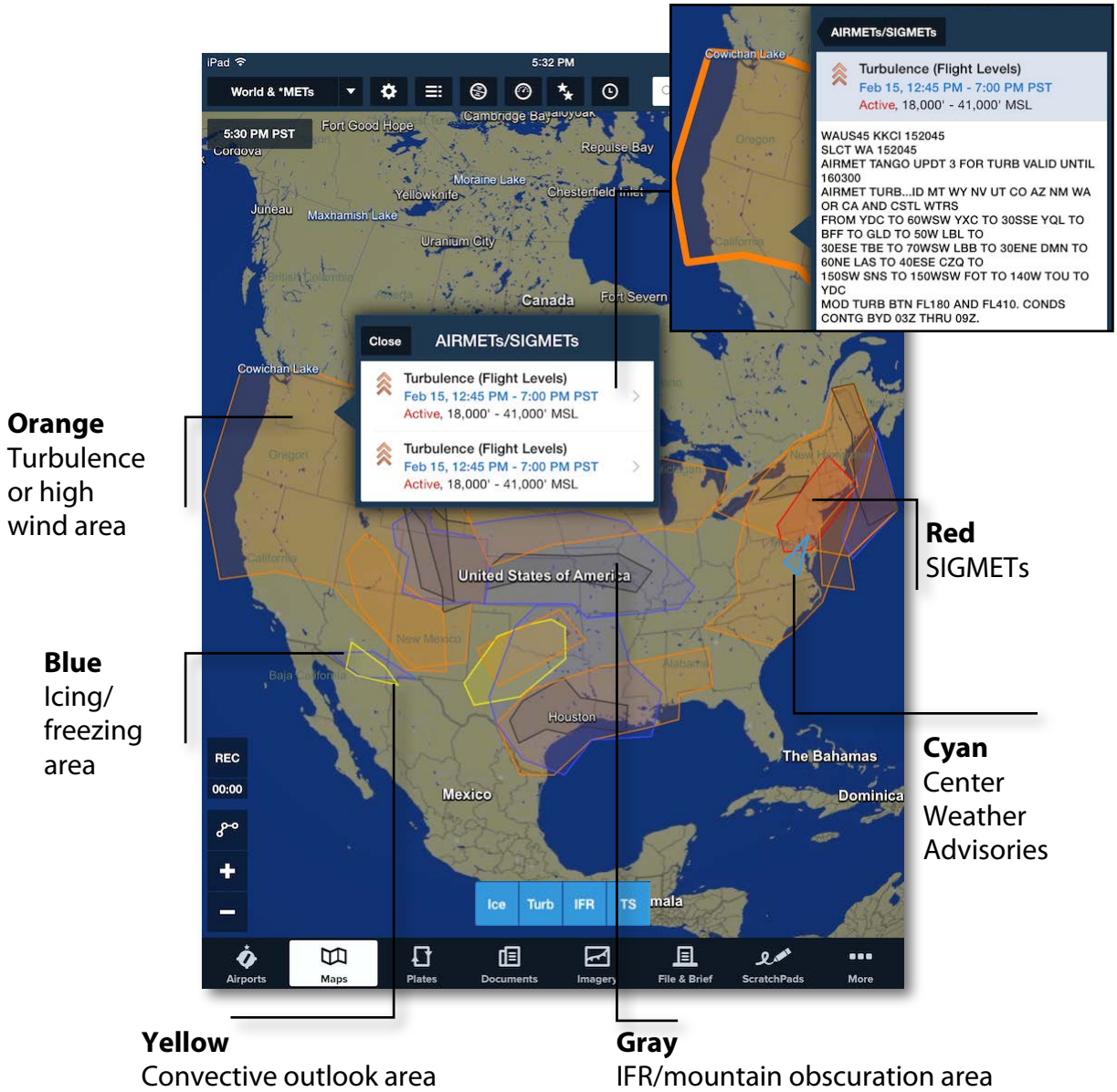
The following symbols are shown on the Aeronautical Maps layer:

	Civil Airports **with** Services (with and without tower)		Civil Airports **without** Services (with and without tower)
M M	Military Airports (with and without tower)	R R	Private Airports (with and without tower)
	Seaplane Bases **with** Services (w/ and w/o tower)		Seaplane Bases **without** Services (w/ and w/o tower)
H	Heliports (light map color scheme)	H	Heliports (dark map color scheme)
	Standard fix		RNAV fix
	VOR Navaid		VOR/DME Navaid
	VORTAC Navaid		NDB Navaid
	NDB/DME Navaid		FBO Location (on ForeFlight airport diagram)
	ARTCC Boundary		ADIZ
	Class B Airspace	110 SFC	Class B Altitude
	Class C Airspace	45 SFC	Class C Altitude
	Class D Airspace	45	Class D Altitude
	Class E surface area		Mode C
	TRSA		SATR Area
	CTRs		MOA/Alert/Training Airspace
	Caution/Warning/Danger Airspace		Prohibited/Restricted Airspace
	Other Airspace	V553	VOR Airways/Jetways
T244	RNAV Routes	V163 (3,500')	Airway ID (MEA)

TFRs

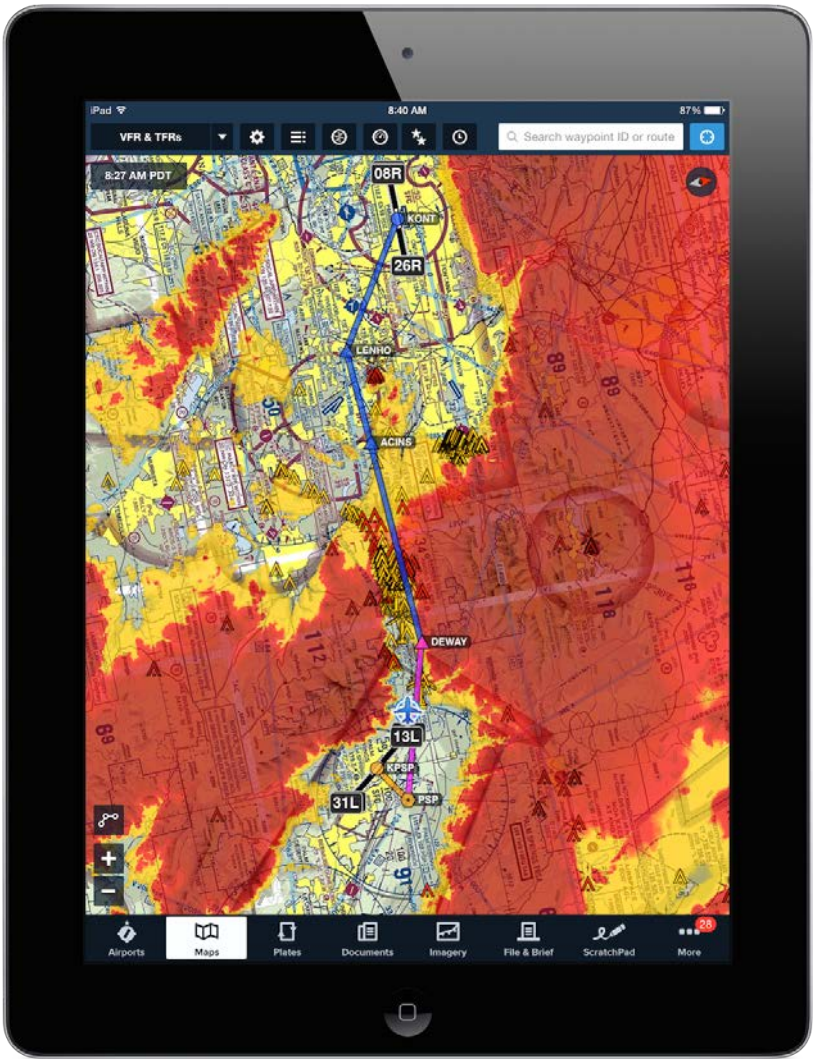
TFR legend

AIRMETs, SIGMETs, and CWAs



Area details
Tap AIR/SIGMET/CWA area to view details

Hazard Advisor™



Hazard Advisor™ legend

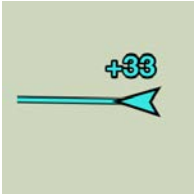
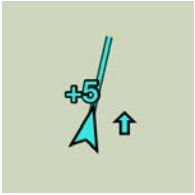
Yellow	Hazard **1000'-100' below** current altitude	
Red	Hazard **100' below to above** current altitude	

Note: Yellow & Red altitude bands can be selected on the Maps page when viewing the "Profile" tab.

ADS-B 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 a traffic target is within 5 NM horizontally and +/- 1,200' vertically of your current position, the target's color changes to yellow.

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.

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)*	
Within 5NM and +/- 1,200 *(+9 is 900' above)*		Ground target (brown)	

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.