

Stratus Insight

Pilot's Guide



STRATUS
INSIGHT™

Rev. 1.1

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Getting Started

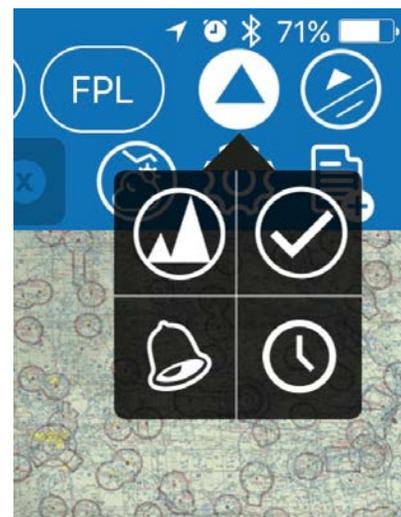
To use Stratus Insight, create an account and choose a subscription or log into an existing account.

When first opening Stratus Insight, you will be prompted to allow the app to access your location. Enable this option to show your current aircraft position on the moving map and use portable TAWS. To allow access later, navigate to your iPhone or iPad Settings → Privacy → Location Services and tap Stratus Insight.

The buttons in the header at the top of the screen take you to the following features:

	Base maps		Track recording
	Map overlays		Brief or file flight plan
	Flight plan route editor		Add PIREP
	Show current GPS position or track up		Favorite and recent flights
	Synthetic vision		Settings
	Vertical Weather Profile		Terrain profile

If your device has a smaller screen and you do not see the full list of icons, tap the down arrow to see them.

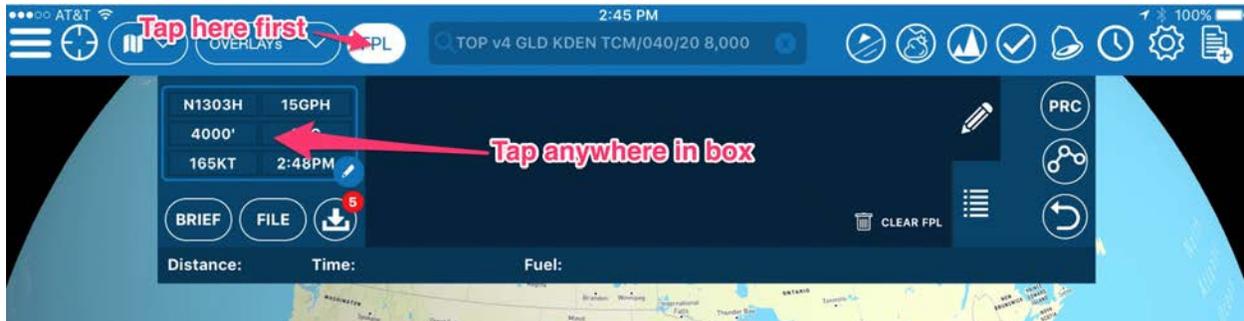


Aircraft Profile

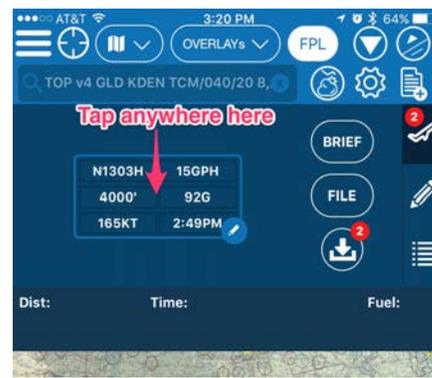
Stratus Insight needs to know your aircraft speed and flight characteristics to make the most of your flight planning. Create an aircraft profile to save this information.

Creating a New Aircraft Profile

1. Open the Flight Planning Modal.
 - iPad: Tap FPL, then tap anywhere in the blue box.



- iPhone: Tap the Flight Plan Tab, then tap anywhere in the blue box.



2. Tap **Aircraft.**, then tap the add aircraft  button.
3. Fill out all of the information to complete your aircraft profile. For more information on performance tables, refer to the next section.

NOTE: You must enter a valid ICAO identifier. If you're not sure what your aircraft ICAO type is, use this search tool: <http://www.icao.int/publications/DOC8643/Pages/Search.aspx>.

4. Tap the save  icon.

 Aircraft 

[Save](#)

TAIL #	N1234
TAS	650
ICAO TYPE	SR71 >
A/C EQUIPMENT	N/A >
A/C SURVEILLANCE	N/A >
WAKE TURBULENCE	N/A >
Fuel Units	<input checked="" type="radio"/> GPH <input type="radio"/> PPH
Fuel Rate/Hour	15
Fuel Rate 1st Hour	200

 Aircraft 

[Save](#)

A/C EQUIPMENT	N/A >
A/C SURVEILLANCE	N/A >
WAKE TURBULENCE	N/A >
Fuel Units	<input checked="" type="radio"/> GPH <input type="radio"/> PPH
Fuel Rate/Hour	15
Fuel Rate 1st Hour	200
Use performance table	<input type="checkbox"/>
Max Altitude	56000

[Manage Performance Table](#)

Creating a Performance Table

For high performance aircraft, creating a performance profile table will give you a top of climb and top of descent marker as well as more accurate enroute times.

1. Enable the **Use performance table** switch.
2. Tap **Manage Performance Table**.
3. Enter each altitude in which a significant change in performance is expected in your type aircraft.

For any gap in altitudes, Stratus Insight will use interpolation to determine intermediate data. Note some of the data is indicated for cruise and some for climb. Cruise TAS & fuel burn is only calculated after reaching this altitude. **When finished it's very important you tap SAVE.**

Enter Performance/altitude

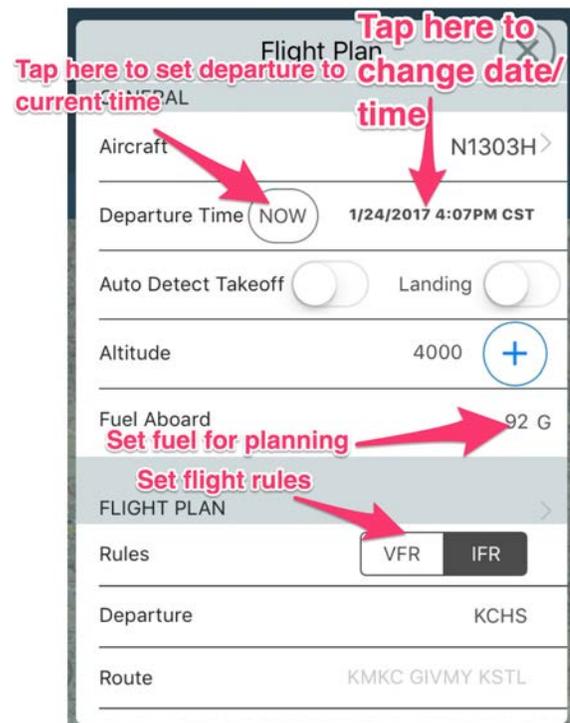
Alt	1,000	Climb (IAS)	0	Climb (FPM)	0
Cruise (TAS)	0	Cruise (GPH/PPH)	0.0	Descent (IAS)	0

Add Altitude

Add New Altitude

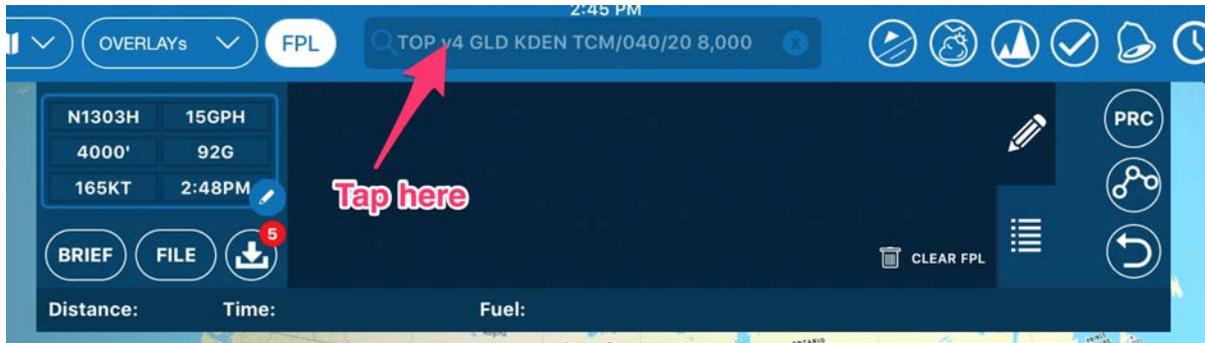
Creating a Flight Plan

Before preparing to create a flight plan it's important we enter the correct departure date/time. Stratus Insight can plan winds and weather up to 8 days in advance, but the closer to the time of departure the more accurate the data becomes. To set the date/time, tap on the blue box from the FPL tab as discussed in Aircraft Profile. We also recommend setting the flight plan rules you intend to use and fuel capacity for planning. The fuel and flight rules will be saved from flight to flight unless you change them.



Search Box

Tap in the search box below and enter a route. For example: **KMKC KMDW** (hitting enter) will replace your existing route. Airport identifiers, waypoint names, VORs, and airways can all be entered. In addition a cruising altitude can be entered.



Here are a few examples:

KMKC TOP V4 GLD KDEN

The victor 4 entry point is TOP and the exit point is GLD. It's important to enter entry and exit points on airways.

KMKC TCM/040/20 KDEN

Identifier/RADIAL/DISTANCE can be entered as a waypoint. In this case it's the 040 degree radial from the TCM VOR at 20 nautical miles.

KMKC ROYAL7.TONCE.RW19 KDSM

Departure and arrival procedures may be entered in the following format: DP-IDENT.TRANSITION.RWY

KTOP

Entering a single airport identifier in the search box will open the airport information modal. This can be used for quick retrieval of a specific airport information without adding or editing your flight route.

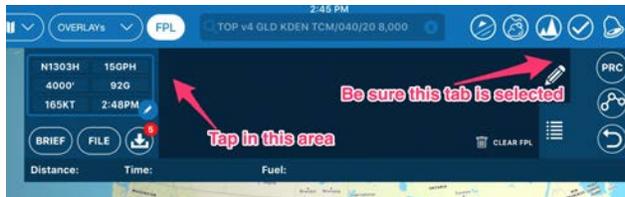
KMKC LEXIN V10 V586 MCM KMBY

Airway to airway routing is possible (w/o entry/exit points) if the airways intersect regardless if an intermediate crossing waypoint exists. A Lat/Long will be calculated to make the transition.

Waypoint Editor

To start entering a route using the waypoint editor make sure you're on the editing tab as indicated below for iPad. For iPhone see below:

iPad



iPhone



Tapping in the areas indicated above will open the keyboard to begin entering waypoints and airports. Start with entering the first airport or identifier:

When entering waypoints you will notice a search box will appear to assist you in entering waypoints, airports, and VORs. **Based on your present GPS position** an ordered list will appear. If you find the item you're looking for just tap on the item to add it. Sometimes a single character is enough to find what you're looking for.

Once you've entered the full name/identifier hitting the spacebar will sequence to the next waypoint entry.

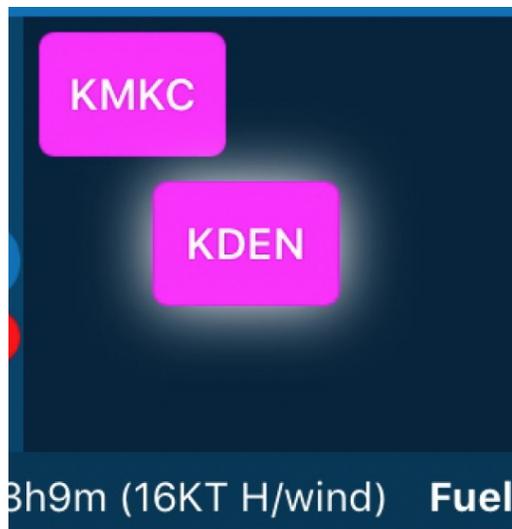
Hitting return will add the waypoint and close the keyboard



Waypoint Management

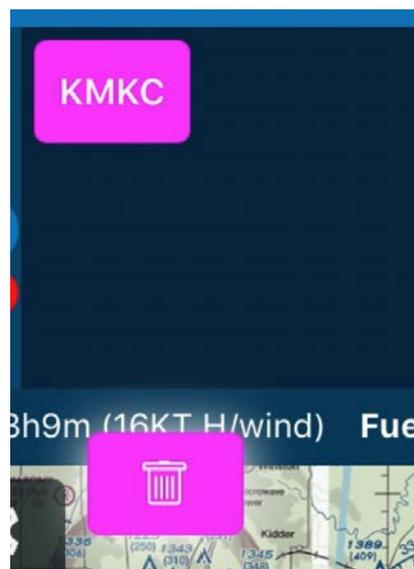
Repositioning

You may hold down on a waypoint and then reposition the order in your flight route by dragging it to a different position. A gap will appear to indicate where you're dropping the waypoint.



Deleting

Holding down an item and dragging it off of the editing area will show a trashcan icon, releasing the item will delete the waypoint.



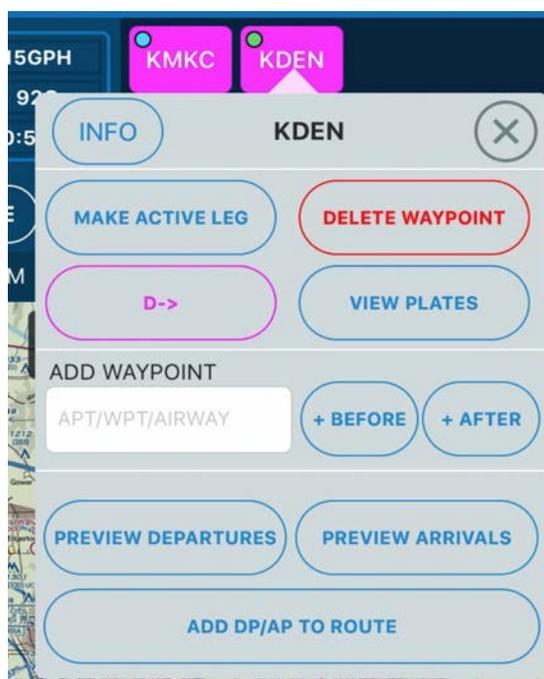
Tapping on a single item will reveal additional controls.

DELETE WAYPOINT = delete item

D-> = Add GPS present position direct to waypoint

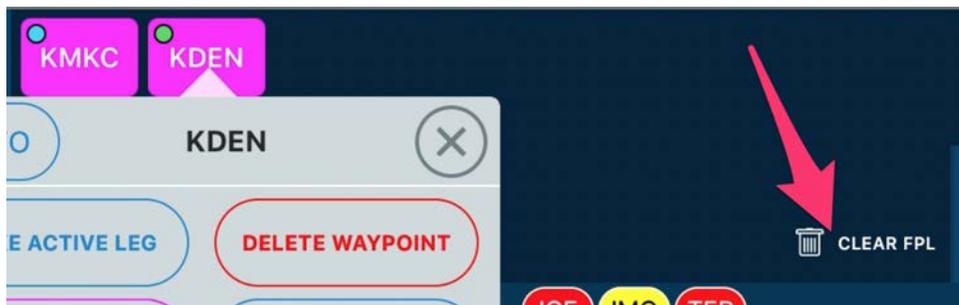
MAKE ACTIVE LEG = make this the active leg segment of the route

ADD WAYPOINT = add a single waypoint/VOR/airport before or after this item.



Deleting Route

Tapping on CLEAR FPL on the editing tool will delete the entire route on both iPad and iPhone.



Tapping the **Waypoint List** tab of FPL gives individual route segment distances, fuel, time, and headings.

Recently Filed = Recently cleared ATC routes (presently around 24 hours), TEC & preferred routes. If the list is empty, try bigger airport city-pairs nearby.

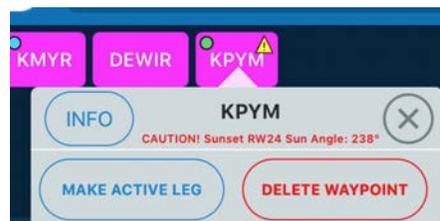
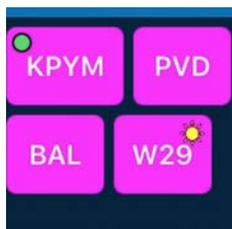
Reverse route = Reverse the route order.



Smart Flight Plan

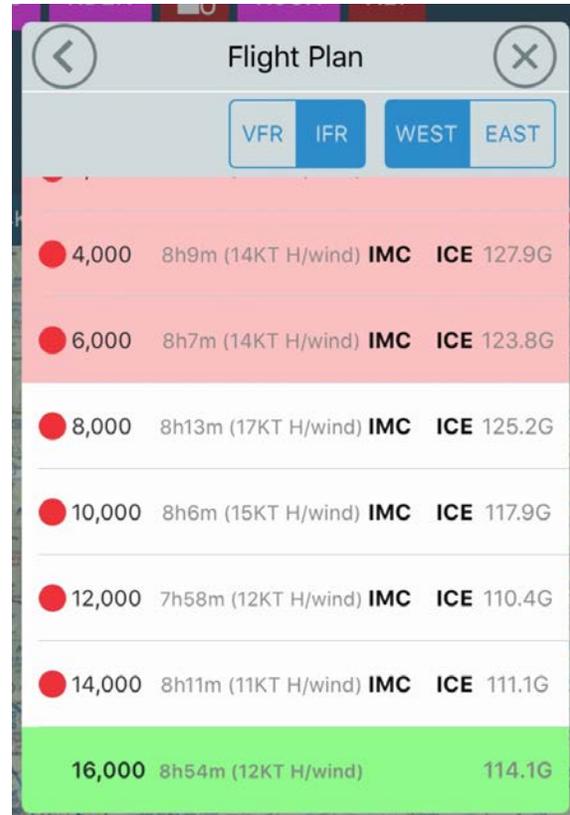
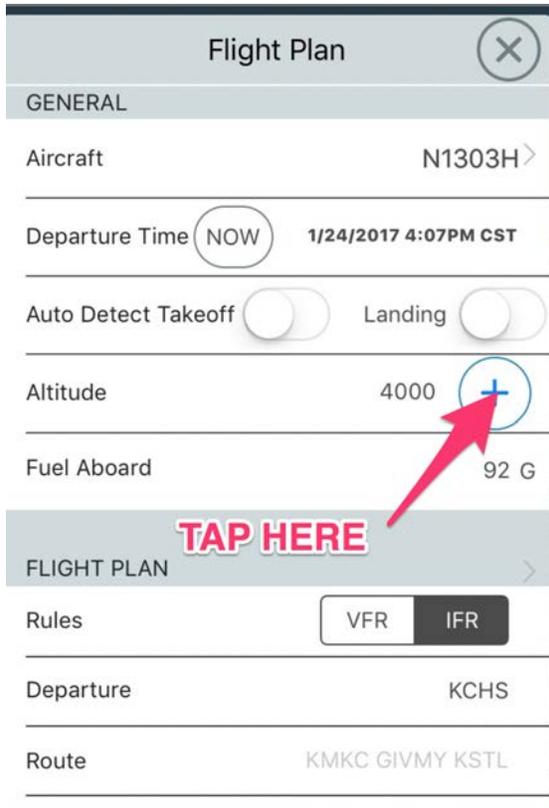
Stratus Insight's Smart Flight Plan feature offers incredible situational awareness all calculated automatically. Up to 8 days in advance forecast weather is used based on the time of departure & time enroute (based on aircraft speed). Let's take a look at a few of these:

- 1.) Airport identifier color code: VFR (green), MVFR (blue), IFR (red), and LIFR (magenta)
- 2.) ICE = Based on route, time of departure, and cruising altitude somewhere along this point ice may be encountered based on Skew-T sounding saturation levels and temperatures.
- 3.) IMC = Based on route, time of departure, and cruising altitude somewhere along this point IMC may be encountered based on Skew-T soundings.
- 4.) TER = Based on altitude selected somewhere along the flight the altitude may be very close to terrain.
- 5.) ALT = Altitude airport may be required based on the 1, 2, 3 rule.
- 6.) Moon symbol = Based on the dept/arrival time night passenger currency may be required.
- 7.) Sun symbol = Dept/arrival time is close to sunset, use caution for glare
- 8.) Caution symbol = Dept/arrival time may present a sun glare hazard based on forecast winds & sky conditions.
- 9.) Distance, Time enroute (with HW/TW component) and fuel required is indicated in the bottom row.



Altitude Selector Tool

Tapping the flight plan editor (blue box) as discussed in creating an aircraft profile. Then tapping on the + icon next to Altitude will reveal the altitude selector tool. This tool will assist you in finding a cruising altitude.



The left circle allow for easy identification of potential hazards such as:

Red = Hazard such as terrain or ice.

Blue = Headwind or IMC

Missing = No significant hazard but no significant tailwind

Green = Free of IMC/ICE & tailwind

Green highlighted row = The fastest time enroute free of ICE

To change altitudes just tap on the row you desire.

Base Maps

A base map is the foundation of your globe and Stratus Insight provides many different options for you. Let's go through them, highlighted in red requires a data connection, green is available offline.

VFR charts = VFR raster sectional charts from the FAA viewable with a data connection.

VFR Charts (Offline) = VFR charts that have been downloaded to this device only. This is for in-flight.

AeroVector Map = Stratus Insight data driven vector based charts. This simply requires current databases downloaded and useful for in-flight.

IFR Low = Low-altitude raster IFR enroute charts requiring a data connection.

IFR Low (offline) = Downloaded Low-altitude IFR charts for in-flight.

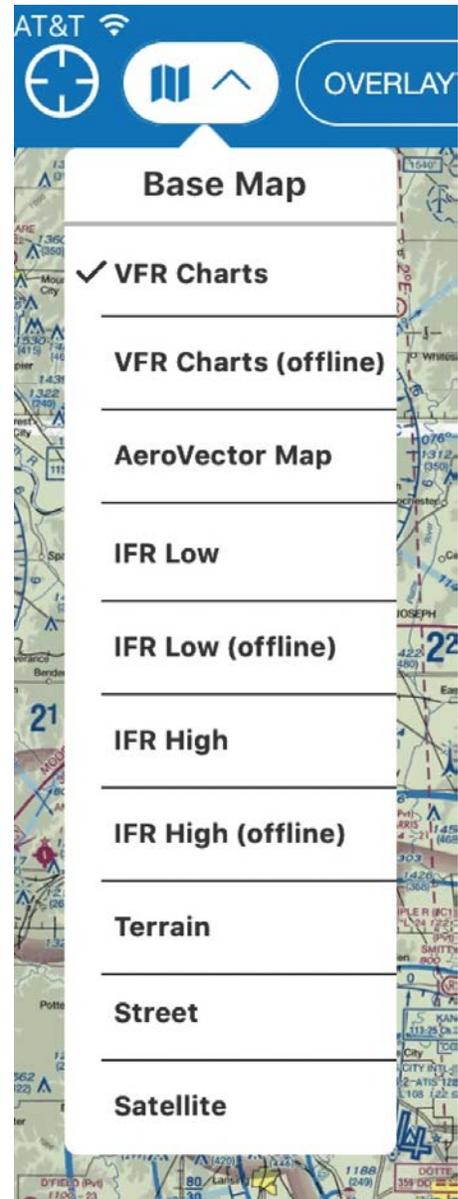
IFR High = High altitude raster IFR enroute charts requiring a data connection.

IFR High (offline) = Downloaded High altitude IFR charts for in-flight.

Terrain = Downloaded raster terrain basemap

Street = Online street maps, requires a data connection

Satellite = Online satellite maps, requires a data connection.



Synthetic Vision

Synthetic Vision is a great way to follow along on your route of flight as a forward view of terrain, obstacles, airports, and glidepath. Synthetic Vision is not a replacement for a primary or suitable backup source of navigation in your airplane. Use this tool for situational awareness only.

Synthetic vision may be used with a valid AHRS source. If AHRS data is not provided SynVis is still useful but the attitude will report level pitch and roll.

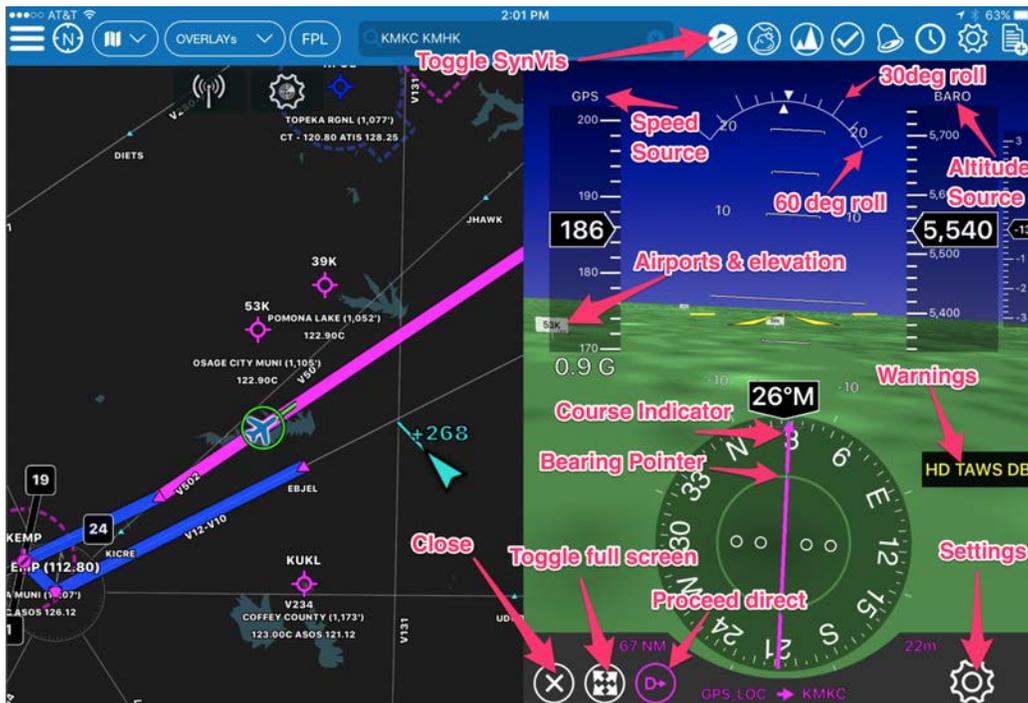
Compatible AHRS sources:

For Cockpit:

OpenFlightSolutions FlightBox with AHRS
iLevel devices
Dual XPGS190

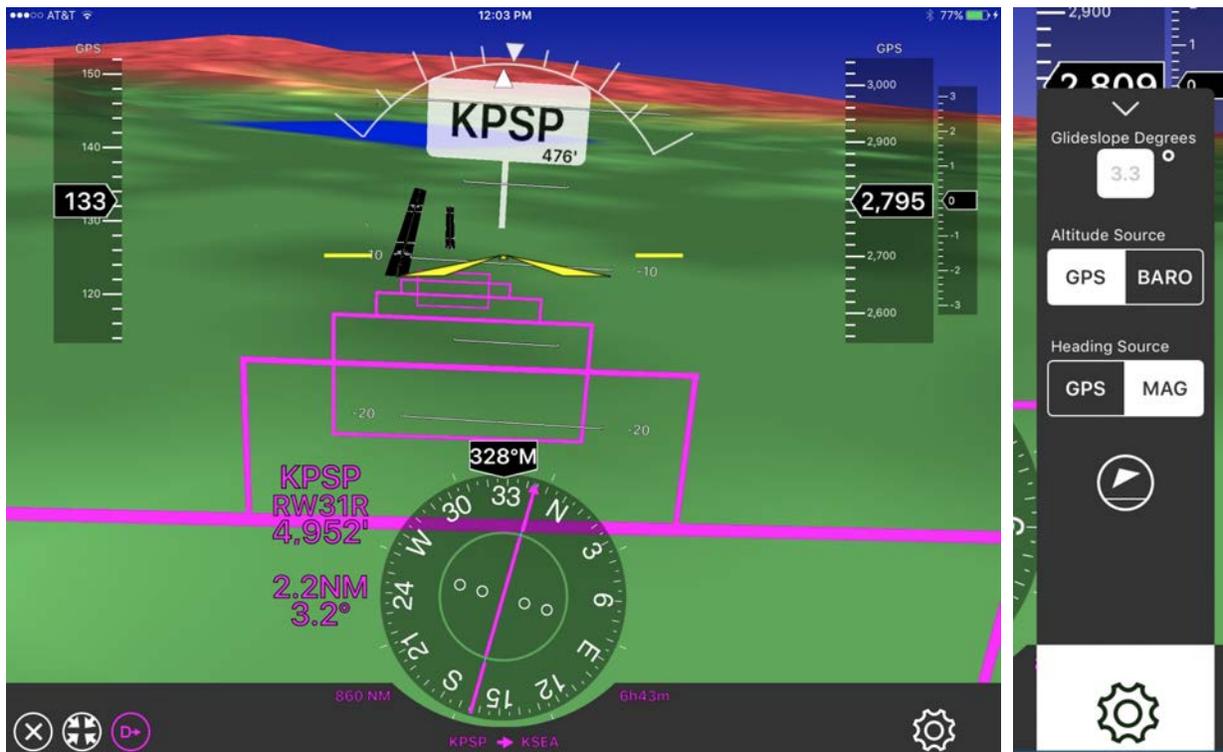
Simulators

X-Plane
Infinite Flight
MS Flight Simulator/Prepar3D with FSXFlight



Awareness

Here is a great example of Stratus Insight's synthetic vision in-use at Palm Springs. Notice the elevation and airport identifier are clearly identifiable. To the left of the HSI the airport, runway aligned with, runway length, distance to runway, and higher of published visual slope degrees or user set angle. Highway in the sky boxes are provided for slope alignment. Terrain highlighting is visible in the distance with red = below or near terrain, yellow = within ~1,000' of terrain.



On the right side find the SynVis settings. You may change heading source between GPS track or MAG source. If MAG is selected but none provided to Stratus Insight, GPS track will be used instead. You may also change altitude sources between the internal BARO or GPS altitude sensors, set the glideslope for highway in the sky boxes, and finally the bottom icon will sync the current attitude as 0 degrees pitch, and 0 degrees roll. This is useful to mount a portable AHRS device in any position.

Takeoff & landing roll

Once you've crossed the threshold of the runway the distance remaining will be indicated on the left side of the screen along with the runway you're currently on.

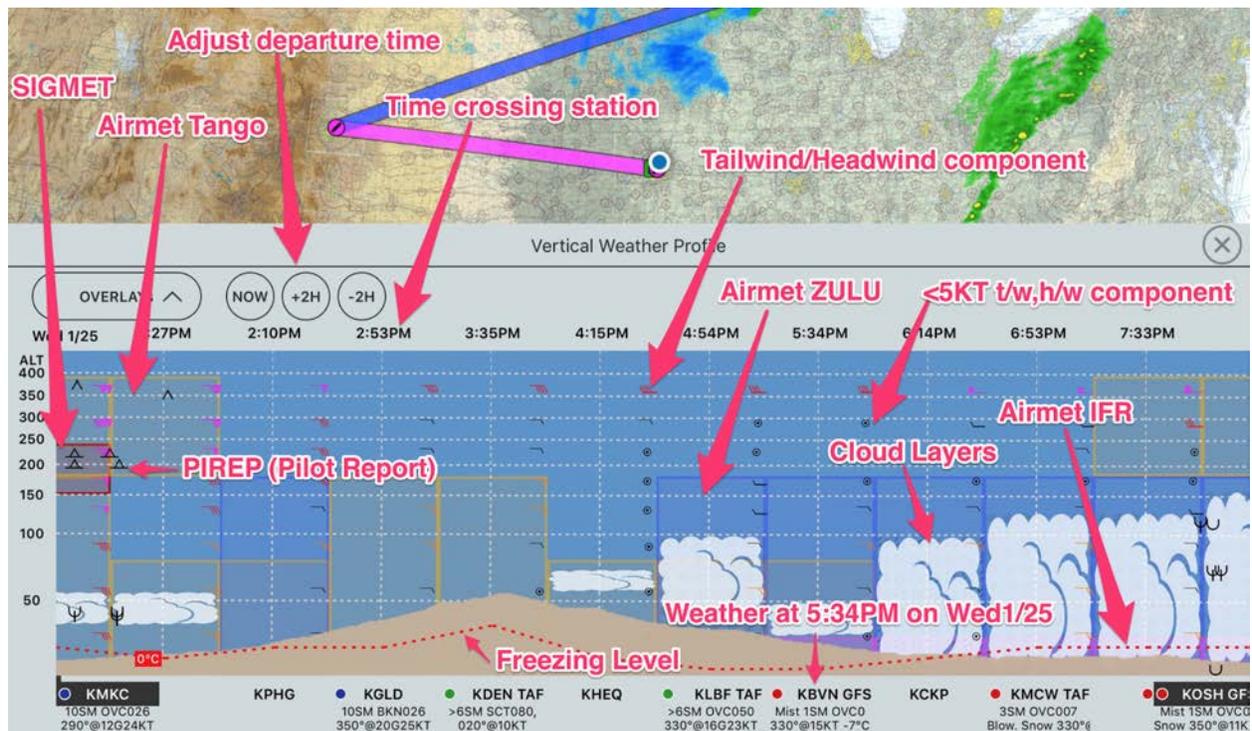
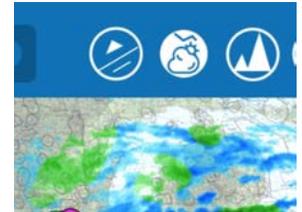
Example of obstacles in SynVis. Refer to Obstacle Overlays for description of each obstacle icon.



Vertical Weather Profile

A Vertical Weather Profile is your route in the vertical slice from departure to destination. Weather information is time smeared based on your aircraft speed upon reaching each intermediate nearby airport. This tool provides information out 8 days. However, certain information such as advisories (AIRMETS & SIGMETs) are only available if departing within the next few hours. AIRMETS are shown when they are valid as a G-AIRMET and not current.

To access the Vertical Weather Profile it's important you have a route & departure time for a flight you're looking to take a look at. Once complete tap on the Vertical Weather Profile icon in the header:



Details

Stratus Insight analyzes dozens of Skew-T (soundings) based on the time your aircraft will cross certain points along your route of flight. If your flight is departing within the next hours Stratus Insight will analyze radar imagery to find nearby precipitation which will be shown as follows:

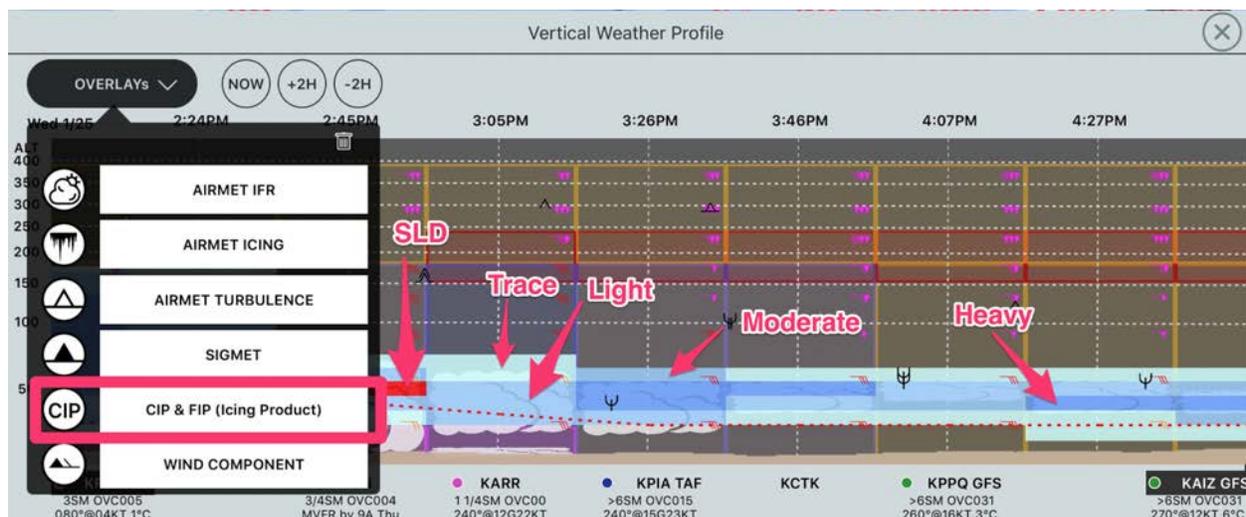
- Rain = Lower dbZ values and no lightning detected as rain mosaic.
- Thunderstorm = High dbZ values OR lightning detected as thunderstorm mosaic
- Snow = Snow showers detected as snow mosaic
- Freezing Rain = Freezing Rain Detected as FZRN mosaic

The vertical extent to precipitation is the highest detected cloud or if no clouds exist then all altitudes. **It's important to note the precipitation types are those received at the surface**, different precipitation types may be encountered at altitude than depicted.

It's important to understand soundings pick-up clouds very well but it is a forecast and subject to inherent faults in accuracy. In addition, soundings do not do a very good job at picking up cumulus type clouds.

Icing

You may turn on/off various features of the vertical weather tool in the Overlays menu in the Vertical Weather Profile. One item is CIP & FIP (Icing Product). This is the AWC icing model. Stratus Insight shows you the icing charts in the vertical slice based again upon the time of crossing a specific station. The colors are identical to those provided by the AWC.



The colors in the vertical tool may appear just slightly lighter in color as they contain some alpha component to see the cloud layers behind them. For SLD on the vertical tool, solid red is indicated instead of a hatched area. It's important to note if your planned departure time is exceeding the FIP icing model time (18 hours) the absence of icing in the vertical is not an indication icing may not be present. We recommend looking at the top down map as well as a part of a complete briefing.



Terrain Profile

To view the vertical terrain profile across your route of flight tap the terrain profile  button in the header menu. You will see a Terrain Profile at the bottom of the screen showing terrain clearance of <1000' in yellow and below or near terrain in red. This is simply based on your cruise altitude and does not account for climb or descent. If your cruise altitude will eventually impact terrain the distance to strike is indicated as well as the worst case clearance.

To change cruise altitudes hold down on the altitude button and move vertically.



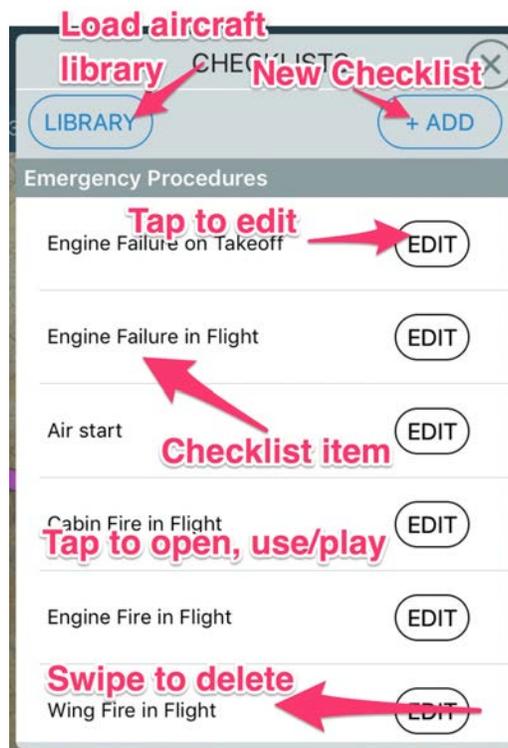
Checklists

Electronic checklists connected to an avionics input or headset via Bluetooth is a great way to perform common tasks while keeping your head outside.

To open checklists, tap Checklist on the bottom Map Instrument Bar.

Downloading Aircraft Checklists

While you can load your entire aircrafts checklist for Normal, Abnormal, and Emergency procedures we recommend loading the most frequently used items only to save time. While it can be a bit of a chore to add items once you've added them they will be saved as you upgrade Stratus Insight versions.



Creating Custom Checklists

Custom checklists can be uploaded from a CSV file through the Stratus Insight website or Stratus Insight app.

Uploading using the Stratus Insight website

1. Log into your [Stratus Insight account](#).
2. Click **Flights**, then click **Upload Checklist**.
3. Click **Download Checklist Import Template** to download the template, if you haven't already. Fill out the template and save it to your computer.
4. Enter a checklist name and drag the completed CSV template into the area indicated on the screen. The content will sync with the app within a couple minutes.

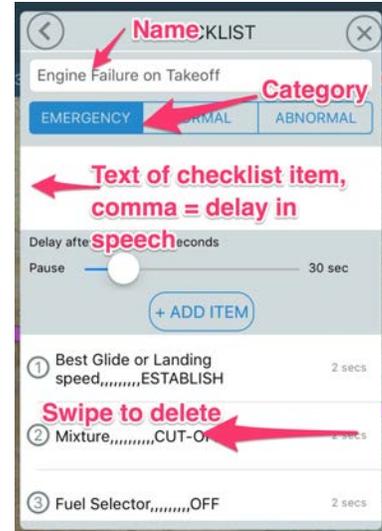
Uploading using the Stratus Insight app

1. Locate the CSV log file from your email or a file manager (such as Dropbox or Google Drive).
2. Tap the file, then tap the up arrow in the upper right corner.
3. Tap **Copy to Stratus Insight** (you might have to swipe left to locate it). The Stratus Insight app will open.
4. Tap **Import Now**. When the import is complete, tap **X** in the upper right corner.

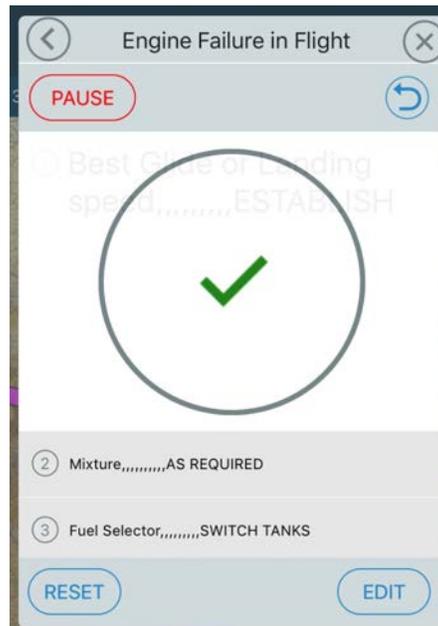
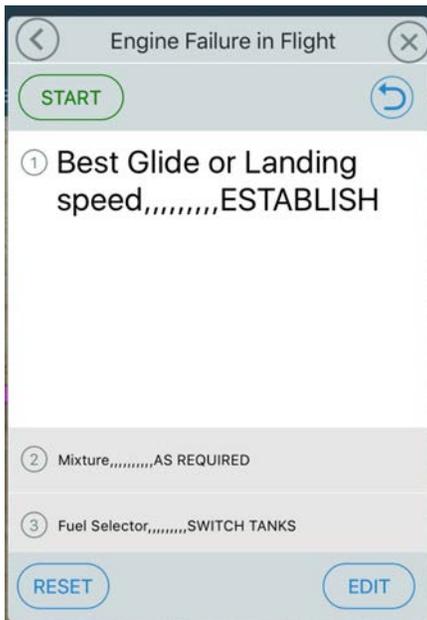
Editing Checklists

When editing a checklist the name is set at the top followed by the category. Next is the checklist items. You may swipe to delete, or hold down on a row and re-order it by dragging.

To cause a delay in speech to manual sequence, drag the pause slider all the way to the left.



Playing a checklist (tap on the checklist item). **Tapping** on the item will manually sequence or hit **START** to play audible recording.



Logbook

Tap **Logbook** on the Map Instrument Bar to use the logbook feature.

Adding Logbook Entries

Uploading Logbook Entries

Automatic Uploading

If the auto detect take-off and landing setting is enabled, flights will appear in the upper left section of the Logbook page. After five hours, they will automatically upload into the logbook. To upload them sooner, tap  to upload them.

Manually Uploading

Flight logs can be uploaded from a CSV file through the Stratus Insight website or Stratus Insight app.

Supported formats include:

- ForeFlight CSV export
- Stratus Insight CSV template (tap  to download template)
- Garmin G-1000 (website upload only)
- Avidyne PFD logs (website upload only)

Uploading using the Stratus Insight website

1. Log into your [Stratus Insight account](#).
2. Click **Flights**, then click **Bulk Log Import** or **Upload Flight/Engine Logs**.
3. Upload the CSV log file.

Uploading using the Stratus Insight app

1. Locate the CSV log file from your email or a file manager (such as Dropbox or Google Drive).
2. Tap the file, then tap the up arrow in the upper right corner.
3. Tap **Copy to Stratus Insight** (you might have to swipe left to locate it). The Stratus Insight app will open.
4. Tap **Import Now**. When the import is complete, tap **X** in the upper right corner.

Manually Entering Logbook Entries

Flight logs can also be entered manually without a CSV file through the Stratus Insight website or Stratus Insight app.

Entering using the Stratus Insight website

1. Log into your [Stratus Insight account](#).
2. Click **Flights**, then click **Add Log Entry**.
3. Enter the flight information, then click **Save Flight**.

Entering using the Stratus Insight app

1. Press  in the upper left corner of the Logbook page.
2. Enter the flight information, then click **Save**.

TIP: Tap **Use XXX** to populate fields with data from your aircraft profile.

Merging a Track Log to Another Log Entry

1. Tap  on a flight you want to merge. Then, tap **Merge Flight Track To Another Log Entry**.
2. Tap the flight that you want to combine with. Then, tap **Yes, Merge**.

Customizing Graph View

1. Tap  in the top left corner of the Logbook page.
2. Under **Graph Options**, select which flight types should show in the graph. You can select more than one option.

Viewing the Flight Map

The map in the bottom left corner shows all of your logbook flights.

To only display the takeoff and landing locations and not the flight route, disable the **Show Flight Routes** switch in the logbook settings.

Adding Endorsements

To have a Certified Flight Instructor endorse your logbook, use the Endorsements feature.

1. Tap  in the upper left corner of the Logbook page. Then, tap **Add Endorsement**.
2. Have the instructor fill out the endorsement information. Then, tap **Save**.

Replaying Track Logs

Tap  in the upper left corner of the Logbook page. Then, tap **Open Flight Track**. The Maps page will open to replay the flight.

Exporting Logbook Entries

Tap  in the upper left corner of the Logbook page to export a logbook entry into one of the following formats:

- FAA Form 8710 (PDF)
- Logbook Full (PDF)
- Logbook Consolidated (PDF)
- Logbook Full (CSV)
- Business Use Report

Recent Flights

Recently created routes will show up in an auto expiring list. To quickly retrieve passed routes simply tap on the recent flights  button and tap on the item you'd like to add. Doing so will replace your existing route with the item you select.

Transcriptions

When connected to a Stratus audio cable, the Radio Playback feature allows you to replay ATC audio clips. The Radio Transcription feature transcribes ATC audio and displays it on the iPad to help locate specific audio clips.

NOTE: The Radio Transcription feature is specifically designed to transcribe ATC audio. Due to its specialized dictionary for aviation terms and phrases, it is not intended to transcribe audio other than ATC audio. Other audio in the cockpit, such as music, may interfere with Radio Transcription.

To use Radio Playback or Radio Transcription, tap the **Transcriptions** tab. Then, tap **Buy cable** to buy a cable, or tap **I have a cable** if you already have a cable. The transcription module will download.

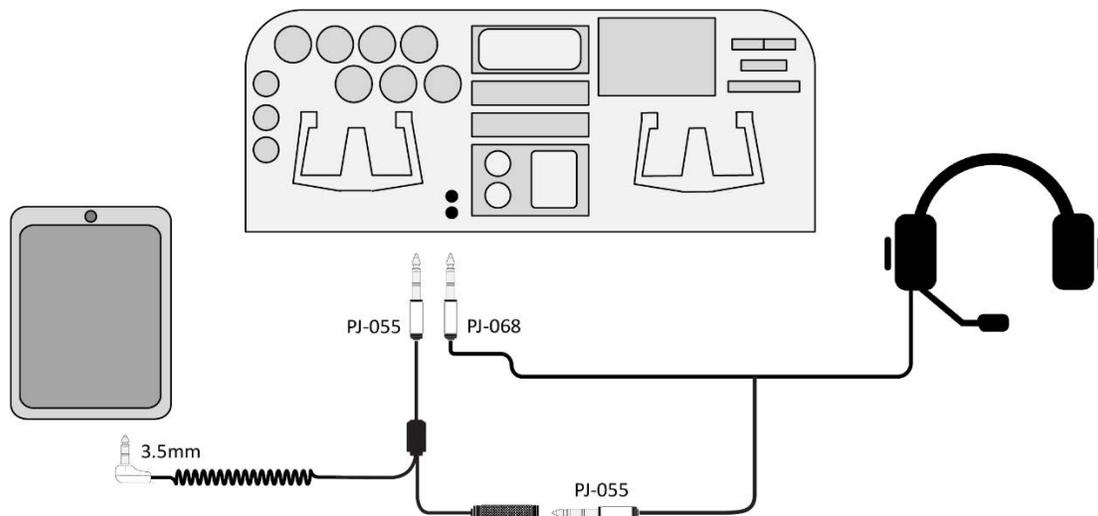
Connecting to the Stratus Audio Cable

To use the Radio Playback or Radio Transcription feature, connect the Stratus audio cable to your headset, iOS device, and audio panel.

NOTE: If your headset does not have standard GA twin plugs, you need an adapter to convert your headset jack to twin plugs. When using an adapter, noise cancelling headphones will not be powered by the panel.

1. Connect the 3.5 mm end of the Stratus audio cable into the audio jack of the iOS device.
2. Connect the PJ-055 end of the Stratus audio cable into the aircraft audio panel.
3. Connect the PJ-055 end of the headset into the receptacle of the Stratus audio cable.
4. Connect the PJ-068 end of the headset into the aircraft audio panel.

Audio will automatically start recording and being transcribed once the audio cable is correctly connected.



Replaying Recent Audio Clips

Tap the arrows at the top of the screen to replay an audio clip from the last 2 minutes.

- Tap the left arrow  to navigate back to previous audio clips.
- Tap the right arrow  to navigate forward to more recent audio clips.
- Tap the arrow  button to jump to the most recent audio clip.

*Cabin audio clips are not transcribed on the Radio audio clips page. To replay cabin audio clips, tap **Cabin**.*

Replaying Older Audio Clips

To play an audio clip from longer than two minutes ago, tap the play  button next to a transcription.

Two hours of active radio audio (not including silence) and 30 minutes of cabin audio is stored before the oldest audio clips automatically delete.

Saving and Deleting Audio Clips

About 636 MB of active audio (not including silence) is stored before the oldest audio clips are automatically deleted.

- To save an audio clip and prevent it from being automatically deleted, swipe right on the recording and tap the save  button.

*To replay saved audio clips, tap **Saved**.*

- To delete a single audio clip, swipe left on the clip and tap **Delete**.
- To delete all audio clips, tap the settings  button, then tap the trash  icon next to **Stored Audio**.

Improving Transcription Quality

The more data Appareo has, the more accurate future transcriptions will be. You can help Appareo improve transcriptions by flagging inaccurate transcriptions.

To view our privacy policy, go to www.appareo.com/privacy-policy.

Uploading all Audio Data

To automatically upload all audio data to Appareo, tap the settings  button, then enable the **Help Improve Transcriptions** switch.

The app must be open and connected to a Wi-Fi network to upload the data to Appareo.

Flagging Individual Transcriptions

1. Swipe right on an audio clip and tap the flag  button.
2. Tap the settings  button, then tap the upload  button next to **Flagged Transcriptions** to submit them to Appareo.

The app must be open and be connected to a Wi-Fi network or cellular network to upload the data to Appareo.

Settings

Tap the settings  icon in the top navigation to personalize your app experience.

In addition the Settings area features the username you've logged in with, version # and build #. Settings also allow you to manage your current subscription with Stratus Insight.

Map Instrument Bar = This is the toolbar at the bottom.

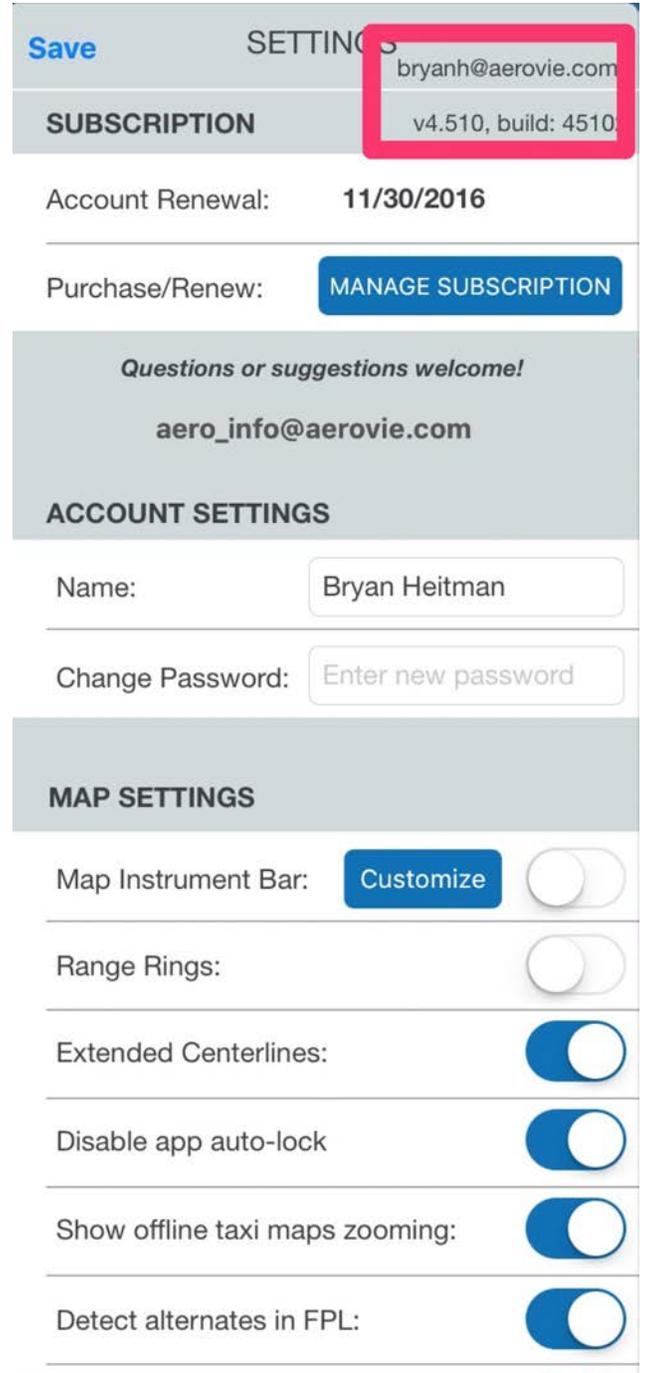
Range Rings = Various range rings expressed graphically on the map in NM based on zoom level.

Extended Centerlines = Runway information for airports in your flight route.

Disable app auto-lock = To prevent app from going to sleep, you can keep the screen on until you close app or manually lock iPad.

Show offline taxi maps zooming = Automatically display taxi chart when zooming in.

Detect alternates in FPL = Automatically apply the 1, 2, 3 rule to your flight route and display ALT icon if necessary.



Save SETTINGS **bryanh@aerovie.com**

SUBSCRIPTION v4.510, build: 4510

Account Renewal: **11/30/2016**

Purchase/Renew: **MANAGE SUBSCRIPTION**

Questions or suggestions welcome!

aero_info@aerovie.com

ACCOUNT SETTINGS

Name:

Change Password:

MAP SETTINGS

Map Instrument Bar: **Customize**

Range Rings:

Extended Centerlines:

Disable app auto-lock:

Show offline taxi maps zooming:

Detect alternates in FPL:

Detect fuel stops in FPL = Automatically display fuel symbol in flight route when a fuel stop may be necessary.

FPL Climb/Descent Markers = If a performance profile has been created then display top of descent and bottom of descent markers on the map.

Suppress Distant Traffic = If this is turned on then only relevant traffic nearby position is displayed. This declutters the map.

Pre-landing briefing = Automatically play a landing briefing when approaching an airport heard over headset or Bluetooth. (requires a connection)

Auto T/O/Landing Timer = This is the groundspeed threshold to indicate in-flight. For most aircraft setting this to the rotation speed or stall is sufficient. High enough to prevent triggering when driving a car is ideal.

Annunciations, these are visual and aural alerts Stratus Insight monitors while in-flight.

Obstacles

Runways = approaching a runway or entering

GPS Unavail = If GPS signal is lost to device

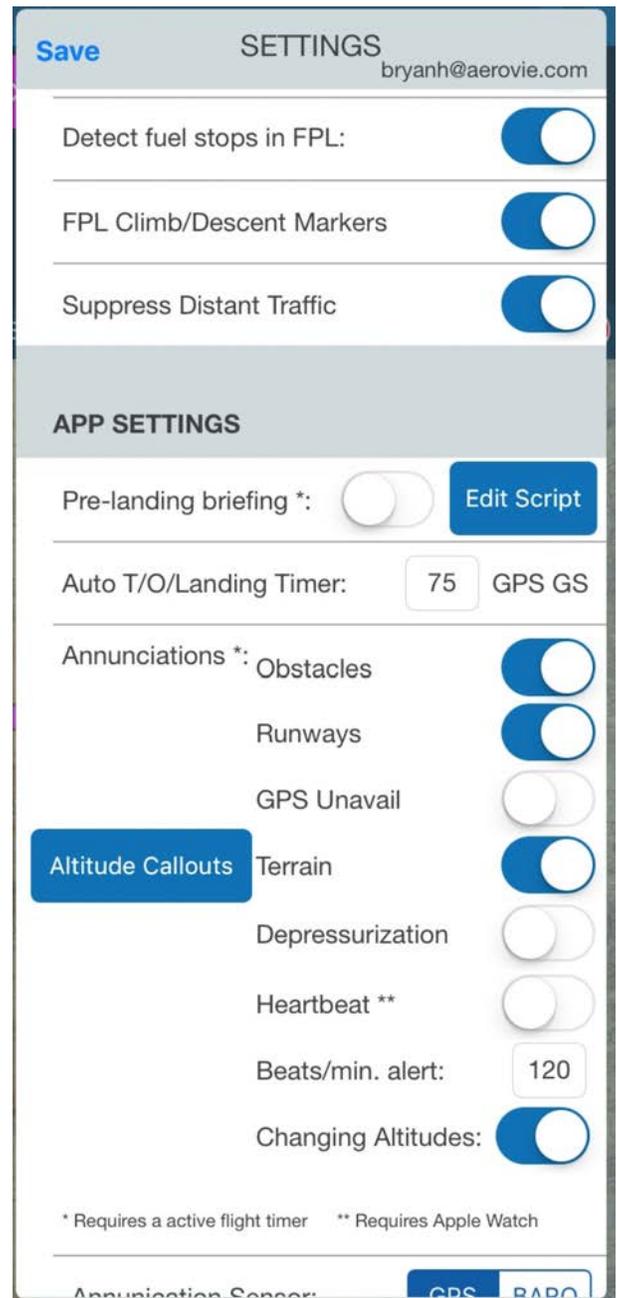
Terrain = Enable Portable TAWS

Depressurization = Monitor high baro climb rate

Heartbeat = For Apple Watch users on iPhone monitor heartbeat with active flight timer on watch

Beats/min alert: Threshold for heart alarm

Changing Altitudes = Automatically report leaving an altitude.



Annunciation Sensor = Use GPS Altitude Barometric
Altitude Sensor =

NOTE: Using a barometric altitude requires setting local
altimeter setting. If connected to an ADS-B receiver then
the nearby barometric altitude is automatically updated.

Listen for Flight Simulators = Listen for X-Plane,
FSXFlight, or FreeFlight.

LOGOUT = Logout of this account.

Annunciation Sensor: GPS BARO

Listen for Flight Simulators:
* Receive simulated information using
UDP 49002

Checklists: [Manage Checklists](#)

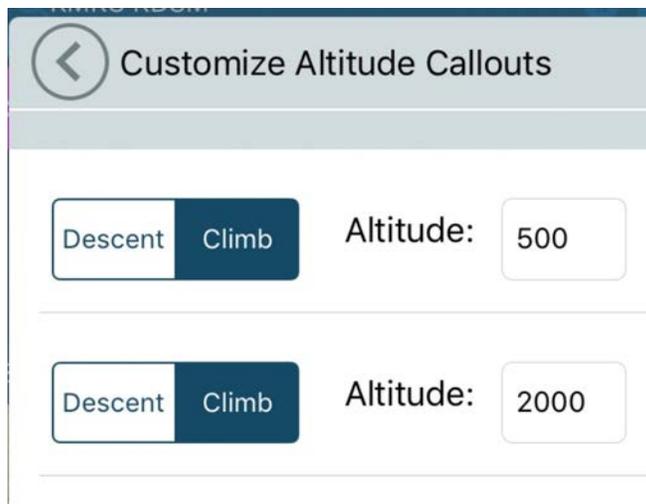
[LOGOUT](#)

Altitude Callouts

Altitude Callouts (see button on previous page)

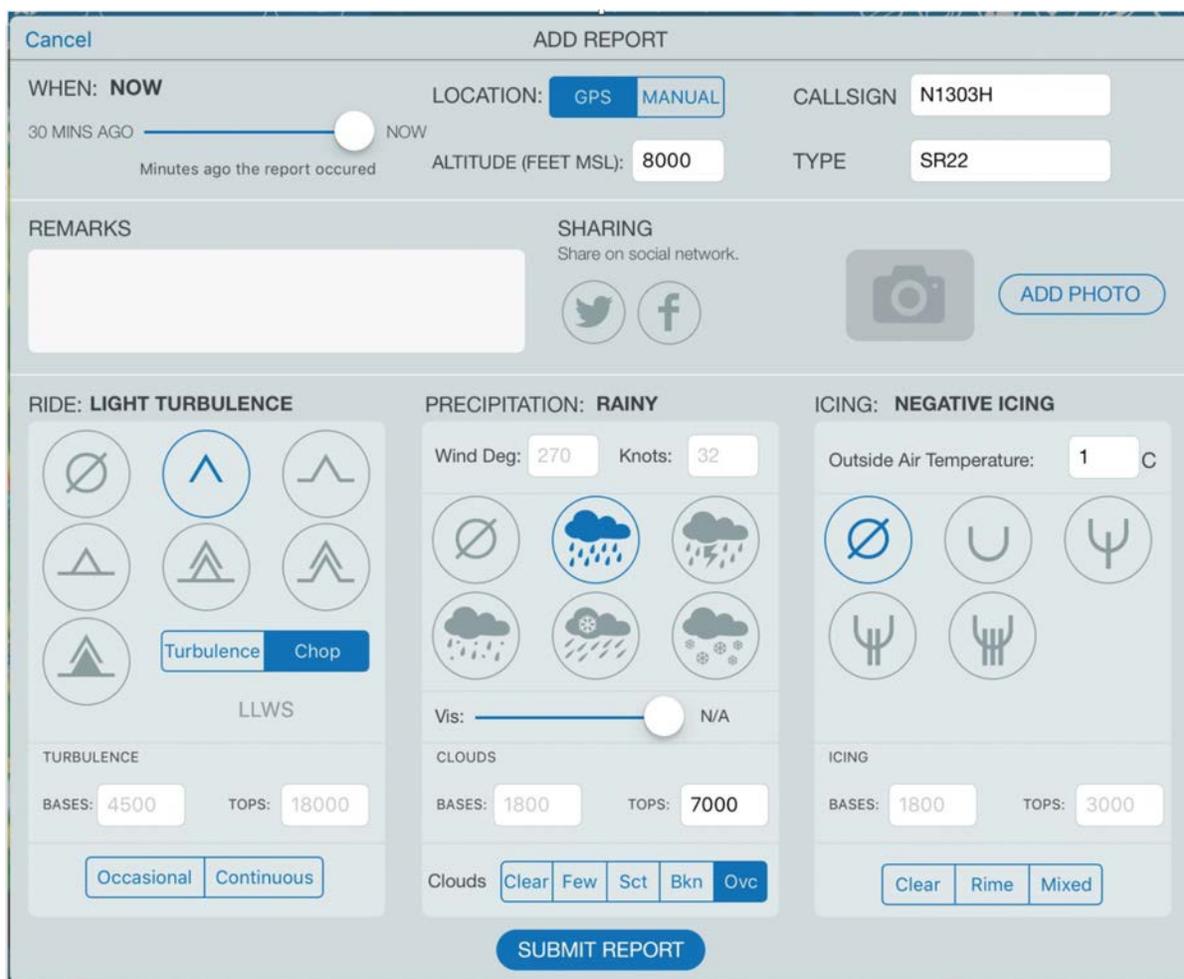
Set custom climb and descent aural callouts heard over headset and/or bluetooth if connected.

These are in feet AGL taking into consideration runway elevation.



New PIREP (Pilot Report)

Tapping on the New Report  icon in the upper right corner of the header will present the ADD REPORT page. You may select as much or as little items to report as you would like. The current GPS position and altitude is automatically entered as well as your CALLSIGN and ICAO TYPE. It's a good idea to verify this information is correct. Pilot reports are transmitted over LTE/DATA or Wi-Fi. If you submit a pilot report in-flight and you do not have a data connection it will automatically attempt to re-transmit to LEIDOS Flight Services to be submitted into the national airspace system. Transmission to LEIDOS must occur within one hour of pilot report creation currently. If you do enter an icing pilot report, a temperature is required.



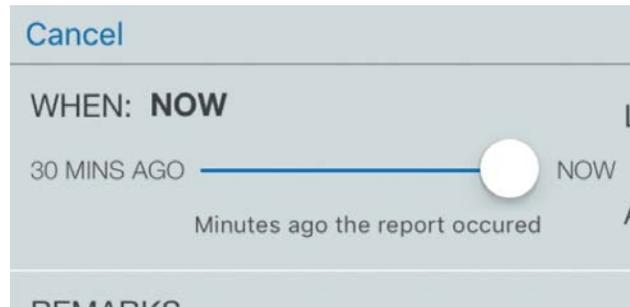
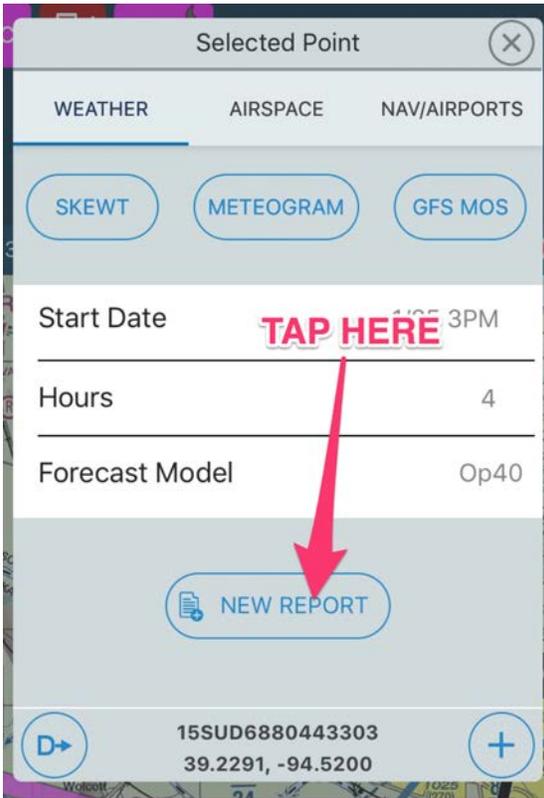
The screenshot shows the 'ADD REPORT' form with the following fields and options:

- Cancel** (top left)
- ADD REPORT** (top center)
- WHEN:** **NOW** (selected), with a slider from 30 MINS AGO to NOW. Below the slider: "Minutes ago the report occurred".
- LOCATION:** **GPS** (selected), **MANUAL** (unselected)
- CALLSIGN:** N1303H
- ALTITUDE (FEET MSL):** 8000
- TYPE:** SR22
- REMARKS:** (empty text box)
- SHARING:** Share on social network. Includes icons for Twitter and Facebook, a camera icon, and an **ADD PHOTO** button.
- RIDE:** **LIGHT TURBULENCE** (selected). Includes icons for various turbulence levels and a **LLWS** section with **Turbulence** and **Chop** buttons.
- TURBULENCE:** **BASES:** 4500, **TOPS:** 18000. Includes **Occasional** and **Continuous** buttons.
- PRECIPITATION:** **RAINY** (selected). Includes **Wind Deg:** 270, **Knots:** 32, and **Vis:** (slider) N/A. Includes **CLOUDS** section with **BASES:** 1800, **TOPS:** 7000, and **Clouds** buttons: **Clear**, **Few**, **Sct**, **Bkn**, **Ovc**.
- ICING:** **NEGATIVE ICING** (selected). Includes **Outside Air Temperature:** 1 C. Includes **ICING** section with **BASES:** 1800, **TOPS:** 3000, and **Clear**, **Rime**, **Mixed** buttons.
- SUBMIT REPORT** (bottom center)

It is only possible to enter in one cloud layer at a time. If you need to report another layer it's a good idea to add this to the textual remarks or wait a few miles and submit another pilot report.

During an instrument approach or other busy time it's a good idea to submit a pilot report when workload permits, such as after taxi and shutdown. To submit a historical pilot report find the location on the map you were at, approximately. Then hold down on the map until this screen appears on the left.

Enter the report as you normally would but move the time slider to the approximate # of minutes the pilot report was observed. See right image for time slider.

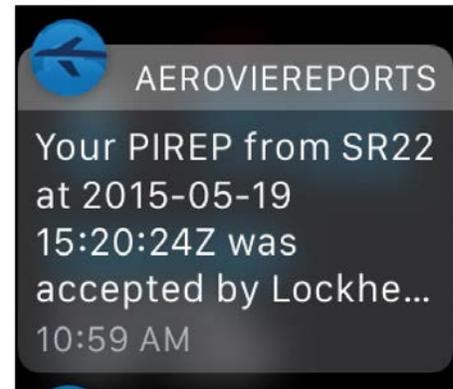


The number of untransmitted pilot reports will be shown next to the new report icon.



Receipt

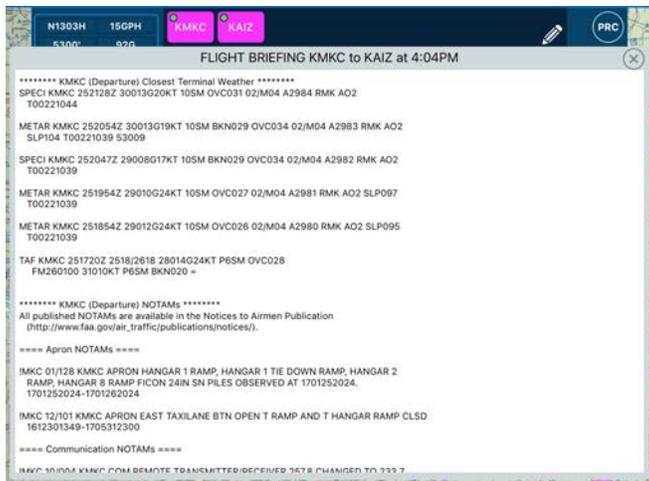
Upon receipt of pilot report by LEIDOS Flight Service you will receive a PUSH notification when it's received:



Briefing

Getting a full route briefing from Leidos Flight Services is as simple as tapping the Brief & File  button on the top navigation, then tapping **Brief Flight Plan**. You will see a notice that the briefing is being retrieved from flight service and when it's available it will be displayed.

Once the textual briefing is available it will be displayed on the screen. Stratus Insight transmits your route, flight route, departure and destination, time of departure, and call sign information to Leidos for recording. In addition a copy of the briefing is emailed to you for your convenience.



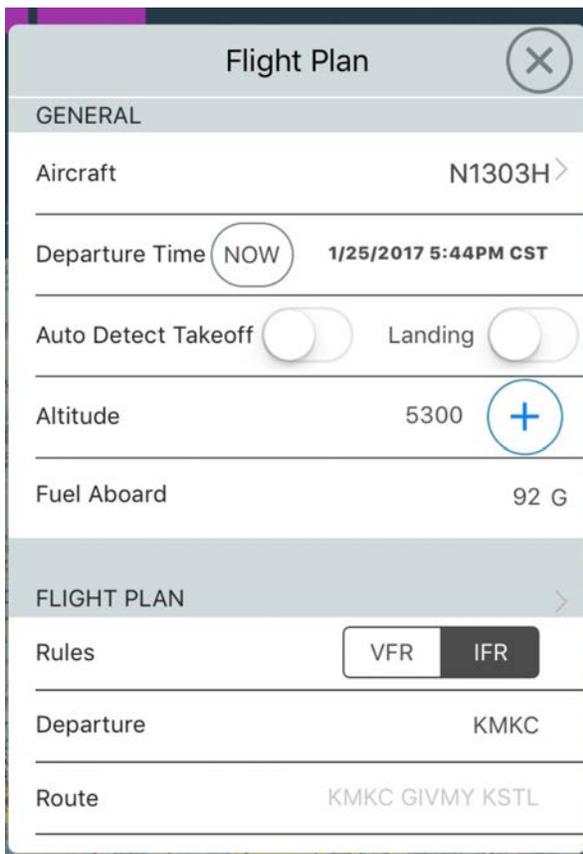
Filing

Stratus Insight flight plans are filed via Leidos Flight Services. All flight plans are ICAO standard as per FAA requirements as of March 2017. The first time you file a flight plan with Stratus Insight will require some filling out of required information on the ICAO flight plan form. Once you've added this information it's fairly straightforward to file a new plan.

Tap the Brief & File  button on the bottom Map Instrument Bar, then tap **File Flight Plan**. Tap **Edit** to change any incorrect information.

On the left: Verify route of flight, rules, altitude, departure time, and fuel on board.

On the right: Verify time enroute, fuel on board, # of people, any remarks, number of aircraft, and any ICAO STS special handling codes.



Flight Plan (Close)

GENERAL

Aircraft: N1303H >

Departure Time: **NOW** 1/25/2017 5:44PM CST

Auto Detect Takeoff: Landing:

Altitude: 5300 (+)

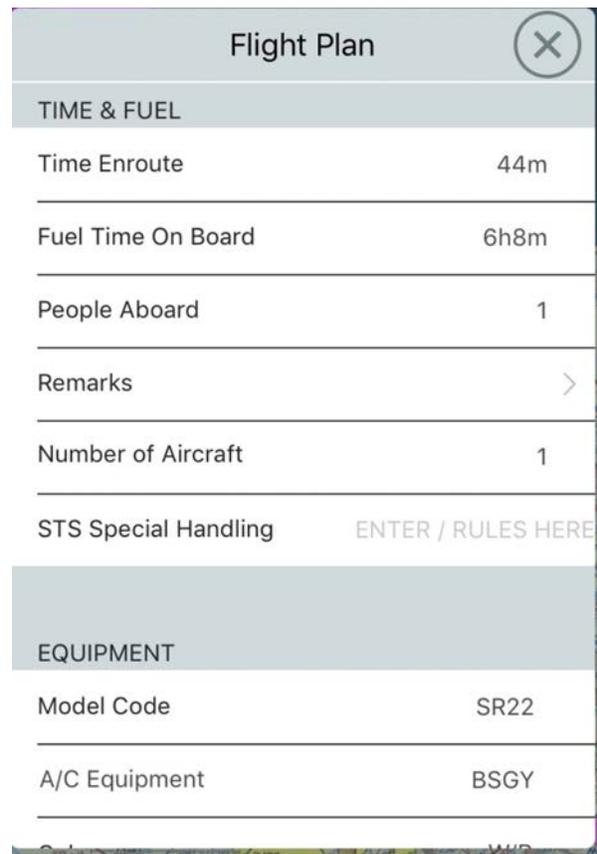
Fuel Aboard: 92 G

FLIGHT PLAN >

Rules: VFR IFR

Departure: KMKC

Route: KMKC GIVMY KSTL



Flight Plan (Close)

TIME & FUEL

Time Enroute: 44m

Fuel Time On Board: 6h8m

People Aboard: 1

Remarks: >

Number of Aircraft: 1

STS Special Handling: ENTER / RULES HERE

EQUIPMENT

Model Code: SR22

A/C Equipment: BSGY

On the left verify the equipment ICAO type, ICAO Aircraft equipment, color, surveillance equipment, wake turbulence category, and home base. Tapping on A/C Equipment reveals a list of equipment options. Just tap the items that match your aircraft equipment and tap SAVE.

Flight Plan (Close)

EQUIPMENT

Model Code	SR22
A/C Equipment	BSGY
Color	W/B
Surveillance Equip	LB2 >
Wake Turbulence	LIGHT >
Home Base	KMKC

CONTACT INFO

Pilot Name [Redacted]

Email [Redacted]

Flight Plan (Close)

Save CHOOSE OPTIONS

N : NIL

S : (VOR, VHF RTF, ILS)

A : GBAS Landing System

B : LPV (APV with SBAS)

C : LORAN C

D : DME

E1 : FMC WPR ACARS

E2 : D-FIS ACARS

On the left you will need to enter pilot information in once, this will be saved for future flight plans.

Flight Plan (Close)

CONTACT INFO

Pilot Name [Redacted]

Email [Redacted]

Address [Redacted]

Phone [Redacted]

Contact Name [Redacted]

Contact Phone [Redacted]

SAFETY EQUIPMENT

Radios none >

Survival Equip none >

Flight Plan (Close)

SAFETY EQUIPMENT

Radios none >

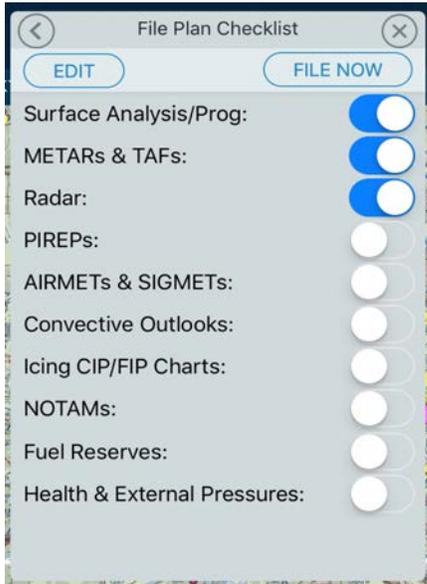
Survival Equip none >

Number Of Dinghies 0

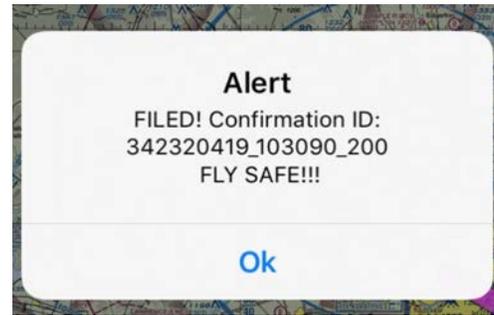
Jackets/Other F >

When you're ready tap the **FILE** button in the upper right corner.

The preflight checklist is provided for your convenience to make sure you got a full briefing. It's purely optional if you would like to use this or not. When you're ready tap **FILE NOW**.



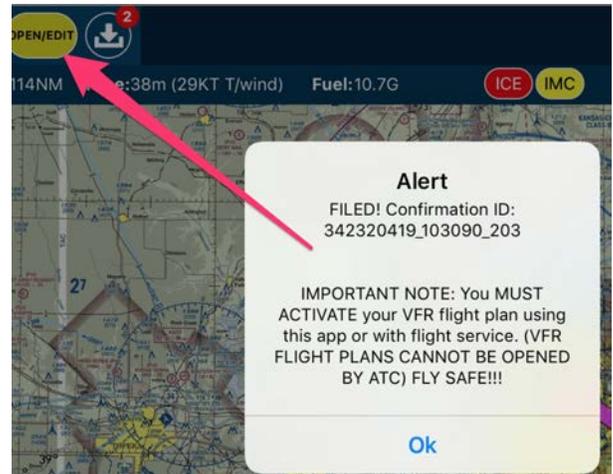
You should receive this message if the filing was successful. If an error was encountered with the data entered the error message will appear here. In this case, fix the error and re-submit.



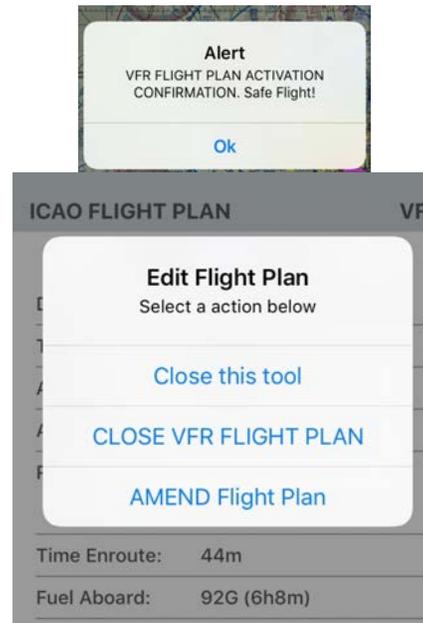
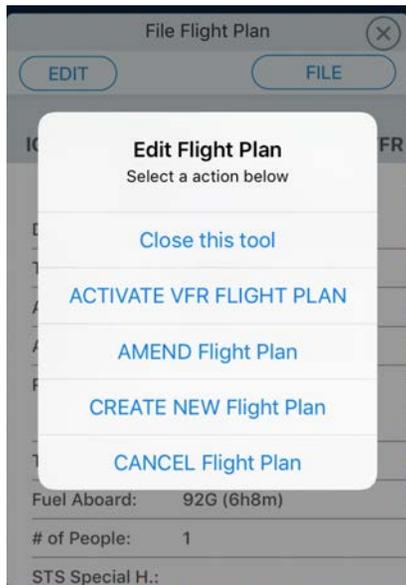
IFR Flight Plans can be amended or cancelled up to 30 minutes prior to proposed departure time. Cancellation reflects an UNOPENED flight plan, cancellation of opened IFR flight plans is currently not possible. After filing, the button will now say **EDIT/FILE**. Tap **EDIT/FILE** to cancel or amend an existing flight plan following on-screen prompts.

VFR Considerations

If you've filed a VFR flight plan you may both **ACTIVATE** and **CLOSE** your VFR flight plan with Leidos Flight Services. Upon filing VFR you will receive as follows, notice the **FILE** button is changed to **OPEN/EDIT**. Tapping this button and following the on-screen prompts will allow you to **ACTIVATE** and **CLOSE** your plan.



See examples below:

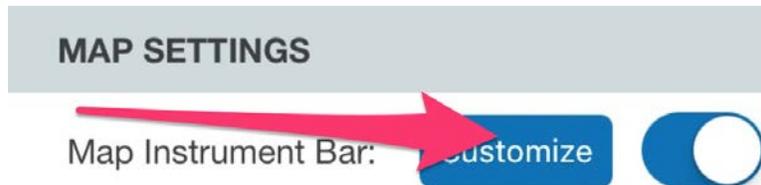


Map Instrument Bar

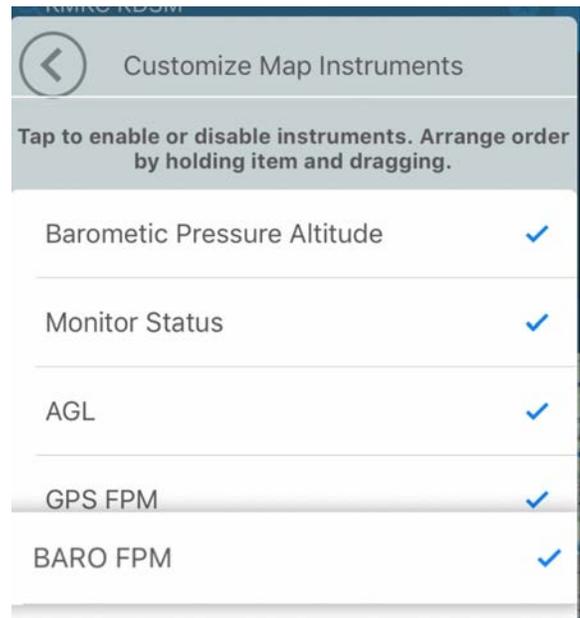
The toolbar at the bottom of Stratus Insight is designed to give you various instruments and tools for in-cockpit use. It can be found at the bottom of the screen and collapsed by tapping the down arrow on the left side of the bar.



The toolbar is horizontally scrollable to fit custom screen sizes of various devices. Each tool is separated by a vertical line and the order of the tools can be customized via Settings:

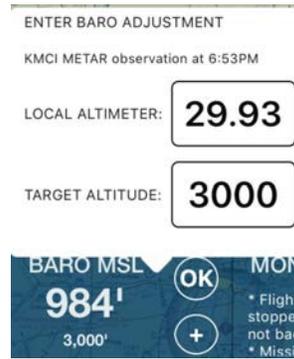


The order of the tools can be changed by holding down on a row and dragging the tool location. The tools are organized from left to right in this list. To turn off an instrument just single tap to toggle the checkmark (on) or no checkmark (off).



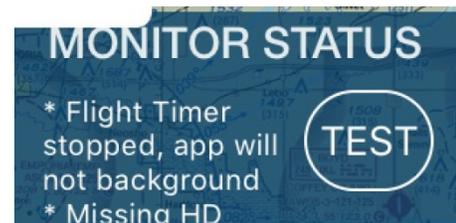
Baro MSL

This tool shows the barometric pressure altimeter (supported in most iOS devices). Tapping the + button reveals the settings for this tool including the local altimeter setting and target altitude. The target altitude upon reaching a climb or descent is shown on the map, green = BARO sensor, magenta = GPS sensor



Monitor Status

This tool is useful for connecting a device to a headset or bluetooth audio. This lists the monitoring status of Portable TAWS and other awareness features. Pressing TEST will play over your headset or bluetooth a test message of the status to verify connectivity.



AGL

Above Ground Level of current elevation database. There are two databases, a low-res version shipped inside Stratus Insight and a HD version available for download for increased resolution.



GPS FPM

GPS Altitude feet per minute + or -



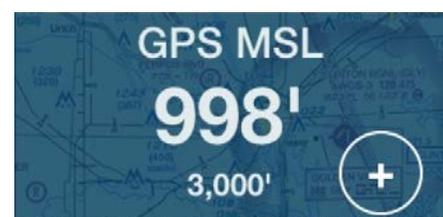
Baro FPM

Barometric Pressure Altitude feet per minute + or -



GPS MSL

GPS Altitude with target altitude indicated below. Hitting the + will allow you to set the target



altitude. For more information see BARO MSL above.
GPS map marker will show as magenta.

Flight Time

The flight timer is automatically started upon the GPS speed triggered in setting. It can also be manually started by tapping START. **This feature is critical for Stratus Insight to background the app and alert you to runway awareness and portable TAWS.** If the timer detects an in-flight condition it will automatically stop if the GPS speed falls below flying thresholds for a few minutes.



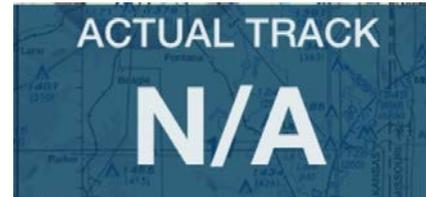
GPS G.S.

GPS Groundspeed



Actual Track

The heading track of the aircraft.



Next Wpt

Time and distance to next waypoint



Destination

Time and distance to destination via each segment of route



Fuel

Fuel tracker based on time enroute (active flight timer)



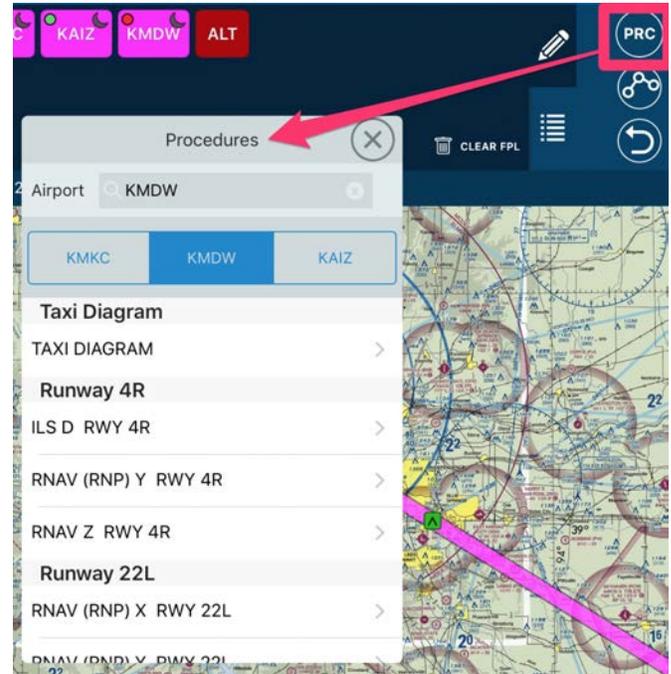
Timer

Generic timer with START, STOP, RESET functions.



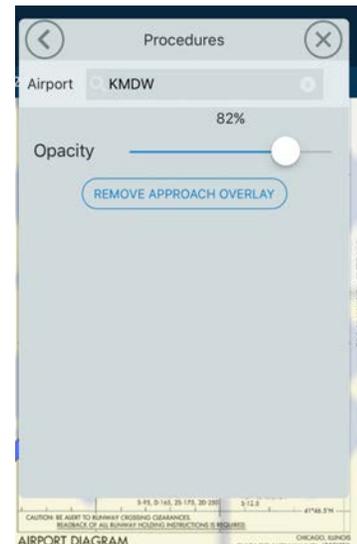
Procedures

Tapping on the PRC button will open the Procedures page. A tab bar across the top will list each airport in your flight route for quick reference to procedures at each of those airports.

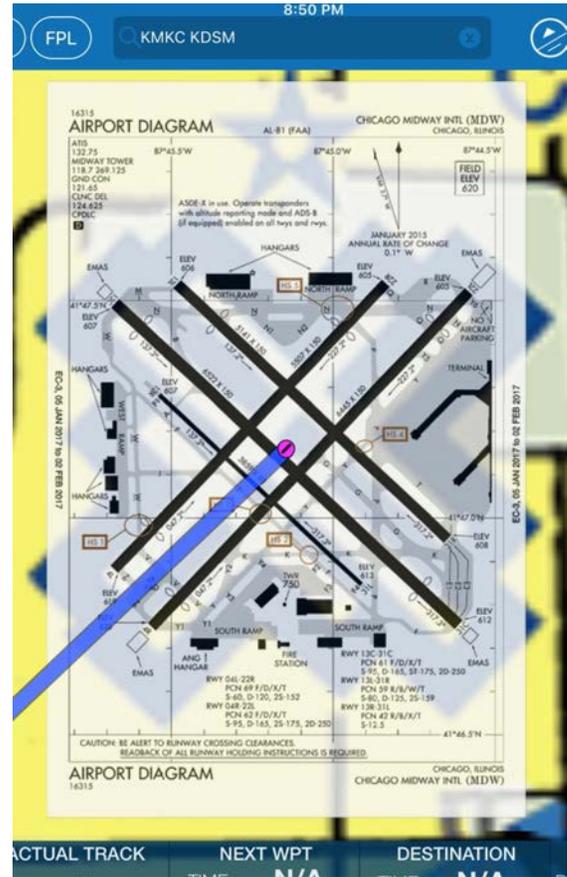
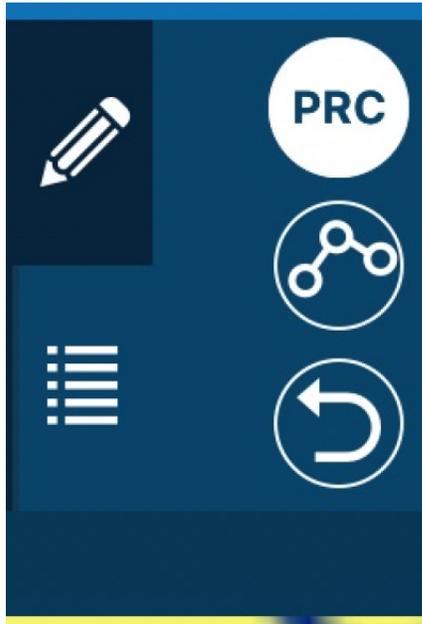


Each geo-referenced procedure available at the airports listed are available organized by runway. If you would like to view a procedure at a different airport then enter the identifier in the search box.

To change the opacity of the chart, use the slider. To remove the procedure from the map just tap REMOVE APPROACH OVERLAY.



Notice the PRC button is now white to indicate a chart is loaded on the map. Tapping it again will allow you to remove the chart.



IFR Alternate Planning Tool

When planning your route of flight you may find an ALT button appears in your flight route as indicated on the right. This suggests based on the 1, 2, 3 IFR rule that an alternate may be required. Tapping on this will open the alternate planning tool which assists you in finding the weather conditions at the time you would get to the alternate, runways, and approaches. This tool does not analyze whether an airport can be legally used as an alternate due to data limitations. The PIC must verify the alternate selection.

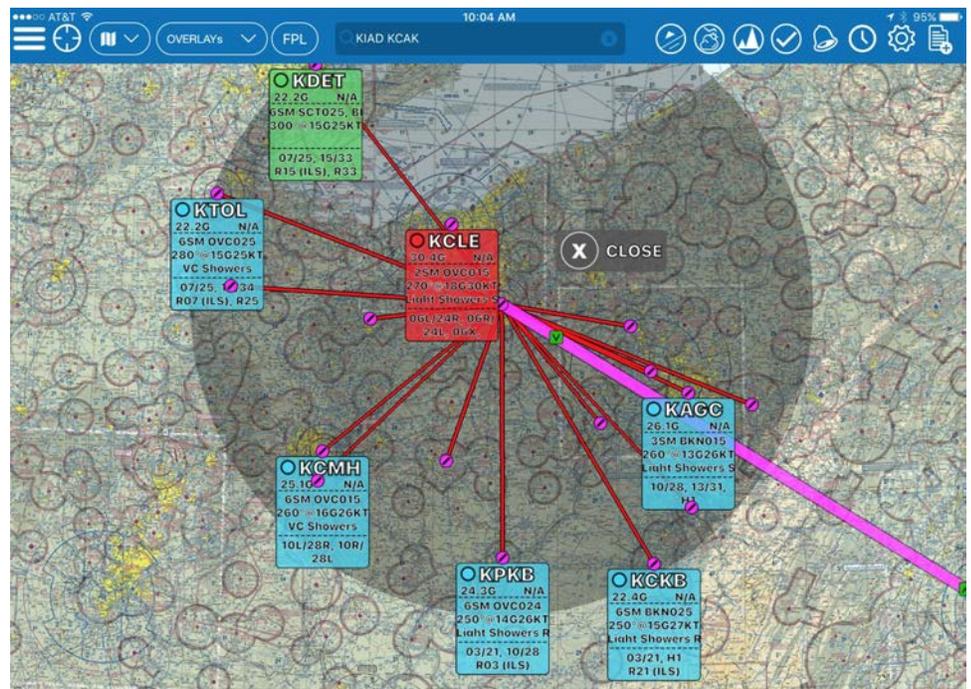


On the right you will see a gray highlighted area, this is your NBAA no-wind fuel range ring. Exceeding this distance would cut into 1 hour reserves.

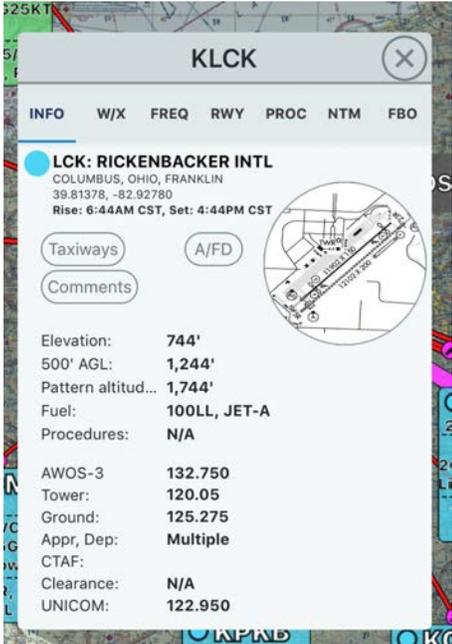
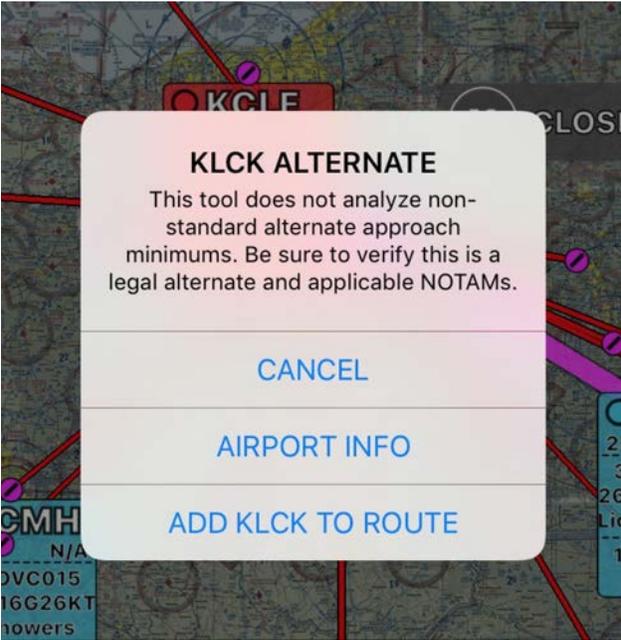
Notice the proposed alternates, wx at time of arrival, and other info.

Colors match that of METAR color codes:

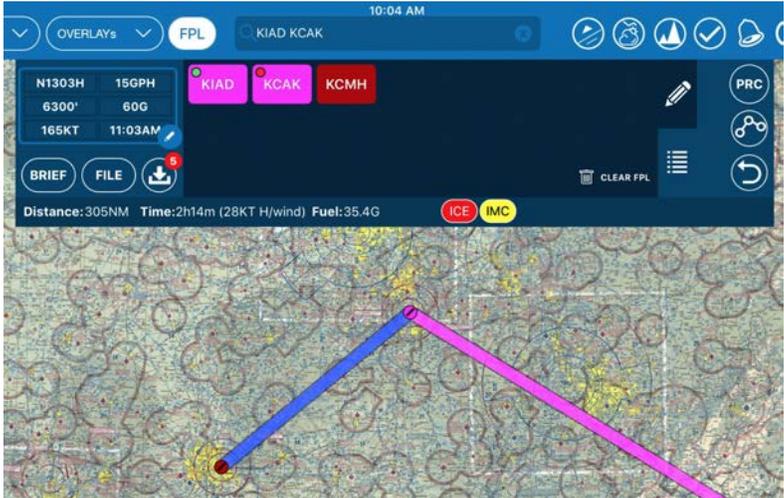
- Magenta = LIFR
- Red = IFR
- Blue = MVFR
- Green = VFR



Tapping on possible alternate choice will reveal the alert on the left. To open the airport info just tap "AIRPORT INFO" as shown on the right. Here you can look at the A/FD, and look at PROC to view approaches, minimums, including non-standard alternate minimums. When you're ready to add this airport to your alternate just tap on the map or hit the X. Next tap on the airport again and tap "ADD XXXX TO ROUTE"

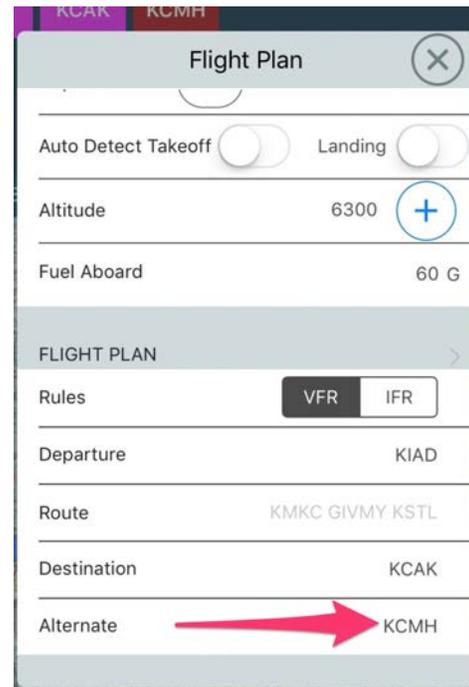


The airport is now added as an alternate as indicated in RED in the flight route. The airport is also shown on the map with a red airport icon:

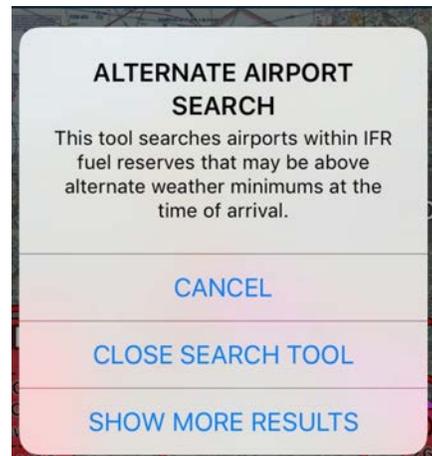


Opening your flight plan information box (as discussed in creating an aircraft profile) will reveal the alternate airport was added to your flight plan for filing.

To choose a new alternate just drag the waypoint off of the editor tool and an ALT will once again appear.

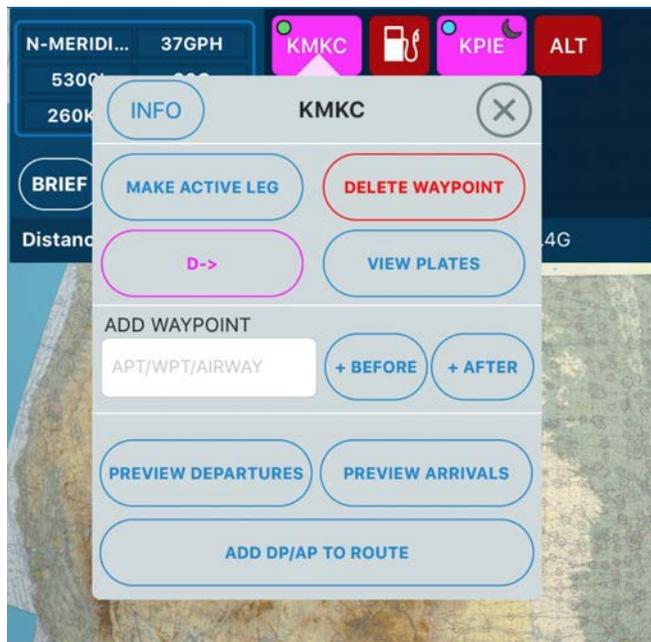


If you do not like the results you were given in your alternate selection you may add additional airports to your alternate search. Note this may take some additional processing time.

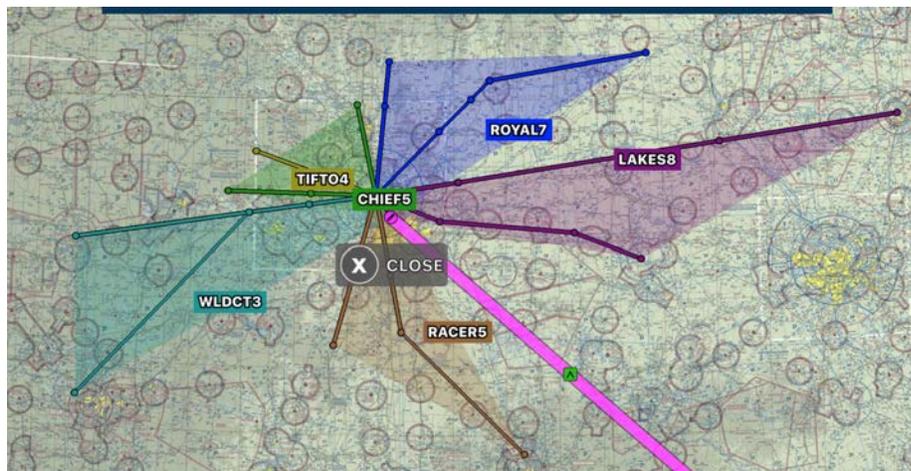


Preview Departure / Arrival Procedures

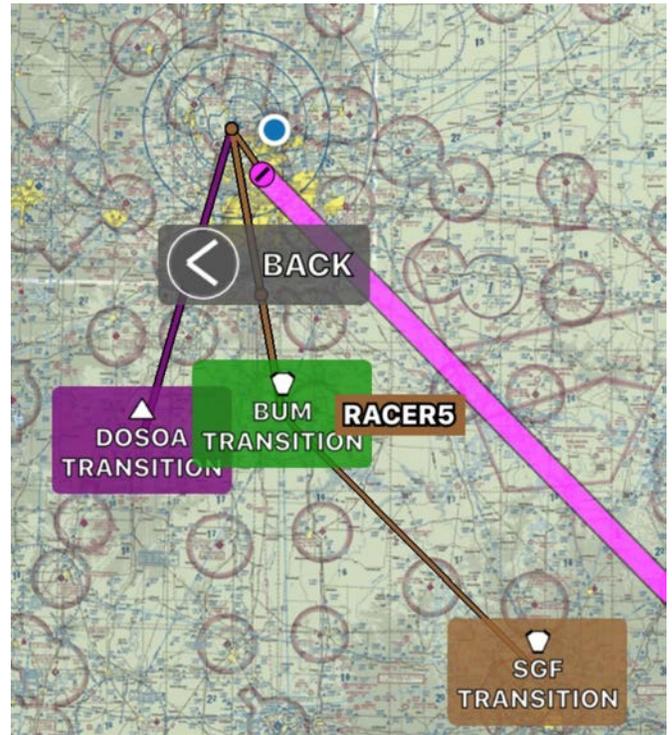
Stratus Insight has the capability to preview departure and arrival procedures to find out which procedure makes the most sense for your direction of flight. To use this feature just tap on an airport in your flight route (as discussed previously). Next, tap on **Preview Departures** or **Preview Arrivals**



Each procedure is highlighted on the right. Find the one that matches your route of flight and tap anywhere on the procedure. Close button will remove the preview.



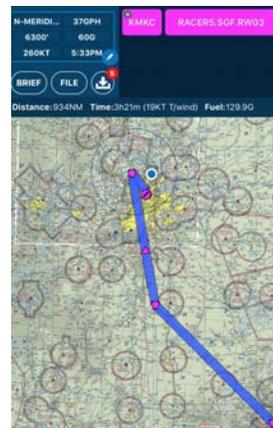
We've selected the RACER5 departure procedure from KMKC. Now tap on the transition for this procedure or hit the BACK button if we've selected the wrong procedure.



Some procedures require a runway selection, tap on the active runway.



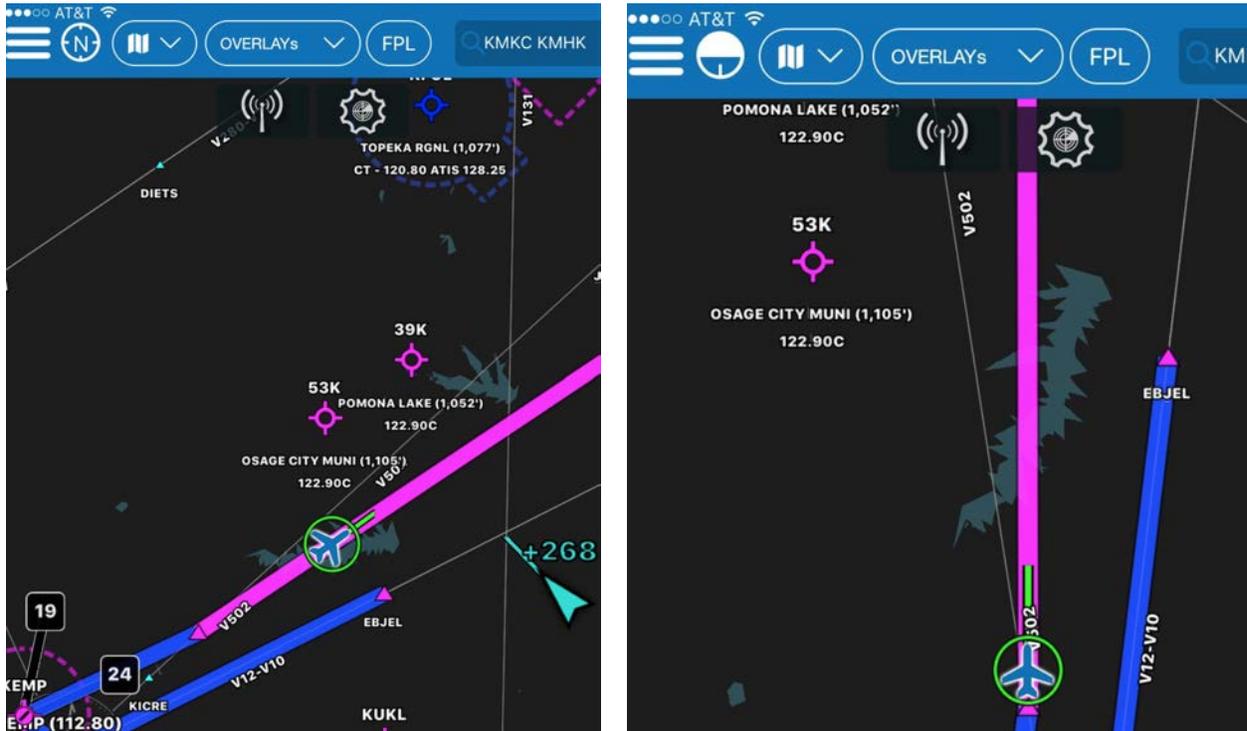
Finally the route is added to the route. To delete this, just hold down and drag it off the route editor window as previously discussed.



GPS Following / Track Up

Tapping on the GPS tracking  button on the top navigation as indicated on the right will toggle between north-up map follow mode or track-up. North-up will be indicated with an icon in the lower left image. Track-up will be indicated in the lower right icon.

Tapping on this icon again will disable tracking. During tracking mode you may zoom in and out of the map w/o stopping tracking. Panning the map will disable tracking and orient the map back to north.



Measuring Distances

Holding down on the map with two fingers for a moment will display the measuring tool.

This tool shows the distance between two points, degrees between points, and no-wind time based upon cruise flight.



If you're using this tool to view very small distances, it will convert from nautical miles to feet.



Route Rubberbanding

Holding down on the route and dragging it will allow dynamic route rubberbanding. Upon releasing the route you will be presented with nearby airports, waypoints, or VORs to add to your route. You may also just tap on the X or tap on the map to revert back to the previous route.

You may drag a route between waypoints as indicated on the right.



You may also drag a specific waypoint as well as indicated on the right. This will replace a waypoint already in your route instead of creating an intermediate waypoint.



Overlays

Overlays in Stratus Insight are perhaps one of the most powerful and comprehensive aviation weather information available anywhere. It's important to familiarize yourself with the basic concepts of overlays and how they're used in general before diving into each specific overlay. Overlays are found in the ☰ menu from the header:

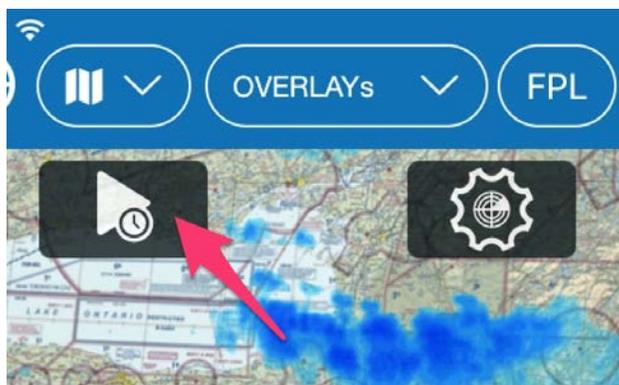
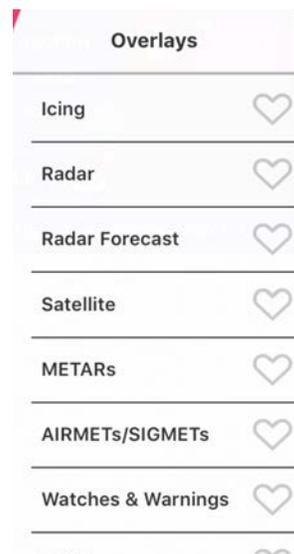
Here is an example of the overlays dropdown menu and where to find it. Notice various overlays you may add on top of your basemaps. Many items can be overlaid on top of one another as you add them. On the right side you will find a heart icon. Tapping this icon will simply add the item to your favorites list shown on the left. They are added to the favorites list in the order in which you add them to your favorites. To reorder the list just tap on the heart icon again to remove the favorite and be sure to add them in the order you desire.

To open an overlay, tap on the text, not the heart.

Let's start with radar.

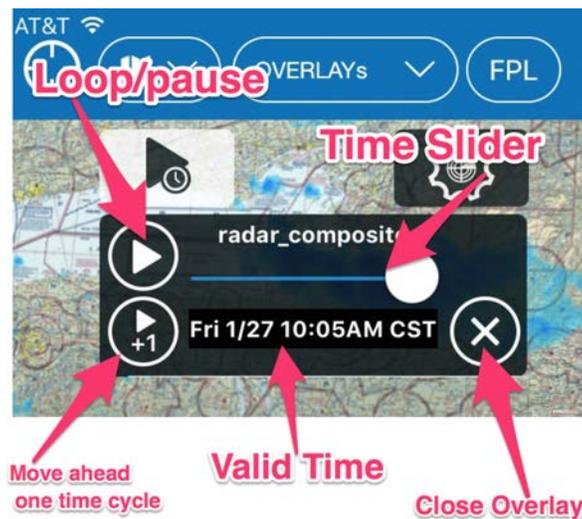
After adding an overlay in most cases a new play icon will appear as indicated on the right. **This is a critical component to overlays that will give you the valid time of whatever product you've displayed on the screen.**

To the right of this icon find the overlay settings icon. Tapping on this icon will reveal individual settings pertinent to the overlay on the screen.



Tapping on the play icon will reveal each overlay valid time and in most cases you may change the valid time by moving the slider, tapping on the Play+1 button to move ahead one time cycle, or loop the product with the Play button. Each valid time is converted to local time for you in the time zone in which the iPad or iPhone is currently set to.

If you've added more than one overlay to the screen then each overlay is provided in a vertically scrollable list. Tapping on the play icon again will hide the list to make more room available on the screen.



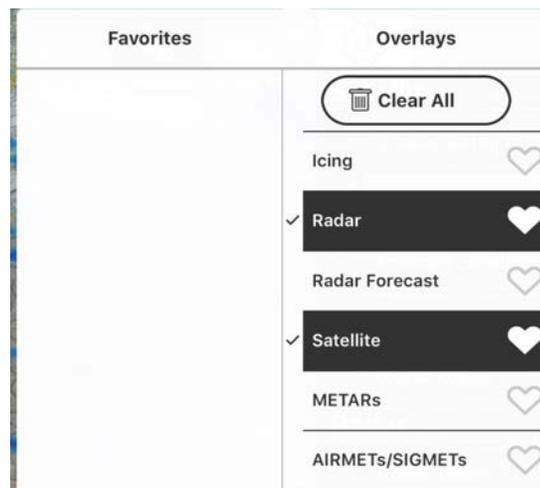
Tapping on the overlay settings icon as indicated on the right will reveal various settings that are applicable to your overlay on the screen. Each overlay settings is indicated at the top of each section, in this case Radar.

To change the settings just tap on each item you'd like to add/edit of your overlay. In some cases multiple selections may be made, in other cases only one item can be added to avoid user confusion. This list is vertically scrollable and you may swipe left to close a particular overlay product.



Tapping on the overlays menu again will reveal a highlighted item and checkmark next to each overlay on the screen. We highly recommend decluttering your screen as you move from product to product. For older iPads or iPhones keeping the items on the screen lower will improve performance.

To remove an overlay just tap on the text again or to clear all overlays hit the **Clear All** button.



Icing Overlay

Stratus Insight's icing overlay is produced directly from the Aviation Weather Centers Current & Forecast icing product. Stratus Insight provides them to you combined into one product called: Icing. Using the time slider a user can start with the CIP or Current Icing Product and move out over the valid times of the product which is currently 18 hours.

Adding the icing overlay will add another set of controls, the vertical altitude slider. Notice the knob control located at the bottom right. When set to the bottom, the default, the icing overlay is set to: MAX. MAX gives you all altitudes on one overlay presenting the worst case scenario to you at a specific valid time. The up and down arrows as well as dragging the knob will change the altitude for the icing product shown on the screen.

The recommended use is to start with MAX, then step through each altitude you will be using up to cruise flight. It's a good idea to step above and below a few altitudes to get a good picture of the icing on any given day. Use the time slider as previously discussed to look both at and around your time you may be flying.



The icing overlay has 3 options

Icing Severity (default): The icing severity forecast on the aviation weather centers CIP & FIP model.

Icing Probability: The icing probability forecast on the aviation weather centers CIP & FIP model.

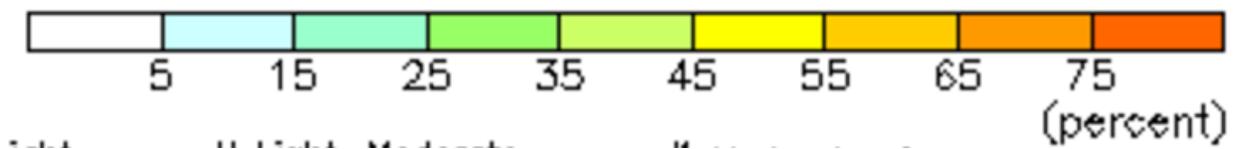
Global Severity: This is based on GFS model data out to 3 days for the entire globe. The logic is based on AWC model data but it's produced in the GFS model. **It's important to note GFS model data DOES NOT FORECAST SLD (supercooled large droplet icing, shown with red hatches)**



Icing Severity & Global Severity (excluding SLD) colors



Icing Probability color representing the % chance.



Radar Overlay

The radar overlay features the following options:

Radar Bases = Iowa State University provided lowest tilt radar mosaic + enhanced with vector data.

Composite Radar = Weather Decision Technologies provided composite radar mosaic + enhanced with vector data.

Worldwide Lightning = Worldwide lightning strikes

24 Hour Precipitation = Colored map of the previous 24 hours precipitation.



Radar Vector Symbols

Radar vector symbols are visible when zoomed into the map and hidden when zoomed out to declutter.

One hour storm track vector, each arrow is 20 minutes.



Non-severe hail (<1 inch)



Severe hail marker (>= 1 inch)



Lightning Strike



30dbZ echo tops, the highest 30dbZ or greater echo top.



TVS Marker (tornadic vortex signature)



Pulse-Doppler radar weather radar detected rotation algorithm that indicates the likely presence of a strong mesocyclone that is in some stage of tornadogenesis

Composite Radar NEXRAD color map

dBZ	Color
5	Light Green
10	Light Green
15	Light Green
20	Light Green
25	Light Green
30	Light Green
35	Yellow-Green
40	Yellow
50	Red
55	Dark Red
60	Magenta
65	Pink
70	Pink
75	Pink
95	White

Radar Forecast

Stratus Insight's Radar Forecast feature include two computer models to provide you with a simulated version of what the radar might look like at a future time.

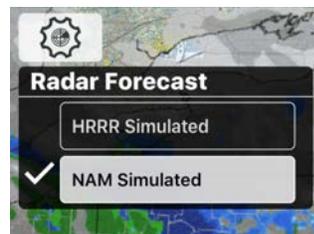
On the right find the NAM model, the NAM model is updated every 6 hours and is usually valid for about 3 days.

Stratus Insight's NAM is color coded with surface based precipitation type, green = rain, blue = snow, magenta = freezing rain.

To change the model as always use the overlay settings feature.

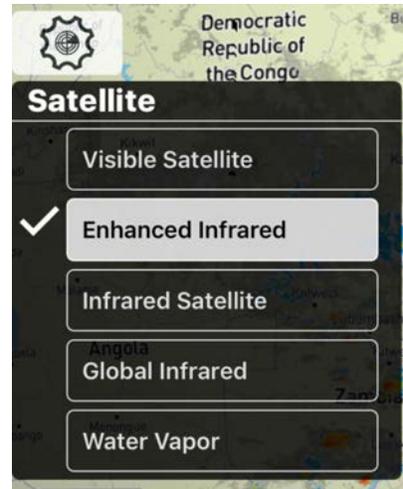
HRRR is the other type of radar forecast model available in Stratus Insight. HRRR is updated once an hour and is valid between 18 to 36 hours. They use slightly different physics between models but the HRRR has a distinct advantage of being updated more frequently but is not available as long-term as the NAM.

Precipitation types are not color indicated on the HRRR.



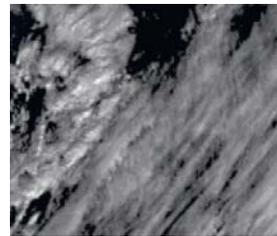
Satellite

Stratus Insight has several different satellite imagery options for you. Satellite imagery has the distinct advantage of being available generally around the globe and is immune to blind spots radars can have due to terrain, availability, etc. and satellites can show clouds vs water droplets. The disadvantage is the update frequency compared to radar but this may change as GOES-R becomes available.



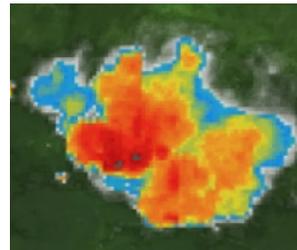
Visible Satellite

Think of this as a black and white photograph from space. At night, your photo will be blank.



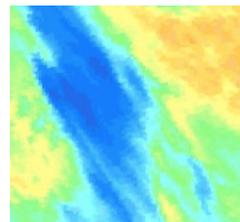
Enhanced Infrared

Infrared imagery is measuring the temperature of the highest object such as a cloud or the surface of the earth. Cold temperatures are color enhanced to make them easy to spot. Colder temperatures can sometimes be associated with thunderstorms due to the height of the clouds.



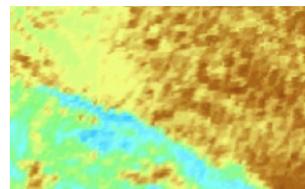
Infrared Satellite

This is a color-enhanced image from the GOES-EAST and GOES-WEST. See temperature key at the bottom. This is available to CONUS only.



Global Infrared

This is a global infrared product is based on the same colored infrared key indicated below.



Water Vapor imagery

Water vapor imagery is used to analyze the presence and movement of water vapor moisture in the upper and middle levels of the atmosphere. The wavelength spectrum used to detect water vapor is in the 6.7 to 7.3 micrometer wavelength range.



Infrared colored temp key



METARs

METAR observational surface data is available in a variety of formats. Each item you'd like to view on the map can be selected to see at the same time. Be aware if you add too many items the METAR text will become very long on the map.

The METAR background color is coded as follows

GREEN = VFR
BLUE = MVFR
RED = IFR
MAGENTA = LIFR

As you zoom in more METAR stations will become visible. To see less items just zoom out.

Historical METAR observations are also available using the time slider.

Ceiling, here is an example of red background color = IFR, OVC = sky, 8 = 800'. Normally this would read: OVC008 but it's shortened to save text.

In the case of SCT for scattered or FEW for few clouds, this will also show up here even though it's not an official ceiling.

Visibility, here is an example of visibility 10SM but the station is MVFR, tapping on the item reveals the ceiling is causing the MVFR conditions.

Flight Category If you would only like to see the color coded category of the airport then select this option. **The colored circles will only appear if this is the only METAR selection turned on.**

Surface Wind This turns on a wind barb for the surface based sustained wind. Open the METAR by tapping on the item to see gusts.



Precipitation If a METAR station is reporting precipitation then it will be reported here using standard METAR precipitation abbreviations.



Temperature The reported temperature in Fahrenheit and Celsius.



Dew point The reported dew point in Fahrenheit and Celsius.



Altimeter The reported altimeter setting.



Dew point Spread The delta between temperature and dew point values.



AIRMETS & SIGMETS

Aviation Weather Center issued AIRMETS & SIGMETS & ARTCC Center Weather Advisories (CWA) are available in a variety of ways in Stratus Insight. To enable these various products just tap on each you would like to see on the screen. To declutter consider reducing the amount of items on the screen at a time. Tapping on any of these items will reveal more detail about the advisory including altitude ranges.

AIRMETS in Stratus Insight are G-AIRMETS and you may use the time slider to see how the AIRMETS effect the time you will be enroute. NOTE however moving the time slider will only impact AIRMETS as SIGMETS, CWA, and Convective Outlooks will always be shown on the screen if they're enabled.



AIRMET Zulu (ICE)

Blue shaded area.



AIRMET IFR & Mountain Obscuration

Magenta shaded area.



Airmet Tango (Turbulence, low and high)

Orange shaded area.



SIGMET including Convective Sigmets and Center Weather Advisories

Red shaded area.



Convective Outlook, conditions are favorable for issuance of a Convective SIGMET.

Yellow shaded area.



Watches & Warnings

Watches & Warnings in Stratus Insight show county based NWS issued watches & warnings.



Winter Weather Advisory



Winter Storm Watch



Winter Storm Warning



Thunderstorm Watch

Thunderstorm Warning

Tornado Watch

Tornado Warning

Mesoscale Discussions

Think of a mesoscale discussion as occurring before a watch is issued. The Storm Prediction Center (SPC) in Norman, OK issues a mesoscale discussion while various meteorologists collaborate over the exact size and basis for issuing a watch. They can be for:

Thunderstorm Watches

Tornado Watches

Winter Storm Watches

etc.



PIREPs

The PIREPs overlay adds a new tool to your screen for filtering of PIREPs. Tapping the filter will allow you to control the altitude base and top of PIREPs you'd like displayed on your map.

You may also change the time cutoff for the age of a PIREP to be shown on the screen.

At any time you may tap ALL ALT and NOW buttons to reset to default settings.

PIREPs use standardized symbols for all icons.

The altitude of the PIREP is indicated at the bottom.

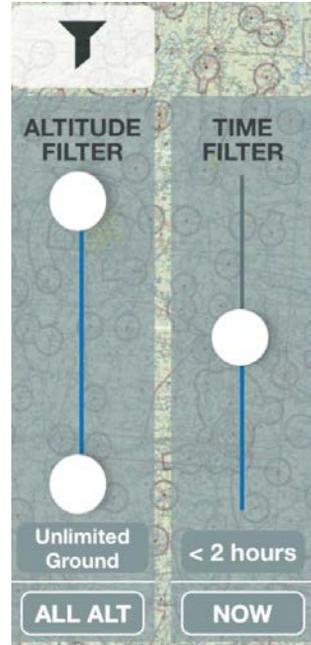
PIREP Turb: ▲ LGT ▲ MOD ▲ SEV PIREP Ice: ▬ LGT ▬ MOD ▬ SEV

PIREPs are colored with a border for severe and moderate conditions as follows:

Red = SEVERE

Orange = MODERATE

To get a PIREP description just tap on the item.



Surface Prognostic Charts

Stratus Insight surface prognostic charts begin with the next upcoming prognostic chart and using the timer slider you may view the prog charts over time up to 7 days. After about 72 hours the precipitation types are not displayed.



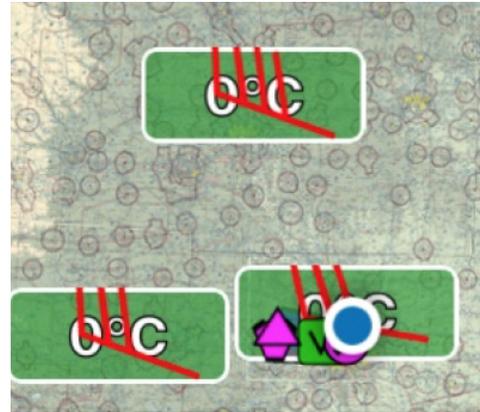
Winds Aloft

Winds aloft gives you the wind direction, speed, and temperature at various altitudes and times.

To see the valid time or view the winds aloft at a particular time just use the time slider.

To change altitudes use the vertical altitude selector as shown below.

The altitude is shown at the top of the altitude selector on the right. To change altitudes tap the up or down arrow or drag the knob as shown on the bottom of the image on the right.



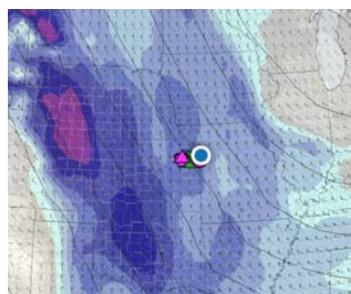
Upper Air

Looking at upper air charts is a great way to get a complete briefing and look at macro weather over the next several days or week. Knowing an upper level trough might exist over your route or good ridging will help drive what you might need to look at in other products. Stratus Insight has several options in upper air charts as shown on the right.

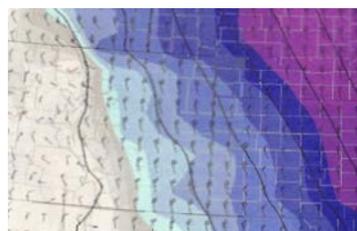
These upper air charts are based on the GFS model.

Wind barbs are added and color coded for your convenience.

GFS 850MB



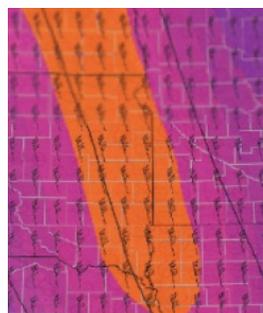
GFS 700MB



GFS 500MB Absolute Vorticity



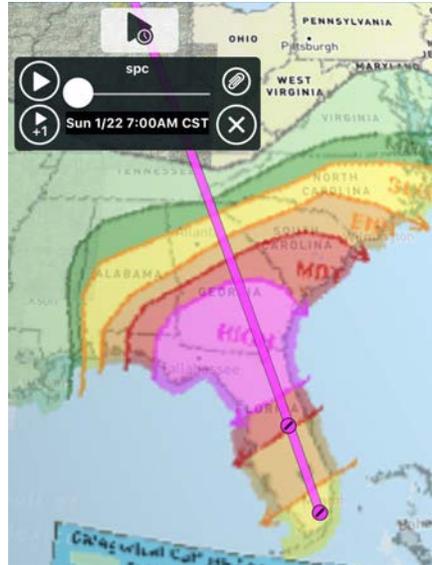
GFS 300MB



T-storm Outlook (SPC)

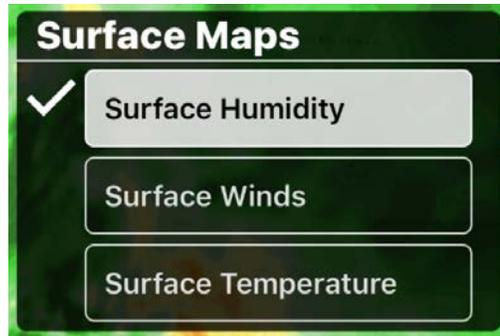
The storm prediction center (SPC) in Norman, OK publishes a 24 hour outlook for thunderstorm activity across the U.S. Using the time slider you may view day 1, day 2, day 3, and day4-7 24 hour outlooks for thunderstorms.

To view the text of the SPC Outlook just tap on the attachment icon in the upper right corner of the time slider as shown on the right.

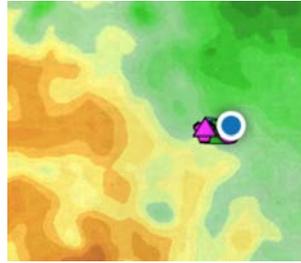


Surface Maps

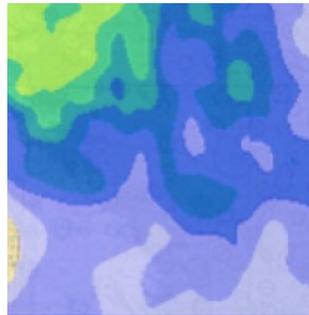
for



Surface Humidity



Surface Winds



Surface Temperatures



TFRs

Visual representation of TFRs is available from TFR overlay from <http://tfr.faa.gov>.

Remember stadium and published TFRs are not depicted and this is not a substitute for a briefing.



Obstacles

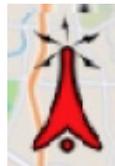
Obstacles are provided from the FAA obstacle database. The database for offline use may be downloaded from the Downloads area. The symbols will show up in three colors:

Red = Current GPS altitude is at or below the elevation of the obstacle <200'

Yellow = Current GPS altitude is nearby the elevation of the obstacle <1000'

White = Current GPS altitude is well above obstacle elevation. >1000'

Lighted tall tower



Bridge



Stack



Lighted small tower



Multiple small lighted towers



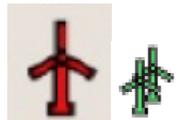
Tank (water tower)



Catenary



Windmill & Multiple Windmills



Elevator



Building with tower



Pole



Unlighted small tower



Crane



Cooling tower



Rig



Building



TAWS

TAWS provides a 2d overlay of shaded areas of terrain relative to GPS altitude.



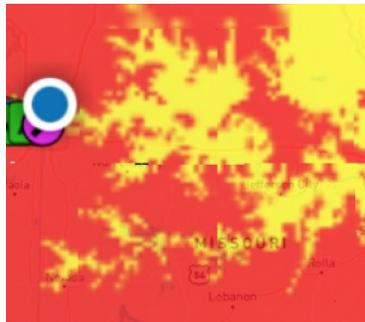
TAWS

Notice this overlay is a submenu, to go back to the main overlays list just tap the back arrow in the upper left corner.



TAWS Ownship

This option will use the current GPS altitude to shade the TAWS overlay. (use this in flight)



TAWS Planning

This option will highlight areas relative to your planned cruise altitude to highlight areas for preflight planning. (use this on the ground)



Fuel

This tool is used for fuel stop planning with a list of fuel prices on the map. You can choose between avgas and Jet-A pricing from the overlay settings menu.

Note the first time the fuel database is loaded it may take a couple of minutes to download.

Here is a look at the fuel prices on the map.

As a reference higher prices are shown as follows:

- Green = Lowest priced
- Blue = Moderately priced
- Red = Highest priced



AeroVector Layer & AeroVector Basemap

AeroVector Layers are vector-based data driven charts including airspace, airways, VORs, and airports. As a layer you can overlay it on top of any base map. For example here is the vector layer applied on top of the street map. Many symbols, colors, and references are modeled after FAA VFR sectional charts.



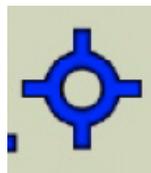
As you zoom into the map more objects will become visible and in more detail. To see information simply zoom out.

Vector Symbols

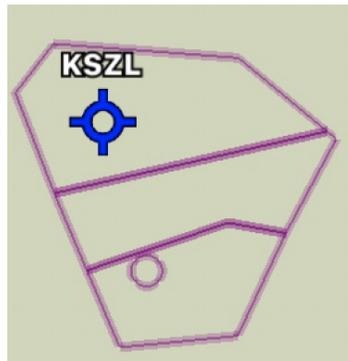
Zoomed out the ARTCC sector boundaries will be visible, see the white boundary line indicated on the right and center name: ZDV (Denver Center)



As you zoom in a bit further towered airports will begin to show up. See a towered airport indicated in blue on the right with services.



Zooming in a bit further special use airspace will begin to appear such as a MOA on the right.

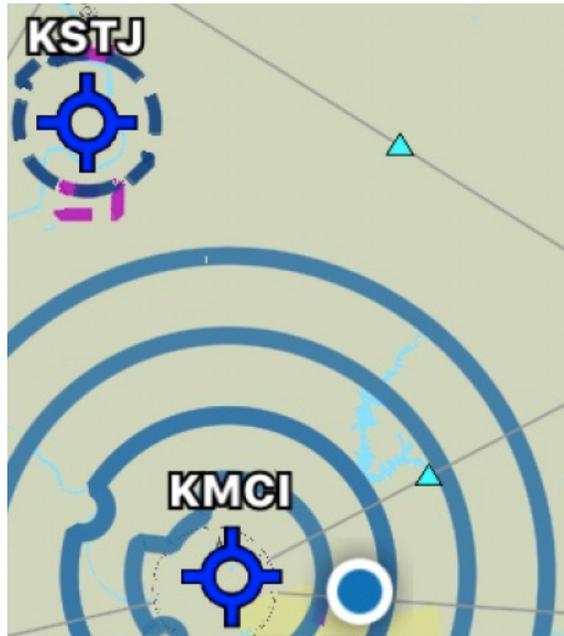


Zooming more airspace begins to become visible.

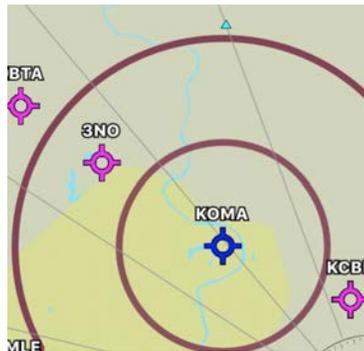
Dashed blue in the upper left is class D airspace.

The blue solid circles are class B airspace

Dashed magenta is class E airspace



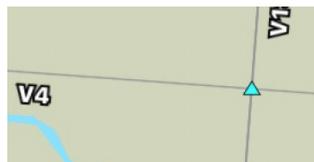
Class C airspace in solid magenta



Water & urban areas are highlighted as indicated



Airways



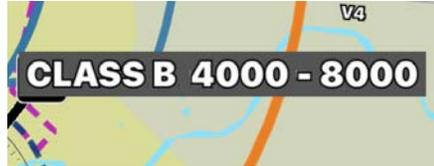
Waypoints



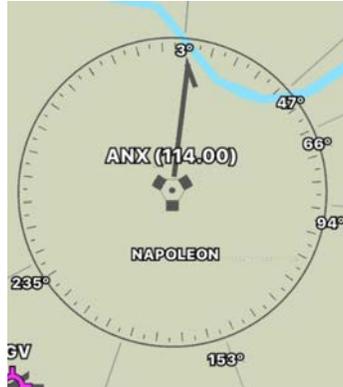
Tap on airways to see MEA



Tap on airspace to see vertical boundaries



VOR names & radials of airways



Runway centerlines, airport name, CTAF & ASOS/ATIS with runway elevation.



Zooming into airport reveals taxiway diagram via FAA chart or vector



AeroVector Settings

Tapping the overlay settings reveals various AeroVector map settings to customize your experience.

At the top you may enable Low or High airways or disable airways to declutter.

When adding as a base map you may have a light or dark theme.

Text size is customizable on the screen.

Minimum runway length may be applied to airports shown.

Airspace boundaries can be disabled to declutter.

SUA (Special Use Airspace) can be disabled to declutter.

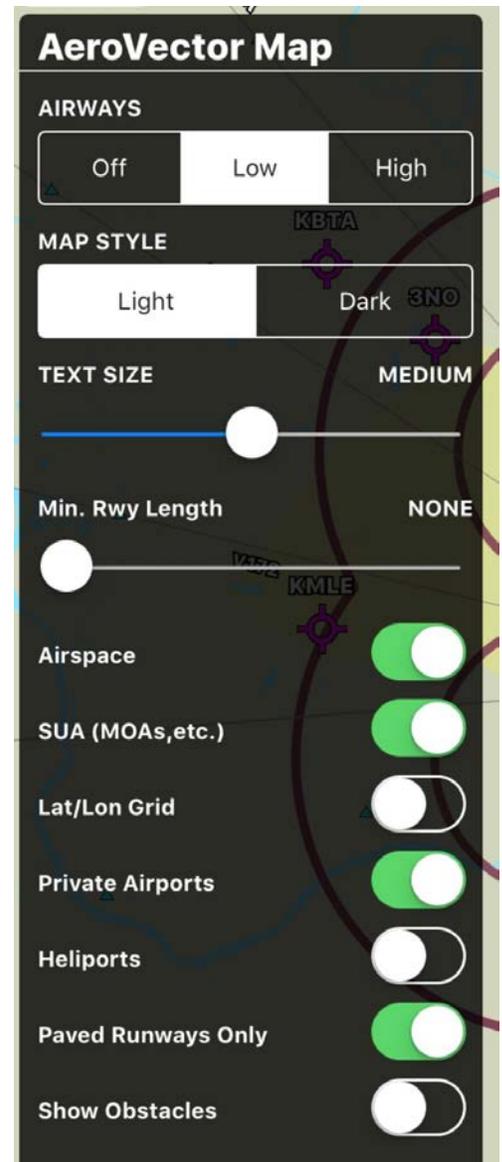
Lat/Lon Grid may be added as a reference similar to the VFR sectional chart.

Private Airports can be disabled to declutter.

Heliports can be added if needed.

Paved runways only, if enabled only paved runways will be shown.

Show Obstacles, obstacles will be shown when AeroVector is turned on instead of turning on the obstacles as a separate overlay.



Airports

The airport information window comes in a couple of varieties and accessed a number of different ways. For iPhone users the page will look similar to the right screenshot.

For iPad users you may access this smaller airport window or a large dedicated airport page.

One of the ways to load an airport is enter a single identifier in the search box at the top as indicated on the right.

Other methods include:

Tapping on a METAR or airport on the AeroVectors layer.

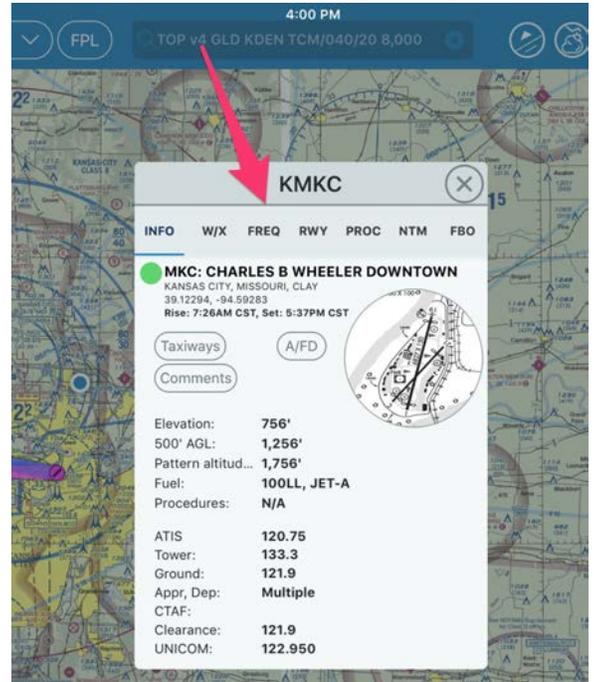
Tapping on an airport in your flight plan.

The small airport window features common frequencies and information presented on the screen including sunset and sunrise times, and airport name.

An airport thumbnail is provided and you may tap on this to see a larger image.

Across the top find buttons for various features within the airport window. Including:

- WX = Weather Information
- FREQ = Other Frequencies
- RWY = Detailed runway information
- PROC = Procedures such as approaches
- NTM = NOTAMs
- FBO = FBO contact information and fuel pricing



Here is a look at the weather tab within the airport window. Tapping on any of these will reveal the information for this airport:

METAR = Current decoded and raw METAR obs. and nearby METAR observations with rewind capability.

TAF = Decoded & raw versions of TAF and/or nearby TAFs

TAF Discussion = A plain English version from the forecaster discussing the TAF.

GFS MOS = A computer model forecast for the airport for 3 days, similar to a TAF but not generated by a forecaster.

NAM MOS = A computer model forecast for the airport for 3 days, similar to a TAF but not generated by a forecaster.

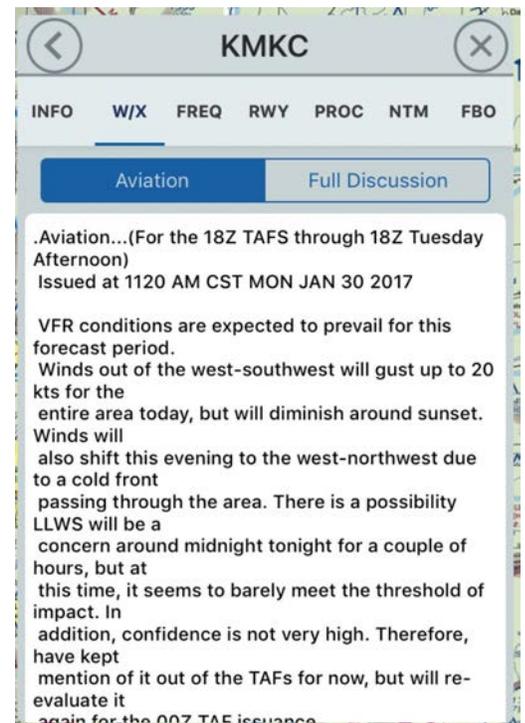
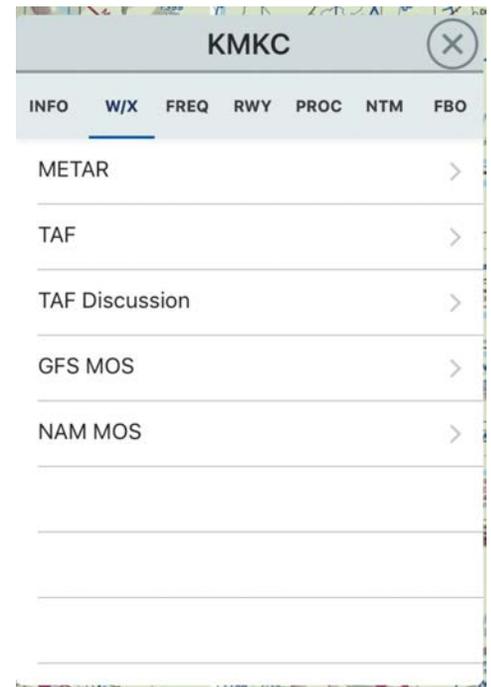
Here is a look at the TAF discussion for KMKC. It comes in two varieties, Aviation and Full Discussion. Aviation discussion discusses the current TAF period in plain English.

Full Discussions is written for all NWS users, such as the general public. The advantage to the full discussion is that often a description of weather 3-7 days in advance is typical in plain English.

Keywords are shown in bold red such as:

- Snow
- Ice
- Tornado
- Thunderstorm
- Etc.

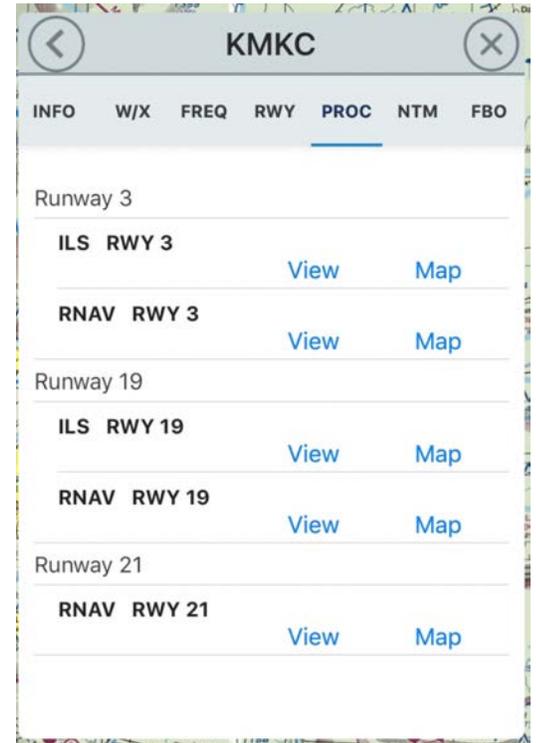
To go back to a previous menu tap the back arrow in the upper left corner.



The procedure tab includes each runway and the procedures for each. To add the chart to the map tap Map, to view the chart only tap View.

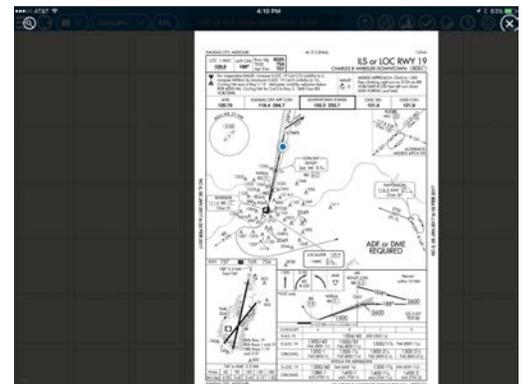
To remove the chart once added to the screen you must use the PRC button from the FPL menu as discussed previously.

To go back to a previous menu tap the back arrow in the upper left corner.



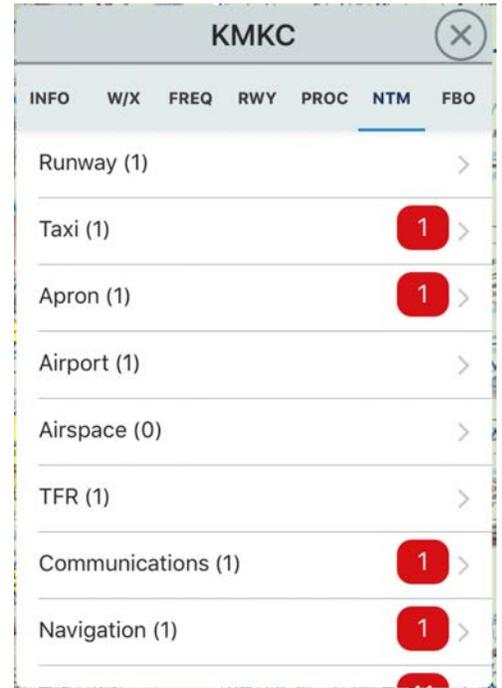
Example on the right of viewing an approach chart. Tap the zoom icon to re-center the zoom location.

These charts are geo-referenced with a moving aircraft shown on the plate. To close this plate tap the X in the upper right corner.



NOTAMs are shown organized by type in the following format:

NOTAM TYPE(# total NOTAMs) (RED: # unread NOTAMs)

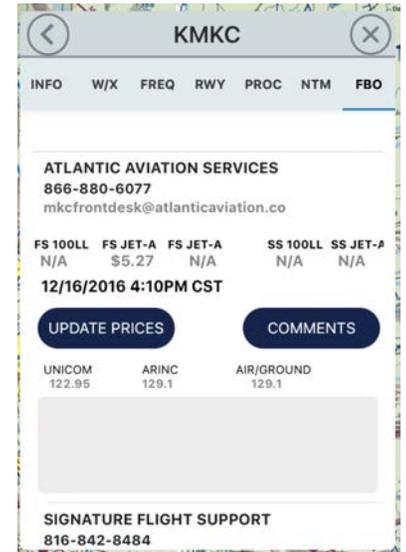


Tapping on the NOTAMs highlighted in red will mark the NOTAM as read. This is useful if planning ahead a particular airport, checking NOTAMs again will highlight the new NOTAMs published since last read.

To go back to a previous menu tap the back arrow in the upper left corner.

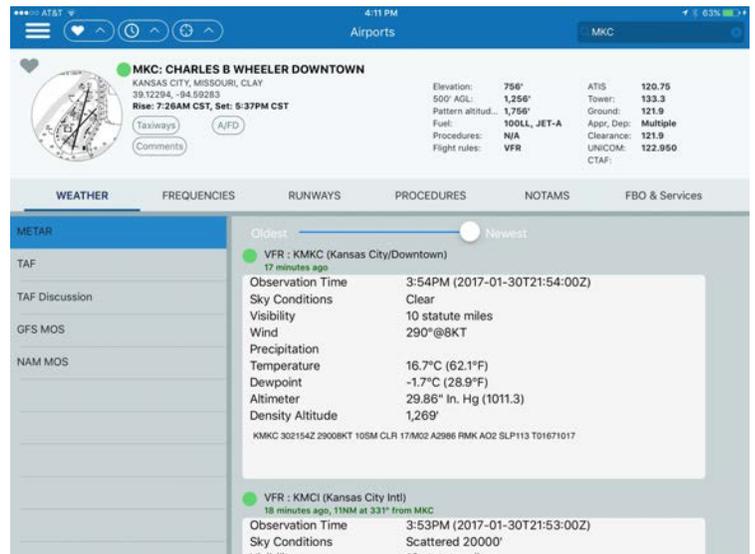


Here is a look at the FBO list, prices, and comments. We encourage you to update prices as you encounter them in the field to make sure other users have the most up to date information. Any comments associated with the FBO we also encourage.

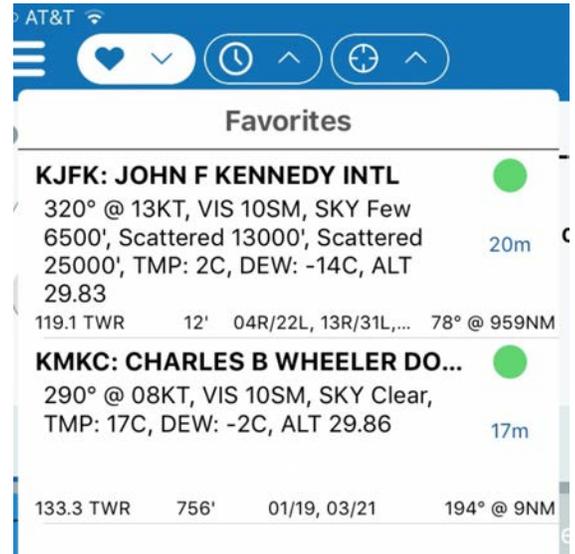


Tap **Airports** on the bottom Map Instrument Bar to reveal the iPad full sized Airport page.

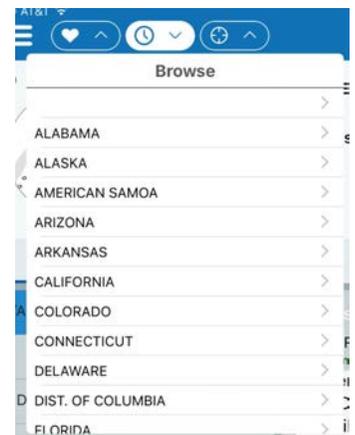
Here is a look at the full size airports page with the same information as the small window.



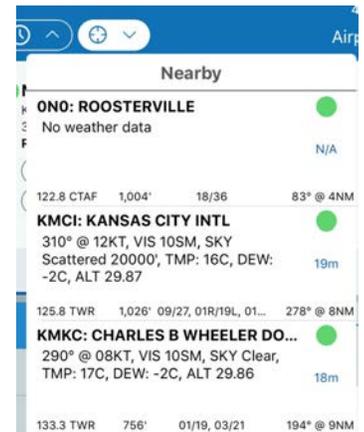
By tapping the heart icon on the main airport page will add the airport to your favorites list. To view your favorites list just tap the heart icon dropdown. This will show you the weather of your favorite airports. To open the airport just tap on the item.



To browse airports by state just tap browse and select the state and city.



Nearby airports dropdown show weather and airports near your current position.



Plates

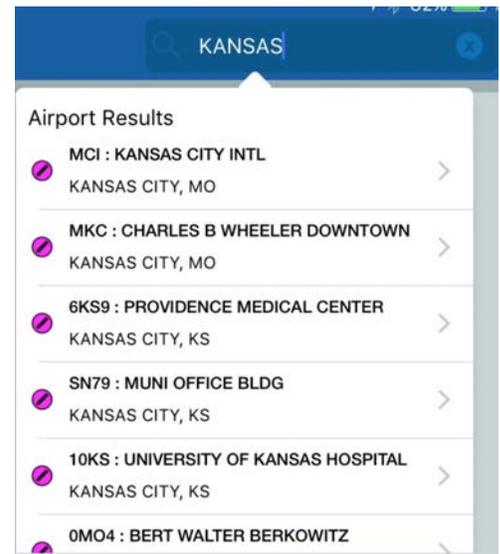
The dedicated Plates page of Stratus Insight is a great way to keep charts organized for frequent use and access them quickly. To access Plates, tap **Plates** on the bottom Map Instrument Bar.

The first time you load the plates tab it will look like the right section. To add plates see below.

The upper right corner search for city names or airport identifiers. When you find the airport you would like to see plates from just tap on it.

Once you've selected the airport identifier you will be presented with a list of approaches and procedures for each runway. To add the items just tap on them.

To close the list tap the X in the search box.



Here is a look at plates that will show up in your binder once you've added them.

To favorite a plate, just tap the heart button.

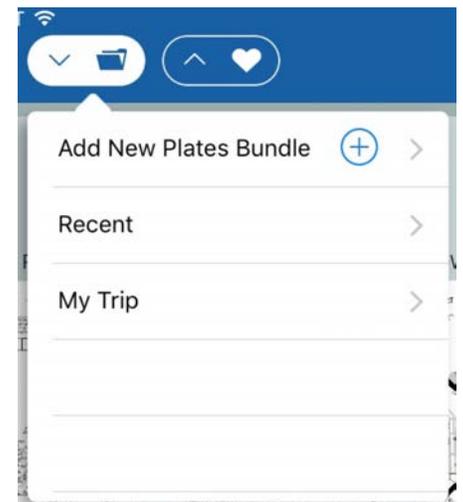
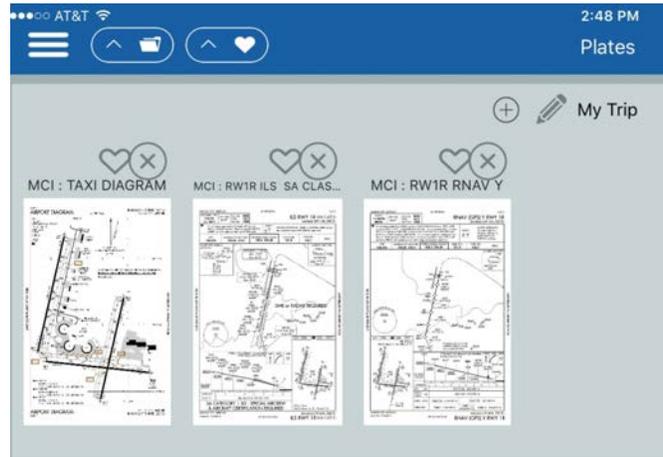
To delete a plate just tap the X button.

You may pinch the plates tab to change the size of the plates on the screen.

To view your favorite plates across all binders just tap on the Favorites dropdown. Tap to open the plate.

To change the binder you have open just tap the binders drop down and tap the binder you'd like to view.

You may also add a new binder here or hit the + button on the main screen next to the binder name.



Downloads

To access downloads, tap **Download** on the bottom Map Instrument Bar.

Downloads control databases, charts, and other information needed for the app to use in-flight (offline).

Downloading databases

Download databases individually or in multiples.

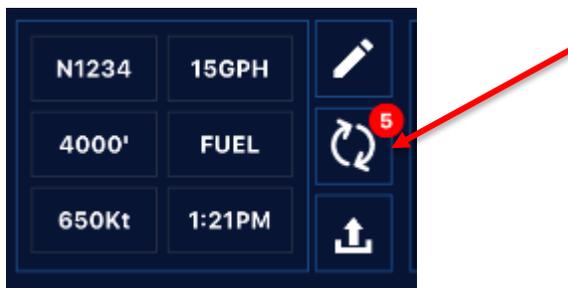
- To download an individual item, tap the download  button to download it.
- To download multiple items, mark the check box next to multiple items, then tap **Start downloads**.
- To download all items, check Select all databases, then tap **Start downloads** to download all selected items.
- Tap the trash  button next to a download to delete it.

Changing download settings

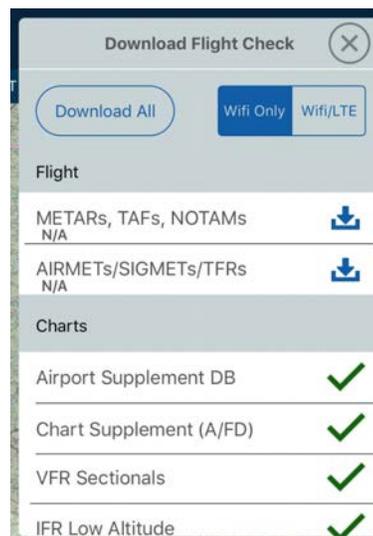
- Toggle the **Automatic updates** switch to automatically download files when the app is plugged into a power source and connected to Wi-Fi.
- Toggle the **Warn when downloading over cellular** to prompt a notification before downloading if you're not connected to a Wi-Fi network.

The quickest way to make sure your charts are downloaded and ready to be used offline is to use the download flight check feature in the FPL menu.

Each time you enter a flight route, Stratus Insight will do a systems check to make sure your entire route is covered by charts already downloaded. The # of items remaining and not downloaded will appear in a red # next to the downloads icon. Tap on it to reveal what is missing.



On the right see the Download Flight Check window. Items missing will show up with a download icon. You may download individual items by tapping the download button. To **download all** of the items just tap Download All. By default all downloads are restricted to Wi-Fi only to prevent expensive data overages. To download over LTE as well tap Wi-Fi/LTE.



Portable TAWS & Flight Monitoring

Stratus Insight has several various features of both aural and visual warnings. In order for this to be effective the iPhone or iPad must be plugged into the headset jack or connected via bluetooth to a headset or avionics panel input port. It's highly recommended you use the TEST button in the navigation bar as previously discussed in this manual to test the volume and connectivity to your panel.

Airport Surface Monitoring

During ground operations Stratus Insight will monitor your taxi to the runway and will alert you as you approach a runway. This is based on time in seconds to entering the runway environment. In certain cases a fast taxi with a vector towards the runway could create a false positive alarm. As you enter the runway another alert is heard.

Examples:

"Approaching runway 1, 19"

"Entering runway 1, 19"



Altitude Descent and Climb from runway environment

Stratus Insight will alert you to altitudes during your descent or climbout in AGL from the runway environment. The default option is to alert at 500' above ground level during the descent to the runway. Customized altitudes can be set as discussed in the Settings area of this manual.

Example:

"Five Hundred"

Altitude Leaving

When you level off at a certain altitude for a few minutes Stratus Insight will detect automatically this altitude. When you have deviated from this altitude by a couple hundred feet Stratus Insight will alert you to leaving this altitude. This serves as a reminder that you're drifting off altitude or a reminder you're changing altitudes as desired.

Examples:

"Leaving flight level 1 8 0"

"Leaving 13 thousand, five hundred"

Obstacle Alerting

Based on a 3D trajectory of the aircraft obstacles will be monitored for potential conflicts if it looks like the clearing and proximity to the obstacle will be very close. Based on certain criteria an obstacle alert will be heard:

Example:

“Obstacle, pole, 4.2 miles, 595 feet”

A visual alert will also be shown around the obstacle with the height.

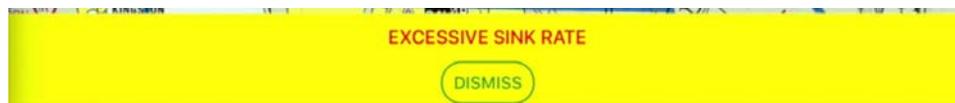


Portable TAWS

EDR

A 3D trajectory is monitored of the aircraft at all times. Based on the aircraft's altitude in AGL, speed, and descent rate an excessive descent rate algorithm may be triggered during a high descent.

“Sink Rate”



PDA

Based on the runway we're approaching if we're at a very low glideslope angle, in other words very low approach angle, an alert will be generated.

“Too low, terrain!”



Terrain

Based on the 3D trajectory of the aircraft and conflict with terrain an alert will be created.

“Terrain, Terrain”



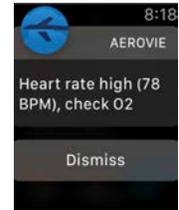
Heartbeat

If we've connected an Apple Watch and enabled a flight timer from the watch the pilots heartbeat will be monitored and if it exceeds a threshold value an alert will be created. The default is 120 but may be increased for individual fitness level in the Settings area of the iPhone.

A heart rate in some cases can be a symptom of hypoxia. For best results a pulse-oximeter should be used to verify.

Example:

"Heart rate high, check oxygen, 123 beats per minute"



Depressurization

Most modern iPhones and iPads feature a barometric pressure sensor in the device. For pressurized aircraft the "depressurization" feature should be turned on in Settings. A high cabin climb rate will trigger this alert.

Example:

"Check Pressurization"



ADS-B Weather & Traffic

Stratus Insight supports the following portable ADS-B receivers and in-panel ADSB solutions.

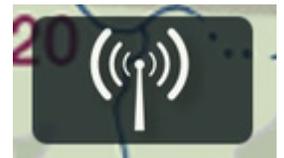
- All Stratus portable receivers
- Open Flight Solutions FlightBox
- FreeFlight
- Dual XGPS 170, 190
- Avidyne IFD series navigators

Receivers connect via Wi-Fi or Bluetooth; refer to each manufacturer for setup instructions. To connect to a Stratus portable receiver, refer to the steps below.

1. Turn on the Stratus portable receiver by pressing the power button or turning on the aircraft if it's configured to power on with aircraft power.
2. Tap the **Settings** button on your iOS device's home screen.
3. Tap **Wi-Fi**.
4. Make sure that Wi-Fi is enabled. Tap the Stratus wireless network, displayed under **Choose a Network**, to connect. Your Wi-Fi network name is on the label on the back of your receiver.

When your device is connected to the Stratus wireless network, a checkmark appears next to the network name.

To verify Stratus Insight has successfully connected to your receiver, look for this icon on the map page of Stratus Insight.



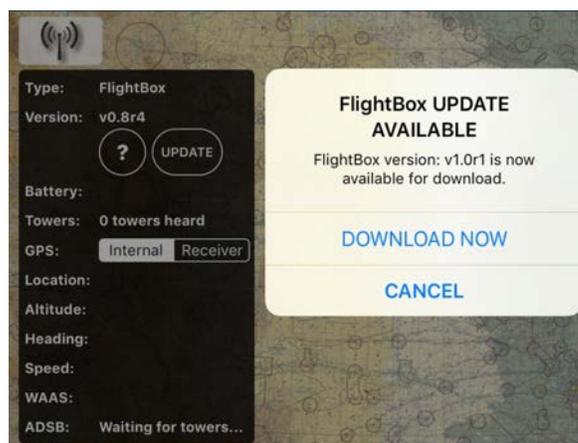
Tapping on the ADSB receiver icon will reveal various status information for your receiver including firmware version and GPS received data.

The GPS in use by the app can be toggled between the Receiver or Internal. This will only be effective if valid information is received from your ADSB device.

Tapping on the ? button will reveal additional status information about your receiver.



For FlightBox users, Stratus Insight can manage your firmware for you. As new firmware versions are released you may receive a prompt to download and install the new software.



For FlightBox users after downloading and the device is connected you will be prompted to INSTALL the new firmware to the device.



Overlay menu

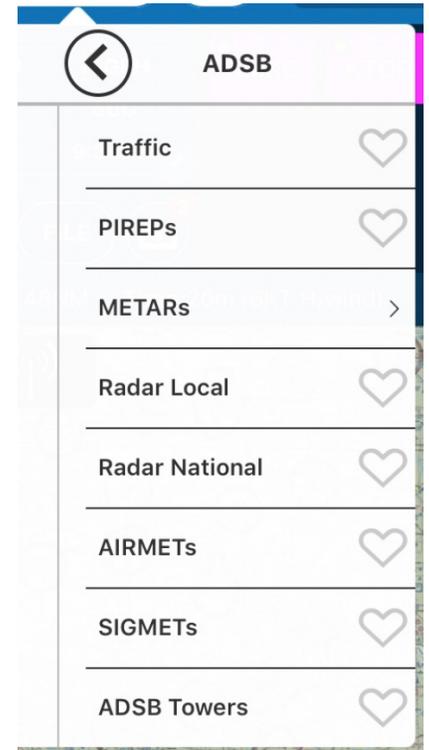
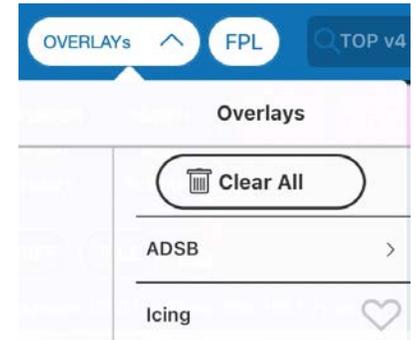
Once your ADSB receiver is connected you will notice a new menu in OVERLAYs labeled: "ADSB". Tapping on this item will enter an ADSB submenu of products available.

ADSB menu

As usual these items can also be added to your quick access favorites list.

Most of these products are similar to the non ADSB counterparts with a few new items.

As you receive data over ADSB Stratus Insight will log this data internally where it can be accessed a number of different ways such as the airports informational tab for METARs, TAFs, and NOTAMs.



Traffic

Traffic over ADSB comes in a variety of ways all of which will make no difference to how they're displayed in Stratus Insight. Here are a few of them:

- 1090Mhz direct air to air
- 978Mhz UAT air to air
- 978Mhz UAT TIS-B in

Depending upon your aircraft capability you may or may not receive the TIS-B feed.

Traffic display includes direction of travel, altitude in 100's or feet + or - from your current GPS altitude and a two minute trend vector.

Tapping on the item reveals additional details. Example of ground based ADSB traffic.

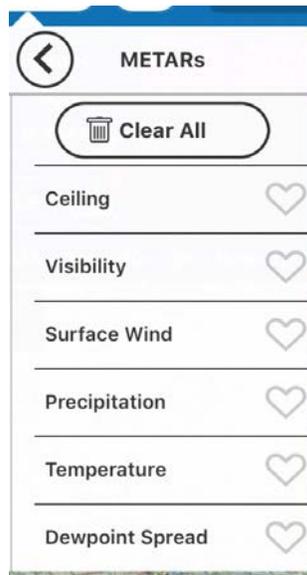


METARS

Accessing the ADSB METARs submenu will allow you to turn on various METAR observational items on the top down map.

METAR data can also be accessed in the airports informational tab.

Received METAR information is also used to automatically update the BARO MSL sensor local altimeter setting.



PIREPs

PIREPs received over ADSB can be accessed from the Overlays / ADSB menu using the same format as non ADSB PIREPs. Tapping on the item will reveal the raw received PIREP.

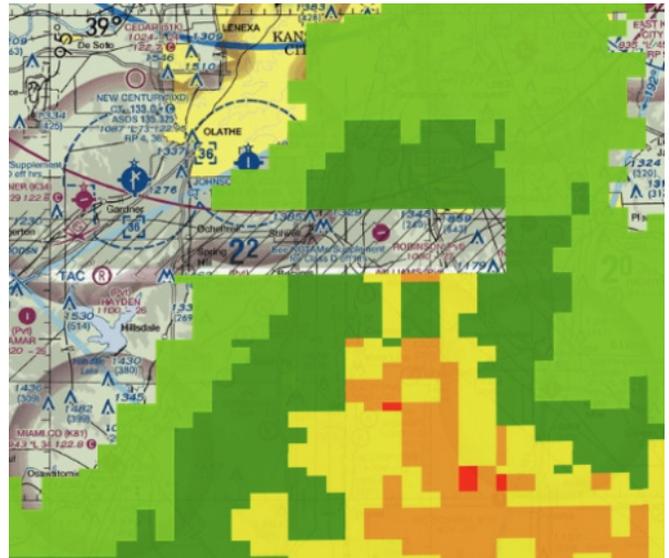


Radar Local

Radar imagery from ADSB comes in two varieties. For local radar, every 5 minutes (with a duplicate received at 2.5 minutes) a local (a few hundred miles around your aircraft) radar image will be uploaded.

Here is an example on the right and notice some areas were not received are hatched out with a gray diagonal line. This means these areas may contain radar imagery or may not but was not received in this cycle from ADSB.

Use the time slider to loop the product over time.



Radar National

Radar imagery from ADSB comes in two varieties. For national radar, every 15 minutes a national CONUS radar image is received in lower resolution than local.



ADSB Radar Imagery Colors

Intensity	dBz	Color
2	20-30 dBz	Light Green
3	30-40 dBz	Green
4	40-45 dBz	Yellow-Green
5	45-50 dBz	Yellow
6	50-55 dBz	Orange
7	≥ 55 dBz	Red

NOTAMS

In the airports information under NOTAMS you will see a new category for **ADSB Received** NOTAMS with a list of all over the air received NOTAMS for the airport.

Apple Watch

The Stratus Insight app on the Apple Watch is a great way to stay connected to nearby airport weather, access nearby radar imagery on your watch, start your flight timer, monitor your heartbeat, and much more.

The first time you load the Stratus Insight watch application it will need to connect to your iPhone companion app to download your session information. If you receive an error message make sure the iPhone is nearby and restart the Stratus Insight app on the phone and watch.

The Stratus Insight watch app is organized into a series of pages you can access by swiping left and right. The current page is indicated at the bottom of the page. The digital crown (wheel on the side) can be rotated to scroll down to see more information on individual pages or simply swipe up and down on the screen.

On certain pages additional settings can be accessed by using a DEEP PRESS, or push hard on the screen.

See the flight timer page on the right, to start a timer just tap on one of them, tap again to pause.

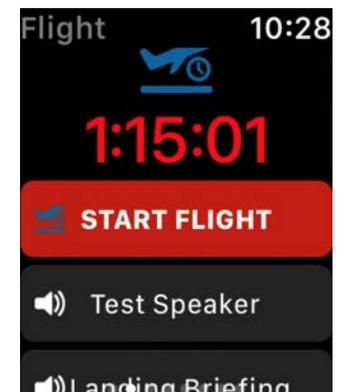
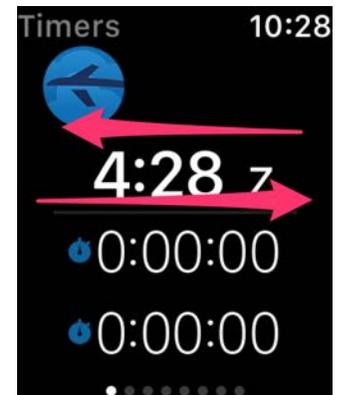
The flight timer page contains several features critical for use in-flight.

By viewing the page the current flight timer status is indicated with the time on top. The colors of the text indicate as follows:

- Red = Communication received from iPhone and timer is stopped
- Yellow = Communication is pending with iPhone, not yet received.
- Green = Communication received from iPhone and timer is started.

Tap START FLIGHT or the timer to toggle between active/inactive timer. An active flight timer will begin backgrounding monitoring on iPhone for portable TAWS and other awareness features.

TEST SPEAKER will test the aural alerts from your iPhone to test avionics or headset connectivity.



The landing briefing button will manually play the landing briefing at the next airport in the waypoint list.

Pressing the checklist button will reveal the digital checklist as setup on the iPhone companion app.

The list of checklists from your companion iPhone app will be displayed in this list. Use the digital crown or wheel on the side to scroll through various checklist items and tap on them to start a checklist.

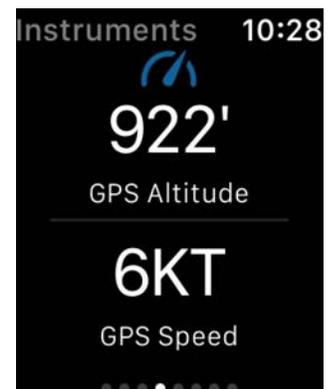
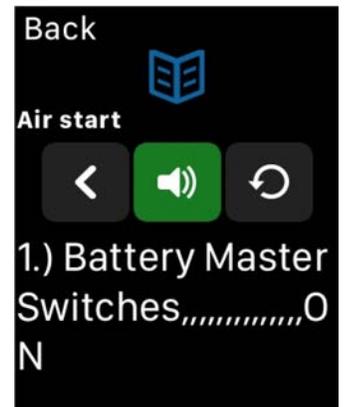
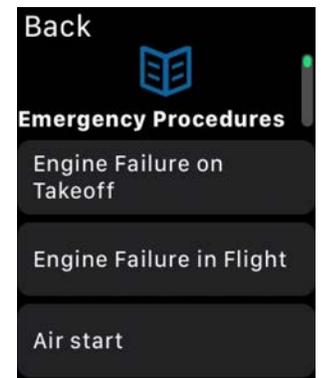
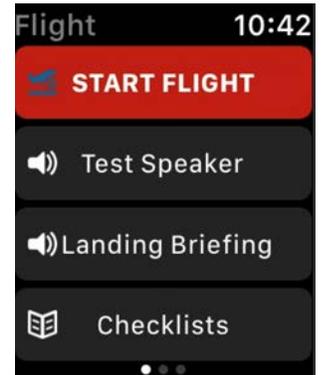
Tap back to go back to the flight timer.

On the right is an individual checklist. To start playing the checklist over your iPhone headset or bluetooth connection tap the speaker icon. To restart the checklist tap the recycle icon.

Tap back to go back to the list of checklists.

The instruments page displays a top and bottom instrument in which you may customize.

To change the displayed instrument simply tap on it and select the new instrument from the available list.



The radar tab will show the current VFR sectional and radar imagery nearby your location. The valid time is indicated at the top of the radar image.

Using the digital crown or wheel on the side you can rotate between various zoom levels.

The departure & destination airport pages show an airport thumbnail, the current METAR weather conditions (VFR, MVFR, IFR, LIFR).

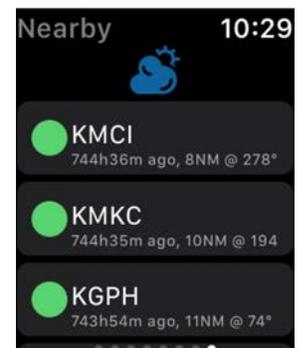
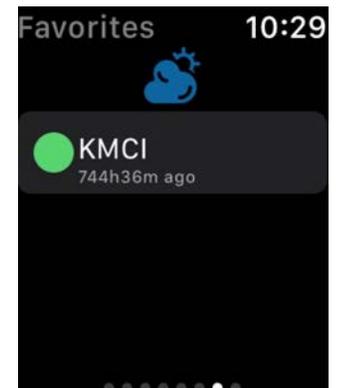
Scrolling down the page will show elevation and frequencies for the airport.

Deep pressing on this page will toggle between airport information and additional METAR, TAF, and TAF discussion information.

The favorites tab will show airports you have favorited on the iPhone companion app by tapping the heart icon in the airport information page.

Deep press on this page to display detailed weather information.

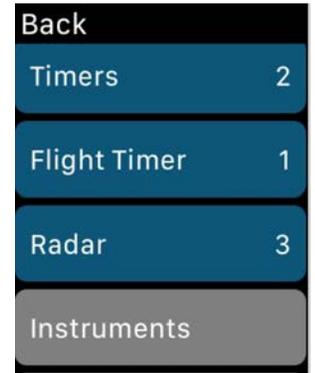
Display nearby airports on this page including METAR color code or deep press on this page to display detailed weather information for each airport.



Deep pressing on any page and tapping on Settings will allow you to customize your Stratus Insight watch experience by selecting only the pages you would like displayed.

Tap reset, then select the pages in the order you'd like them displayed.

Tap back when complete.



Apple Watch Complications

Apple watch complications allow you to create widgets on your standard watch face to include the nearest major airport METAR, TAF, and GFS MOS. You may set these up using your iPhone Watch application or using the watch itself.

In this example the top line reads as follows:

<IDENT> <WX_CONDITIONS> <time-of-observation>
<Current Conditions>

<Current conditions expanded or next significant weather
Chang event>

+FCST = Indicates a fair weather forecast in TAF.

Deep pressing on the main watch screen will reveal a customize button.



Tapping customize and using the digital crown (wheel on the side) you can rotate between complications. Find Stratus Insight for the complications you'd like to add it to.

We highly recommend the modular face with the large middle area for the most content available.



Troubleshooting

For assistance using Stratus Insight, contact us at support@appareo.com. Here are a few common things to check if you're having some troubles:

GPS Location is not shown using Stratus Insight	Check iPhone or iPad Settings under Privacy → Location Services → Stratus Insight to make sure GPS access is turned on for Stratus Insight.
Application is running slow	Try reducing the number of items on the screen at the same time by only turning on overlays you absolutely need. We recommend iPad Air 2 or newer & iPhone 6 or newer.
ADS-B products are not displaying.	Check to make sure your ADS-B receiver is connected to Stratus Insight by seeing this icon on the map:  Tapping on this icon will reveal status information such as # of towers heard from. Make sure you have turned on the ADSB products in the overlay menu for the items you'd like to display.
Maps get blurry as I zoom in	Most likely your base map is set to an online chart and not an offline chart while enroute without a data connection. Check your base maps menu is using a chart labeled (offline).
I cannot remove a procedure (approach chart) from my screen.	To remove tap the PRC button in the FPL menu of the maps section and then REMOVE APPROACH CHART.