User Manual (iOS)

7.x — Last update: Dec 17, 2020

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Welcome to AvPlan EFB for iOS devices!

AvPlan EFB is the premier portable flight planning and electronic flight bag for the Apple iPad and iPhone for pilots.

AvPlan EFB allows you to perform all pre-flight planning activities including:

- Download and save copies of all aviation maps and aerodrome documents. These are then available to use when there is intermittent/no network access.
- Prepare a flight plan, download and incorporate winds and then submit the plan via IFIS and/or NAIPS. AvPlan EFB incorporates the functionality to sync your plans and aircraft between your various Apple devices.
- Download and save weather briefings from NAIPS/IFIS.
- Prepare an aircraft loading plan and view the weight and balance envelope.
- Add, delete and share custom aircraft profiles.
- Determine the optimal altitudes for your flight.
- Inbuilt help function.

In flight AvPlan EFB can be used as an electronic flight plan, greatly extending the Electronic Flight Bag concept. The AvPlan app can:

- Calculate departure, arrival times for all waypoints based on actual arrival times plus forecast winds.
- Display aircraft routing and current location on all maps and airport diagrams and approach plates.
- Log and display aircraft track on all maps, airport diagrams and approach plates.
- Quickly display status of PRD areas.
- Provide easy access to AIP information.

Downloading this manual as a PDF

If you'd like to download this manual (for printing, etc), there is a *Download as PDF* option at the bottom of the Table of Contents column. To use this download function on the [AvPlan-EFB website](#) simply click on the button. To use it from within AvPlan EFB, tap and hold the button, then tap *Open Link* in the pop-up menu.
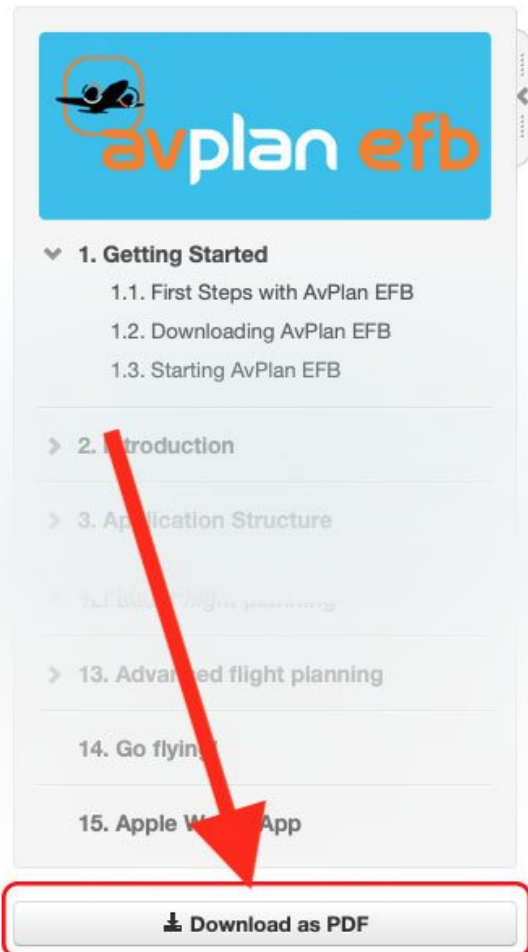
If you don't see the Table of Contents, it may have been hidden. You can return it by tapping the tab in the top-left of the page:
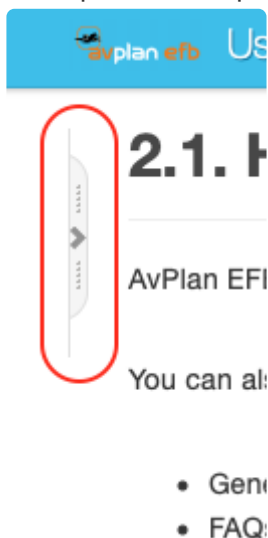
1.1. First Steps with AvPlan EFB

To get, launch and start using the app:

1. Download and install the app from the Apple App Store, then tap the AvPlan EFB icon on your devices' Home Page.

2. Create an aircraft type if one does not already exist. Go to our online type database at *Settings > Aircraft Type Database* and scroll down to the blue section.
3. Visit the Data Downloads section (tap *Settings > Data Downloads*) and download the maps and airport documents you require.
4. Enter your NAIPS/IFIS login details (tap *Settings > User Settings > NAIPS or IFIS Details*)
5. Create a flight plan and select your aircraft's callsign.
6. Submit your flight plan.
7. Go flying!

1.2. Downloading AvPlan EFB

AvPlan EFB is a free download from the Apple App Store on your devices.

> ✳ If it's the first time you've downloaded AvPlan EFB on that device, the app will automatically begin a 30 day free trial.
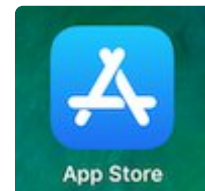
1. Tap the App Store app icon from your iPad/iPhone's Home screen.
2. Tap on the Search button in the bottom-right of the screen.
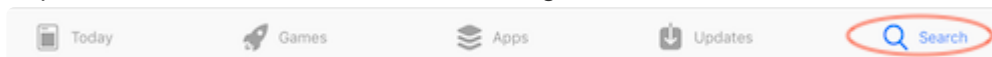
3. Tap in the search bar, and type in *AvPlan EFB*

4. From the results, tap on the *GET* button.
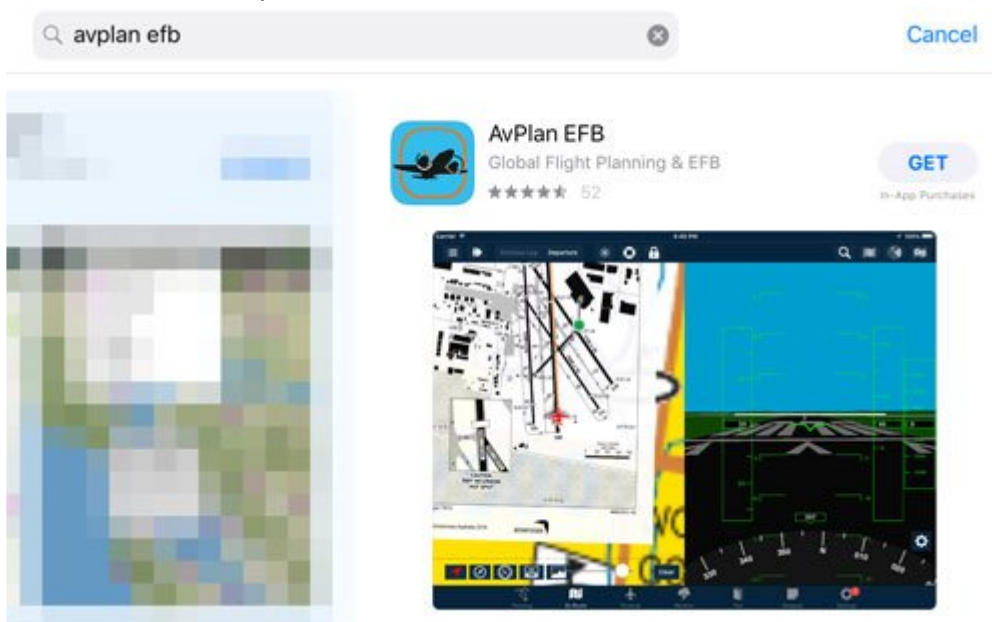
> **!** Make sure you know your Apple ID password, as you may be required to enter it at this point to begin the
> download. If you're not sure what your Apple ID password is, you can retrieve it by going to the Apple Support website.

OPEN

5. Once the download has completed, you'll see an Open button.   Tap it to start Avplan EFB.

> **✳** If you've previously downloaded AvPlan EFB using your Apple ID, you may see a
>
> button instead of the GET button. Both buttons do the same thing.

Even if you've pre-purchased a subscription on our website, you'll still need to download the app via the steps above.

1.3. Starting AvPlan EFB

From your Home screen, tap the AvPlan EFB icon:

When the app starts, you'll see a blue 'welcome' screen with a white rectangle in the bottom-right corner.

Any current 'foundation' subscriptions will be displayed in the list. Note: Not all of your subscriptions will appear in this view; any *Upgrade* type subscriptions (i.e. IFR Upgrade, Pro Upgrade, AOPA, etc) as well as your foundation subscription(s) will be viewable in *Settings > Subscriptions* once you've entered the app.

If the app pauses at this page, tap the Login Details and see if you can sign in with your credentials.

1.4. Help

AvPlan EFB for iOS incorporates an inbuilt quick-tip (FAQ) system. Tap *Settings > Help Centre/Contact Us* for tips on app functionality.

You can also tap the Life Belt icon at the top of En Route, Terminal, Text or Notepad panes to

initiate a message with AvPlan EFB support.

- General information about the application is available at: www.avplan-efb.com/about-2/
- FAQs are also accessible from any browser by going to: www.avplan-efb.com/avplan/faq/
- For support enquiries, contact support@avplan-efb.com

1.5. Licensing and subscriptions

The App is available as a free download with a one month fully featured free trial via the Apple App Store. After 30 days, the app is then requires a periodic subscription. The base subscription is a Standard (VFR) package. There are optional upgrades (IFR and/or PRO upgrade packs, the Australian Country Airstrip guide and others) that can be added to the base subscription if desired.

Subscriptions purchased from inside the app (which uses iTunes) will not automatically renew at the completion of the subscription period.

Subscriptions purchased via www.avplan-efb.com are set to automatically renew by default at the time of purchase.

> ✳ Note: Subscriptions are valid for a single pilot, installed on a maximum of three devices.

- The AvPlan **VFR Standard** subscription enables use of the app, with the AIP, ERSA and VFR maps available (VTC, VNC, WAC, ERC Low and PCA). At the completion of the subscription period the app will no longer function.

- The **IFR Upgrade** adds the ability to view approach plates and associated IFR documentation (i.e. DAP and IFR Charts (ERC H, ERC L, TAC)).

- The **PRO Upgrade** adds geo referenced airport taxi diagrams and instrument approach procedures. These show your aircraft location, flight plan route and stored ground track. These charts can also be overlaid on the Mega charts.

- Optionally in Australia, a subscription to the AOPA airstrips guide or the FlightAce® Country Airstrips Guide can be purchased.
    - ◦ AOPA provides a text-based information enhancement for many Australian airstrips (large and small), containing largely pilot-sourced information.
    - ◦ The Country Airstrips Guide is a set of data sheets created by FlightAce® for many small Australian ALAs. Each one has a mud-map and a standardised set of data fields.

1.6. Activating a subscription

Subscriptions can be purchased either within the app, over the phone, or from www.avplan-efb.com.

To activate a subscription purchased via the website:

1. Press *Login Details* button on the bottom-right of the blue 'Welcome' screen.
2. Enter the email address and password used when purchasing the subscription.
3. Press the *Sign In* button, seen under your password. NOTE: If you haven't registered your email and password yet, tap *Sign Up* instead.
4. A confirmation pop-up will appear when successfully signed in.
5. Press the Back icon.

If AvPlan EFB is already running, tap *Settings > User Settings > Username* and sign in using the procedure above. You can also reset or change your password here, too.

1.7. Notice

Information contained in this manual is subject to change without notice.

AvSoft reserves the right to make changes to specifications and/or procedures without notice.

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1.8. New/Updated topics

17 DEC 2020	Updated	Text – CASA and Airservices Documentation
07 DEC 2020	Updated	User Waypoint DropBox Integration
26 OCT 2020	Updated	Getting Started : how to download this Manual as a PDF document
16 OCT 2020	Updated	User Waypoint Management
06 OCT 2020	Updated	Notes on LSALT calculation (Digital Elevation Model details)
05 OCT 2020	Added	Note about Default vs Overridden Callsign management
01 OCT 2020	Added	External Device Settings
01 OCT 2020	Added	Use of the Three Finger Tap to access aerodrome plates
01 OCT 2020	Added	Use of Abeam Waypoints
21 SEP 2020	Added	Use of CSV files for importing User Waypoints
18 SEP 2020	Updated	En Route HUD details
18 SEP 2020	Updated	Text: Addition of ACs, the Part 61 MOS and others.
18 SEP 2020	Updated	Terminal section; particularly Leg Details
27 AUG 2020	Added	Cancelling & Changing SARTIME
27 AUG 2020	Updated	Alternates
31 JUL 2020	Added	Flight Status
31 JUL 2020	Added	View/Print Flight Plan reports
31 JUL 2020	Added	Insert RNAV (GNSS) Approach

29 JUL 2020	**Release 7.10**	
13 NOV 2019	Updated	Route Annotations
13 AUG 2019	Added	Send flight plan to Garmin Pilot app
13 AUG 2019	**Release 7.9**	
07 MAY 2019	Updated	Loading
05 APR 2019	Updated	Adding Enroute and Destination Alternates
05 APR 2019	**Release 7.8**	

2. Application Structure

AvPlan EFB is significantly different from other EFB apps. It is structured around a flight plan, and not just a GPS replacement. Your electronic flight log is always visible (in most modes, see App Display Modes) and does not obscure any detail or functionality inside the rest of the application.

The flight plan can be displayed and hidden using the Flight Plan Show/Hide [icon] button on the left of the top menu bar.

The other pane on the screen has a flexible view with the following optional views:

- Planning
- En Route
- Terminal
- Weather
- Text
- Notepad
- Settings

2.1. App Display Modes

AvPlan EFB features a flexible display layout. The relative position of the Electronic Flight Log (flight plan) can be altered, depending on how you want to set up the device.

Landscape mode
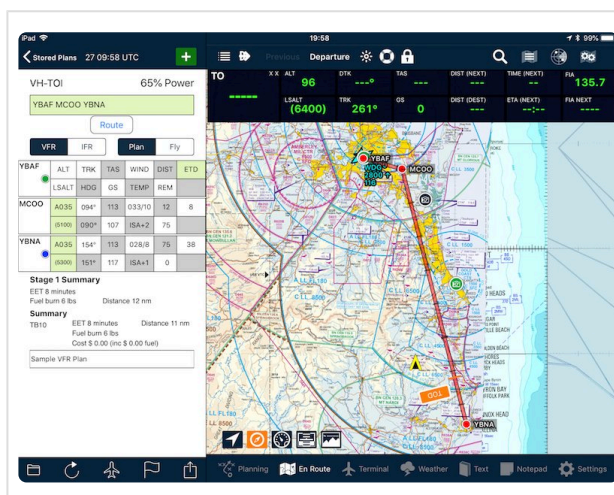
- In landscape mode, the flight plan appears on the left hand side of the screen.
- on 12-inch iPad Pro models, an extra Fuel column is displayed

Portrait mode
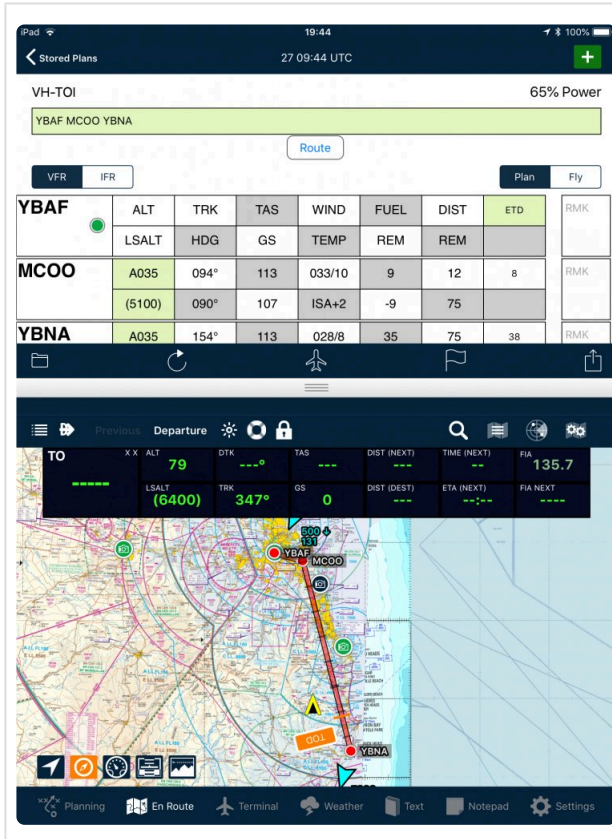
- In portrait mode, the flight plan appears above the map. In between the border of the flight plan and the flexible section, there is a grey line that can be dragged up and down with a finger.
- This allows you to dynamically alter the viewable area of the flight plan.
- An advantage of this mode is that two extra columns are added
  - Fuel, and
  - Remarks
- If you prefer to have the flight plan below the map, tap *Settings > User Settings > Display Flight Plan Below Map (Portrait)*

Full screen flight plan mode
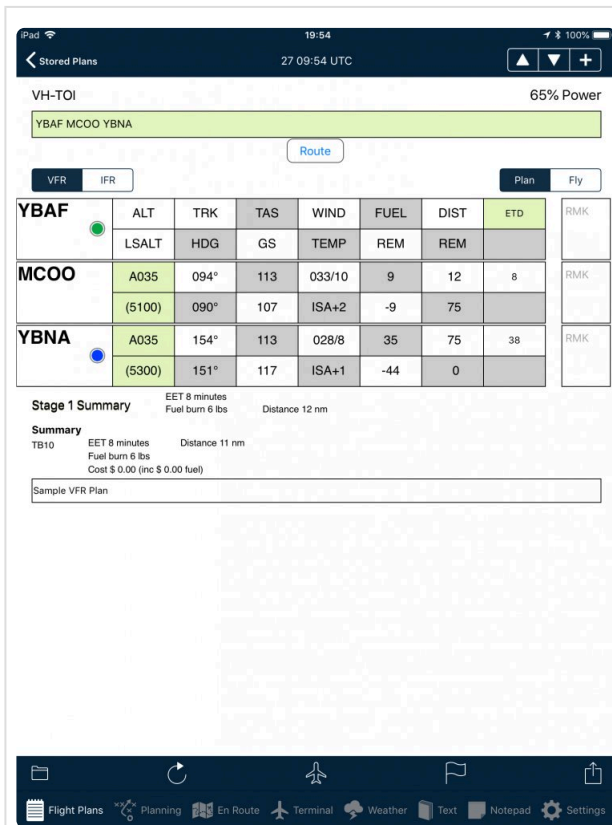
- Optionally, you can select to have a whole tab assigned to the flight plan.
- When this mode is selected, an extra tab appears in the bottom-left corner of the screen:
- An advantage of this mode is that two extra columns are added
  - Fuel, and
  - Remarks
- To set the app in this mode, tap *Settings > User Settings > Full Screen Flight Plan*

iPhone mode

- The iPhone version of AvPlan EFB is essentially operating in the Full Page Flight Plan Mode at all times.
- The Weather, Text and Notepad and Settings tabs are combined in the *More* tab
- Due to reduced screen real estate, the following functionality is not included in the iPhone version:
  - Synthetic Vision
  - HSI
  - Profile View
  - Brightness Control and Fade to Black
- The "Locate point" (Magnifying glass) icon is not available, but the Terminal button offers a searchable list of all available airports and NavAids to achieve the same outcome.
- There is no *Departure* or *Next Leg* button at the top of the EnRoute page; Use the arrow buttons on the Flight Plan tab to manually control the active leg if required.

2.1.1. Advanced night mode

AvPlan EFB is compatible with the iPad 'Smart Invert Colour' mode.
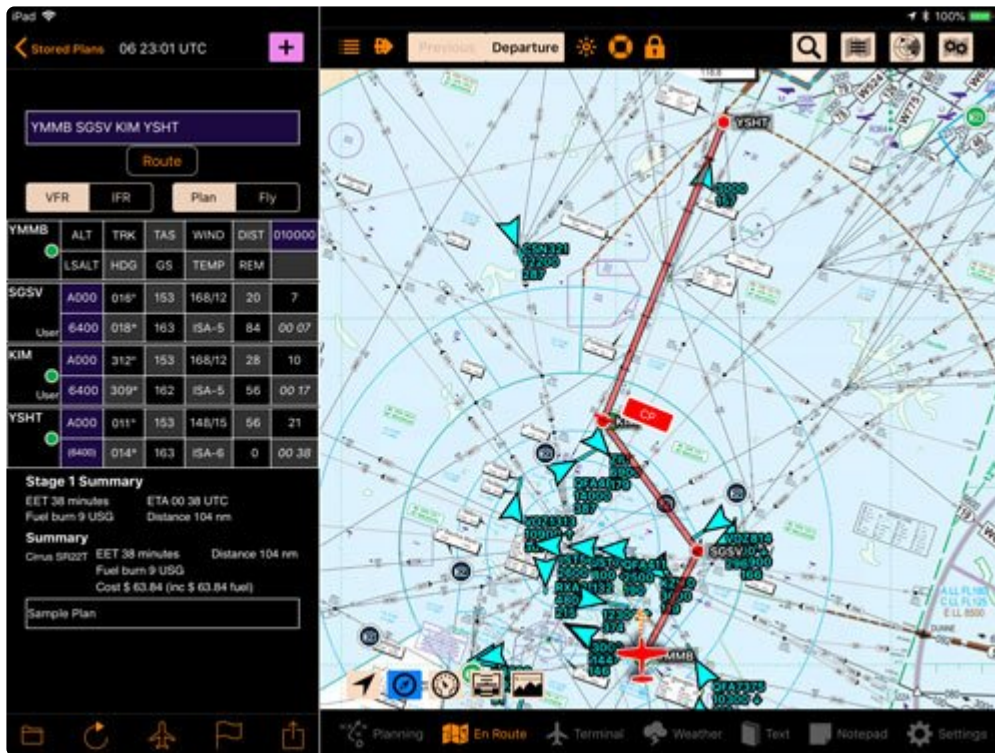
This is ideal for night operations where most text colours are inverted. Items where the colours are important (VFR maps, METAR icons, Synthetic Vision etc) remain their normal colour however.
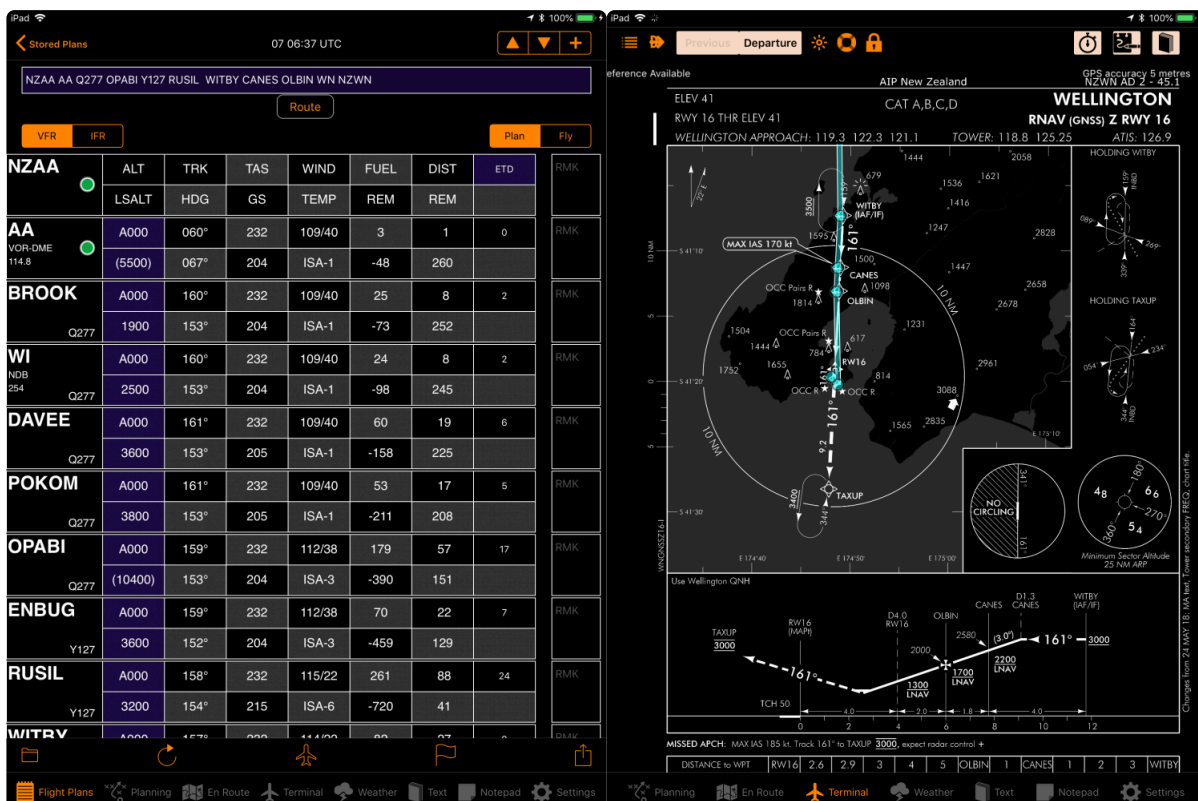
To enable Smart Invert Colours:

1. Open the iPad's *Settings* app
2. Tap General > Accessibility > Display Accomodations > Invert Colours > Smart Invert.

✱ It is also possible, and recommended, to change your iPad settings to enable a triple-click of the *Home* button to toggle this display mode on and off. To do this, open the Settings app and tap *General > Accessibility > Accessibility Shortcut*. Make sure *Smart Invert Colours* is enabled.

3. Flight Plan

- Flight plan index
- Flight plan view

3.1. Flight plan index
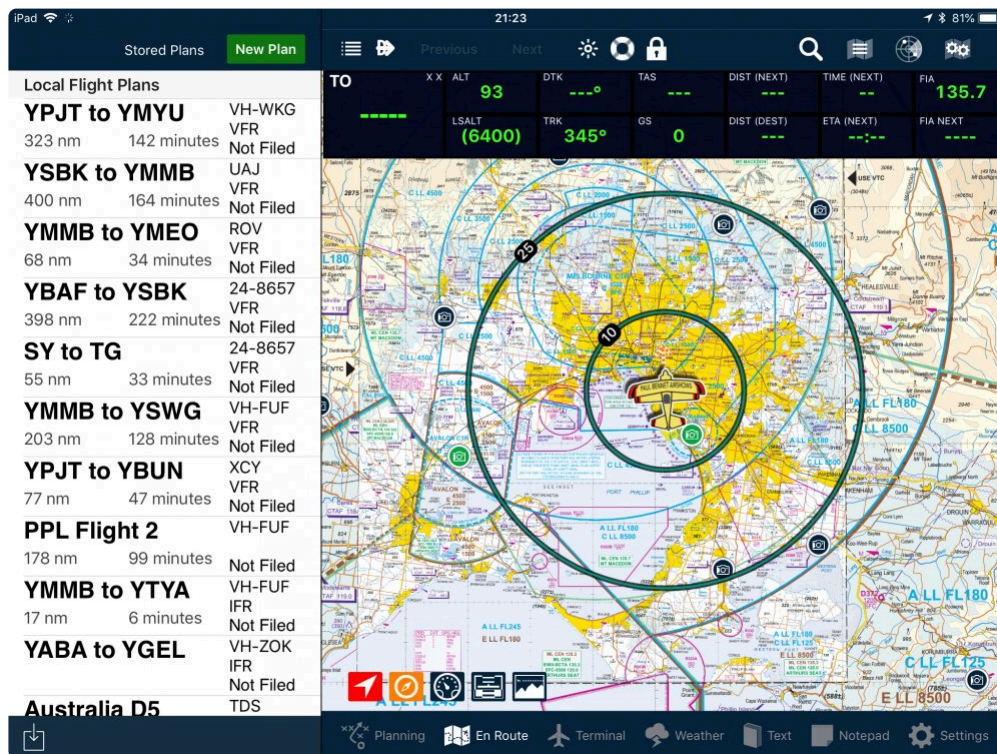
Flight Plan Index View

In the flight plan index, each plan is displayed with:

- Departure and arrival landing points, or a custom name entered by you.
- Distance and time.
- Flight rules.
- Aircraft callsign.

The status of the plan submission is displayed as one of the following:

- Not Filed (Plan has not been sent to NAIPS).
- Filed OK (Plan has been successfully submitted).
- File Failed (Plan failed to submit correctly).

3.1.1. Creating a new flight plan

There are several ways to create a new flight plan:

Option 1:

Tap the **New Plan** button at the top right hand side of the flight plan index (Stored Plans).

Option 2:

Tap *Planning > New Flight Plan*

Option 3:

From the EnRoute map, tap to bring up Nearest Items. Tap the waypoint you wish to begin from, scroll down to the bottom and tap the New Plan button.
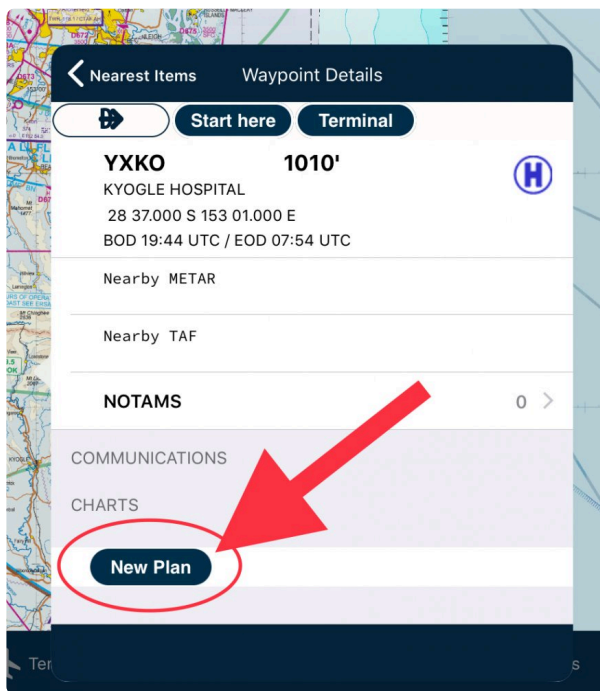
New plan from Waypoint Details

3.1.2. Closing and saving your plan

To place your flight plan back in the Stored Plans list for later use, tap the *<Stored Plans* button that appears in the top-left of the flight plan pane. You will be asked if you wish to Save or Discard changes. Tap *Save Changes*.

AvPlan EFB will then store your flight plan and all associated data (track logs, times, etc). If you have Sync Flight Plans selected and have an internet connection, a sync to AvPlan Cloud will also be completed at this time (if Sync Flight Plans is switched on).

3.1.3. Syncing a flight plan

Flight plans can be synchronised between a user's multiple devices.

> ✳ Ensure 'Sync Flight Plans' (tap *Settings > User Settings > Sync Flight Plans*) is enabled, and each device is logged in to the same username to sync plans between your devices.

A sync to AvPlan Cloud is performed at two points in time:

1. They are automatically saved and uploaded when returning from a plan to the flight plan index. See (Closing and Saving your Flight Plan).
2. When you manually perform a sync. Tap the *Send/Share* icon at the footer of the flight log, then select *Sync Plan via Cloud*.

A Busy symbol is displayed during the copy process. After the plan is uploaded, it will automatically download to another device if that plan is already downloaded. If not, it will appear in the list of Other Flight Plans.

Flight plans in the Stored Plans list will be colour coded as follows:

Black – Changes synced.
Blue – Upload in progress.
Red – Local changes not synced.

Flight plans that appear below the Other Flight Plans subheading are on the AvPlan Cloud, but are not currently present on that particular device. Simply tap a flight plan to import it and make it available on that device.

3.1.4. Deleting a flight plan

To delete a flight plan:

• Swipe the row you want to delete from right to left to reveal a Delete button.

- Press *Delete* to remove the plan. Any track logs stored against that plan will also be deleted.

> ✳ Note: The same flight plan synced to any other device/s will also be deleted.

The flight plan index will also display plans you have created on other devices, but not yet copied locally as Other Flight Plans.

- Tap on a plan in 'Other Flight Plans' to download it to your device.

3.2. Flight plan view
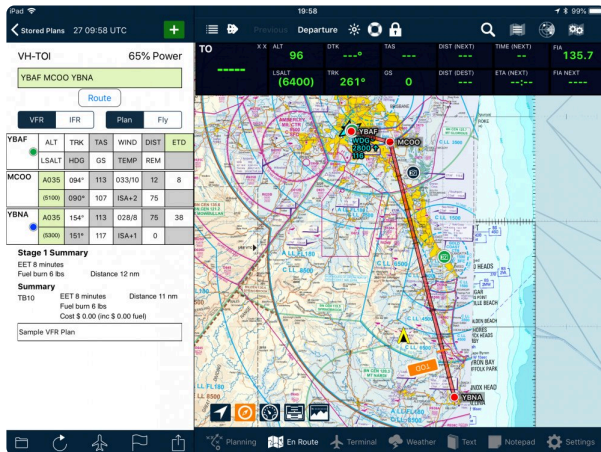
The flight plan table contains information about the flight plan.

- Tap on a row in the flight plan and the Terminal pane displays details on that leg.

- To hide/show the flight plan, press the Flight Plan ⠿ icon on the top-left of the screen.

> ✳ Note: All fields that appear within the flight plan table shaded green denote either the ability to add data to that cell, or to edit the automatically generated data placed in the cell by AvPlan EFB.

3.2.1. Flight plan table

The flight plan table contains information about the flight plan.
- Tap on a row in the flight plan to short-cut to the Terminal pane and details on that leg.
- To hide/show the flight plan, press the Flight Plan

 icon on the top left of the screen.

All fields that appear within the flight plan table shaded green are inviting you to either;

1. enter information in that cell, or
2. edit the automatically calculated information in that cell.

Each waypoint in your flight plan contains two rows of cells:
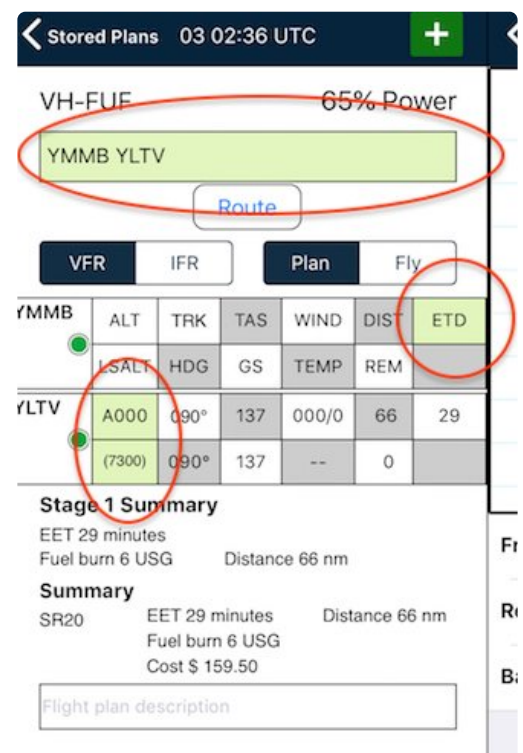
Green, editable fields

Left	
WPT ID	Contains the waypoint identifier, or User Waypoint name. • If the waypoint also has a METAR station associated with it, you'll also see a METAR icon. • If the waypoint is associated with a navaid, the frequency will be displayed: • If the leg has been planned using a promulgated air route, the air route identifier will be displayed: • The word USER will appear in the bottom-right hand corner if a User LSALT has been nominated for that leg (see below). • If the waypoint is an alternate, or part of the route to the nominated alternate, the field will turn grey
Top Row	
ALT	Planned altitude for that leg. You can type either the flight level 'A' or 'F' style altitude figure (e.g. A015 or F220), or type the full number (e.g. 5500 or 25000) and AvPlan will automatically convert it.
TRK	Planned track for leg in °magnetic
TAS	Planned True Airspeed for that leg. If a Detailed Performance profile has been set up for your aircraft, the TAS figure will adjust as different altitudes are selected. If a single block TAS is nominated in Basic Performance, the TAS figure will be static
WIND	Planned wind for that leg in °mag/speed in kts
DIST	Distance in NM to the next waypoint
ETD	Estimated Time of Departure. This field only appears in the first waypoint of the stage. Subsequent waypoints contain the Estimated Time Enroute for that leg. The cell is expecting a six-figure entry (i.e. DDHHMM), however as a shortcut if you are flying today, simply type in the time (i.e. HHMM) and tap the return key. AvPlan will automatically enter the correct date.
Bottom Row	
LSALT	Lowest Safe ALTitiude. When planning using established IFR routes, the LSALT will be automatically populated with the route LSALT. When planning off route/direct, the Grid LSALT will be placed in this cell as a placeholder. This figure will appear in parentheses. You can override the figure by tapping in and typing in your own user-calculated LSALT. Planning between those two waypoints in future plans will automatically use the user LSALT. To remove a user LSALT, delete the entered figure.
HDG	Planned heading in °magnetic, accounting for forecast winds (unless the winds are toggled off, where the plan is presented in a zero-wind scenario)
GS	Planned groundspeed in knots
TEMP	Deviation from ISA in °C
REM	Distance in NM to destination of that stage
ATA	This field can either display Planned time of arrival (based on your ETD, which is displayed in

		italics), or it will display times based on your Actual Time of Arrival (ATA) in bold.

TO row

In flight, an extra row is inserted between the previous and next waypoints. This 'TO' row displays live calculated data (recalculated every second) derived from the GPS location.

As you fly past each waypoint in your flight plan, the TO row sequences down the waypoint list. Above the TO row is historical data (Actual time of arrival, etc), below is planned information (based on planned winds and performance calculated from the time you passed the last waypoint). To take advantage of the automatic logging of waypoint ATAs etc, ensure that *Waypoint Auto Sequencing* is enabled in *Settings > User Settings*.

Some of the information presented in the TO row can be replicated in the HUD. However, having the TO row inserted in the electronic flight log in this

Electronic flight log in flight

way makes comparison of planned versus actual flight performance a breeze, therefore you can make informed decisions for diversions/extra fuel stops earlier and easier, should you experience un-forecast headwinds, etc.

3.2.1.1. Sync flight plans

Flight plans can be automatically be synced between iOS 7+ devices via AvPlan EFB's cloud services. When enabled, a sync will automatically occur whenever a flight plan placed back in Stored Plans and *Save Changes* was selected.

> ✳ To enable flight plan syncing, go to *Settings > User Settings* and place a tick next to *Flight plan sync.* Do this on each of your devices, and ensure they're all logged in to the same username/password.

A sync can be manually instigated at any time by tapping the *Sync/Send* icon and selecting *Sync Plan via Cloud*.

When the same flight plan is open at the same time on another linked device, a prompt will appear 'Updated Flightplan Available'; with an option to Cancel or Import changes. This capability makes the transition (for example – in flight) from a primary device to a secondary device seamless.

The Flight plan index has two sections:

Local Plans	stored on the device in your hands (plans in this section appear in dark bold text)
Other Plans	synced/saved plans only on the cloud server (plans in this section appear in light grey text)

To load a plan on your local device, locate the desired plan in the Other Plans section and tap it. It will download and import, and appear at the bottom of the Local Plans list. This can then be opened, viewed and edited as if it was originally created on that very device.

If you view a plan (and have modified it) and save the same plan on another device, a pop-up warning will appear, asking if you want to import this new plan.
• If you want to discard the current plan, tap OK and a remote copy will load.
• To ignore the remote changes, tap Cancel.

> **!** Note: An internet connection is required for the flight plan sync process.

3.2.1.2. Manual flight plan transfer via AirDrop

If no internet access is available, it is possible to manually send flight plans or aircraft models from one iOS device to another locally via AirDrop.

To transfer a flight plan using this method:

1. Complete flight planning on your first (source) device – iPad/iPhone
2. Power up your second (target) device and start AvPlan EFB
3. Ensure both devices have Air Drop activated:
    a. Swipe up from the bottom of your screen to reveal Control Centre
    b. Press and hold on the Aeroplane Mode icon
    c. Tap *AirDrop*
    d. Select *Everyone*
    e. Dismiss Control Centre by tapping the AvPlan EFB screenshot
4. On your source device tap the Send/Share icon below the flight plan

5. Select *Send Flight Plan to App* from the menu
6. Wait until your target device appears in the AirDrop section of the popup
7. Tap to select
8. On your target device, tap *Accept* from the popup options
9. Your flight plan should now be present on both devices

3.2.2. Quick plan entry field

To quickly enter flight plan waypoints, tap within the Quick plan entry field and type their identifiers in order with a space between each. When finished, tap return on the keyboard and your waypoints will be entered into the flight plan below. Air routes can also be included in the plan.

For example:

YMMB YTYA YTDN YLTV YMMB
Or
YWGT WGT W696 ELW W188 MB YMMB

You can also incorporate Lat/Long or Bearing/ Distance entries too.

For example:

3805S14540E
or
YMMB YMMB10020
(where this flight plan departs from YMMB, then moves to 100° magnetic at 20 miles).

If some waypoints are already entered in your flight plan, typing more in the Quick plan entry field will add them to the end of the plan.

Quick plan entry field

3.2.3. Route button

After entering the departure and arrival waypoints in the Quick Plan Entry field, tapping the *Route* button will display different routing options.

Option	Description
Fly Direct	Selects a direct flight path between the two waypoints
Connecting IFR Routes	If a route has been promulgated between those to waypoints, it will appear here
Shortest IFR Route	This is using AvPlan EFB's auto-routing engine to look for the shortest possible IFR route
Recently Filed Routes	This option brings up previously filed flight plans between those two waypoints that you can import and use as your own

✳ The Shortest IFR Route is auto-generated, and as such does not take into consideration preferred outbound/inbound routes from airports. Check with your airport's documentation and adjust the route as necessary.

3.2.4. Plan/Fly toggle switch

The Plan/Fly switch changes the app from planning mode, to one that will be used in flight.

> ✳ Note: The selected option is identified by the dark blue section with white writing. (e.g. in the above image, *Plan* is selected)

- When *Fly* mode is activated:
    - Your 'Off Blocks' time is logged
    - The GPS in your device is turned on (if not already running)
    - Manually edited flight plan altitudes <u>do not</u> auto-fill down the plan
    - The map scroll speed is slower (so a flick does not accidentally pan the map off screen)
    - Changes the Terrain Overlay and the Flight Profile modes to show terrain proximity based on your GPS altitude and not flight plan altitude
    - Requires a longer tap (≈0.2 seconds) to bring up the Nearest Items window within the En Route pane
    - Your track flown is being logged to the currently open flight plan
- When *Plan* mode is re-activated:
    - Track logging ceases
    - Your 'On Blocks' time is logged
    - Map scroll speed and Nearest Items tap length requirement returns to normal
    - Manually edited flight plan altitudes auto-fill down the plan

> ✳ It used to be recommended you place the flight plan back in *Plan* mode before <u>closing the plan</u>. This was to prevent a track line being created between where you last closed the plan and where you reopened it to review. It also prevented AvPlan EFB logging the track of your drive home. From **version 7.10 onward, AvPlan automatically puts AvPlan back into Planning mode** after you have landed and come to a stop.

3.2.5. VFR/IFR toggle switch

The VFR|IFR toggle switch changes the entire plan (or stage in a multi-stage flight plan) to be under that flight rules.

To change from VFR to IFR or IFR to VFR within a plan, see here.

3.2.6. Flight plan description

You can optionally give your flight plan a particular name, which overrides the automatically generated one AvPlan EFB creates for you. This will be displayed in the list of flight plans in the [Flight Plan Index](#).

Automated names consist of:

For a single stage flight plan:
[Departure waypoint code] – [Arrival Waypoint code]

For a multi stage flight plan:
[Departure waypoint code] – [Intermediate waypoint codes] – [Arrival Waypoint code]
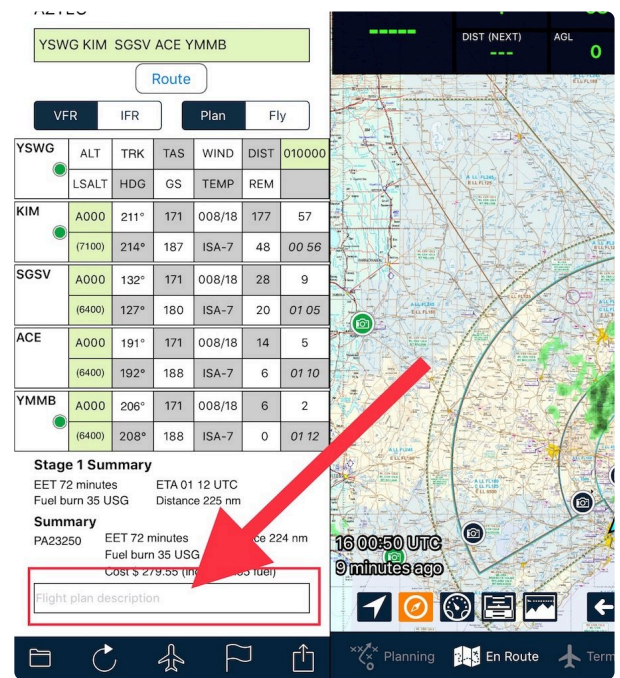
Flight Plan Description field

3.2.7. Flight plan controls

The flight plan displays the following icons at the bottom of each plan (from left to right):

- Edit mode toggle
- Refresh weather/re-calculate plan
- Aircraft profile/callsign Selection
- Winds on/off toggle
- Send/Share Plan menu

3.2.7.1. Edit mode

The Edit Mode toggle button puts the plan in Edit mode.

Edit mode allows you to:

- Delete individual legs (with red icon on the left of each waypoint)

- Pick up and move individual legs (with the grey icon on the right of each wayponit)
- Enter user winds in the winds column. To clear a user wind, delete the contents of the cell
- Add a flight plan leg to the bottom of a flight plan stage (with the green + icon)
- Manually enter TAS data

Edit Mode
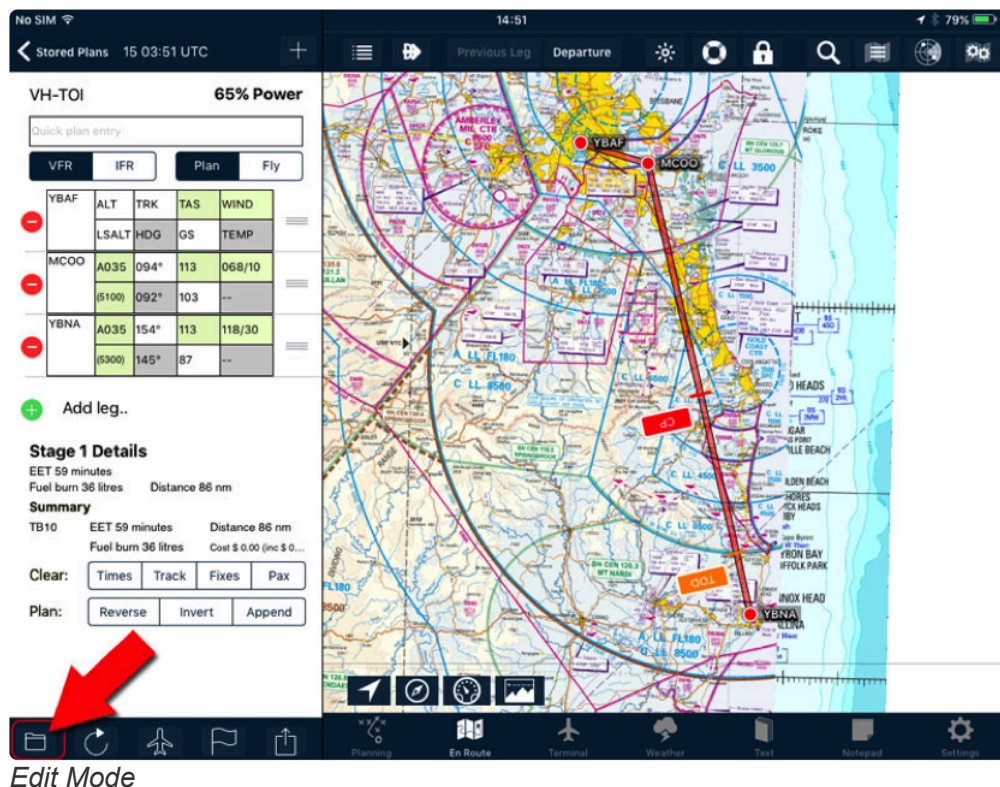
A number of buttons appear at the bottom of the flight plan (below the flight summary). These allow you to:

- Clear the plan for re-use:
    - Flight times, track logs, fixes and passenger lists from the plan, so the plan can be reused. Note: When clearing the flight times, the submission status (Filed OK/File Failed/Not Filed) is also cleared
- Alter the plan:
    - **Reverse** flight plan. When this button is tapped, flight plan legs are added to the end of the plan back to the point of origin. For example, an A – B – C flight plan then becomes A – B – C – B – A
    - **Invert** flight plan. When this button is tapped, the flight plan is flipped (i.e. departure becomes destination). For example, an A – B – C flight plan then becomes C – B – A
    - **Append** other flight plans to the end of the current plan. This can be used to copy a flight plan as well (i.e. append a flight plan to the end of a blank plan)
        - Selecting this option brings up a window with the list of flight plans currently saved on the device. Scroll the list up and down to view the full list
        - Tapping on one will cause AvPlan EFB to extract the waypoints from that plan and install them in the current plan. The current plan could be a new plan with no waypoints yet, or a partially completed plan. In the case where waypoints are already in the plan, the appended waypoints will appear at the end
        - Using the Append Plan feature does not affect the data in the saved plan (for

example, track logs, times, passenger manifests, etc)

3.2.7.2. Refresh button

The Refresh icon will re-download weather information if it is greater than 15 minutes old, and apply these new values to the plan.

If weather information is less than 15 minutes old, no weather is downloaded, only a recalculation is performed.

Tapping Refresh Plan icon a second time will also cancel any weather downloads currently in progress.

3.2.7.3. Select callsign button

The Select Callsign button allows you to select a different aircraft profile from the one automatically selected by AvPlan EFB.

When creating a new flight plan, AvPlan EFB automatically re-selects the callsign from your last used flight plan.

To apply an existing aircraft and performance model to the plan:

1. Select the aircraft callsign.
2. If more than one detailed performance profile is available for the type, select desired performance profile.
3. If no detailed performance profile is available, the basic performance values are used.
4. To add a new aircraft, tap the + icon at the top of the aircraft pop-up view.

3.2.7.4. Winds toggle button

The Winds icon toggles the winds on or off within the current plan. Handy for planning flights in theory

some time out (beyond current weather forecasts). The icon turns red when the winds are set to off.

3.2.7.5. Send/Share button

The Send/Share icon allows you to:

- Submit flight plan (via NAIPS). Opens the Flight Planning tab and enters the NAIPS Plan Submission view
- Email flight plan in GPX format (best file format to use for sending to other AvPlan EFB users)
- Send flight plan in GPX format to another app on your device (Cloud Ahoy, Google Earth, etc)
- Email an FPL format flight plan. (NOTE: .FPL format is used only to send to Garmin devices)
- Send a plan in FPL format to another app on your device
- Share details about this flight to Twitter
- Share details about this flight to Facebook
- Sync the plan via AvPlan EFB's cloud services, so it is available on your other devices – or if you need to restart the device at some stage during the flight
- Send a plan to your Dynon Skyview avionics
- Send a plan to Jeppesen FliteDeck if installed on your device
- Send a plan to your Avidyne IFD avionics

3.2.7.5.1. Sending a flight plan to Dynon SkyView

> ✳ NOTE: This option will only appear in the Send/Share list when the *Enable Dynon Connection* is turned ON. Tap *Settings > External Devices > Dynon Status* to enable this feature.

Prerequisites:

- Dynon Skyview 1000 or 700 unit (excludes D10A)
- SkyView 13.0 System Software (minimum)
- Dynon WiFi adaptor installed in SkyView unit(s). NOTE: A WiFi adaptor is required for each screen installed in the aircraft.
- *Dynon Connection* enabled within AvPlan EFB. Tap *Settings > External Devices > Dynon Status* and ensure it's switched ON.

Process:

1. Power up the Dynon SkyView unit(s).

2. Connect the iPad to the WiFi hotspot created by the Dynon Skyview – via the iPad's *Settings* app. (Refer to your Dynon Skyview documentation for more information regarding setting up the WiFi hotspot).

3. Return to AvPlan EFB and complete your flight planning process. Tap <u>Send/Share icon</u>.

4. Select *Send to Dynon*.

5. A confirmation will appear on the Dynon screen. Select Accept to import the flight plan.

3.2.7.5.2. Sending flight plan to Jeppesen FliteDeck app

Upon selecting this menu item, the FliteDeck app will automatically open and present you with the option to either Save or Load the imported flight plan. To utilise the flight plan right away, select *Load*.
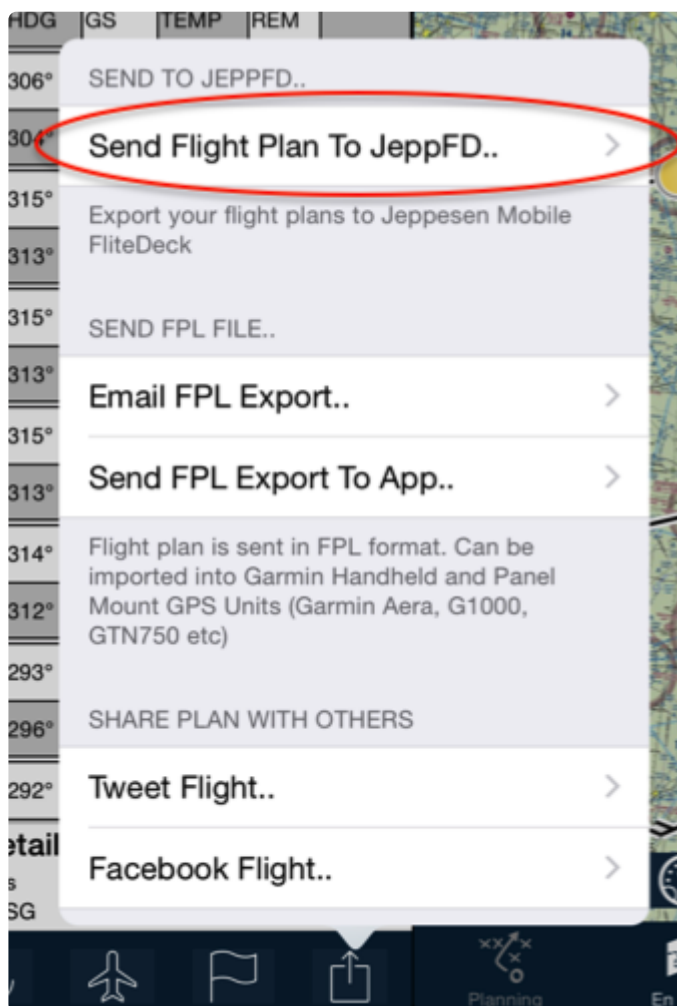
This menu item will only be displayed if you have the Jeppesen FliteDeck app installed on your device. A separate subscription to Jeppesen is required.

3.2.7.5.3. Sending Flight Plan to Avidyne IFD-Series Avionics

Prerequisites:

- Avidyne IFD 550, 540 or 440
- iPad Bluetooth/WiFi turned ON
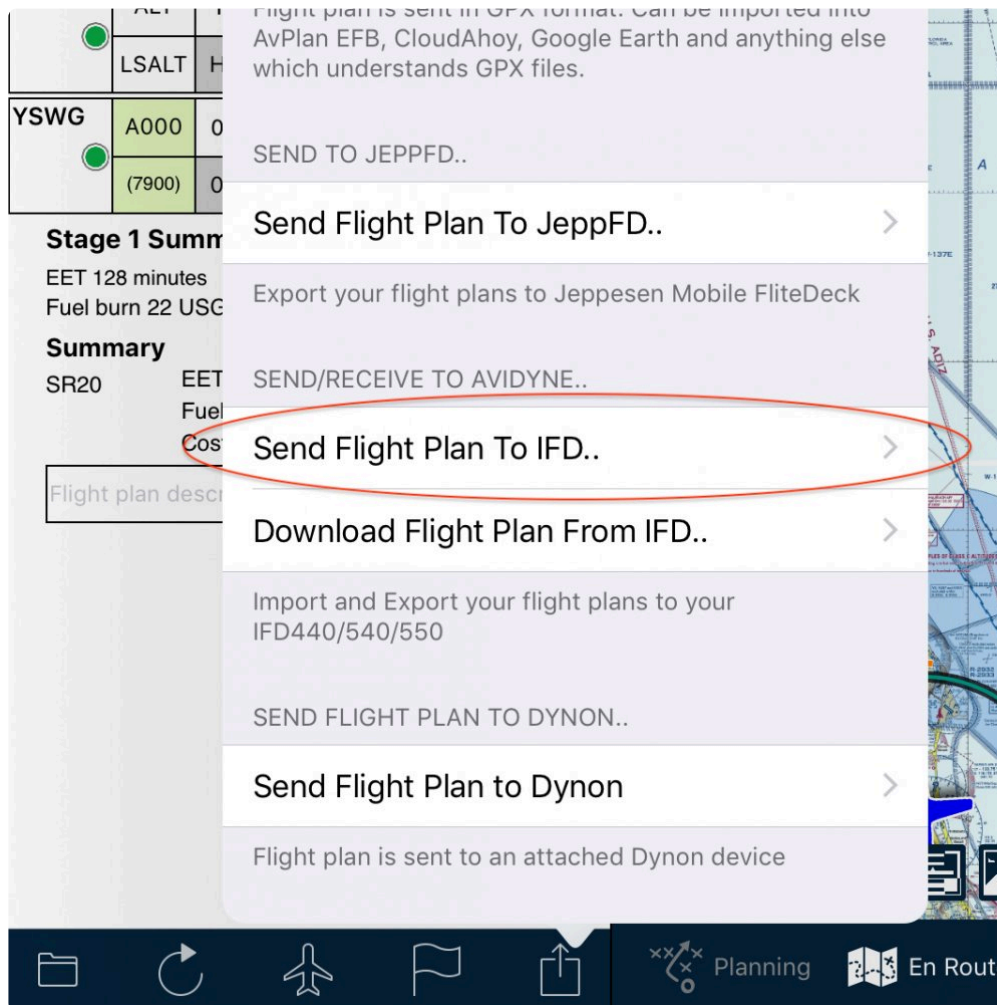
Process:

1. Power up the Avidyne unit
2. Agree to turn on Bluetooth/Wifi on Avidyne touchscreen
3. After a few seconds, AvPlan EFB will automatically join the hotspot. This can be confirmed by tapping *Settings > External Devices > Avidyne IFR 440/540/550 Status*
4. Complete your flight planning process in AvPlan EFB. Tap *Send/Share* icon at the footer of the flight log:
5. Select *Send Flight Plan to IFD*
6. On the IFD, the route will appear in the Routes list. Tap it and select *Activate*

3.2.7.5.4. Sending a flight plan to Garmin Pilot app

Upon selecting this menu item, the Garmin Pilot app will automatically open and present you with the option to Load the received flight plan.
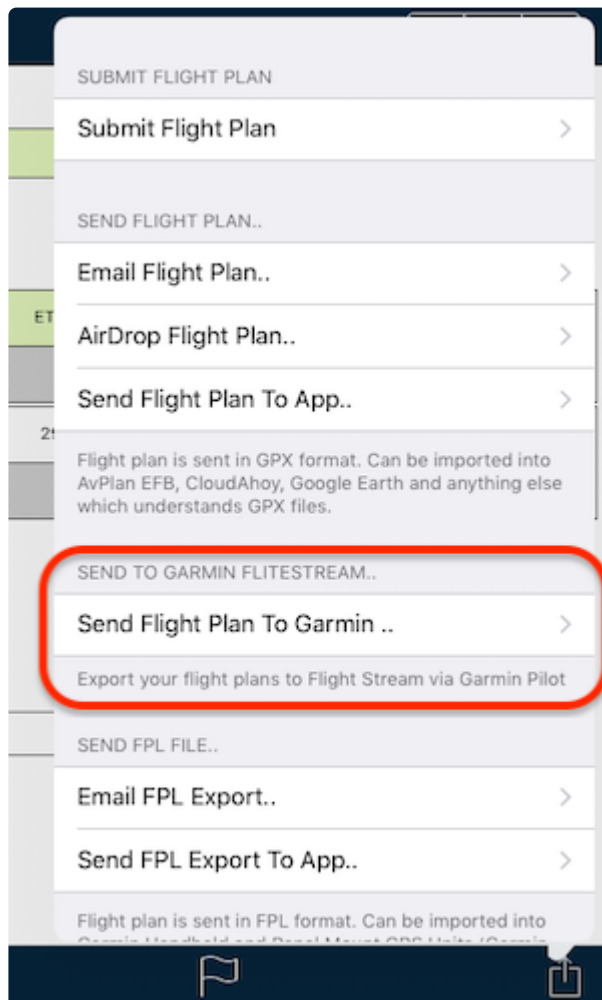
Send flight plan to Garmin Pilot app.

The flight plan can then be sent to aircraft avionics from Garmin Pilot via the FlightStream system.

> ✱ This menu item will only be displayed if you have the Garmin Pilot app installed on your device. A separate subscription to Garmin is required.

3.2.7.6. Clearing a Plan for ReUse

Clearing a flight plan for re-use

If you've re-opened a flight plan that has been previously flown and you wish to use the same plan again, it will need to be cleared for re-use. There is a quick way of doing this:

1. Tap within the *ETD* (Estimated Time of Departure) field of the <u>first</u> stage.
2. Type in your new departure date/time. Tap the *Return* key.
3. The *Clear Plan* popup will appear. Select or Deselect the options depending on what you wish to clear. (This choice is remembered as a default for next time)
4. Tap *Clear*. The new time you typed in will be entered in the ETD field, the app will perform a recalculation of expected times using the predicted winds.
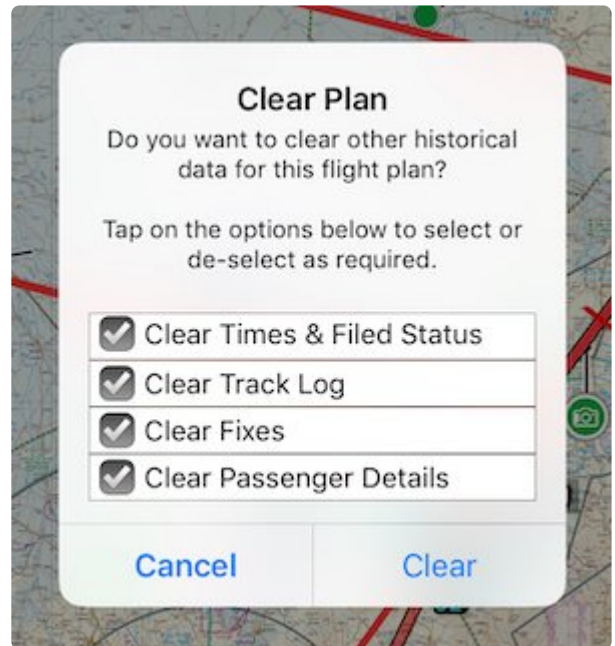
Clear Plan options

✱ The Clear Plan popup will not appear when changing the ETD on subsequent stages, only the first stage.

3.3. Adding route waypoints to flight plan

Option 1:

Tap the button at the top of the flight plan. This opens the search window to add a single new waypoint to the plan. You can search for a waypoint identifier, or a place name.
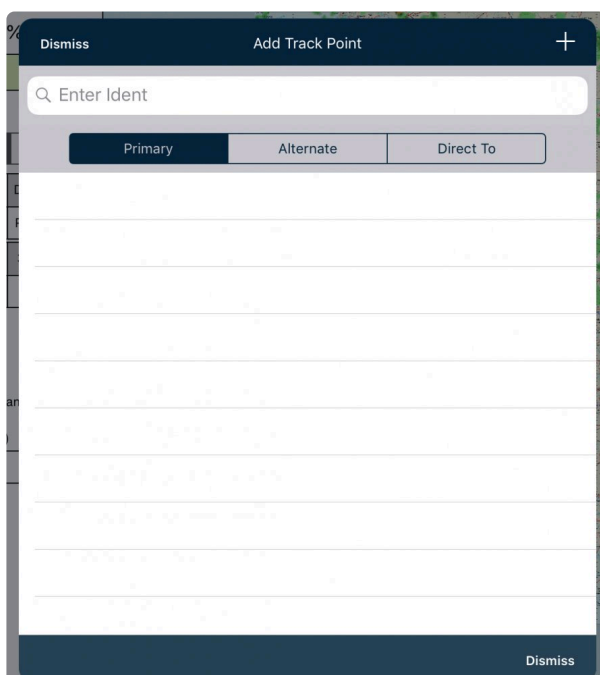
To manually add a new tracking point/waypoint to the plan:

1. Either:
   a. Enter the Waypoint Identifier and results will automatically appear,
      or
   b. Enter the full or partial name and press Search.
2. Tap the desired waypoint's row to add it to the plan.
3. The Primary/Alternate/Direct To selection changes whether the waypoint added is a primary tracking point, or part of the track to the alternate aerodrome. Direct To enables direct tracking to that point.

To dismiss the Add Leg view without adding a track point:

• Press Dismiss.

Option 2:

Via the Nearest Items dialogue on the EnRoute page.
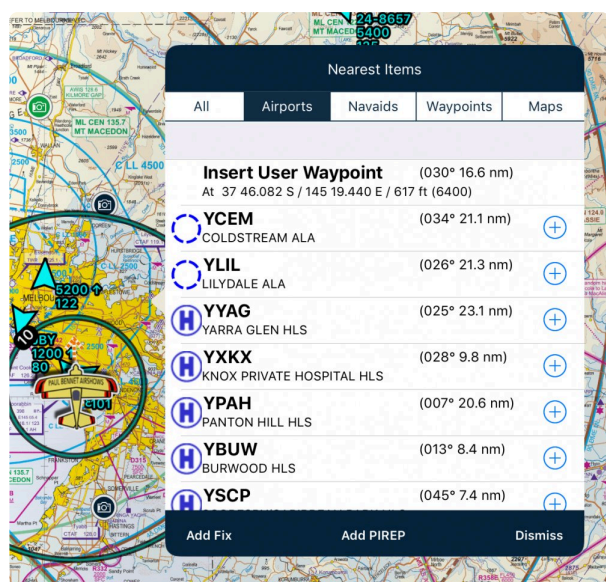
Option 3:

Via the Quick Plan Entry field.

3.4. Passing Abeam a Point

If you wish to track directly towards your distant destination while still having timing points along the route, it is possible to set up User Waypoints along the way. However, this could be a time consuming process. Another useful technique is to use large, easily visible features *abeam* the track for timing purposes while maintaining a straight-through track for flight.

For example, consider this simple VFR flight plan:

Note the Summary tells us that it is 225 NM, travelling via those turning points.

Now, try this:

Repeat the above procedure for any intermediate waypoints as appropriate. Which will give us this result:

Note that the overall distance has been reduced to 215 NM, but you still use those points as references whilst flying our plan.

Any Abeam waypoints will be noted by (Abeam) appearing in the waypoint name field within the flight log, and on the map an 'A' will appear in the waypoint label before the identifier code.

You can submit the plan with these type of waypoints. When submitting the plan, the *Abeam* waypoints will automatically be sent in a format that will be understood by your local air traffic authority (for example, distance and bearing from the original waypoint).

To undo a waypoint that has been set to Pass Abeam, tap and hold its line in the flight log. Then select the option *Overfly*. The original waypoint now appears in the same menu position that Pass Abeam held previously.

4. Planning

The Flight Planning tab contains a logical list of flight planning tasks that if each is worked through one-by-one from top to bottom, you can be confident that you've covered your basic planning requirements.
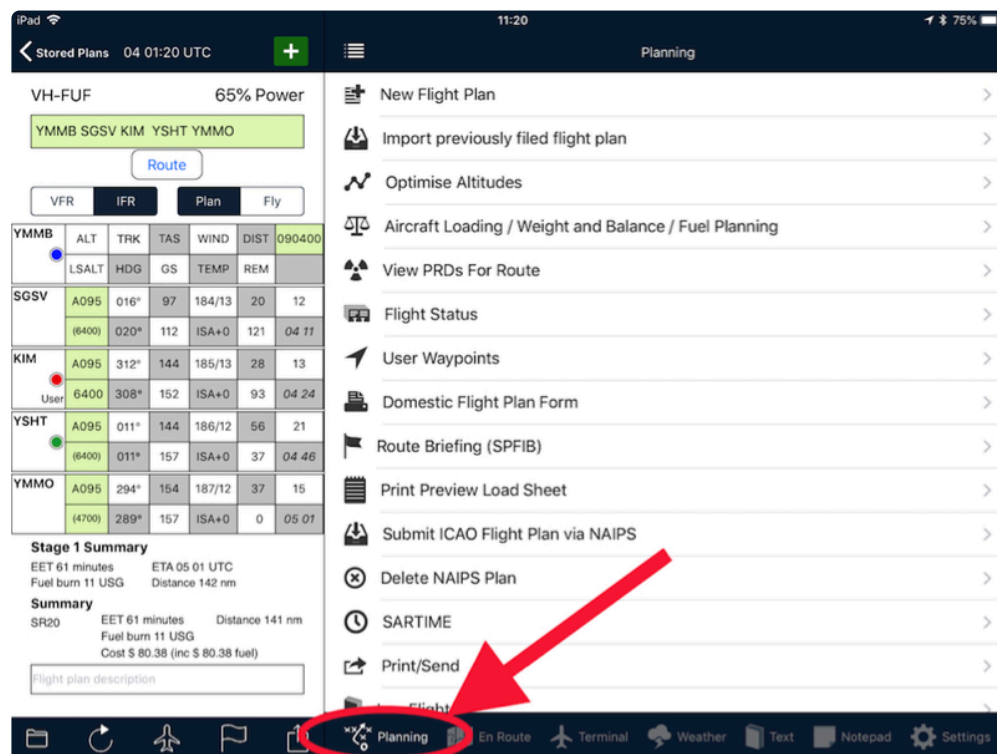
Planning

When no plan is open, the list is small, but grows to contain the following options when the first waypoint is added:

- Create a new flight plan
- Import a previously filed flight plan (PRO Feature only)
- Select the optimal cruise altitude for your flight based on time, fuel burn and/or cost
- Complete Aircraft Loading / Weight and Balance / Fuel Planning
- View PRDs for planned route
- Flight Status messages
- View/Edit/Add User Waypoint(s)
- Preview your Domestic Flight Plan Form for this flight
- Request a Route Weather Briefing (SPFIB)
- Print Preview Aircraft Load Sheet.
- Submit SARTIME only
- Submit ICAO Flight Plan (and SARTIME) via NAIPS.
- Delete a NAIPS plan and/or SARTIME
- View, change or cancel SARTIME notifications.
- Print/Send flight plan pages, Weather and ERSA/DAP pages.
- Log your flight to logbook app LogTen Pro. Find out more: http://coradine.com

4.1. Import previously filed flight plan

> ✳ This is a PRO subscriber feature only.

Using this interface, you can import almost any flight plans that have been previously filed (within the last two weeks), via the internet.

Search using either registration or flight number.

e.g. ANZ9 or VH-ABC or ZK-ABC

This feature is also accessible in the Flight Plan Index by tapping the *import* icon in the footer section.

Import Filed Flight Plan shortcut icon

4.2. Optimise altitudes

The Optimise Altitudes page displays the time interval and fuel used for each 1000ft increment for each stage in the flight plan, up to the service ceiling entered in the currently selected aircraft model.

Tap a row to select and apply the altitude to a particular flight plan stage.

Scroll down to view the list for subsequent stages of a multi-stage flight plan.

> ✳ Note: The correct hemispherical altitude for the route to be flown is highlighted in green. If the highlighted altitudes are not correct for the flight rules you will be flying under, ensure you have the correct flight rules selected for the flight plan.

4.3. Aircraft loading / weight and balance / fuel planning

The Weight and Balance view displays the following:

- Loading envelope
- Loading stations, including fuel load
- MTOW figure
- Takeoff/Landing/Zero Fuel weights
- Persons On Board
- Fuel plan table

> ✱ If you have a multi-stage flight plan, swipe the screen from right-to-left to view the loading for subsequent stages.

As with the flight log, any cells that appear on this page shaded green can be manually edited.

If there is important weight and balance data missing from your aircraft profile, you will be prompted by a pop up in the top right-hand corner. Any required data will be highlighted in red text. Once entered, the text will turn black.
Common omissions are:

- Basic Empty Weight
- Empty Arm

  If all details are now correct, (and there are at least two waypoints entered in your flight plan) you should see the centre of gravity plotted within the envelope.

4.3.1. Loading

Loads can be added to any stage in the plan. Enter weights for each load station in the green shaded fields.

Loads on previous legs will be reused on subsequent legs, and unburnt fuel is available by default for use on subsequent legs.

The loading table is in the following format:

Load Station	Maximum	Actual Load

- A load station row's text will turn RED if the maximum limit for that station is exceeded.
- The take-off weight row's text turns RED if the MTOW is exceeded.
- The landing weight row's 's text turns RED if the MLW is exceeded.

Scroll the load stations list to see all load stations if there is a long list. Fuel tanks will be found at the bottom of that list.

The Persons On Board (POB) figure can be entered in the green shaded box per each stage.

Relationship between weights table, fuel planning table and CofG envelope

Relationship between envelope and tables

With weights entered, within the Centre of Gravity envelope should appear two small circles, a grey + symbol and dotted line connecting them. If you don't see that, there may be some important data missing from your aircraft profile. Visit the Aircraft Type Database to enter those details.

Multi-stage plans

To access the load details of subsequent stages, swipe the page.
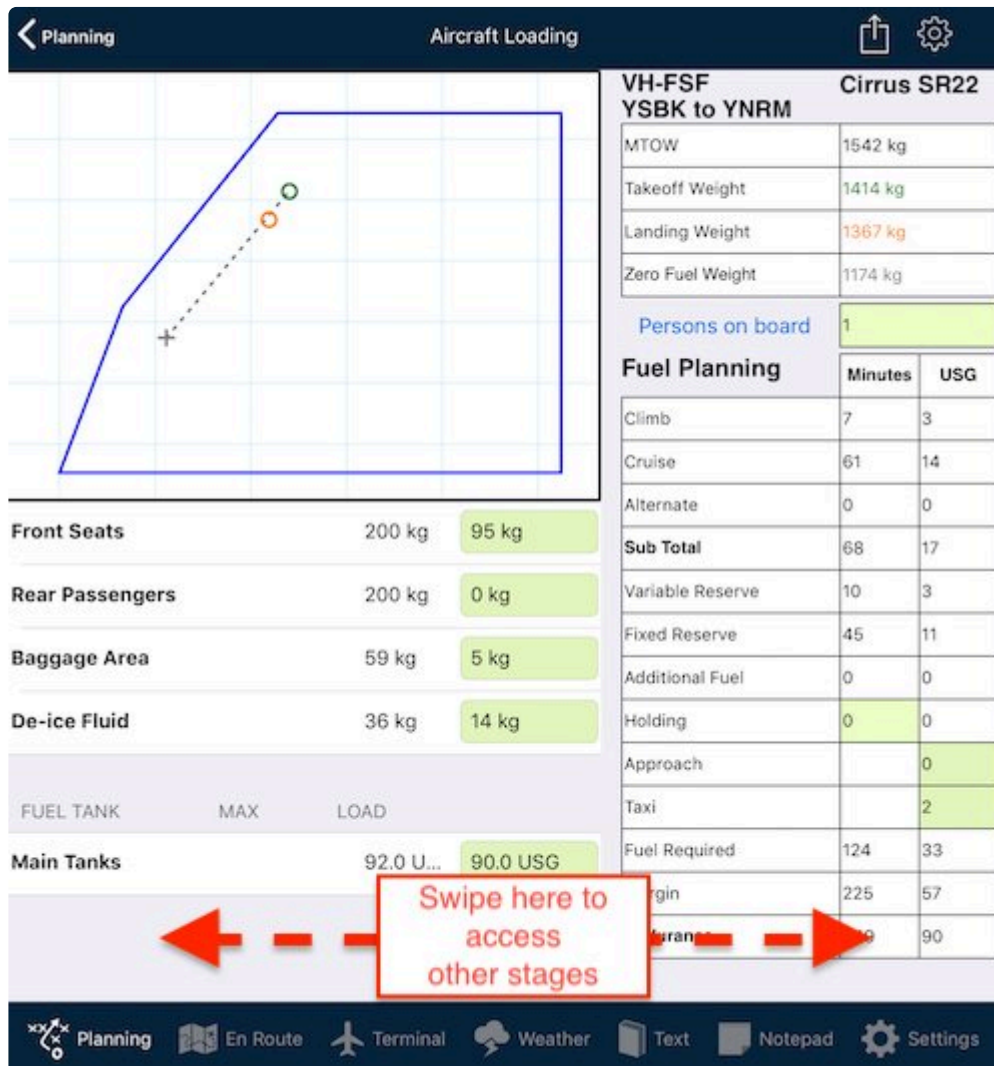
Instructions for creating multi-stage plan can be found in the Advanced Flight Planning section.

Any passengers/loads/bags/etc are automatically also added to subsequent stages. Unburnt fuel from previous stage is automatically added as the fuel state of the next stage.

Adding pax names

If you add just a *weight* to a load station, then by default it is treated as cargo by AvPlan EFB (even if that station is set up as a seat, for example). If you add *names and weights*, then the Passenger Manifest section of the Load Sheet print-out is filled out accordingly.

There are two methods of entering Passenger names and weights:

- You can access the Passenger Manifest view by tapping the 'Persons on Board' text, or
- Instead of tapping a green cell, first tap the white section in middle of the load station row.

Tapping this area will open up a second field directly below the original. In this new line (not the original row):

1. Enter the passenger name first, then tap the return key.
2. Enter their weight in the green cell that is in the same row, then tap the return key.

It is important to enter the details in the above order.

The weight will then be entered in the load station, and also the figure in the Persons on Board field will be updated accordingly.

For subsequent passengers, repeat the above process in the empty line. Each time you enter a new passenger, both the *Persons on Board* field and the total weight for that load station will be updated accordingly.

4.3.2. Fuel planning

Fuel can be added to any stage and any tank by adding a figure in the right-hand (green) field.

Fuel Planning	Minutes	USG
Climb	7	2
Cruise	137	20
Alternate	15	2
Sub Total	158	24
Variable Reserve	24	4
Fixed Reserve	45	8
Holding	30	3
Approach		0
Taxi		1
Fuel Required	257	40
Margin	105	16
Endurance	362	56

Fuel Planning Table

FUEL TANK	MAX	LOAD
Wing Tanks	56.0 U...	26.0 USG

In the above example there is currently 26 USG on board. To fill the tank full of fuel:

- tap in the green field
- type in *56* (no need to enter USG or LT etc)
- tap the *Return* key.

If a higher figure than the maximum size is entered, the row's text will turn red.

Also, if you haven't got enough fuel on board to complete the stage, the text in the *Margin* row within the fuel table will turn red.

Extra fuel requirements

Within the fuel planning table, there are several fields that details can be amended or entered.

This includes the *Holding* row, the *Approach* row and the *Taxi* row.

For example: If you'd like to add 30 minutes holding fuel, type *30* in the Holding row. If your aircraft burns 2 USG for startup and taxi, enter *2* in the Taxi row.

> ✳ Fuel is burned from top to bottom in the order the tanks appear in the load stations list.

To alter the fuel tank burn order, rearrange the order in which they appear within the Weight and Balance section within the aircraft type profile. Tap *Settings > Aircraft Type Database > [your type] > Weight and balance.*

Multi-Stage Refuelling

Any unused fuel for a stage in the plan automatically appears as the tank contents for the next stage. Swipe the page from right-to-left to view the loading and fuel for the next stage. Do the same again to view Stage 3, and so forth.

The unused fuel can be amended accordingly if you are planning to add fuel at that particular landing point. Simply amend the figure(s) to the amount of fuel you will have on board after refuelling the aircraft.

Changing the fuel units

If your aircraft profile is currently set up with the wrong units you wish to operate with (i.e. it's in USG

rather than litres, or LBS rather than KG), you can use the setup shortcut button in the top-right corner.

Select the correct units by tapping the *Fuel units* row, then placing a tick next to the correct one. Dismiss the menu by tapping away from it.

There's no need to alter the setup figures, as AvPlan EFB always stores the figures in a standard unit, then displays whatever is selected.

> ✳ If you wish for AvPlan EFB to automatically enter a standard fuel state (e.g. full fuel, or tabs, etc) and the correct taxi fuel, they can be set as a <u>default for that aircraft</u>.

4.3.3. Passenger manifest view

To navigate to the Passenger Manifest view, tap the *Persons On Board* text:

Persons on board	2

(just above the words Fuel Planning).

Now add names and weights for all occupants in the seat/row to which they are assigned.

Note that:

- AvPlan EFB will automatically update the combined weights for those rows, and the overall POB for the flight plan stage.
- If you entered passenger weights on the loading page, previous weight settings for these load stations will be overridden.
- Passengers, when added, are also added to all subsequent stages in the plan.
- The load sheets will display all names and weights for all occupants, plus fuel load and weight and balance envelope, which can then be printed, emailed in the *Print/Send* section of the Planning Pane.
- To delete a row, swipe it from right-to-left. A delete button will then be revealed.

Tapping the edit icon in the top-right corner will put the page in edit mode, so you can reorder or delete passengers as necessary.

4.4. Flight Status

After successfully lodging a flight plan to NAIPS, AvPlan will retrieve certain information from NAIPS that

relates to the flight plan.

When such information is available it will be displayed here as a set of MESSAGES.

Currently, the kinds of information that can be retrieved and alerted in Flight Status Messages are:

- A new SPECI METAR has been issued for a landing point in the plan
- An amended TAFhas been issued for a landing point in the plan
- A SIGMET or AIRMET has been issued which covers your flight plan track
- A new NOTAM is issued for a landing point in your flight plan

When a message has been read it can be *marked as read* to save space

You can configure these notifications in AvPlan EFB under Settings>Notifications

> ✱ If there are no updated or new items to display, the MESSAGES pane will be blank. This could happen if your flight is short; is between locations without weather information, or perhaps if you are flying through truly wonderful conditions.

4.5. User waypoints

User waypoints can be managed (added, edited or removed) in three different ways. These are described in the following sub-topics

4.5.1. Adding, Editing & Managing Waypoints via the Planning pane

User waypoints can be managed (added, edited or removed) from within this window.
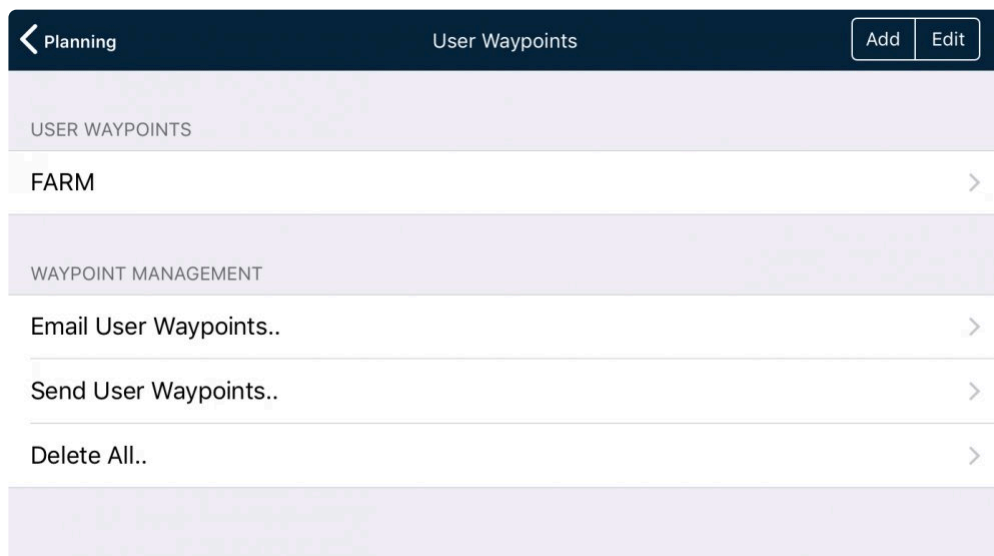
Individual Waypoint Management

- To add a waypoint, press Add. Latitudes and longitudes are in the format DD MM.MMM* S/N and DD MM.MMM* E/W
- To edit a waypoint, select a waypoint and edit as required.
- To delete a waypoint, swipe the row and a Delete icon will appear.
- User waypoints can be created from street addresses. Tap the Find Street Address row to create or edit a waypoint.
- Enter in the street address, and then tap the Pin icon if the correct location is displayed.

As well as entering Latitude/Longitude figures, user waypoints can be created via a bearing/distance from another known location, or from a street address.

> ✳ *The number of decimal places is important! To maintain the accuracy of your user waypoint position, use three decimal places in the minutes part of the Latitude and Longitude data

User Waypoints	Edit User Waypoint	
WAYPOINT DETAILS..		
Name		FARM
Latitude		35 40.343 S
Longitude		144 03.752 E
Altitude		0
Magnetic Variation		10.69 E
Forecast Area		30
LOCATION FROM ADDRESS		
Find Street Address...		>
LOCATION FROM BEARING/DISTANCE		
Known Location...		>
Bearing magnetic		000
Distance (nm)		0.0
OTHER COORDINATE SYSTEMS		

Planning   En Route   Terminal   Weather   Text   Notepad   Settings

Scroll to the very bottom of the page to view a satellite map view of the waypoint.
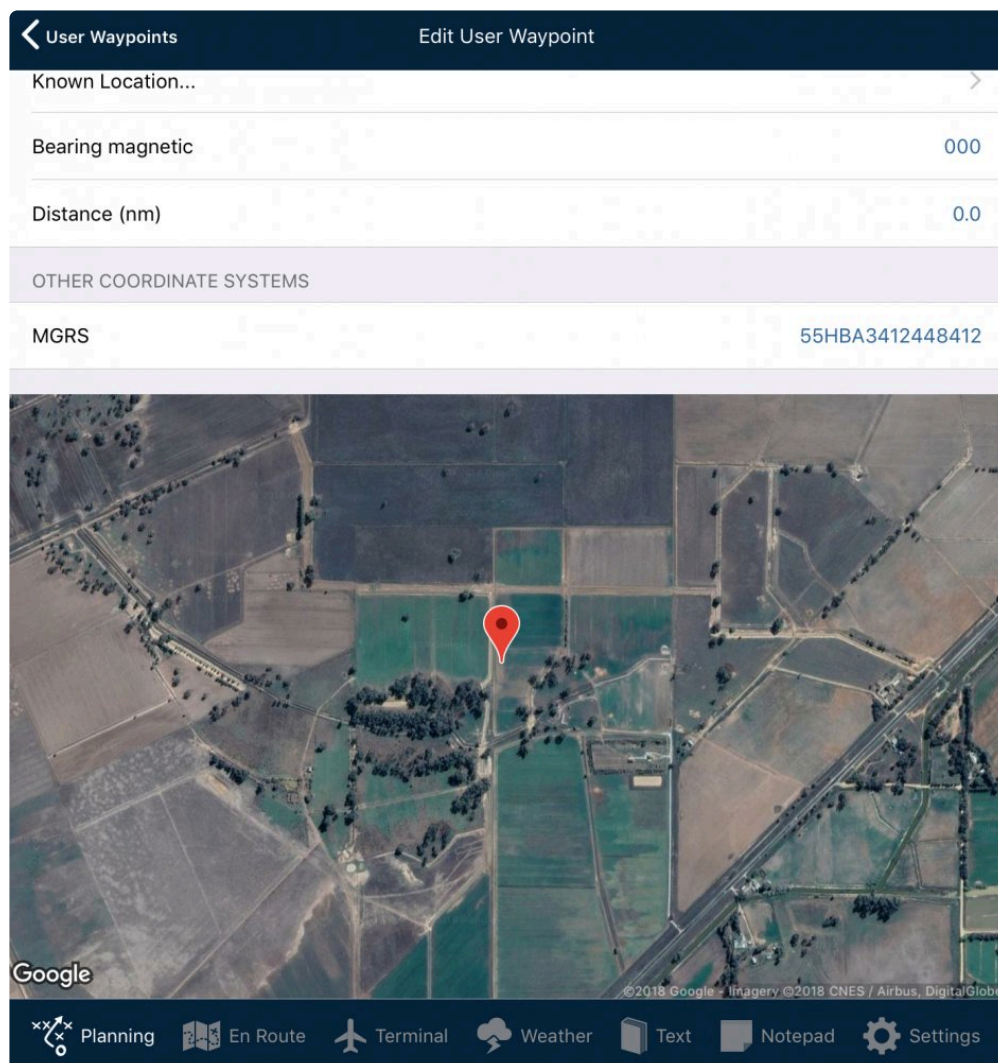
To fine-tune the waypoint's position, tap and hold on the marker. After a brief moment the marker and satellite image will 'jump', enabling you to see exactly where the point of the marker is. Keeping your finger on the screen, drag the marker so that the marker's point is exactly at the desired position. Now release your finger and the user waypoint's Lat/Long will be updated to the new position.

See also how to use the Crosshairs for greater accuracy when editing in the En Route pane.

When a flight plan is submitted using a user waypoint, only the latitude and longitude is sent (or the known location, bearing and distance in the case with waypoints created with that method).

Bulk Waypoint Management

At the bottom of the Waypoint List in the User Waypoints page, there are options for sharing your waypoints with another AvPlan user or between devices;

1. by email, or
2. by AirDrop,

and

3. there is an option to Delete *all* waypoints.

> ⚠ The Delete all waypoints option is not reversible. It therefore requires further confirmation, or can be cancelled to avoid inadvertent waypoint deletion.

Automatic syncing of user waypoints between devices is not currently supported.

4.5.2. Adding & Editing Waypoints in the En Route Pane

A short cut to editing User Waypoints can be found in the *Waypoint Details* menu on the *En Route* tab.

- Tap the map near a User Waypoint to bring up the Nearest Items list. (Note: You can select User Waypoints to be visible on the map by tapping the *Map Settings* button and placing a tick next to *User Waypoints*).
- Ensure the scope selector is set to either *All* or *Waypoints* in order to see the existing User Waypoint(s).

- Select the User Waypoint by tapping the row (anywhere other than the blue plus ⊕ icon).
- Tap the *Edit* button in the top-right corner of the window.
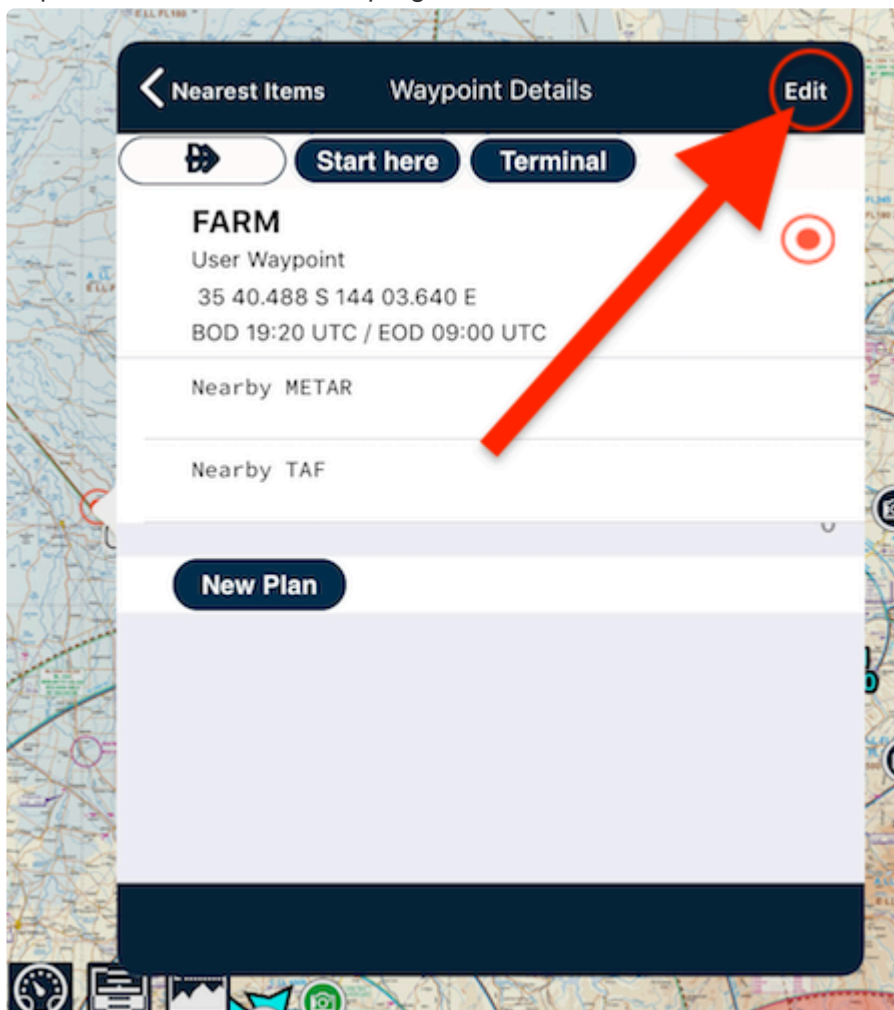
- Make the edits you need.

Making fine adjustments with the Satellite image in the background.
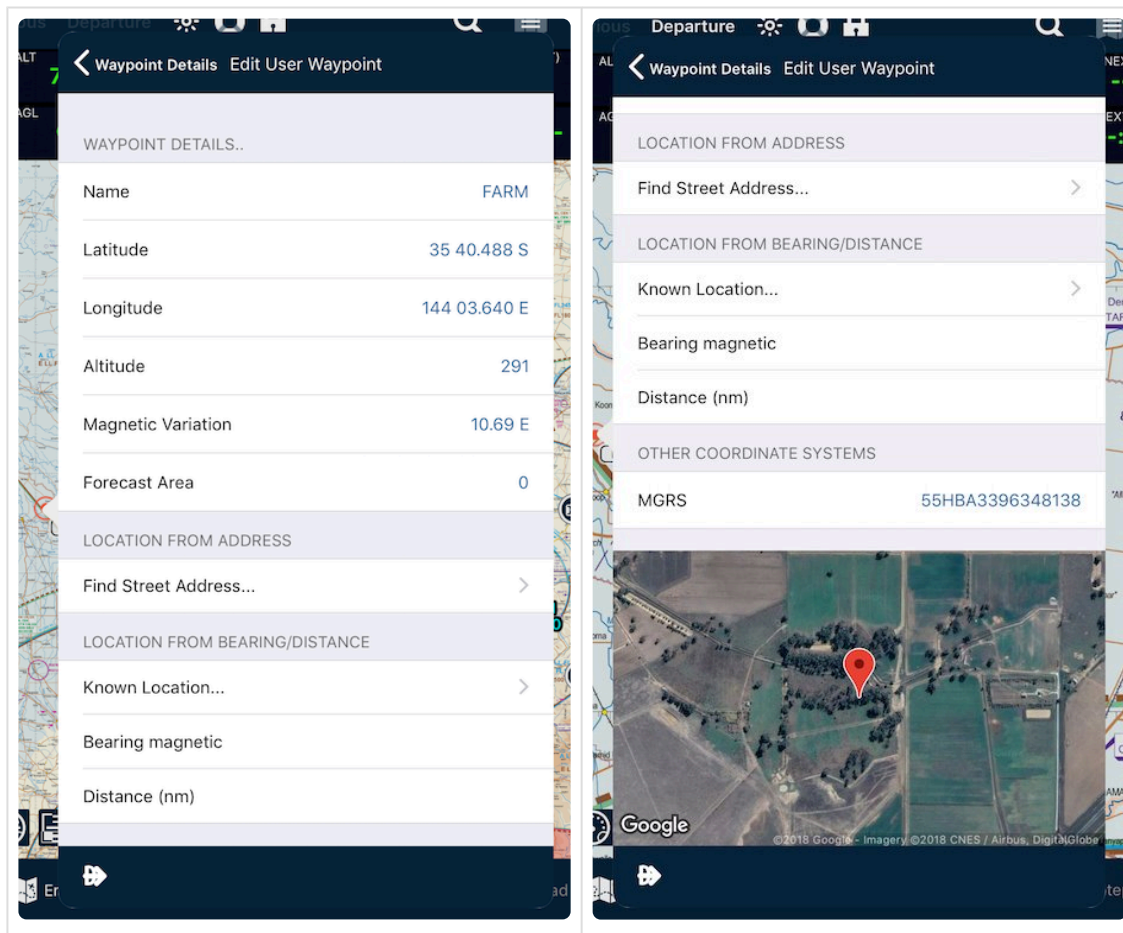
- As with the editor in the Planning tab, the waypoint's position can be fine-tuned. Tap and hold on the marker, then drag it to the desired position. Release it and the user waypoint Lat/Long will be updated to that new position. For even greater positional accuracy, turn on crosshair *Cursor* in Map Options and position the map such that the crosshair is exactly over the desired location, then tap on the crosshair. Tapping close to the crosshair has the effect of tapping *exactly on* the crosshair.
- When you've completed your edits, tap the back button in the top-left corner to return to the Waypoint Details screen, and once again to return to the Nearest Items list.

4.5.3. Adding Multiple Waypoints from a .csv file

Importing CSV Waypoint Files

Waypoints defined within a .csv file can be imported using the file sharing option provided by Dropbox and other cloud storage products. The steps for importing waypoint files stored in Dropbox via iOS are as follows:

1. Put the csv file containing your User Waypoint data into e.g. a dropbox folder that is accessible on your iOS device
2. Navigate to the folder containing the CSV formatted waypoints using the Folder app.
3. Locate and tap on the waypoint file to open the file in the Folder app.
4. Once opened, tap on the share icon and select the "Copy to AvPlan EFB" option displayed in the pop-up. This will initiate the waypoint import action in AvPlan.
5. On completion, in AvPlan EFB, tap on the "User Waypoints" option in the "Planning" pane.
6. From the list of waypoints displayed validate that the imported waypoints are present and the values correct.

CSV File Format

The format for these files is as follows:

Column	Description
Ident	Short version character string used to identify waypoint
Name	Long form character string used to identify waypoint (Currently not used)
Type	Single character value defining type of waypoint. Value defaults to type *"User"* (U) (Currently not used)
Freq	Frequency of navaid if appropriate (Currently not used)
Latitude	The Latitude of the waypoint (decimal degrees)
Longitude	The Longitude of the waypoint (decimal degrees)
Elevation	The elevation (feet, AMSL) at the specified Latitude/Longitude.
Magnetic Variation	The magnetic variation of the specified Latitude/Longitude, degrees. AvPlan will recalculate the value on import

Notes:

1. AvPlan will automatically assign a forecast area to the waypoint based on its location.

2. The filename MUST have the .csv extension to ensure both iOS and AvPlan EFB will apply the correct actions.

3. South Latitudes, West Longitudes and East magnetic variations must be *negative*.

> ✳ Use at least four decimal places in the Latitude and Longitude values to ensure ~10 metre accuracy. Five decimal places are better.

Example File entry:

wpt1,waypoint 1,,,-25.00000,145.00000,155,0 wpt2,waypoint 2,,,-35.1,137.6,2000,0

4.5.4. Associating data files with user waypoints

Any PDF file containing information relating to a user waypoint can be associated with the user waypoint via the Dropbox interface.

The process is exactly the same as adding files that relate to airports or navaids, and is described in [Dropbox Integration](#).

4.6. View/Print Flight Plan Reports

The "Domestic Flight Plan Form" action in planning has been expanded for PRO users with new report options under the heading "View/Print Flight Plan Reports".

The original Domestic Flight Plan Form is the first of the four options, and is available to all users.

A PRO subscription gives three further Flight Plan Reporting formats.

All four Flight Plan formats have a set of printing options.

The options (top right button bar) in the Flight Plan Report screen are as follows:

- Share (Email, Print, Send to App)
- Settings (Configuration settings for the report. These vary per report as listed below)
- Reports (select the default report – 1 of the 4 options listed below)

The four reports and the available settings options for each are:

1. **Classic AvPlan-EFB** Domestic Flight Plan

Flight Plan
PBH
YWMC - YLIL

EST: 14-08-2016 01:30 UTC
Printed: 29-07-2020 14:16

LEG	LSALT	ALT	TAS	TRK	WIND	HDG	GS	DIST	ETI	EST	REV	ATA	FUEL	ACT	Remarks
STAGE 1 DETAIL															
YLEC										140130		140146	418		
LEC	(5000)	A070	100	084	192/13	087	103	1	1			140146	416		Grid LSALT
ALTIR	5000	A070	156	131	201/12	136	151	162	86			140249	305		W550
MIA	3700	A070	156	131	170/10	133	148	123	49				242		W550
YMIA	(1900)	A070	130	110	170/10	114	124	0	0				242		Grid LSALT
						TOTALS		286	137						
STAGE 2 DETAIL															
YMIA										140345		140415	222		
ASWAN	(2000)	A070	98	131	189/11	133	87	99	71	140456		140451	121		Grid LSALT
CANTY	4700	A070	156	130	138/8	130	148	100	48	140544		140527	63		V173
ARBEY	4500	A070	156	159	138/8	158	148	22	9	140553		140535	54		H119
ML	(6400)	A070	156	158	128/15	156	143	30	13	140606		140543	39		Grid LSALT
YLIL	(6400)	A070	130	083	128/15	088	118	25	10	140616		140553	17		Grid LSALT

Printing options for the Classic AvPlan-EFP Domestic Flight Plan are:
a. Double Spacing
b. Stage Headings
c. Flight Levels
d. Blank EST
e. Blank remarks

2. **Navigation Log** Based on Jeppesen Navigation Log

		NAVIGATION LOG			Page 1 of 1
		AvSoft Australia Pty Ltd			**Revision 0**
		Route: YMMB-YMAY			Created: 14-07-2020 12:40

Aircraft Number	N106BA	Notes

Check Points (Fixes)	VOR Ident Freq.	Course (Route)	Altitude	Wind Dir. / Vel. / Temp	CAS / TAS	TC / -L/+R WCA	TH / -E/+W Var.	MH / ± Dev.	CH	Dist. Leg Rem.	GS Est. / Act.	Time Off ETE ETA / ATE ATA	LPH 36 Fuel / Rem.	Airport & ATIS Advisories

Check Points	VOR Ident/Freq	Course	Altitude	Wind Dir/Vel / Temp	CAS / TAS	TC / WCA	TH / Var	MH / Dev	CH	Dist Leg/Rem	GS	LPH/Fuel/Rem	ATIS/Airport
YMMB			A000	018 11 / ISA-5	113	243 / +4	248 / +11.9			1 / 149		0 / 0	Departure / Destination
MB		W188	A000	018 11 / ISA-5	113	014 / 0	014 / +11.7			15 / 135		5 / -5	ATIS Code
HARRO		W188	A000	018 11 / ISA-5	113	014 / 0	013 / +11.7			5 / 129		1 / -7	Time Check
COLDS		W188	A000	018 11 / ISA-5	113	014 / 0	013 / +11.7			12 / 117		4 / -11	Runway
LACEY		W188	A000	018 11 / ISA-5	113	014 / 0	013 / +11.7			26 / 91		9 / -20	Wind
TEMIS		W696	A000	048 10 / ISA-5	113	003 / +2	005 / +11.6			52 / 39		17 / -38	Ceiling & Vis
LUTVU		W465	A000	048 10 / ISA-5	113	033 / 0	033 / +12.0			38 / 0		13 / -52	Temp & DP
AY	AY 115.6		A000	048 10 / ISA-5	113	248 / +2	251 / +12.0			0 / 0		0 / -52	Approach
YMAY	AY 115.6							Totals »		149		53	Altimeter

Airport Frequencies

	Departure		Destination	
ATIS	120.90	ATIS	115.60
Ground		Approach	
Tower	123.00	Tower	123.25
Departure		Ground	121.80
Field Elev	50	Field Elev	539
Chocks On		Log Time	
Chocks Off			

AvPlan EFB 7.10   Report Format © Jeppesen Sanderson, Inc

With report printing options:

    a. Blank Form

    b. Blank Heading Text, GS, ETE & WIND

3. **Flight Plan (Landscape)** from Command Flight Planner

DOMESTIC FLIGHT PLAN Page 1 of 1

DEP PT/ETD ROUTE SEGMENT LANDING POINT	LSALT	FL or ALT	TAS	TR MAG	WIND	HDG MAG	GS	DIST	ETI	PLN EST	REV EST	ATD ATA	ROUTE QUALIFIER
YMMB / 1200													
KIM	(6400)	F120	110	339	235/13	332	112	41	31				
BDGSM	(6400)		110	307	237/06	304	107	45	25				
Y0KS	(4700)		110	015	277/21	004	110	98	53				
CDOSC	(3800)		110	026	242/15	021	122	153	75				
YMDG	(6100)		110	062	249/11	061	120	136	68				
								472	251				
YMDG / 0238													
YBBN	(6500)	F110	110	020	241/10	016	117	360	191				
								359	190				

Plan Summary

Callsign: XCY   Distance: 832 nm
EET: 443 mins   Fuel Burn: 2553 Lt

ROUTE	ALT	SSR	FREQ	LIMIT

CALL	TYPE	POSN	TIME	LEV	TRACK

FUEL CALC.	Min	Lt	Min	Lt	Min		Min	
Climb	23	158	18	122				
Cruise	229	1266	173	950				
Altn	0	0	0	0				
SUB TOTAL	252	1424	191	1073				
Variable Res	0	0	0	0				
Fixed Res	30	213	30	213				
Holding	0	0	0	0				
Taxi		28		28				
Fuel Req'd	282	1665	221	1314				
Margin	-114	-644	-239	-1342				
ENDURANCE	168	1021	-18	-28				
FROM	YMMB		YMDG					

AvPlan EFB 7.10

AREA QNH

LOC	COD	RWY	WIND	QNH	TEMP	CLOUD	VIS	WEATHER

Created: 14-07-2020 12:29   © AvSoft Australia Pty Ltd

With report printing options:
   a. Print one pager per Stage
   b. Double Spacing
   c. Blank Form
   d. Blank Columns HDG (MAG), GS, WIND

4. **Flight Plan (Portrait)** from Command Flight Planner

DOMESTIC FLIGHT PLAN													Page 1 of 2
DEP PT/ETD ROUTE SEGMENT LANDING POINT	LSALT	FL or ALT	TAS	TR MAG	WIND	HDG MAG	GS	DIST	ETI	PLN EST	REV EST	ATD ATA	ROUTE QUALIFIER
YMMB / 0900													
MB	(6400)	A095	85	255	116/14	248	89	1	1				
HARRO	3600		85	026	116/14	039	80	15	11				W188
COLDS	3600		85	026	116/14	037	82	5	4				W188
LACEY	4900		118	026	116/14	033	117	12	9				W188
TEMIS	5500		118	026	116/14	033	117	26	13				W188
LUTVU	4700		118	014	158/10	017	126	52	25				W696
AY	4200		118	045	158/10	049	121	38	19				W465
MUSOP	6300		118	043	129/19	052	115	56	29				W817
AVBEG	6300		118	042	169/19	049	128	70	32				W817
KEDDY	4900		118	042	156/26	053	126	26	12				W817
AKMIR	5100		118	041	156/26	053	126	40	19				W817
YSBK	(5900)		118	058	157/38	077	117	46	24				
								387	198				

SARTIME	DATE TIME		TO ATS UNIT		FOR ARRIVAL AT		Last Light

FUEL CALC.	Min	Lt	Min	Lt	Min		Min		Min		Min		Plan Summary
Climb	22	16	0	0									Route
Cruise	177	106	81	48									YMMB-YSBK-YSCB
Altn	0	0	0	0									
SUB TOTAL	199	123	81	49									Callsign AC Type
Variable Res	0	0	0	0									N106BA TB10
Fixed Res	0	0	0	0									EET Distance
Holding	0	0	0	0									279 mins 512 nm
Taxi		0		0									Fuel Burn
Fuel Req'd	199	123	81	49									171 Lt
Margin	132	81	55	33									Description
ENDURANCE	331	204	136	82									A simple description
FROM	YMMB		YSBK										

Pilot Notes:

- Report printing options are the same as for Flight Plan (Landscape)

❋ Note 1: The Reports and Settings options are sticky, i.e. the selected options will remain

> ✳ set/unset until unset/reset by the user.

> ✳ Note 2: In the Navigation Log report the empty line under the title NAVIGATION LOG is editable when the report is displayed. The user can enter and save any desired text here; for example, a company name.

The Print/Send function in the Planning pane will show thumbnail Flight Plan images and will print pages that reflect the Flight Plan format and options that have been chosen here in *View/Print Flight Plan Reports*.

4.7. View PRDs for Route

The option displays the status of any restricted areas traversed during flight.

Touching a line will expand it and display any applicable NOTAMs. Tapping the 'i' icon on the right-hand edge will open up the En Route pane, the edges will be highlighted and a diminishing blue halo will appear over the area.

A restricted area briefing can be refreshed with the Refresh icon in the top-right of the window.

4.8. SPFIB/IFIS Briefing

The SPFIB/IFIS Briefing displays a tailored route briefing for your flight plan.

This briefing product displays only information relevant to the areas that will be overflown.

The *Update* button at the top will display *only the changes* between the original briefing and the current conditions, saving you having to work out what, if anything, has changed.

> ✳ The SPFIB briefing from NAIPS will fail if you are using a plan that has been previously successfully filed without first clearing the plan for re-use.

4.9. Flight plan submission

AvPlan EFB allows easy flight plan submission to the correct aviation authority.

Depending on which country/region your flight plan departs from, AvPlan EFB automatically offers the correct authority option within the Planning tab.

- Submitting via NAIPS

- Submitting via IFIS

A note about Callsigns

AvPlan EFB will submit the callsign provided by the selected aircraft profile unless the callsign has been 'overidden'. The ability to override an aircraft callsign for flight plan submission purposes has been included for use by Military or Emergency Services that always use the same callsign, regardless of the particular airframe being flown.

When you tap *Planning > Submit ICAO Flight Plan via NAIPS* to submit your plan, you will notice that the Callsign field is editable.

If you have inadvertently changed or overridden the default callsign, you'll notice the word (Overridden) next to the Callsign text:

AIRCRAFT DETAILS

Aircraft

Callsign (Overridden)

Registration

ICAO Type

To remove the overriding callsign, tap the callsign text:

Use the backspace key to remove all characters. With no more characters (just a flashing cursor) tap the Return key.

The 'Change Default Callsign' popup will appear. Ensure you tap Yes to confirm the change.

The 'Overridden' message should disappear, and the aircraft's correct callsign should now be displayed in the field.

4.9.1. NAIPS

The ICAO Flight Plan Submission page allows you to submit a flight plan and SARTIME details in the one place. The page contains the following information sections:

• Pilot details
• Flight details

• Aircraft details
• Departure details
• En Route details
• Destination details
• Emergency details
• SARTIME details (for VFR flights only)

Any time you amend a setting on this page, the change will propagate back to either your flight plan, or your aircraft profile.
For example: If you notice that your aircraft is missing a DME in the submission, you can tap the Nav/Comm row, select D (DME) then dismiss the pop-up. This change is now automatically saved to your aircraft profile for future submissions.

If you have missed entering some information (such as altitude or departure time), the row(s) will highlight green until the necessary information is entered.

4.9.1.1. Submit ICAO flight plan via NAIPS

Use this option when planning to fly IFR, VFR in controlled airspace, or you wish to use a VFR Flight Following service. You can submit your flight plan and nominate a SARTIME in one go. There's no need to submit a separate SARTIME notification if you've submitted a VFR flight plan via this method.

Flight Plan/Pilot details

This information, which includes the pilot's NAIPS details must be entered to submit a plan. These are then saved for future use.

Any rows requiring attention will be highlighted green

Tapping the Estimated Time of Departure (ETD) row brings up the time picker popup. Tap the UTC button switch between UTC and LT (Local Time)

Any time you amend a setting on this page, the change will propagate back to either your flight plan, or your aircraft profile. For example: If you notice that your aircraft is missing a DME in the submission, you can tap the Nav/Comm row, select D (DME) then dismiss the pop-up. This change is now automatically

saved in your aircraft profile for future submissions.

SARTIME

A SARTIME can be entered for departure/arrival at a particular point in a VFR flight plan.

SARTIMEs are in UTC, and entered using the 'tumbler' pop-up. You can switch between UTC and device Local Time (LT) by tapping the button in the top-right corner of the pop-up.

> ✳ If AvPlan EFB has been granted access to your calendar (which is requested the first time you submit a SARTIME), a calendar entry will automatically be created so your device(s) will chime ten minutes prior to your nominated SARTIME.

Submitting a plan/NOSEND

The Submit button sends the plan to AirServices. If only a test plan submission is required, set NOSEND to ON before tapping Submit. When NOSEND is set to ON, a flight plan is sent to Airservices with the word NOSEND substituted for your callsign.

> ❗ Use NOSEND sparingly. Once a NOSEND plan sends successfully, there is little reason

why an actual plan submission should not work; there is no need to send multiple NOSENDs.

The NAIPS response to the plan submission appears in the window below the Send icon.

At the top of the screen, Not Filed will update to Filed OK when the submission works correctly. If an error message is received, the status File Failed will display. This will only be cleared by a successful submission.

Amending a submitted flight plan

Flight plans can be amended by making the necessary changes to your flight plan (e.g. departure time), then pressing the submit button once again.

Flight plan messages

When your flight plan has been accepted, you will receive a message on your device(s) that ATC have acknowledged your plan.

In addition, you will be advised of your expected routing. If ATC change your flight planned route, you will see this message and can be ready to confirm the new routing when you call for a clearance.

These messages will appear in *Planning > Flight Status*. Tap the *Mark as read* button to dismiss them.

If you do not wish to receive such messages, these can be turned off/on by tapping Settings > Notifications.

NAIPS errors

Common error codes returned by the NAIPS system and their fixes can be found at our FAQ.

4.9.1.2. Submit SARTIME via NAIPS

This option sends a SARTIME only notification to NAIPS, rather than a full flight plan. Use this option when your VFR flight is operated entirely outside of controlled airspace.

The details sent are not as numerous, so there's less potential for error messages from NAIPS.

Flight Plan/Pilot details

This information, which includes the pilot's NAIPS details must be entered to submit a SARTIME. These are then saved for future use.
Any time you amend a setting on this page, the change will propagate back to either your flight plan, or

your aircraft profile.

SARTIME

A SARTIME can be entered for departure/arrival at a particular point in a VFR flight plan.

SARTIMEs are in UTC, and entered using the 'tumbler' pop-up. You can switch between UTC and device Local Time (LT) by tapping the button in the top-right corner of the pop-up.

> ✱ If AvPlan EFB has been granted access to your calendar (which is requested the first time you submit a SARTIME), a calendar entry will automatically be created so your device(s) will chime with ten minutes left on your nominated SARTIME.

Submitting a SARTIME/NOSEND

The Submit button sends the plan to AirServices. If a test SARTIME is only required, set NOSEND to ON before tapping Submit. When NOSEND is set to ON, a flight plan is still sent to Airservices, however the word NOSEND is substituted for your callsign.

> ✱ Use the NOSEND sparingly. Once a NOSEND sends successfully, there is little reason why the actual submission should not work, so there's no need to send multiple NOSENDs.

The NAIPS return of the SARTIME submission appears in the window below the Send icon.

At the top of the screen, Not Filed will update to Filed OK when the submission works correctly. If an error message is received, the status File Failed will display. This will only be cleared by a successful submission.

NAIPS errors

Common error codes returned by the NAIPS system and their fixes can be found at our FAQ page.

4.9.2. IFIS

- Submit flight plan via IFIS

4.9.2.1. Submit flight plan via IFIS

Use this option to easily submit flight plans that originate in NZ.

> ✳ You'll need to place your IFIS credentials (IFIS Account ID and IFIS Password) in *Settings > User Settings > IFIS Details* before being able to submit flight plans using this method.

Ensure your name and phone number are entered in the first two rows.

If you'd like to perform a test plan before switching to submitting a real one, switch

the *Test Plan* switch to ON before pressing the *Submit* button.

After the *Submit* button is tapped, a response from IFIS will appear in the clear section immediately below the button and switch.

To submit the flight plan fully, ensure the *Test Plan* switch is set to the OFF position.

Submit flight plan via IFIS

4.10. Print/Send

The Print/Send screen allows individual pages to be printed, or emailed to another app on your device (e.g. Dropbox, iBooks, etc).
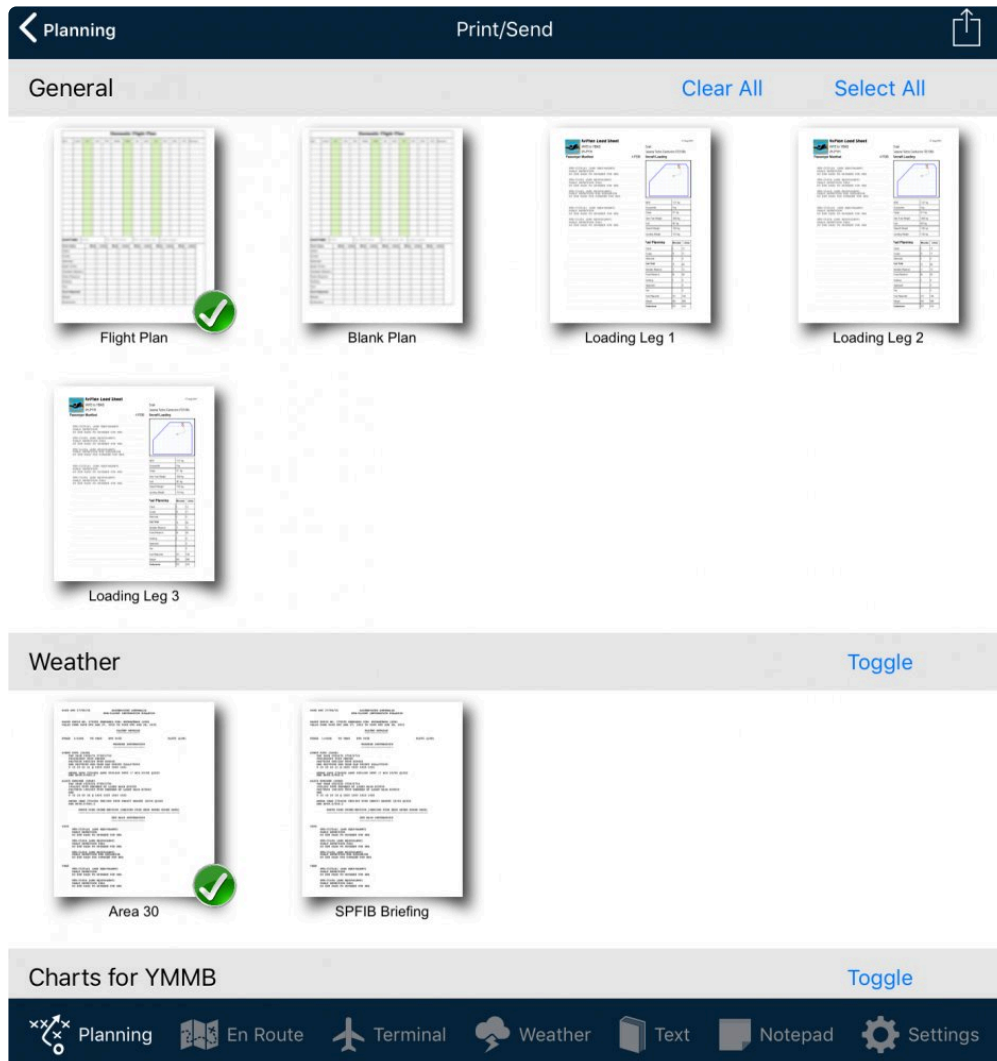
Print/Send screen

The following items can be printed/emailed/sent (as a .PDF) to another app:

- Flight plans.
- Blank plan forms.
- Load sheets.
- NAIPS submission verification.
- Weather forecasts.
- SPFIB Briefings
- ERSA/DAP pages for each leg in the active flight plan.

Scroll down the page to view all documentation associated with the planned flight.

Any document thumbnail with a green tick will be included in the document package. Tap a thumbnail to select/deselect.

The *Toggle* button on each section inverts the selection for all items within that section.

Or, you can use the *Clear All* or the *Select All* to change all in one go.

Once you have selected your desired documents, tap the Send/Share icon (in the top-right of the screen) to select your delivery method.

4.11. Log flight

The Log Flight screen displays your flight record details including:

- Date/time of flight.
- The aircraft callsign.
- Aircraft type.
- Departure and destination points.
- Total flight time.

For each stage it displays:

- Departure and destination.
- Block off/block on times. (These are recorded when the flight plan is switched from Plan to Fly mode)
- Wheels off/wheels on times. (Recorded when aircraft is above 30kt and 100 ft above field elevation)
- Flight time.

> ✻ These parameters can then be logged directly into the LogTen Pro app (purchased separately – find out more at: coradine.com).

5. En Route

The En Route pane displays mapping information. AvPlan EFB overlays all required information over all maps to ensure that you have all the information needed easily at hand, in a format that is easy to understand.
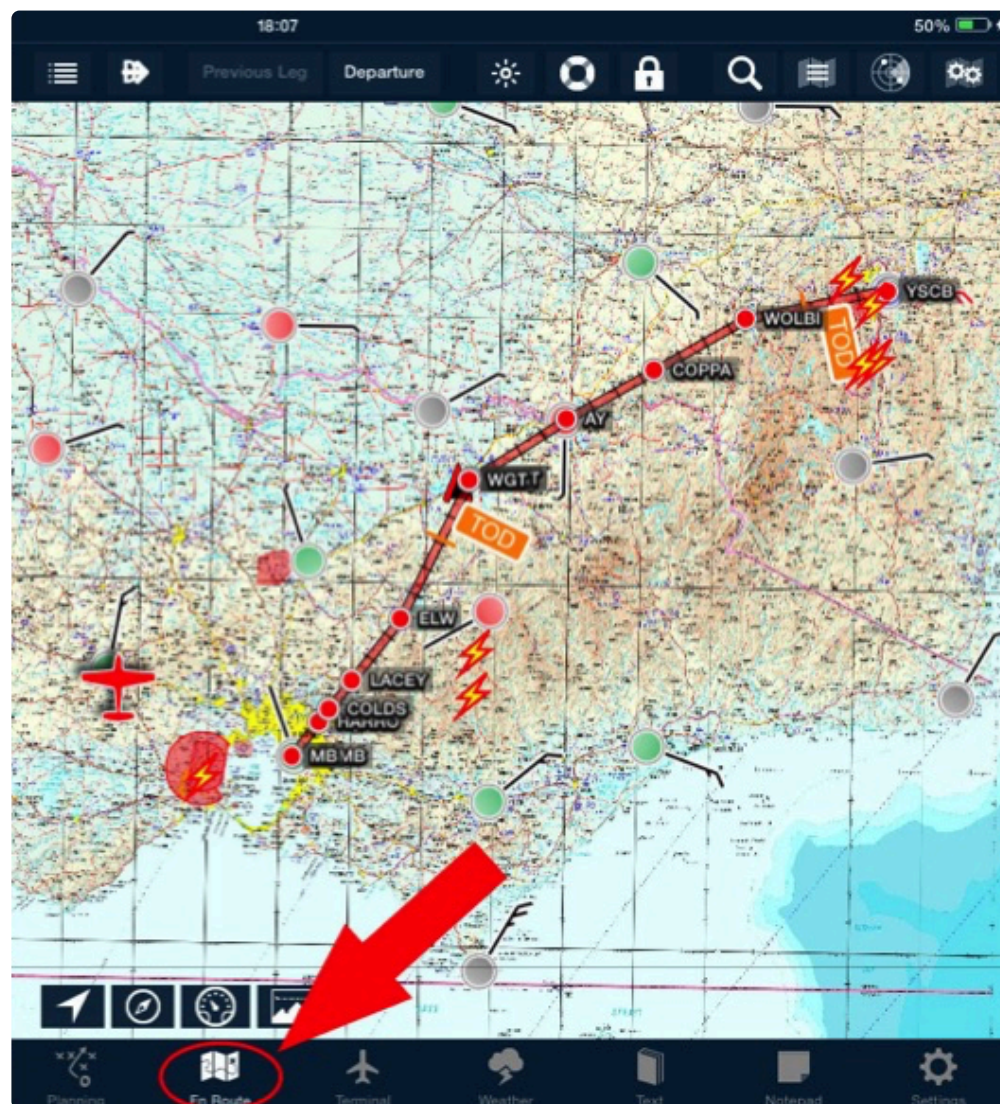
En Route tab

AvPlan EFB combines all Australian charts into three seamless maps:

• MegaVFR,

• En Route Lo, and

• En Route Hi maps.

These maps become more detailed as they zoom in, automatically switching from a WAC view to a VNC to a VTC view (in the case of the MegaVFR).

On top of these maps you can selectively overlay many other features.

Icons found along the EnRoute title bar include:

	Direct To Button	Find waypoints and begin a direct-to
	Brightness Button	Adjust screen brightness and screen timeout settings
	Help Button	Initiate a chat with AvPlan EFB Support
	Screen Lock Button	Temporarily lock the screen from unintended touches
	Search Button	Search for airports, waypoints, helipads, airspace, PRDs, etc.
	Map Selection Button	Select between different available maps to display
	Weather Overlay Button	Select weather-related overlays to be displayed over the map
	Map Settings Button	Select many different display options

As well as the above buttons, whilst a flight plan is open the following flight plan control buttons will appear:

	Departure button	Tells AvPlan that you've departed and log the ATD (Actual Time of Departure)
	Return/Advance buttons	Manually advance/regress the current leg that you're flying

At the bottom-left corner of the map, the following group of buttons appear:

These are used to control the behaviour of the moving-map, and the visibility of extra functions.

	Centre Map on Aircraft Button	Switches on/off centring the map on your current position
	Map Orientation Button	Cycles through different map orientations

	HSI Button	Switches on/off visibility of the Horizontal Situation Indicator
	Synthetic Vision Button	Switches on/off visibility of the synthetic vision function
	Profile View Button	Switches on/off visibility of the flight plan profile view

5.1. Own aircraft symbol

The aircraft position is overlaid on all map types.

The aircraft is colour-coded depending on the accuracy of the GPS fix:

	The aircraft is BLACK when the fix is >100m
	The aircraft is RED when the fix is <100m but no heading information is available
	The aircraft is (color-blue) BLUE when the fix is <100m and there is valid heading information

The default aircraft symbol can be changed under *Settings > User Settings > Default Aircraft Icon*. This icon will be displayed any time there is no flight plan selected.

To change the icon you see whilst using a flight plan, tap *Settings > Aircraft Type Database > [your type] > Basic Performance > Aircraft Icon*.

5.2. Direct to

Within AvPlan EFB, there is two different types of Direct To:

- Direct-To any point outside your flight plan (like in an emergency diversion).
- Direct-To a future (or past) waypoint within your flight plan (like ATC track shortening).

Direct to any point outside your flight plan

Consider this scenario:
You're flying along your flight plan and experience some sort of safety concern (like a sick passenger), so you decide to divert to the closest suitable airport.

In this case you have an active flight plan, so

Option 1:

- Tap near intended point on the map and the Nearest Items will appear.
- Tap the Direct-To switch at the top of the list and then tap the blue plus to track direct, at which time a magenta track line will appear from your present position to that point.

Option 2:

- Tapping the Direct to button brings up a list of waypoints around your current GPS position:
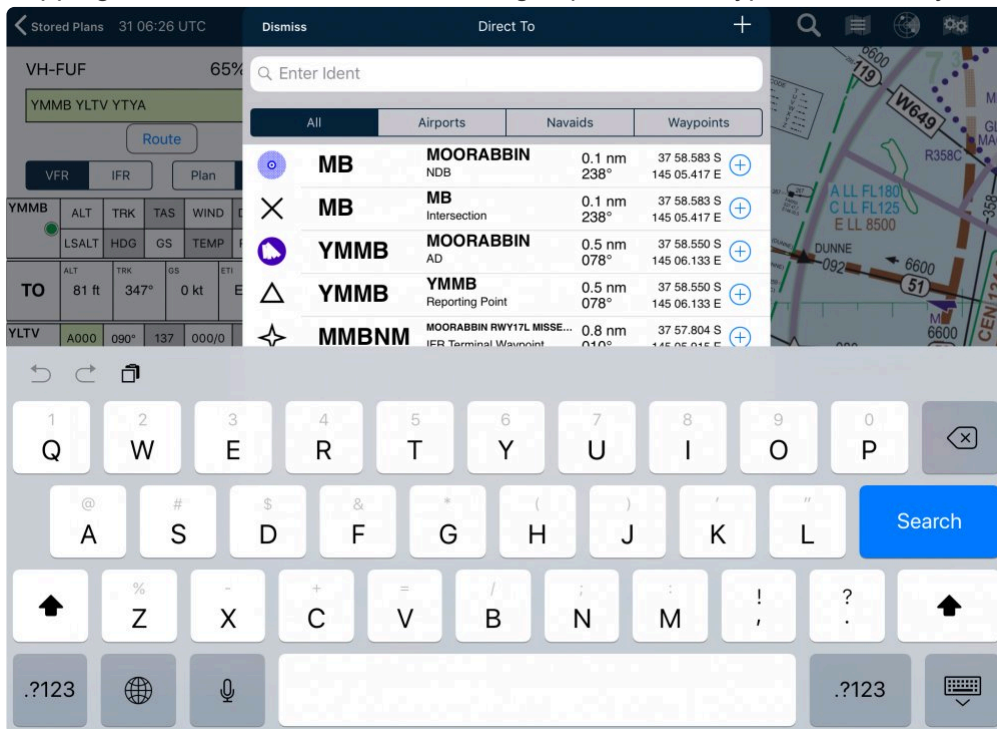
Direct to dialogue

- You can also search for a particular waypoint, or use the scope bar to filter the list down to only Airports, Navaids or Waypoints.
- Tap a row to begin a direct-to to that location.

Direct to a future point within your flight plan

Consider this scenario:
You're flying along in Controlled Airspace and ATC instruct you to turn and fly a much shorter track directly to a point later in your flight plan, missing one or more intermediate waypoints.

Option 1:

- Tap and hold on a leg in the flight plan, a Leg Settings menu appears.
- Select Direct To from that list. A magenta line will appear from your present position to that waypoint in the plan.

Option 2:

- Tap the waypoint you wish to track to on the map
- As it's already within your flight plan, the Waypoint Details automatically appears.
- Tap the Direct To button.

The beauty of this form of direct to is that once you reach that point, the auto sequencing will occur and you can continue along the rest of your flight plan. This makes complying with ATC instructions a breeze!

Cancelling a direct to

With a flight plan open:

Option 1:
Manually sequence the flight plan to the waypoint you wish to fly instead of the direct to.

Option 2:
Tap the Plan|Fly toggle to set it back to *Plan*.

Where no flight plan is currently open:

Tap the *To* field in the HUD.

5.3. Brightness

 Tapping the Brightness button brings up the following dialogue:
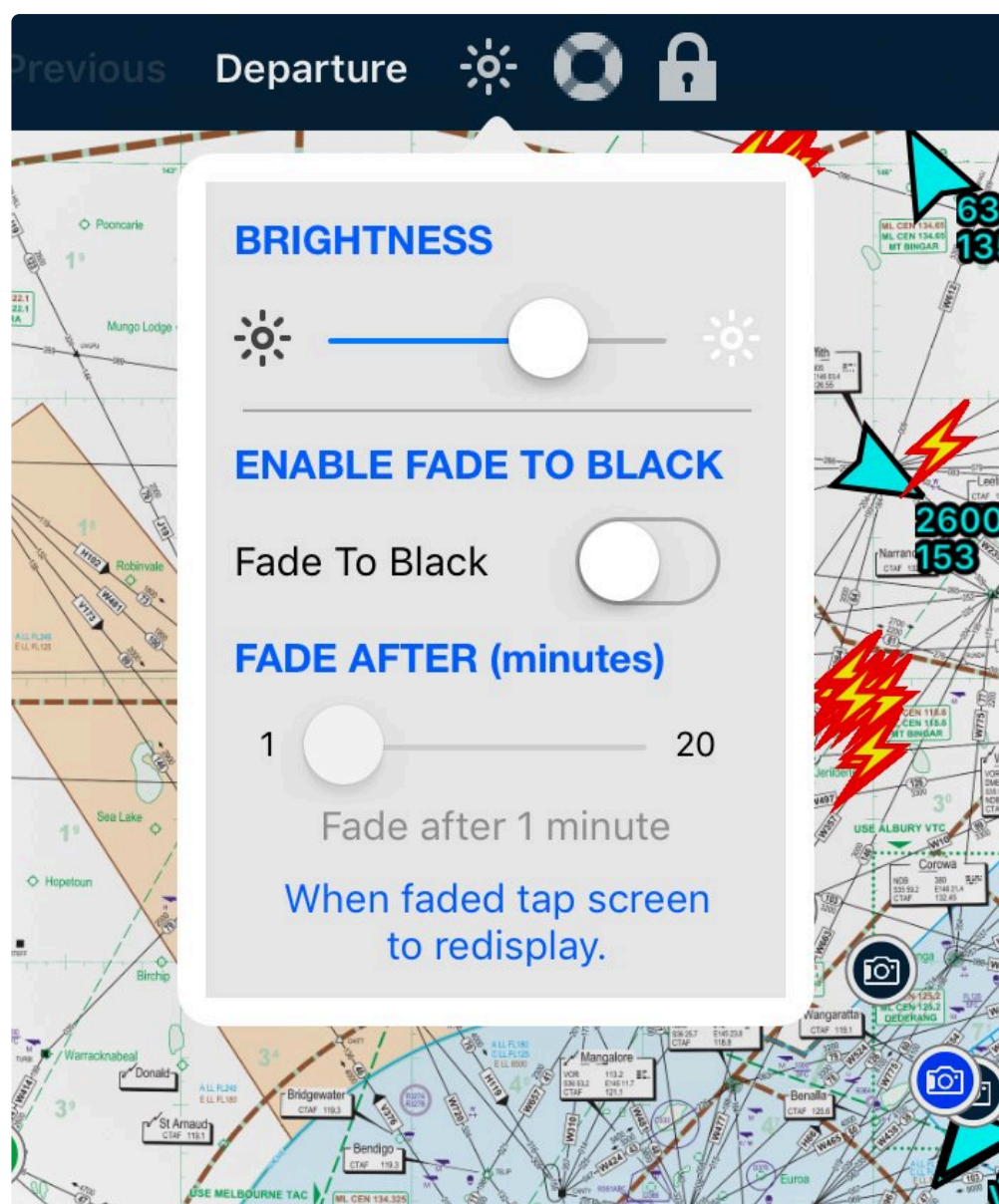
Slide the Brightness slider right to make the screen brighter, or left to make it darker.

> ✳ This slider also controls the devices' brightness slider, however the slider within AvPlan EFB is able to go much darker than the Apple slider – very handy for night operations.

Fade to Black

Enabling Fade to Black allows AvPlan EFB to fade the screen after a preset timeframe (set by the slider).

The app will be still fully active while faded (tracking your progress, calculating times to the next waypoint, etc), however the backlight will be switched off, and the faded screen will simply show **Screen dimmed. Tap to restore.** A single tap on the screen will restore it to the previous brightness setting.
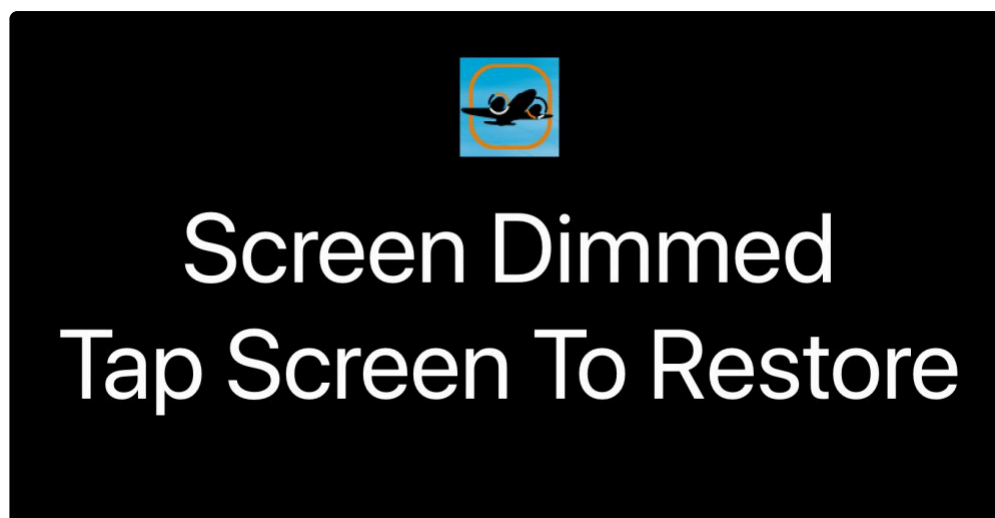
Screen dimmed

Advantages:

- device's battery lasts a little longer
- less internal heat created – less chance of head-related shutdown in summer
- less visual distractions
- easily return to normal display with one tap

Advanced night mode

Advanced night mode can be set up to smartly invert the colours of certain parts of the app, while retaining the colours of important things like maps, etc.

Tap here to view Advanced Night Mode set up instructions.

5.4. Lock screen

🔒 Tapping the *Lock Screen* button prevents unintended touches of the screen.

When the screen lock is active, the icon will turn red, and a SCREEN LOCKED message will be displayed at the bottom of the screen.

To unlock the screen, tap the *Lock Screen* button once again.

5.5. Search

 The Search button allows waypoints and airspace names to be searched and located on the map.
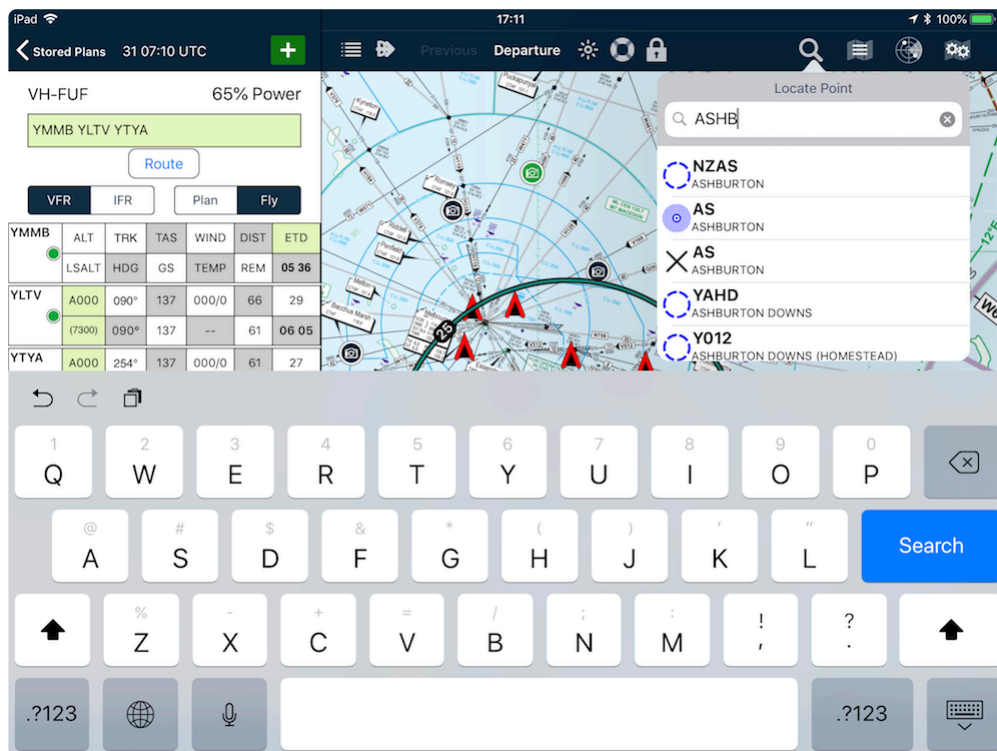
Waypoint/Airspace Search

Searches can be the waypoint identifier, full name, or even partial name. For example: Search *Ashb* returns all waypoints that contain a partial match.

Tap on a result to centre the map on its position.

When looking for a particular airspace, you can type the airspace identifier e.g. R332, and tap the result

to view its position and outline on the map. Similar to the View PRDs for Route option in Planning.

5.6. Map selection

The Map Selection icon allows you to select a map to display. The maps are divided into Local Maps and All Maps.

Local maps are the maps that are applicable to your current GPS location, whereas All Maps are the complete map catalogue.

The download state for the maps is also displayed:

Saved	means the complete map including all areas it covers is saved on your device.
Sections Saved	denotes that select parts of the map are saved on your device. An example will be the Mega charts which cover whole countries, or even the whole world. Sections of the maps can be downloaded by tapping on the map under Settings > Data Downloads.
Not Saved	means no part of the map is saved locally on your device. You may still be able to view these maps if you are currently connected to data. The parts of the map you are viewing will be downloaded as you view them, but not saved to your device. If you wish to view a Not Saved map when not connected to data (e.g. in flight), download and save the map to your device.

5.7. Weather overlays

The weather overlays button displays available weather-related overlays on the map.

Weather Overlays

Weather Options
Overlay Transparency

Animated Overlays

Weather Radar Overlay ✓

Infrared Satellite

Surface Pressure Forecast

Freezing Level Forecast

Ceilings Forecast

Visibility Forecast

Static Weather Overlays

METARs ✓

SIGMETs ✓

Lightning ✓

PIREPs

Weather Cameras
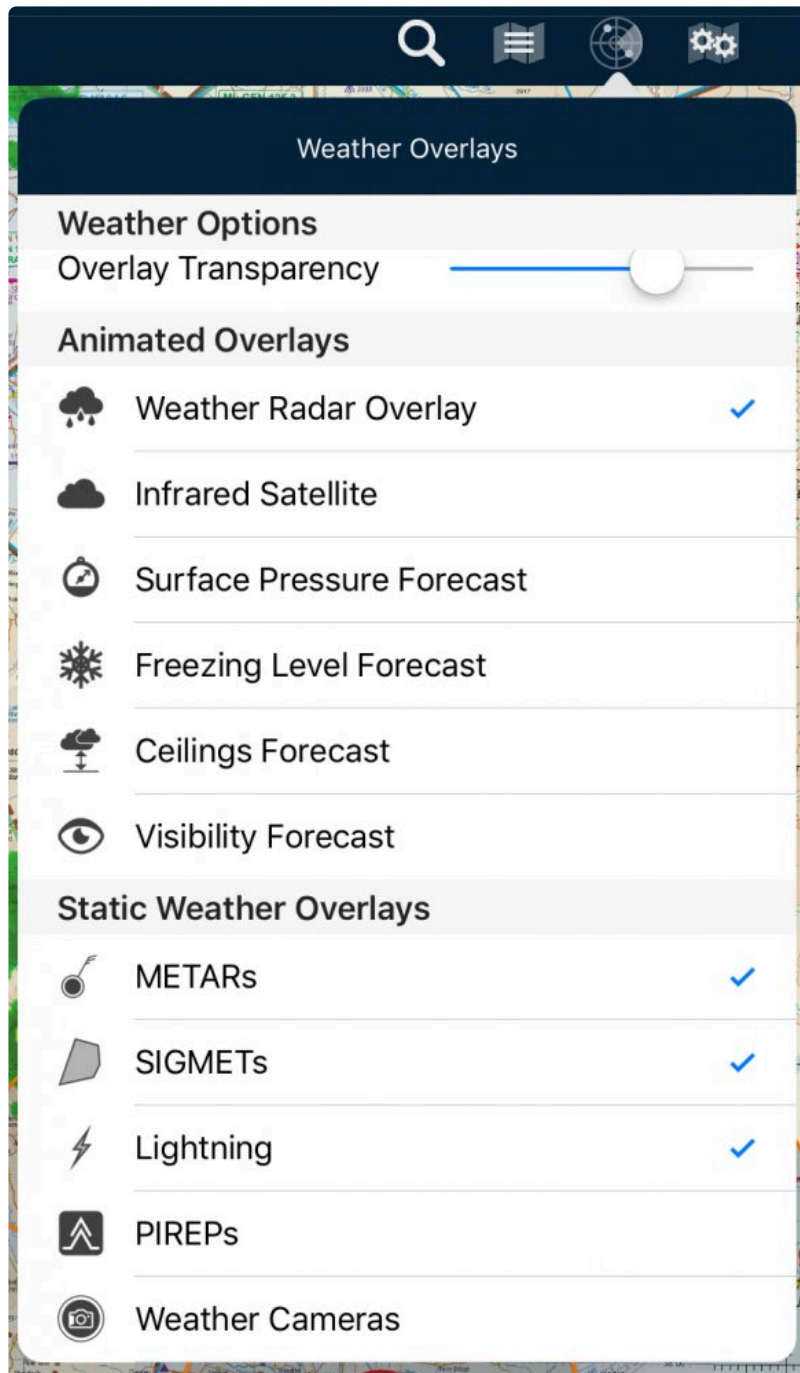
✳ Multiple static overlays can be selected, whereas only one animated overlay can be displayed at a time.

5.7.1. Animated weather overlays
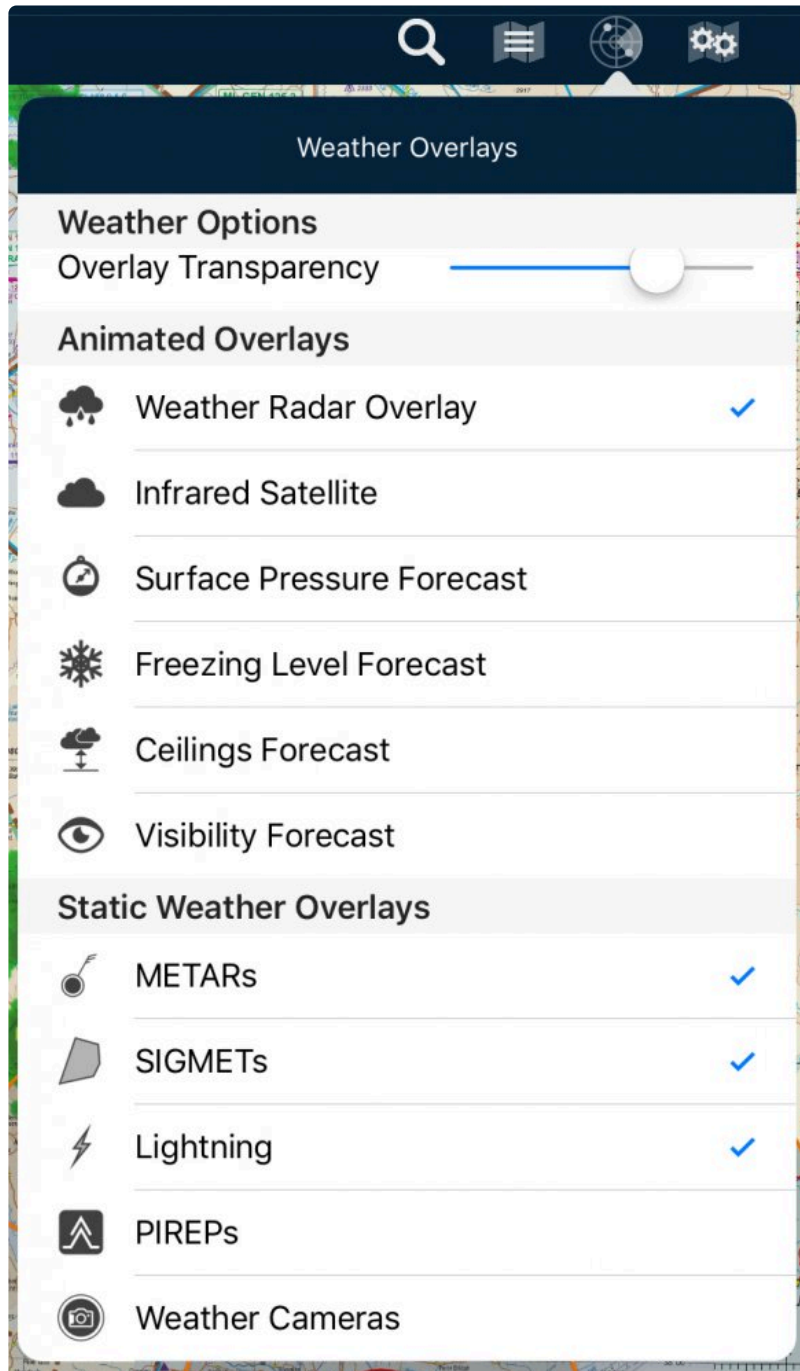
The Weather RADAR overlay displays a continuous loop of radar information for the last hour. The feed is refreshed every five minutes. Note: this may lag actual rain by up to approximately 5-10 minutes.

Animated overlays such as this can be played in a loop, paused or stepped forwards/backwards, using the icons on the radar controls.

These controls appear at the bottom of the map page.

The timestamp for the snapshot is displayed in the bottom-left hand corner.

You can also select from:

- Infrared Satellite (cloud)
- Surface Pressure Forecast
- Freezing Level Forecast
- Cloud Ceilings Forecast
- Visibility Forecast

✳ Only one animated overlay can be selected at a time.

Overlay Legends

To view a legend/key for the overlays, tap on the update time (in the bottom-left corner of the EnRoute tab). For example:
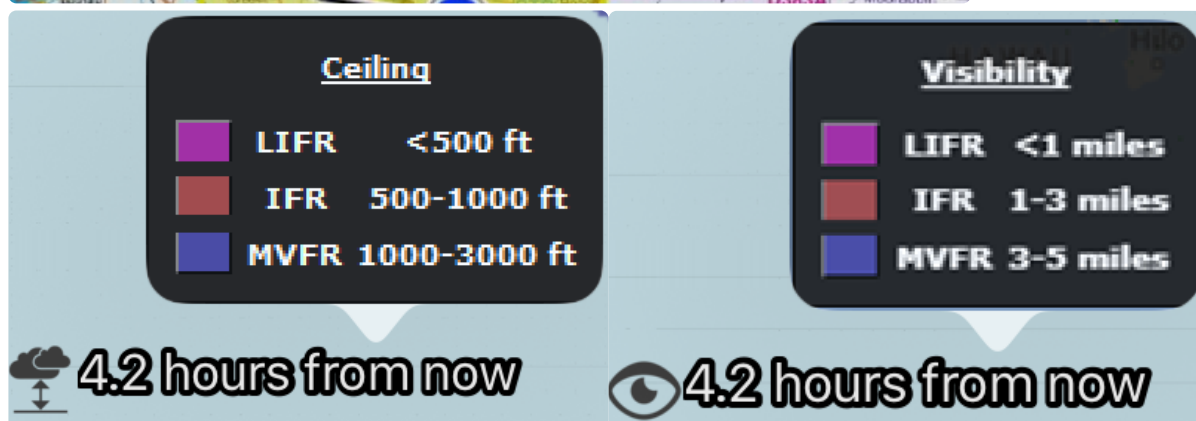
In an nutshell, the Visibility and Ceiling overlays:

[Clear = VFR]
Blue = marginal VFR
Red = IFR
Purple = Low IFR

5.7.2. Static weather overlays

AvPlan EFB can overlay METARs, SIGMETs, PIREPs, Weather Camera Locations and Lightning on the map.

Tap the Weather RADAR icon and select from the five options below the Static Weather Overlays subheading. When METARs are selected, forecasts will automatically refresh in the background when panning around a map.

NOTE: Ceilings Forecast and Visibility Forecast options are only available to Premium/Pro subscribers

Only one Animated Overlay can be active at one time, whereas multiple Static Weather Overlays can be selected at the same time. Once selected, the static overlays selection will be stored and displayed next time AvPlan EFB is launched.

METARs

METAR icons appear with wind indicators at METAR reporting locations. These are colour coded in the following format:

Green	VFR	Visibility >8km	Cloud >3000ft AGL
Blue	Marginal VFR	Visibility >5km	Cloud >1000ft AGL
Yellow	IFR	Visibility >1600m	Cloud >500ft AGL
Red	Low IFR	Visibility <1600m	Cloud <500ft AGL
Grey	No vis./cloud information		

The wind vector points toward the upwind side of the METAR station. Each full 'feather' on the end represents the maximum wind speed (including gusts) rounded to the nearest 10. E.g. 4 'feathers' ≈ 40 knots. Part 'feathers' will also display wind rounded to the nearest 5 knots.

METARs coded as SPECI have a red wind direction vector.

METAR icons also appear in the flight log for any places that also have a reporting station as a quick at a glance view of the visual conditions along your route.

METARs on map/flight plan/nearest items

Tap on a METAR icon to display its full text. See above. Tap on the METAR text row to view the 'plain English' translation of the raw text.

SIGMETs/AIRMETs

When selected, any current SIGMETs and/or AIRMETs will display on the map.

SIGMETs example

Tap a SIGMET Identifier label to view the SIGMET text. While it is selected, the boundaries of that particular SIGMET will change to red. This will help identify it when many SIGMETS are present in the same region.

The SIGMETs are colour-coded for easy identification:

- Severe Turbulence SIGMETs are orange.
- Severe Icing SIGMETs are displayed in blue.
- AIRMETs are coloured purple.

Lightning

When enabled, Lightning displays satellite-sensed lightning strikes worldwide within the last 10 minutes. The overlay updates every few seconds whilst the device is connected to data.
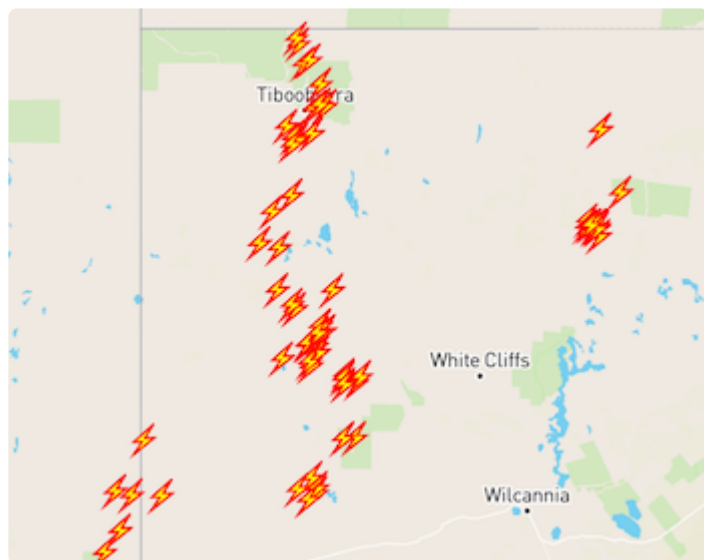
Global Lightning overlay example

A label in the bottom-left corner of the map displays the age of the last update your app was able to retrieve from the server.
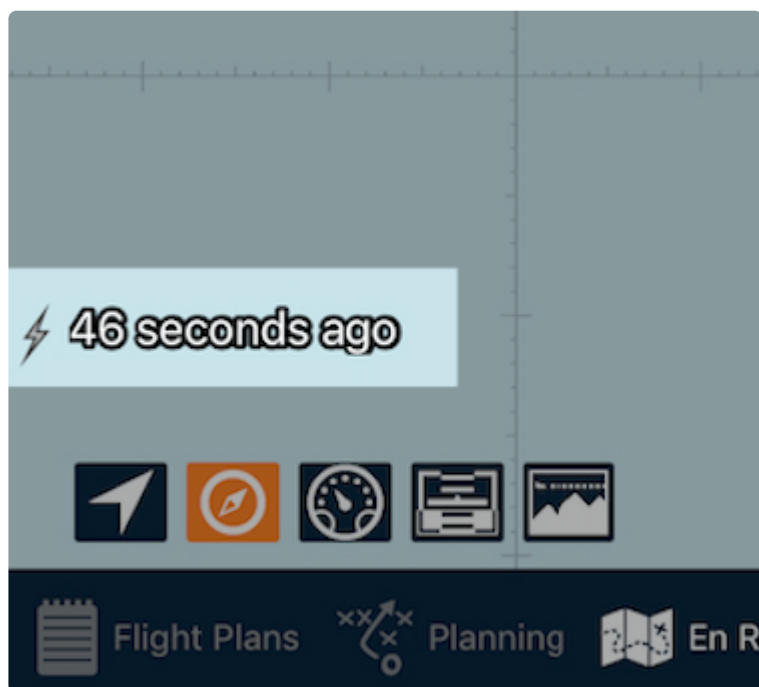
Pilot Weather Reports

For more information about PIREPS, click here.

Weather Cameras

When enabled, camera icons will be visible on the map. Weather camera icons are coloured in the same method as METAR icons where the camera is co-located with a METAR station (see above).
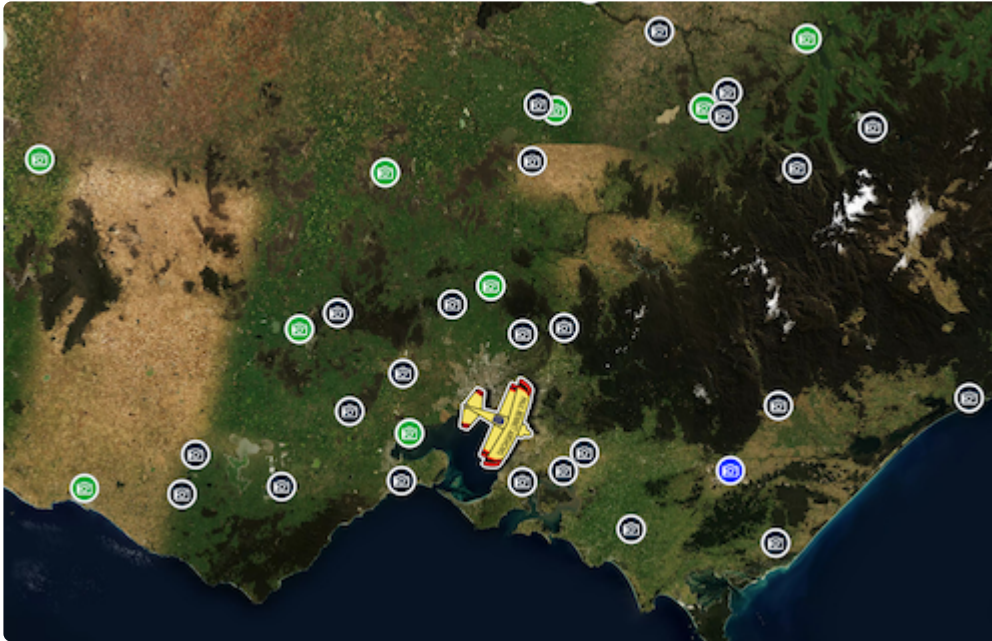
Weather camera locations

Tap on an icon to view the available images. There may be several cameras in different directions at a single site. Tap the direction options at the top of the image popup to switch between different views.

Weather camera popup

Tap the *Details* button to bring up the Waypoint Details menu for that location (if available).

The *METAR* button is used for quick access to the weather station information (if available).

5.7.2.1. Pilot weather reports

Enabling Pilot Weather Reports displays PIREPs (otherwise known as Pilot REPorts) on the map.

PIREPs are a valuable way of communicating real in-flight observations to other AvPlan EFB users.

A PIREP will be visible for two hours after submission. To read more about submitting a PIREP, refer to

.

When the Pilot Weather Reports option is turned on, PIREPs appear on the map in the position they were submitted.
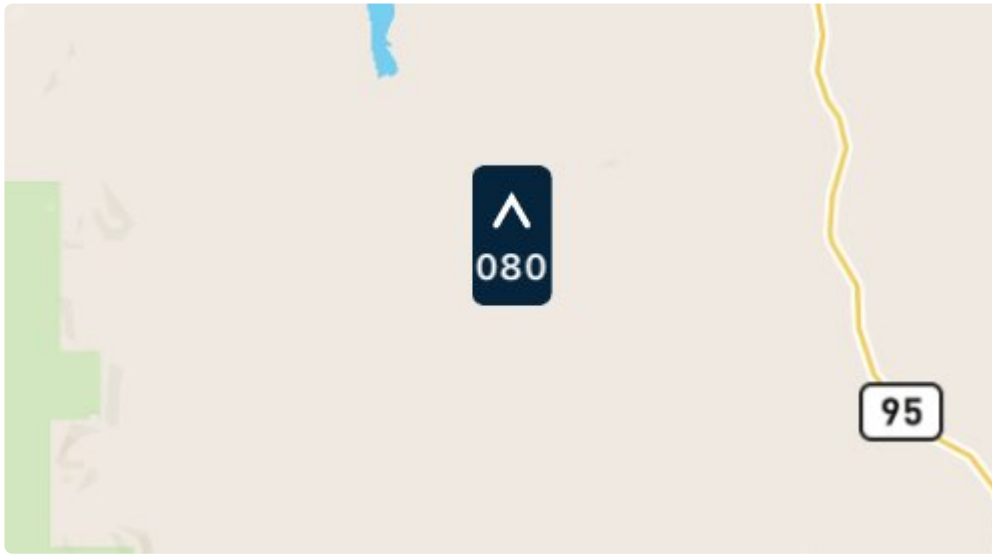
Double-tapping the icon will expand the PIREP to display its full details:
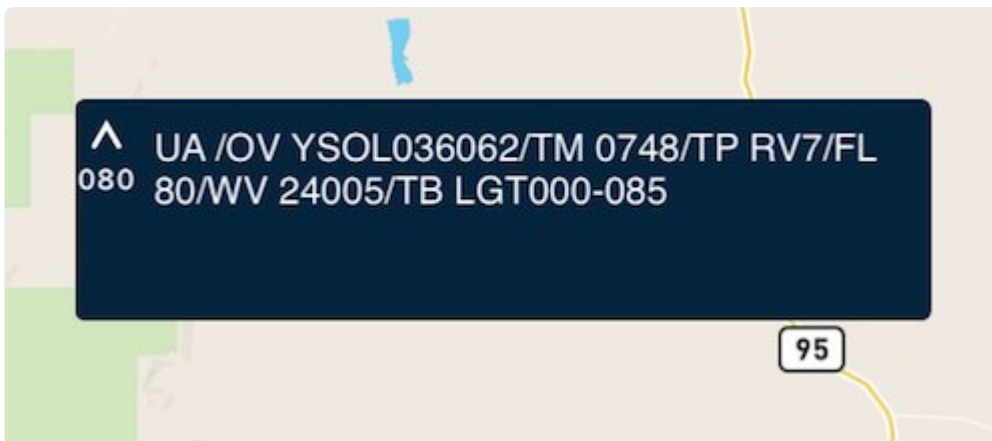
The following required information will be included:

UA or UUA	used to identify the PIREP as routine (UA) or urgent (UUA)
/OV	location of the PIREP
/TM	time the PIREP was received from the pilot
/FL	flight level or altitude above sea level at the time the PIREP is filed
/TP	aircraft type

optional info to be reported and displayed:

/SK	sky cover
/TA	temperature

/WV	wind velocity
/TB	turbulence
/IC	icing
/RM	remarks

Each PIREP will be accompanied by the following icon:

	Turbulence:
⊘	Nil turbulence
- - -	Smooth/light turbulence
∧	Light turbulence
⩓	Light to moderate turbulence
⋀	Moderate turbulence
⋀	Moderate to severe turbulence
⋀	Severe turbulence
⋀	Extreme turbulence

	Icing:
⊘	Nil icing
∪	Trace icing
∪	Trace to light icing

	Light icing
	Light to moderate icing
	Moderate icing
	Moderate to severe icing
	Severe icing

To return the PIREP to its compact view, simply double-tap it again.

> ✳ An active data connection (e.g. a 4G network or WiFi hotspot) is required to send or receive PIREPs.

For further information about how to read PIREPs, visit: www.m0a.com/how-to-read-pireps/

5.8. Map Settings: Map & Route Options & Map Overlays
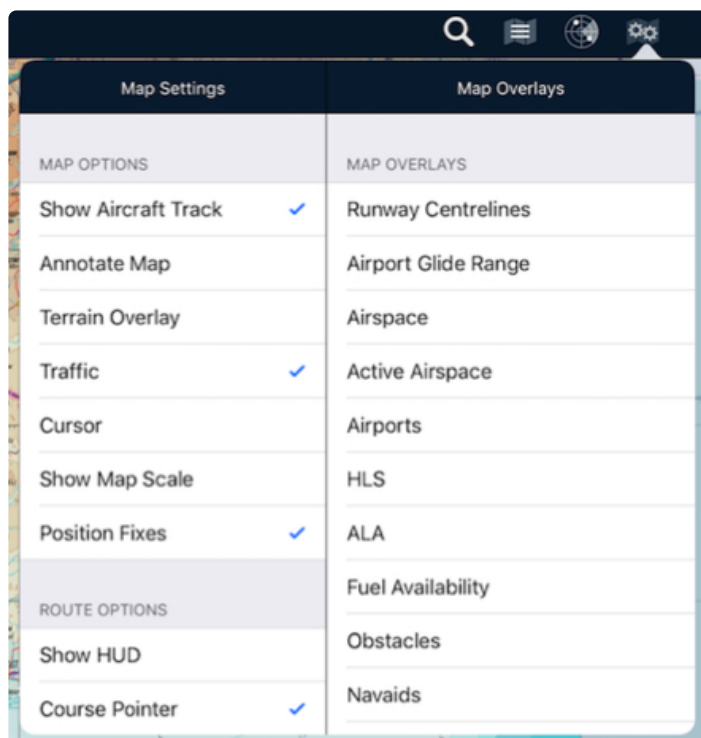
Map settings is divided into two columns:

- **Map Overlays** includes the following items to be overlaid on any map:
    - Runway Centreline extensions (5 Nautical Mile) for certified/registered airports set as takeoff or landing sites within the current plan. Note: If no plan is open, extensions will not display.
    - Airport Glide Range
    - Airspace boundaries
    - Active Airspace (highlights region red on the map when PRD is active)
    - *Airports* (Certified, registered or military airports)
        - Label displays Name, Height AMSL and CTAF Frequency
        - Icon displays a small-scale representation of runway layout/alignment within the blue circle
        - Airports without official surveyed runway lengths/alignment will be displayed with a diagonal dashed line
    - *Helicopter Landing Sites* (HLS)
    - *Authorised Landing Areas* (ALA)
        - Label displays Name and Height AMSL. CTAF Frequency is displayed if available.
    - *Fuel Availability*
    - *Obstacles*
    - *Navigation Aids*
    - User Waypoints
    - *VFR Waypoints*
    - *IFR Waypoints*
    - IFR Routes – High and Low
    - Flight Information Area (FIA) Boundaries
    - Area Briefing (ARFOR) Boundaries

Items in the above list that are in italics are displayed on the map, making use of the 'decluttering' feature. Only a certain amount of icons can be visible when zoomed a long way out. As you zoom in, more and more items will be displayed on the map. Labels rotate with the screen orientation, so they are always the correct way up.

- **Map Options** includes:
    - Show Aircraft Track toggles the visibility of the aircraft track log.
    - Annotate Map toggles the ability to add your own annotations to any map
    - Terrain Overlay option enables or disables the terrain warning map overlay.
    - Traffic traffic icons plotted on the map. There may be two sources for this feature: AvPlan Live, or an External ADS-B receiver device is present and connected.
    - Cursor adds a dotted crosshair over the map. The Lat/Long at the centre of the crosshair is displayed in real-time at the bottom of the screen. Tapping the centre of the crosshairs brings up some very quick User Waypoint options.
    - Show Map Scale toggles the visibility of the map scale view at the top left of the map.
    - Position Fixes menu item toggles the visibility of user fixes on the map.
- **Route Options** includes:
    - Show HUD overlays live information about the current flight plan leg, including current speed/course and ETA over the map among many other options.

- ◦ Course Pointer adds an animated course indicator to the aircraft, displaying anticipated position in 2, 5 and 10 minutes' time (assuming groundspeed and track were to remain unchanged).
- ◦ Distance Rings toggles visibility of 3, 10 and 25 nautical mile rings around your current aircraft position.
- ◦ Rocket Boxes adds a brightly coloured box at the beginning of each leg containing the desired track and distance to the next waypoint.
- ◦ Route Annotations toggles the visibility of Top of Climb (TOC), Top of Descent (TOD), Critical Point (CP) and Point of no Return (PNR) annotations on the flight plan route. These only become visible after a cruise height has been set (and fuel has been loaded – in the case of PNR) in the flight plan.
- ◦ Route Markers. Select none, 10 minute, 6 minute or 10 Nautical Mile markers to be shown along planned track.
- ◦ Hide Flight Plan option toggles the visibility of the route on the map. Only the waypoints remain displayed – useful when reviewing ground track.

- **Additional Overlays**
    - ◦ As well as the supplied overlays above, you can optionally import KML/KMZ overlays of your own design. These can be created in tools like Google Earth – for example: highlight the fenceline of a property for fence inspections.

        To import them, either open them from an email or AirDrop them to your device. Select 'Open in AvPlan EFB. They will automatically sync to your other device(s).

        Any imported KML/KMZ overlays will appear under the 'Additional Overlays' subheading. Place a tick next to the layer(s) you wish to display.

        To delete an imported overlay, swipe the row from right-to-left, which will reveal a Delete button.

5.8.1. Runway centrelines

At designated landing or takeoff points within your flight plan, visible centreline extensions can be added to all certified/registered airports on the map. Extensions will also be added to airports designated as a direct-to destination.
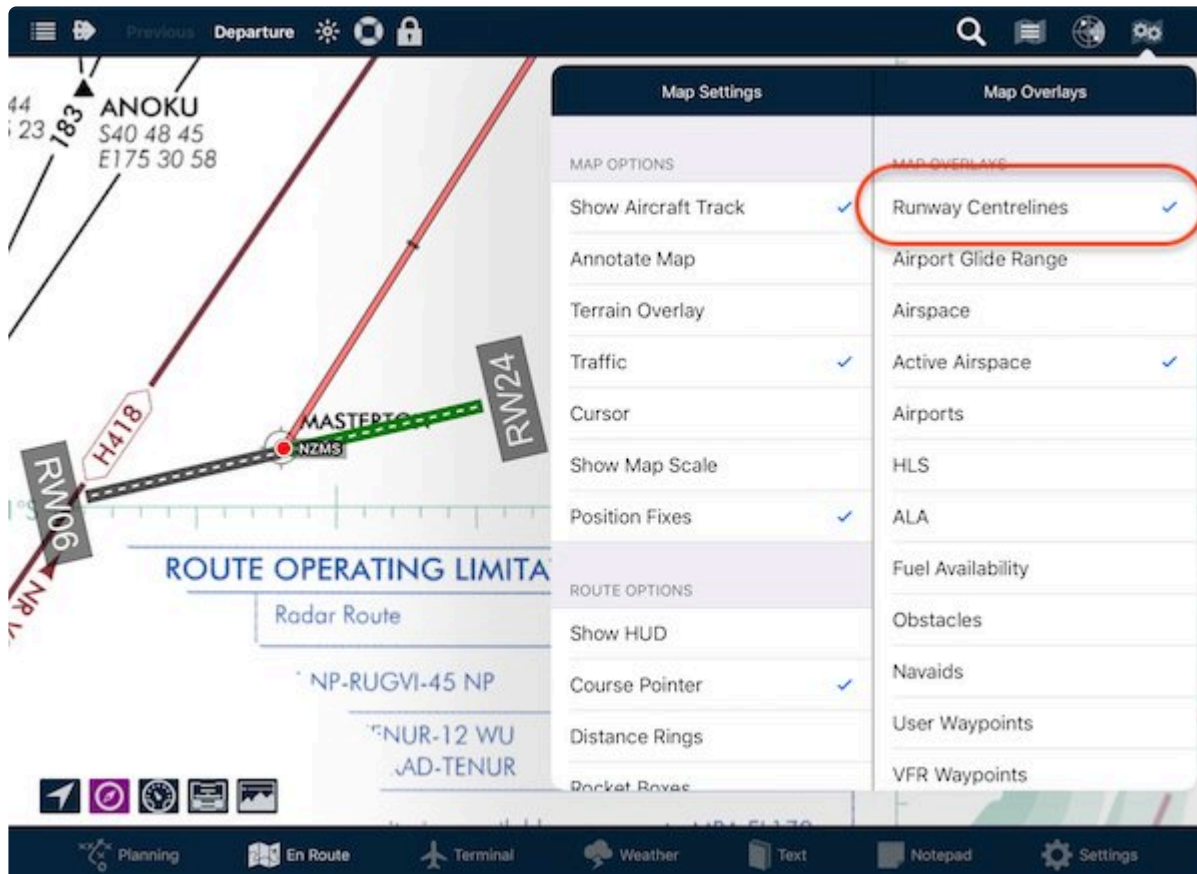
Runway centreline extensions

Each extension projects out 5 Nautical Miles from the runway threshold.

Where there is also a METAR station at that airport, the most into wind runway will be highlighted in green (see RW24, above). If the wind favours two runways equally, both will be highlighted.

> ❗ Caution: The most into wind runway may **not** be the actual duty runway. There may be operational reasons why the highlighted runway may not be in use (NOTAM'd runway un-servicibility, tower requirements, etc).

Extensions may not display for one or more of the following reasons:

- If no flight plan is currently open
- If an airport in your flight plan is being used as a turning point only
- If the airport does not have formally surveyed runway ends (usually grass/gravel runways) or there are no details present in the current navdata database

5.8.2. Airport Glide Range & Glide Planning

Selecting the *Airport Glide Range* overlay displays a theoretical representation of your aircraft's glide envelope (using the glide data provided within the aircraft model). It has two different functions, depending on if you are *planning* or *flying*.

Aircraft glide envelope

This green dynamic shape takes into consideration aircraft glide ratio, wind and terrain to derive and display an area that your aircraft could theoretically reach in at a manoeuvring height of 1500 feet AGL – if placed into a glide at this very moment.

From the current location, the current Altitude Above Ground Level (AGL), the winds for the given location, the altitude and the glide performance characteristics of the aircraft – we simulate the glide performance of the aircraft in a 360-degree radial around the aircraft to produce the glide envelope. The glide range for a given radial is from the location/altitude of the aircraft to a point along the radial where the aircraft reaches 1500 ft. AGL or comes to with-in 500 ft. of terrain (a hill, mountain or obstacle) between the aircraft and the airfield.
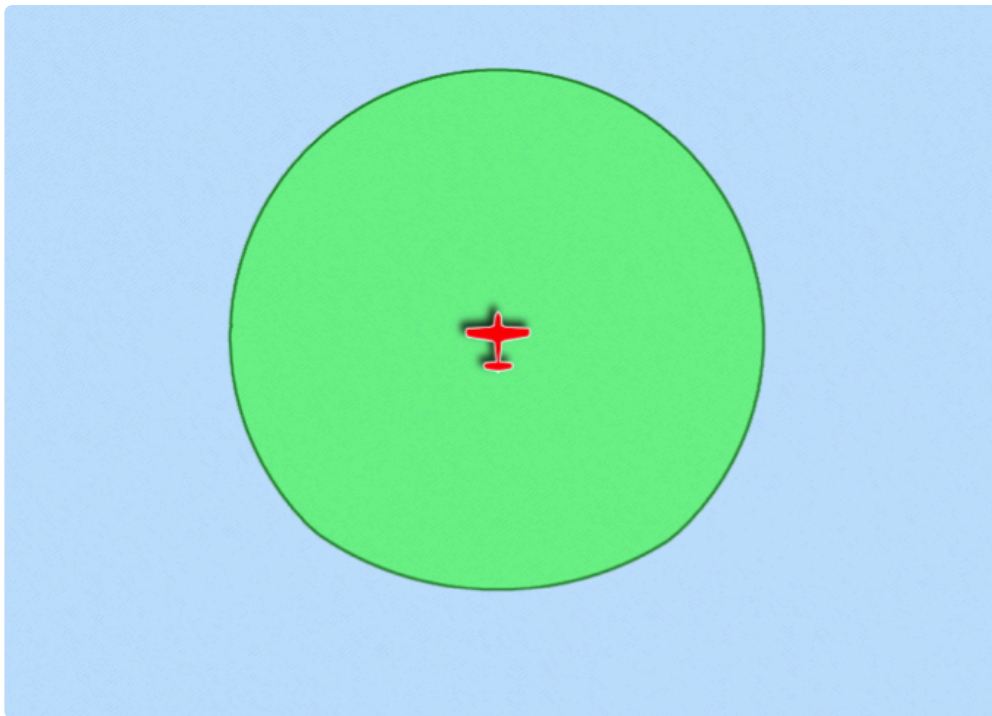
Glide envelope - nil wind/nil terrain example

This shape will change as you fly around and over various types terrain. In zero wind, with no terrain undulations (such as a large body of water), the glide envelope will appear to be near circular. If however, you are over land and during the glide the aircraft would not clear terrain by a minimum of five hundred feet AGL the envelope will be reduced in size and shape accordingly.
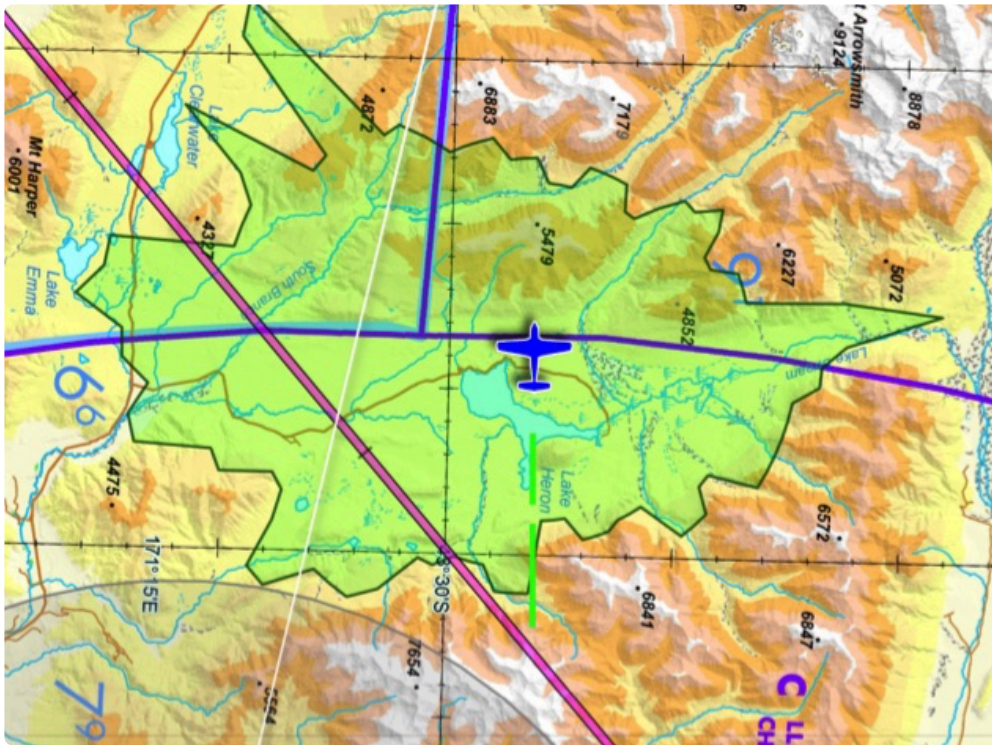
Glide envelope - low altitude, high terrain example

The example above shows an aircraft flying at a low level over mountainous terrain and the associated aircraft glide envelope. Note the edges of the glide envelope follow the contours of the surrounding terrain (i.e. the point at which the aircraft would come to with-in 500 ft. of the terrain).

The glide area behind the aircraft is derived via an algorithm that assumes a height loss of 500 feet during the turn to face that new direction.

Forecast wind effects are taken in to account by the simulation. Strong enough winds will cause the envelope to be displaced (i.e. the aircraft will no longer be in the centre of the envelope), owing to the degraded glide distance over ground with a headwind versus a tailwind (or part thereof).
Note that this is an aid to situational awareness only – it does not take into account aircraft configuration, localised wind phenomena, or changes during the glide.

Airport glide envelope & ASETPA planning (PRO feature)

When the Airport Glide Range overlay is selected, grey areas surrounding airports appear along your planned route. The shapes of these will be affected by the same parameters (wind, terrain, etc) as the Aircraft Glide Envelope, however each of the theoretical simulations are completed using the Lat/Long of the airport, and a desired manoeuvring height of 1500 feet above airport elevation. These could be considered catchment areas for each airport at your planned cruise altitude. Only airports that meet the Shortest Runway Length criteria in the selected aircraft profile will be displayed.

Essentially, when at planned cruise altitude, if your aircraft is flying within a grey envelope (or if the green and grey envelopes merge over an airport), a safe glide to that place is theoretically possible.
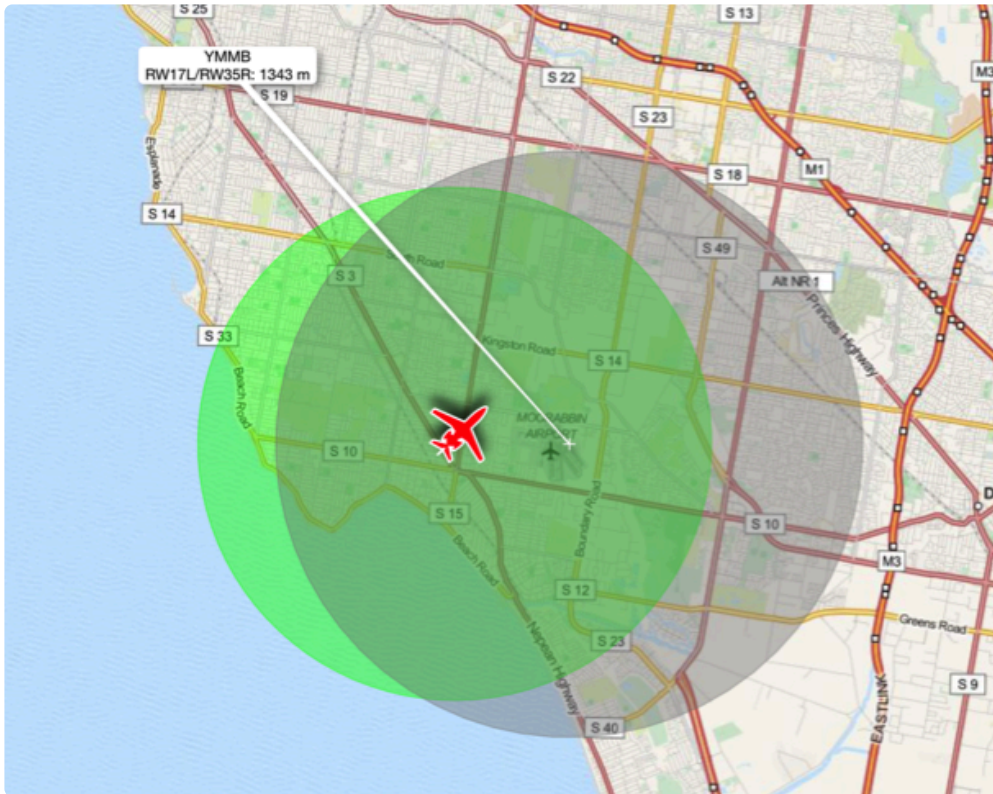
Airfield and aircraft glide envelope overlap

Note that in the above example, the glide envelope is almost circular due to little wind or terrain interference.

Maximizing glide during flight planning

Displaying the glide envelopes within range or almost within range of a proposed flight path allows the pilot to maximize in-flight safety from a glide perspective. In the following screen capture the proposed flight plan from YMMB to YSBK has been modified to maximize the period of flight within glide range of an airfield.

Maximizing glide during flight planning

Areas with many suitable airports within a relatively small area will have merging glide envelopes. Theoretically, when the aircraft position is within a grey area, a safe glide to around 1500' above a suitable airport is possible (see below).
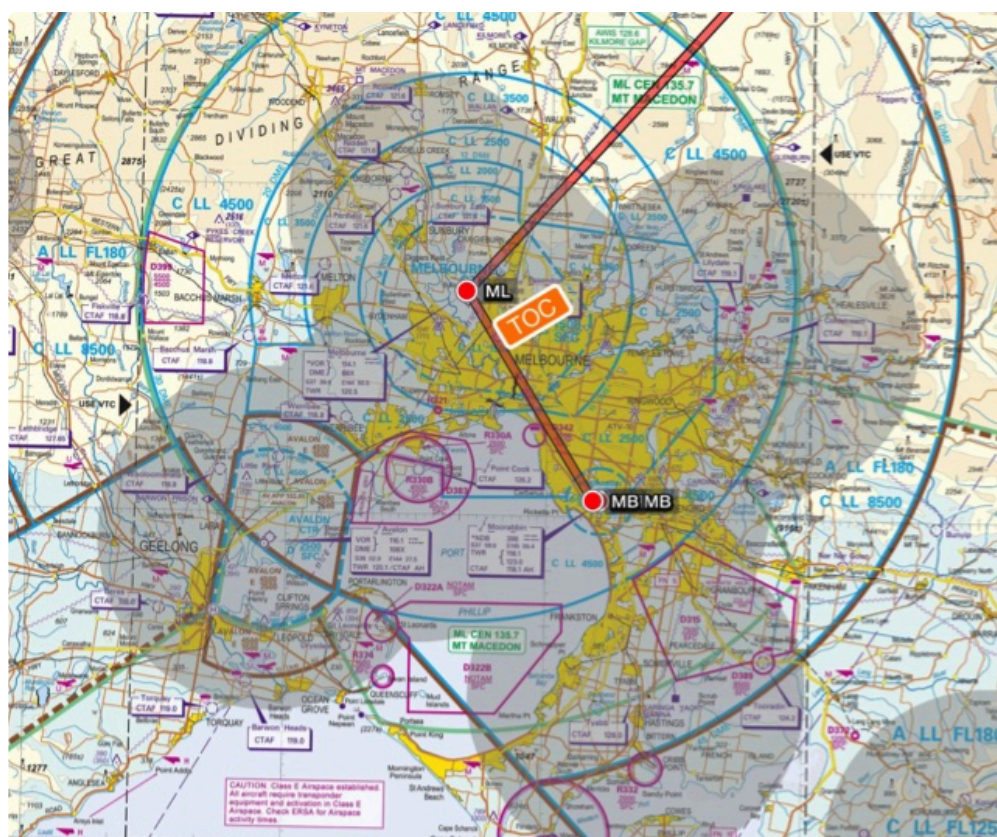
Merged airport glide envelope example

Dynamically calculating closest airfield in flight

While in flight, AvPlan will calculate and designate the most appropriate and/or the closest airfield for the parameters set within the aircraft profile. An algorithm constantly prioritizes, selects and labels these using the following criteria (in order of preference):

1. **Airfields within current glide range and with suitable runways**. Suitable runway in this sense means that the one or more runways are long enough for the aircraft to land. Given that airfields may be equidistant from the aircraft's location or that the runway lengths for one may be longer than the other(s), a weighted scoring mechanism based on distance and runway length is used to determine the best airfield based on this algorithm. This selection is denoted by black text within the airport label.

2. **Airfields within the current glide range with maximum runway length that is less than the minimum runway length requirement** for the aircraft. In this instance the algorithm selects the best airfield based on the shortest glide distance. This selection is denoted by violet text within the airport label.

3. **Airfield within the current glide range with unknown runway length**. In this instance the algorithm selects the airfield based on the shortest glide distance. This selection is denoted by blue text within the airport label.

4. **Airfield outside the current glide range with unknown runway length**. In this instance the algorithm selects the airfield with the shortest glide distance. This selection is denoted by red text within the airport label.
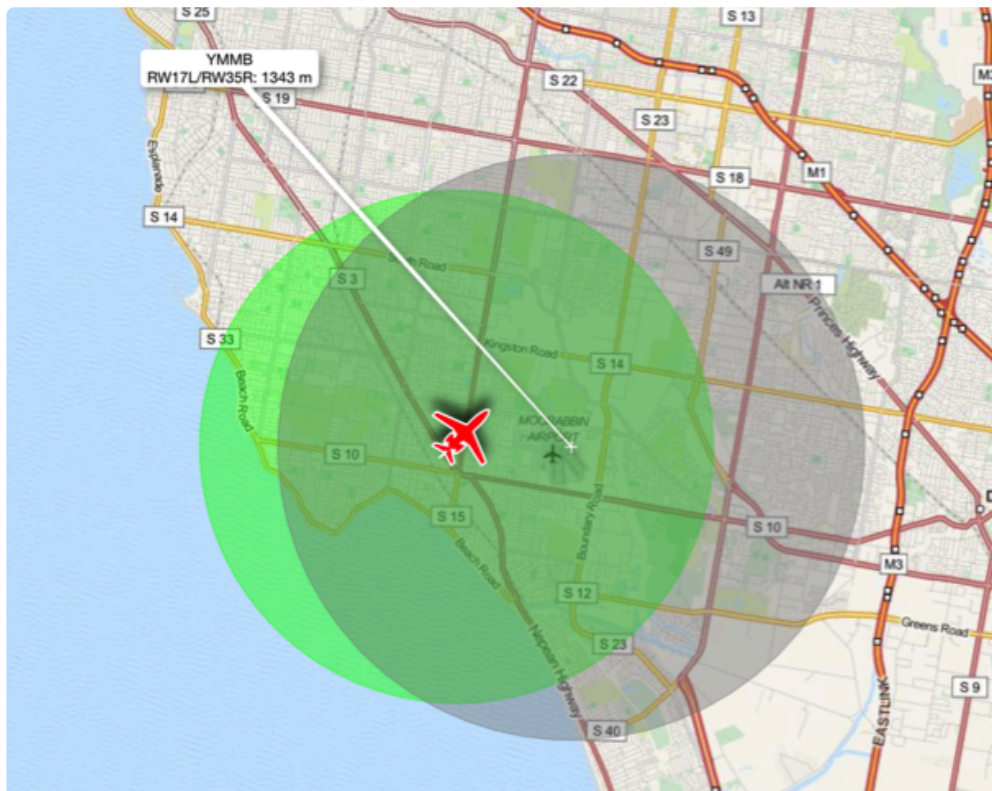
5.8.3. Active airspace

The status of Prohibited/Restricted/Danger airspace can be displayed on top of all maps. Place a tick next to Active Airspace to make them visible.

Active Airspace colour key:

Red	Airspace is active now, or the NOTAM is too convoluted for the system to extract status reliably. AvPlan errs on the side of caution and a *'Check'* status is applied.
Yellow	Airspace will become active in the future (at which time it will turn red).
Grey	AvPlan EFB has been unable to obtain an update in order to determine active or de-active status. Make sure your 4G data is on, or connect to a WiFi hot spot or check your NAIPS login status in order to download updates.

- Double-tap the map to display all airspace information above that point.
- The lower and upper limits of each airspace is displayed in the right-hand column of a list item.
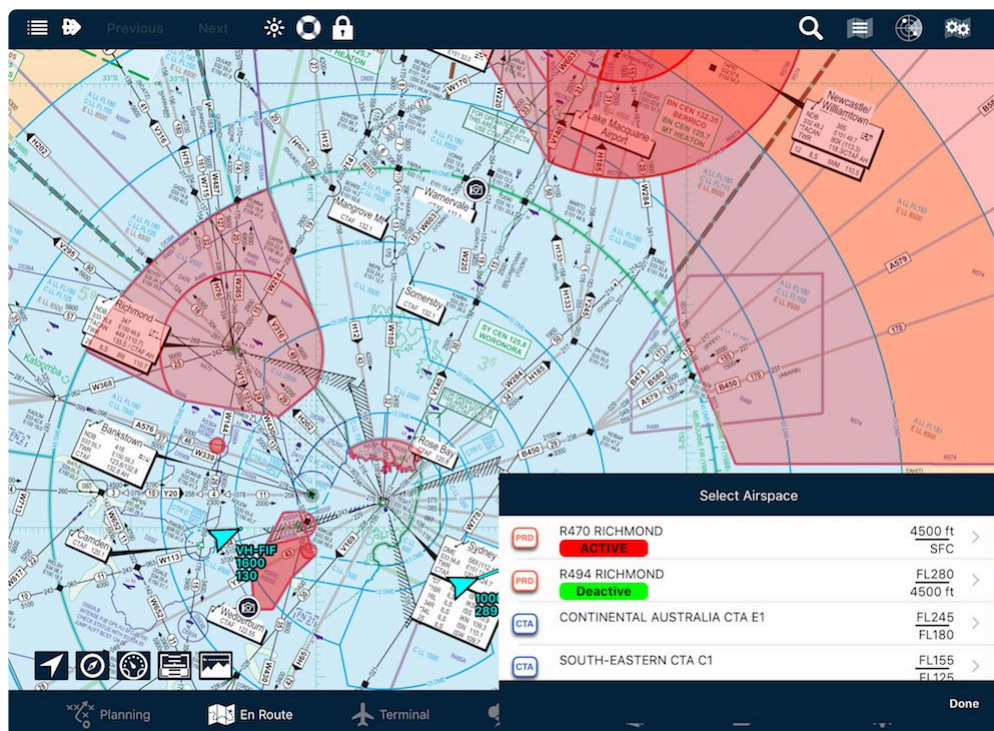
Select airspace

- All controlled airspace will be listed.
- The QNH Forecast region will be listed. Tap the > symbol in that line to request an updated QNH for that region. This procedure works even if that region does not appear in your flight plan – or even if you do not have a flight plan open.
- The FIA and frequency can be found here.
- Any Prohibited, Restricted or Danger (PRD) areas.
- Tap an entry in this list to access information (where available – e.g. QNH) and also highlight the boundaries on the map for ten seconds.

NOTAM Airspace

From time-to-time, special airspace areas will appear on the map. These are also known as Temporary Restricted Airspace areas (TRA)s.

In Australia, one example is the Low Jet Route (LJR). These are routes flown by RAAF fast jet aircraft below 5000' AGL. AvPlan's systems will decipher the NOTAM and display the route on the map.
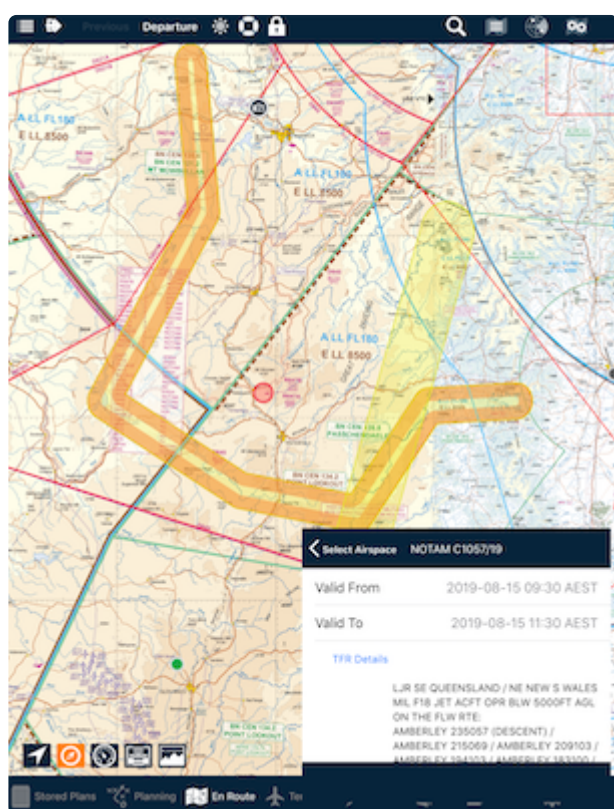
Upcoming Low Jet Route (LJR) example	*Active Low Jet Route example*
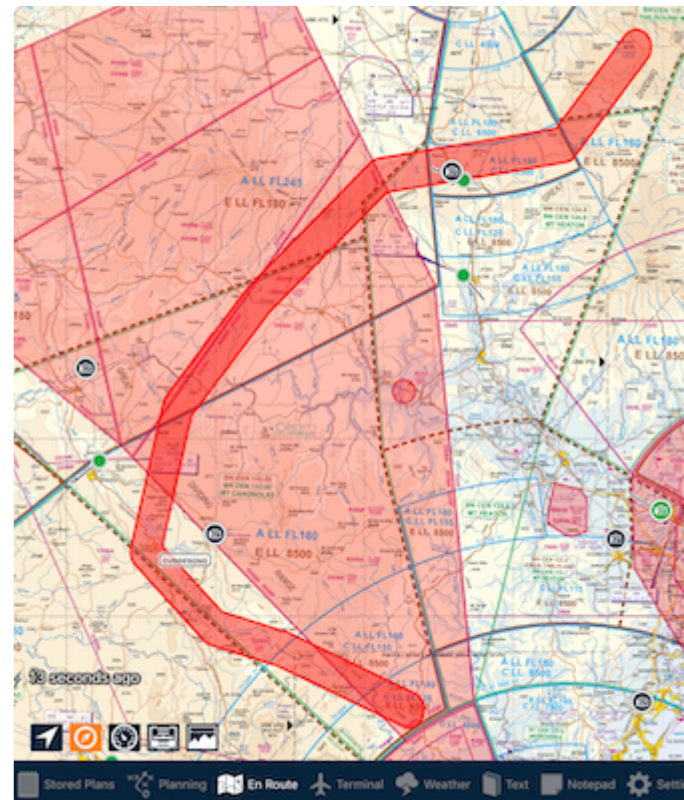
Upcoming NOTAM airspace example

5.8.4. Fuel availability overlay

When enabled, known fuel prices are displayed on the map.

- The Fuel type (AVGAS, MOGAS or Jet-A) displayed on the map is automatically selected depending on the default fuel assigned to current aircraft profile within the flight plan.

- When no flight plan is currently open, the default fuel type from the last used aircraft profile is displayed.

Each entry on the map is colour-coded (green, orange or red) depending on the part of the price spectrum they fall in to:

Green	shows fuel available in the cheaper end of the spectrum
Yellow	represents prices in the middle band
Orange	shows prices in the higher end of the spectrum

The coloured price bands are derived from the prices for the visible icons and are representative of the difference between the highest and the lowest fuel prices displayed. The icons are colour coded based on which of the calculated low, medium and high bands the associated fuel price falls into. Note that icon colours may change when you zoom and pan the map. This is because the price bands are recalculated to reflect the fuel prices on display.

5.8.5. Terrain and obstacle warnings

AvPlan EFB has a built-in terrain and obstacle warning system. When enabled, terrain warning banners will appear over the En Route, Terminal, Weather or Text panes in the App.

The terrain warnings are based on those defined in the FAA TAWS-B standard. This standard defines the amount of clearance with terrain at different phases of flight.

- Tap on the red bar to dismiss the warning. Once the conflict has been cleared, a new terrain conflict will show the warning again.
  When Audible warnings are enabled, the App will also sound a verbal annunciation, including a '500' warning when passing through 500 feet AGL on descent.

Terrain warnings can also be set as a verbal annunciation.

Obstacle warnings

When Terrain Warnings are active, Obstacle warnings will also appear on all Mega maps.

During planning, any possible obstacles within 13 nautical miles either side of track and less than 1500 feet of your planned altitude will appear. See below for an example of planning mode.

Obstacle display

Colour codes:

Red	Within 500 feet of your planned altitude
Yellow	Within 1500 feet of your planned altitude

Hidden	More than 1500 feet below your planned altitude

When in Fly Mode, obstacle warnings appear in reference to your current altitude; not planned altitude.

5.8.6. Terrain overlay

A terrain overlay can be added to all mega maps.
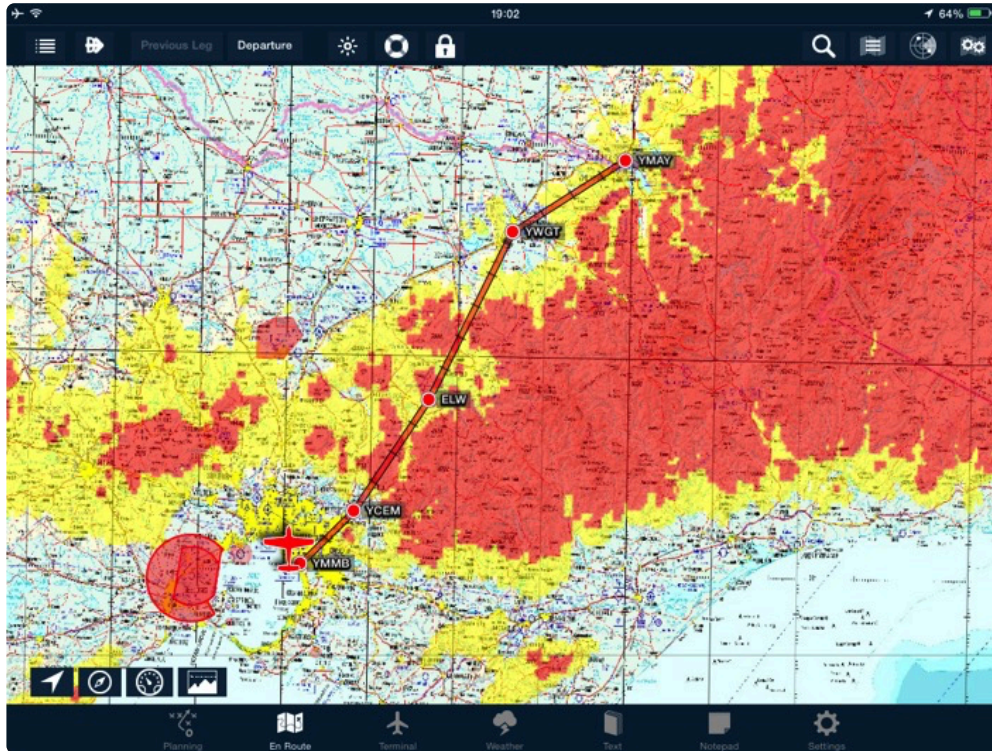
Terrain overlay

The overlay operates in two distinct modes:

Plan Mode

When the flight plan is in Plan mode, the terrain overlay colour codes the terrain based on the highest cruise altitude in your flight plan.

Fly Mode

When in Fly mode, the terrain overlay colour codes the terrain based on the current altitude. In flight, the terrain overlay will update every 150 foot vertical change during climb or descent.

Colour Codes

Yellow	Terrain that is 1500 feet below to 500 feet below you
Red	Terrain that extends from 500 feet below to above you

5.8.7. Traffic
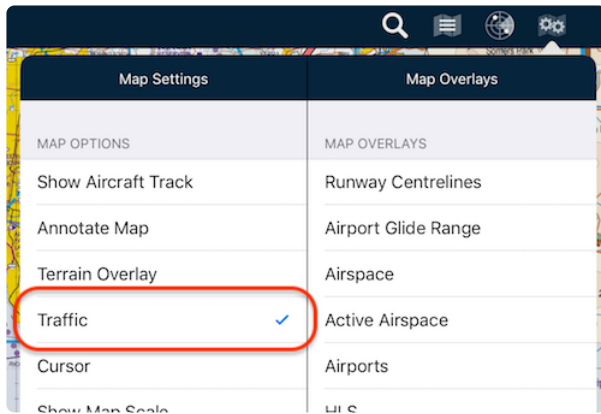
When traffic is switched on, AvPlan EFB displays traffic symbols on any selected map.
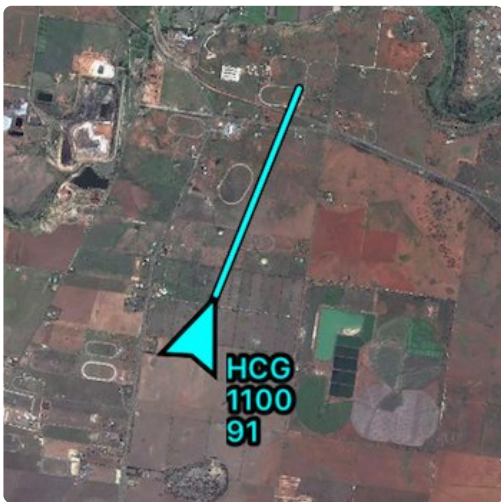
Traffic example

Traffic targets are accompanied with an information block, with three possible rows of information:

1. Callsign
2. GPS height in feet, with a climb/descent arrow symbol

Aircraft on climb

Aircraft on descent

3. Groundspeed in knots

If no callsign is available, only two rows will be displayed:

1. GPS height in feet, with a climb/descent arrow symbol
2. Groundspeed in knots

No callsign example

Extending out the front of each target, is the one minute future position prediction line. Assuming the aircraft does not change heading or speed, the aircraft will be at the end of the line in one minute. Aircraft travelling at high speeds (e.g. jet or turboprop traffic) will have longer lines than those of slower GA traffic.

Traffic examples with differing groundspeed

Double-tap the traffic target to see a trail of its recent history. This will be in the form of a cyan line trailing from the aircraft. If the user has also elected to share their flight plan (see AvPlan Live Tracking in the Settings tab), you'll also see the remainder of the plan ahead of the aircraft in purple.

Traffic sources

The traffic displayed on the EnRoute map can be from more than one source, and is blended into the one view. Where a traffic target is visible by two different traffic sources, the source with the highest refresh rate (generally ADS-B from a connected device) will take precedence, the other will be hidden from view.

External Devices traffic

When AvPlan EFB is connected to an ADS-B receiver, traffic as far as the receiver can observe will be displayed. Traffic sourced from the receiver will be coloured green to allow quick identification of a traffic target's source. No height or distance limitations are placed on traffic delivered by an attached device.

Traffic received via this method is updated once every second.
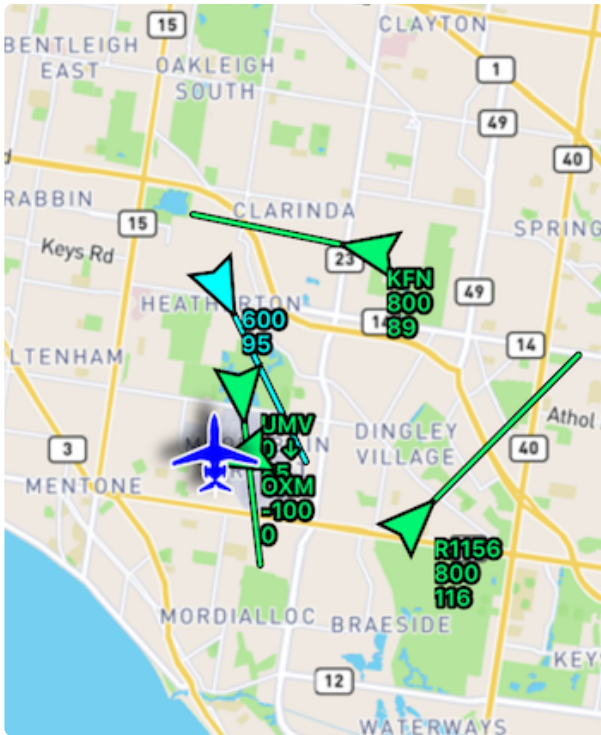
To read more about the kinds of compatible devices that AvPlan EFB can connect to, visit our AvPlan Omni page.

AvPlan Live traffic

AvPlan Live traffic requires a data (e.g. 4G) connection, and consists of other connected airborne AvPlan EFB users, a network of ADS-B ground receivers and FLARM ground receivers.

Due to data network limitations, the traffic package received via this method is updated every five seconds, and is limited to a radius of 180 nautical miles and ±15,000 feet from your devices' current GPS position.

Requirements to see AvPlan Live traffic:

- *AvPlan Live Tracking* must be turned on
- Your device must be connected to a data network; either via WiFi or 4G
- Your device must have a valid GPS position, so it can tell the AvPlan Live server what traffic package to send

> ! Note that this traffic is a great start for situational awareness, however it does **not** include **all** traffic. Always be on the lookout/maintaining a listening watch for traffic.

5.8.8. HUD

Heads Up Display (HUD)

A set of live data can be overlaid on top of all maps (The HUD). This data can be individualised to show what you'd like to see while in flight. The HUD is able to show the following details:

HUD Item	Details
TO	Waypoint at the end of the Currently selected leg of the flight plan. If the Waypoint is an Aid, then the type and frequency of the Aid are displayed. When the HUD is active this item is always present and cannot be changed
AGL	Current GPS Altitude Above Ground Level, ft
AIRSPACE	Current Airspace (CTR, CTA or PRD)
NEXT AIRSPACE	Next Airspace (CTR, CTA or PRD). See note below *re* track projection
ALT	Current GPS Altitude above Ground Level, ft
BARO ALT	Barometric Altitude, ft. (Taken from the device)
BRG	Bearing to the next waypoint from the current location, °M
DIST (DEST)	Distance remaining from the current position to destination, nm
DIST (NEXT)	Distance remaining from the current position to next waypoint, nm
DTK	Desired Track – The *Planned* track from last waypoint to the next waypoint of the current leg, °M
ETA (NEXT)	ETA at the next waypoint (UTC)
ETA (DEST)	ETA at the Destination (UTC)
FIA	Current area frequency
FIA NEXT	Next area frequency. See note below *re* track projection
GPS HORIZ ERR	Estimated horizontal error calculated by the GPS (including external GPS devices)
GS	Ground speed, Kt
LATITUDE	Latitude
LONGITUDE	Longitude
LSALT	Lowest Safe Altitude for current leg, or Grid LSALT if outside envelope used for route LSALT calculation, ft [If on a direct-To leg that is not in the plan and you calculate an LSALT, it will appear here]

QNH	QNH based on nearest available METAR at the current location, with METAR Location shown, hPa
QNH DEST	QNH based on the nearest available METAR at the the destination Location, hPa
ROD (DEST)	Rate of Descent required from the current position to arrive *at ground level* at the Destination
SFC WIND	Surface wind at the current position based on the the nearest available METAR, with METAR Location shown
SFC WIND DEST	Surface wind at the Destination location based on nearest available METAR
TAS	*Planned* True Airspeed for the current leg, Kts
TIME (NEXT)	Minutes to next waypoint
TIMER	Stopwatch (tap to start/stop/reset)
TRK	Current track over the ground (aka Track Made Good), °M
XTE	Cross Track Error, nm

✳ NOTE: AIRSPACE NEXT and the FIA NEXT area frequency are the Airspace and FIA frequency that will be reached when heading in the current direction, not in reference to your flight plan. The FIA field flashes several times after it has changed.
When flying an active flight plan and the TO field is displaying the next waypoint, tapping within that field is a handy shortcut to the Terminal page for that place.

Personalising the HUD

To change a field, tap and hold until the cell border highlights, then release. A list of available options appears below. Tap the one you want to save it in that location in the HUD.
Note: Cells cannot be duplicated; only currently available options will be shown. To move cells that are already present to another position, tap and hold both until they highlight. When you then release your fingers, they will swap positions.

HUD text colour can be changed by going to *Settings > User Settings > Application Colours*.

5.8.9. Route annotations

Tap this option to enable flags along your route line on the map, giving you important information.

VFR Standard and PRO/Premium subscribers:		
TOC	Top of climb	Based on your planned cruise altitude, the rate of climb in your aircraft profile, and the forecast winds.
TOD	Top of Descent	Based on your planned cruise altitude, the rate of descent in your aircraft profile, and the forecast winds.

PRO/Premium subscribers only:		
PNR	Point of No Return	The point along your route, beyond which you won't have enough endurance to turn around and return to your departure airport
CP	Critical Point	Can also be thought of as an equal time point. The point, along your route where it's the same enroute time to continue on to your destination, as it is to return to your departure point. Takes into consideration aircraft performance and forecast winds.

> ✳ Each label will have the stage number in parentheses appended to it, e.g. PNR (2) – which would refer to the Point of No Return for the second stage.

Pro subscribers may also see multiple Critical Point calculations displayed (where they've been set up in aircraft profile). These will be labelled depending on what you've set them up to be within the aircraft profile. For example:

Example:		
EMERG	Critical Point 1	Critical point for general emergency operations: e.g. single engine at 14000ft
UP	Critical Point 2	Critical point for degraded TAS operations: depressurised at 10000ft

In order to see the two CPs displayed, ensure your aircraft profile has a *Reduced TAS* and *Reduced Fuel Flow* nominated. See Creating/editing an aircraft type for information about aircraft profile management.

5.9. Centre on aircraft

The centre on aircraft button switches between to different modes:

	Free mode	Map is stationery, own aircraft symbol moves on the screen
	Locked mode	Own aircraft symbol is fixed on the screen, map moves below it

When active, the own aircraft symbol will stay in the middle of the page (with the exception of Track Up mode, where the icon will appear in the lower third of the screen – to show more of what is ahead).

If you need to look away from that position, simply pan the map and the lock will unlock.

5.10. Map orientation

Tapping the Map Orientation button steps through the different orientation modes available:

	Free rotation	Use your pinch/zoom gesture but rotate the gesture to rotate the map
	North up	Locks the map with magnetic north at the top of the screen
	Planned track up	Keeps the current leg of your flight plan straight up and down the map
	Track up	Keeps the aircraft icon pointed to the top of the screen

5.11. Horizontal situation indicator

The HSI shows the current track offset of the current flight plan leg. The scale is +- 5 NM.

Tap the show/hide HSI button to show or hide it:

- To select a different inbound course, turn the HSI using your finger.
- To sync the HSI back to the current track, tap the top left hand (magenta) field.
- To change the HSI position, tap and hold until it increases in size slightly, then drag it to the new location and release your finger.
- To change the size of the HSI, use a pinch/zoom gesture.

5.12. Synthetic vision

> ! Synthetic Vision within AvPlan EFB is designed to be an enhancement to situational awareness. It is not a certified system and therefore should never be relied upon for instrument flying.

Synthetic Vision brings a whole new level of terrain awareness. Terrain, obstacles and runways ahead of you are depicted in 3D.

With the addition of an external AHRS (Altitude and Heading Reference System) device, pitch and roll are also then accurately depicted.

Synthetic Vision will still work without an AHRS, however no pitch or roll information will be depicted – only the straight-and-level view of the terrain ahead, based on your GPS position. You'll see the No attitude input warning displayed while operating in this mode.

Synthetic Vision can be shown and hidden at any time by tapping the following icon:

When turned on, the Synthetic Vision appears on the right half of the map page (one third if the flight plan is also visible).
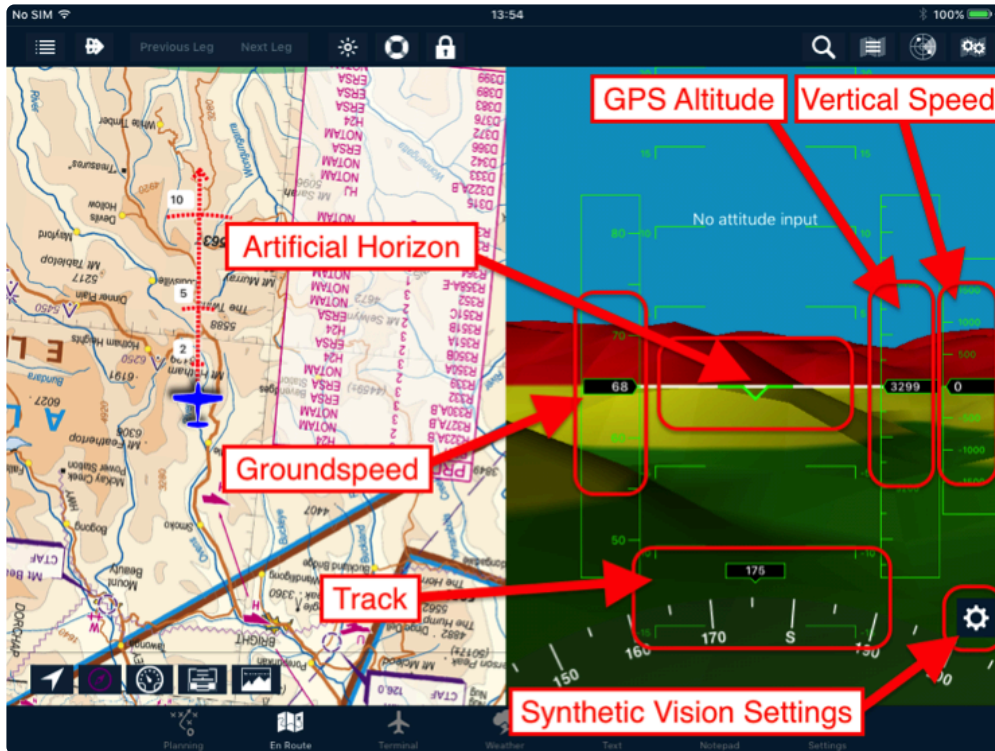
Terrain around you is shaded according to the relative height:

RED	At your current height or above.
YELLOW	500 feet below, up to your current height.
GREEN	More than 500 feet below your current height.
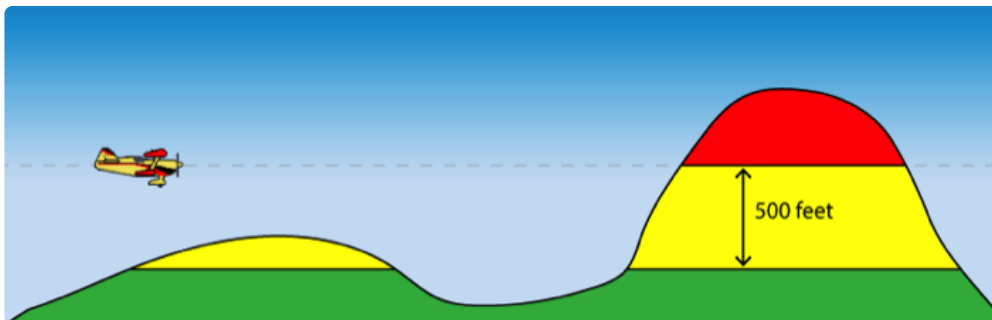
Charted obstacles and certified runways are also depicted to scale on the landscape:
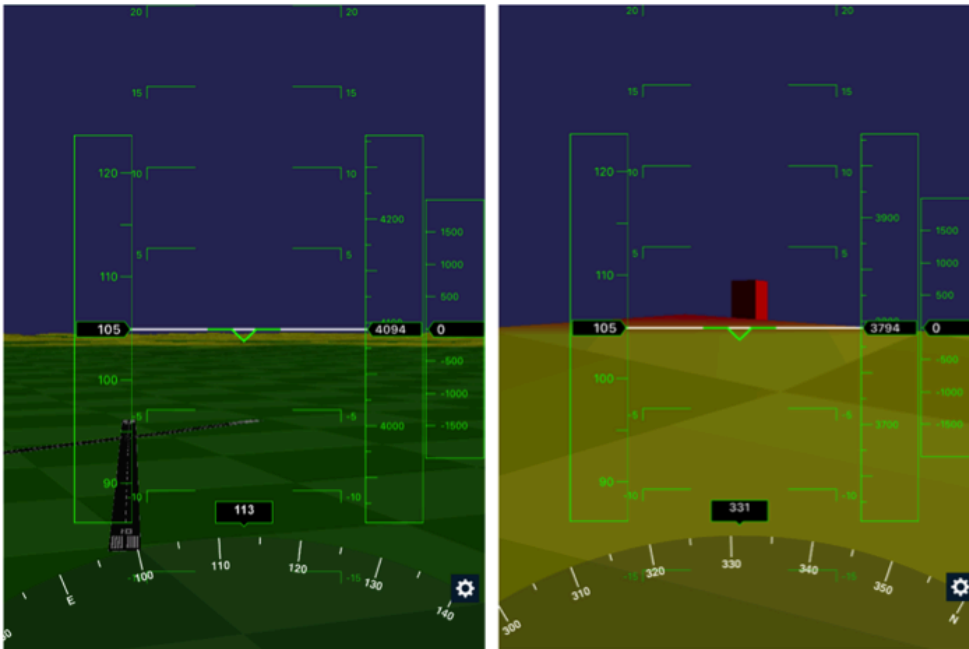
When straight and level, you can use the Settings button in the lower right-hand corner to zero any or all of the three axes. It's also a handy shortcut to download the relevant data.

> ✳ Early model iPads are only able to display the terrain. To display obstacles, runways, rivers/lakes/coastlines/etc, the minimum specs required are iPad Air or newer/iPad Mini 3 or newer.

5.13. Profile view

Tap the Profile View button to display a horizontal representation of terrain, obstacle and airspace. This view is an excellent tool to assist with planning vertical navigation and enhancing terrain or obstacle awareness during flight.

- Terrain less than 500 feet below planned altitude is displayed in red
- Terrain between 500 and 1500 feet below planned altitude is displayed in yellow
  Obstacles are also shown as red vertical lines (If *Terrain Warnings* is set to on – see *Settings*)

Airspace along your route is also depicted in the Flight Profile view. Controlled airspace appears as blue boxes, whereas PRD areas are depicted in red.

As with the Terrain overlay, the Flight Profile view operates in two distinct modes:

Plan Mode	Shows your entire flight. If it is a long flight that doesn't fit in one window, the rest of the flight can be viewed by scrolling from right-to-left.
Fly Mode	Shows a live representation of the terrain in front of the aircraft, based on your current altitude and track, looking 30 NM ahead.

5.14. Nearest items and Waypoint Details
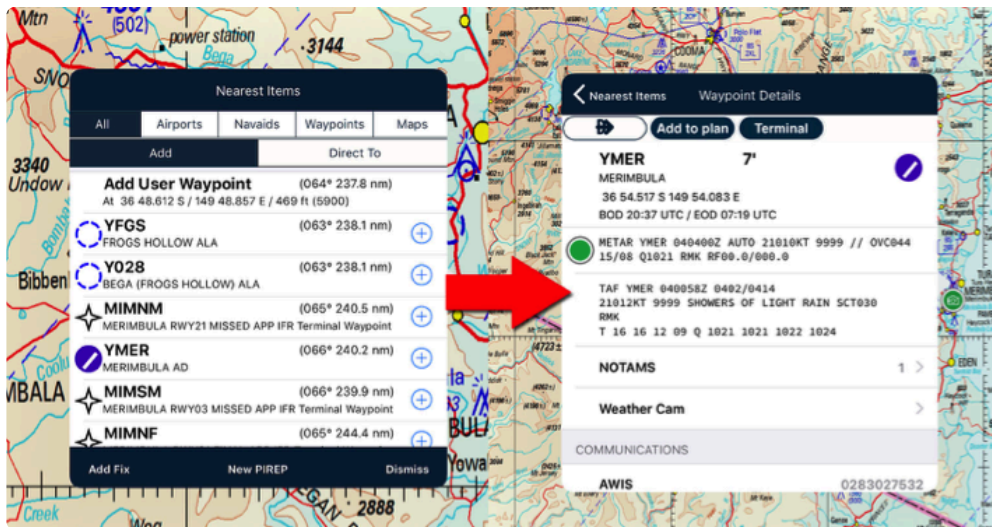
Nearest Items > Waypoint Details

When you single tap on a map, the Nearest Items view appears. This view shows the Nearest Airports. Navigational Aids, Waypoints and Maps at the location tapped, and the bearing and distance to each of them from your current location.

- When you are in Fly mode, a long tap (≈1/2 a second) is needed to display the Nearest Items window (to stop inadvertent taps causing this to pop up when in turbulence).

The *Add|Direct To* toggle switch changes the behaviour when the Quick Action (+) icon is tapped on a row in the table, so one of the following occurs:

- In **Add** mode, the point is added at the end of the flight plan.
- In **Direct To** mode, selecting an item activates the direct to function.

The first item in the table allows a user waypoint to be created at that location. When returning to the original view, this point can be added or inserted into the plan.
Selecting a map opens that particular map.

- When you tap on the row of the item you'd like, the Waypoint Details page will open and display a handy shortcut to Weather, NOTAMs, Cameras (if available), plus ERSA and/or DAP pages for that location. Tap any row to view more. Direct To, Add to Plan, Terminal and Delete buttons are also included in this view, making it a very handy hub for many tasks – both during pre flight planning and in-flight.

> ✳ Note: tapping directly on a waypoint already in a flight plan will take you directly to the Waypoint Details page.

	Tap the Show Chart On Map shortcut button to place that plate on the map (Note: this is only available for georeferenced plates.

5.14.1. Adding a fix

A user fix can be added to a map, just like circling your current position on a paper chart and noting the time.

1. Tap on the aircraft (or where you actually are) and the Nearest Items window is displayed.
2. Tap Add Fix in the bottom left of the screen.

Delete fix view

3. To delete a fix, tap on the fix and then tap Delete Fix.

Fixes are stored against the active flight plan. With the plan in Edit mode, you will see an option at the bottom of the plan to Clear Fixes. This will clear all fixes associated with the active flight plan (useful for times when the plan will be reused).

5.14.2. Submitting PIREPs

To submit a PIREP:
- Tap on the map at the spot you wish to submit the report.
- From the Nearest Items window, tap the 'Submit PIREP' button at the bottom.
- A form will be displayed. You can select the weather phenomenon, add the current altitude, winds, cloud and remarks and then submit it. You don't need to fill out every part, just the pertinent sections for the weather you're observing.
- Once you tap Submit it will be almost instantly available to all other AvPlan EFB users (assuming they have network connectivity – 4G/WiFi).

Submit PIREP view

> ✳ No personal information (such as aircraft callsign, name etc) is transmitted.

PIREPs are visible to other AvPlan EFB users for two hours. In the USA, AvPlan EFB submitted PIREPs are also shared with NOAA.

For an outline of the various icing or turbulence icons, visit the Pilot Weather Reports page.

5.15. MegaZOOM

A quick and convenient way of viewing an airfield's detailed airfield diagram (where available) is to simply zoom in to the desired airfield on any Mega-type map using the pinch-to-zoom method. Once you get close enough zoomed in, the chart will automatically appear on the map and you can then zoom further to read taxiway designations, etc.
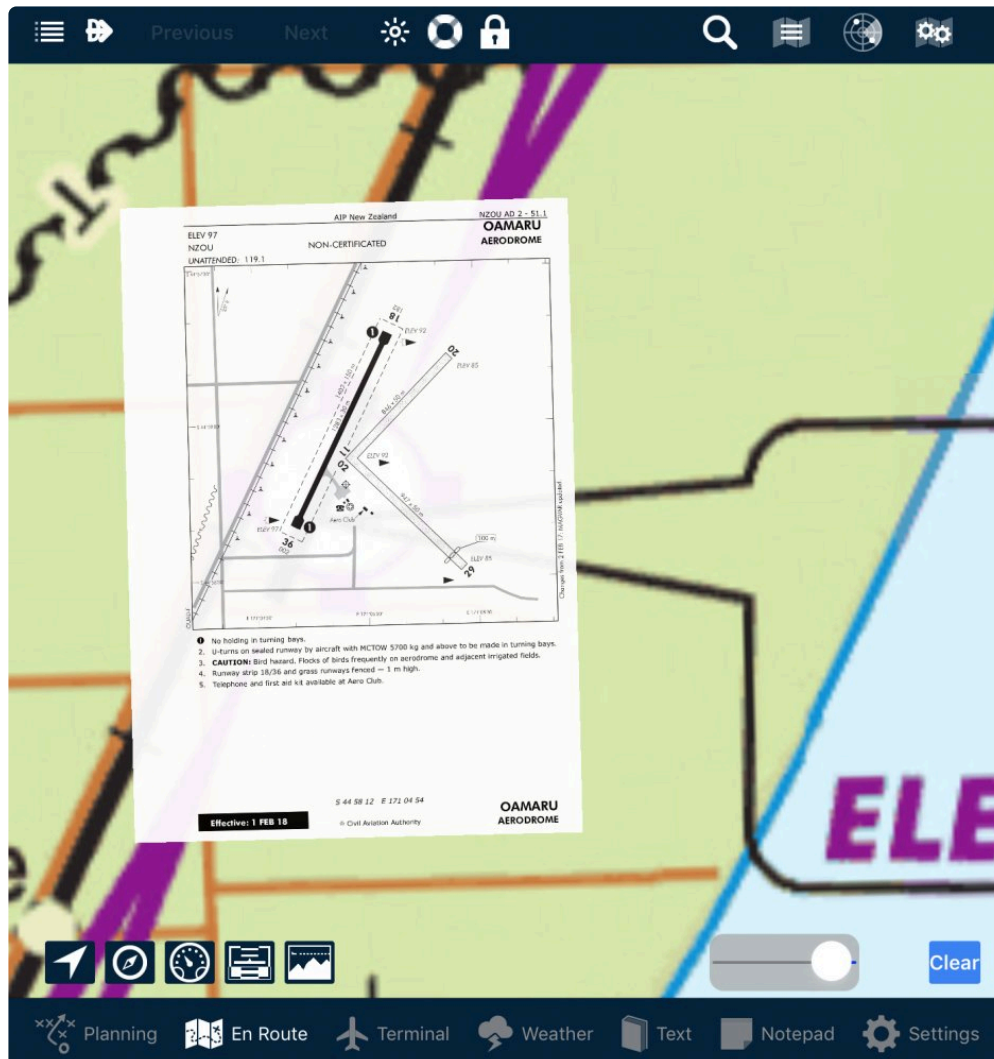
MegaZOOM example

As with any geo-referenced chart placed on the map (see example above), tap the Clear button on the bottom-right of the map screen to remove. A slider appears next to this button, which controls the chart's opacity.

There is no need to clear one chart before viewing another, simply zoom in on the new place and it will appear.

> ✱ Note: If the *Clear* button is tapped to remove the chart, the same airport chart won't appear until a different place has been viewed using the above method.

5.16. Ruler

One thing that is eroded ever so slightly with electronic mapping is the sense of map scale; owing to the fact that it can be constantly panned and zoomed through multiple map types. On a paper map, you have only one map at a time and all remains fixed.

To remedy this, we have the digital ruler.
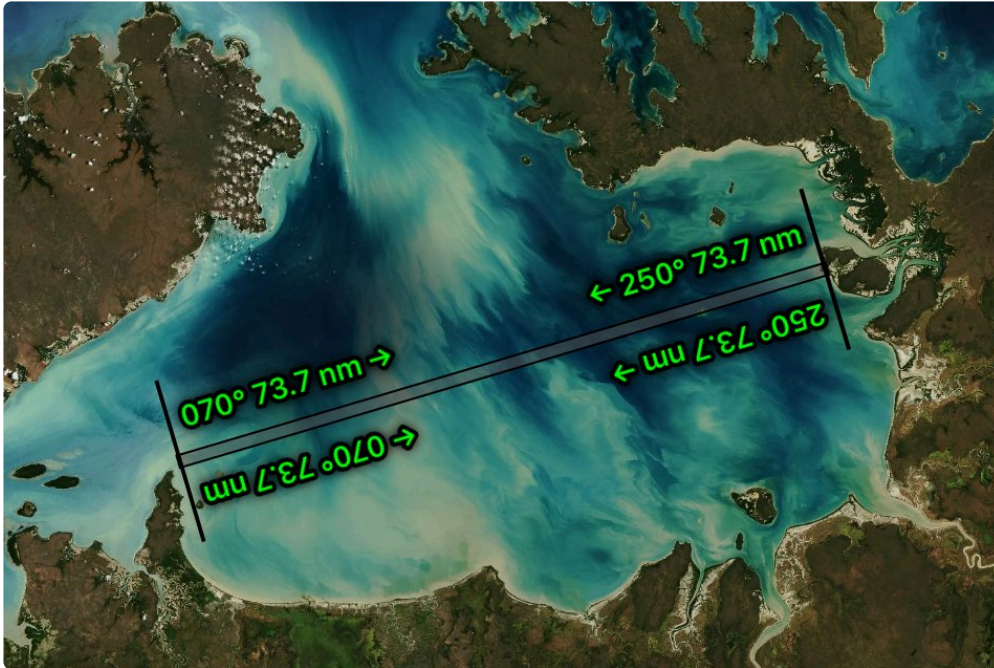
Ruler example

Displaying the ruler

Simply place two fingers slightly spread apart (as if you were going to zoom out, but don't) on to the map and hold for a two seconds. It's important that you don't move your fingers during the two second pause, as the map will then treat the action like a zoom instruction.

Between and slightly above your fingers, the ruler should appear. It doesn't even have to be perfectly aligned with the objects you wish to measure at this time; because once it's visible, while keeping your two fingers on the screen you can then spread/contract/twist/drag to align it with your desired measurement.

Once the ruler is satisfactorily aligned, simply remove your fingers from the screen and the ruler will remain in place. You can even continue to pan around the map with one finger and the ruler will stay in the assigned position relative to the map.

The ruler displays the great circle distance between the end points, plus a magnetic bearing both to and from.

Clearing the ruler

To clear the ruler, you can repeat the process and create a brand new ruler somewhere else, or simply zoom the map slightly. The moment the map is zoomed in or out, the current ruler is cleared.

6. Terminal

The Terminal tab displays information about a location within the flight plan, or about any other location that has been selected even if it is not in the plan.

There is a presentation of some common information above a row of tabs.

The common information consists of the Location Identifier and Name , its Latitude and Longitude, the current Beginning (BOD) and End of Daylight (EOD) values (UTC) at the location and the location Elevation in feet AMSL. If the location has a weather camera, a Camera icon will displayed beside the BOD/EOD. Tapping on the Weather Cam icon will access the camera images directly.

If the location is part of the current flight plan there are buttons to indicate whether the the current leg is to be flown *VFR* or *IFR*, and to allow changing from one to the other at that point in the plan.
There are also buttons to add a planned *Landing* at the location, or to delete a planned landing and *Overfly* it. If the location is the last point in a plan the *Overfly* button changes to a *New Stage* button, which can be used to copy the location at the end of the plan and start a new stage.

Printing

Any page displayed in the Terminal pane can be printed by simply tapping on the printer icon when the page is open. This includes ERSA, RDS, DAP, Country Airstrip guide pages and SUPS.

6.1. Leg Details

The Leg Details tab contains a number of items that can be populated if required, and a couple that are filled in automatically.

Adding an en-route *Delay* and *Remarks* to the leg

If you have aerial work to be completed at a location, this is where you can add the details.

The En-route Delay time required to complete aerial work can be specified for any leg in a flight plan.

- Tap on the desired waypoint in the flight log, and the Terminal pane will open.
- Go to the Leg Details page (the first page).
- Enter the Delay time for the aerial work in the first field in the format HHMM (Hours, Minutes) and then enter the description of the activity (for example 'PRNAV 36 SEH PILS 18'), into the Pilot Remarks field.

The entry above would be good for a practice RNAV on runway 36 with a sector entry and hold, followed by a practice ILS on Runway 18. Check with your local air traffic management office or a knowledgeable local pilot to see what terminology is best suited to your planned activities.

The Image below shows the Leg Details page with an entry for two practice RNAVS with holds on the same two runways.

The planned elapsed time for this leg of the flight plan is increased (and therefore the overall time in the Summary is also increased) to account for the time added here.

Delay time in flight plan

When the plan is submitted, the appropriate en-route delay time and description will be inserted in section 18A of the plan. There is no need to add "DLE/" or "RMK/". AvPlan automatically puts these into the plan submission.

> ❗ To avoid errors when submitting, ensure the remarks entered are in ALL CAPS, without any special characters (*$%^&@_- etc).

Fuel

The auto-filled items are the **Planned Fuel On Board** and **Planned Fuel Burn For Leg**. The values shown are calculated by AvPlan based on what fuel has been entered in the Fuel Planning section, and aircraft performance respectively.

If desired, you can manually edit the **Actual Fuel on Board** value.

If known, the quantity of fuel on board can be input at any time during a flight to improve the accuracy of fuel planning from that point forward. If left at zero it will be ignored.

Notes

The Notes area is where you can record any notes that may be useful to you.

6.2. Comms

Terminal Comms view

The Comms page in the terminal pane shows all available communications frequencies and/or phone numbers for e.g AWIS of ATIS, as well as Navigation aid frequencies and identifiers.

If you are using a phone or have enabled remote dialling on an iPhone from your iPad you can simply tap a phone number to dial it.

6.3. MET

The MET tab in the terminal pane gives access to available Weather information, including both raw and decoded TAF/METAR information.
Tap the *MET* option to view the TAF, METAR, TTF METAR and/or ATIS for your airport.

The first column shows the Raw TAF at the location if there is one, followed by a Plain English version, then by raw TAFs at any nearby locations.

Similarly, the second column contains the Raw METAR and ATIS at the location if they exist, followed by a Plain English version, then by raw METARS at nearby locations.

Notable features:

- The Decoded TAF includes a tabular presentation of forecast Temperatures and QNH vs UTC, with interpolated values for the current time coloured magenta.
- The METAR column includes a density altitude calculation
- Currently active INTERs & TEMPOs in the TAF are highlighted
- Nearby TAFs and METARs are accessible with just one tap
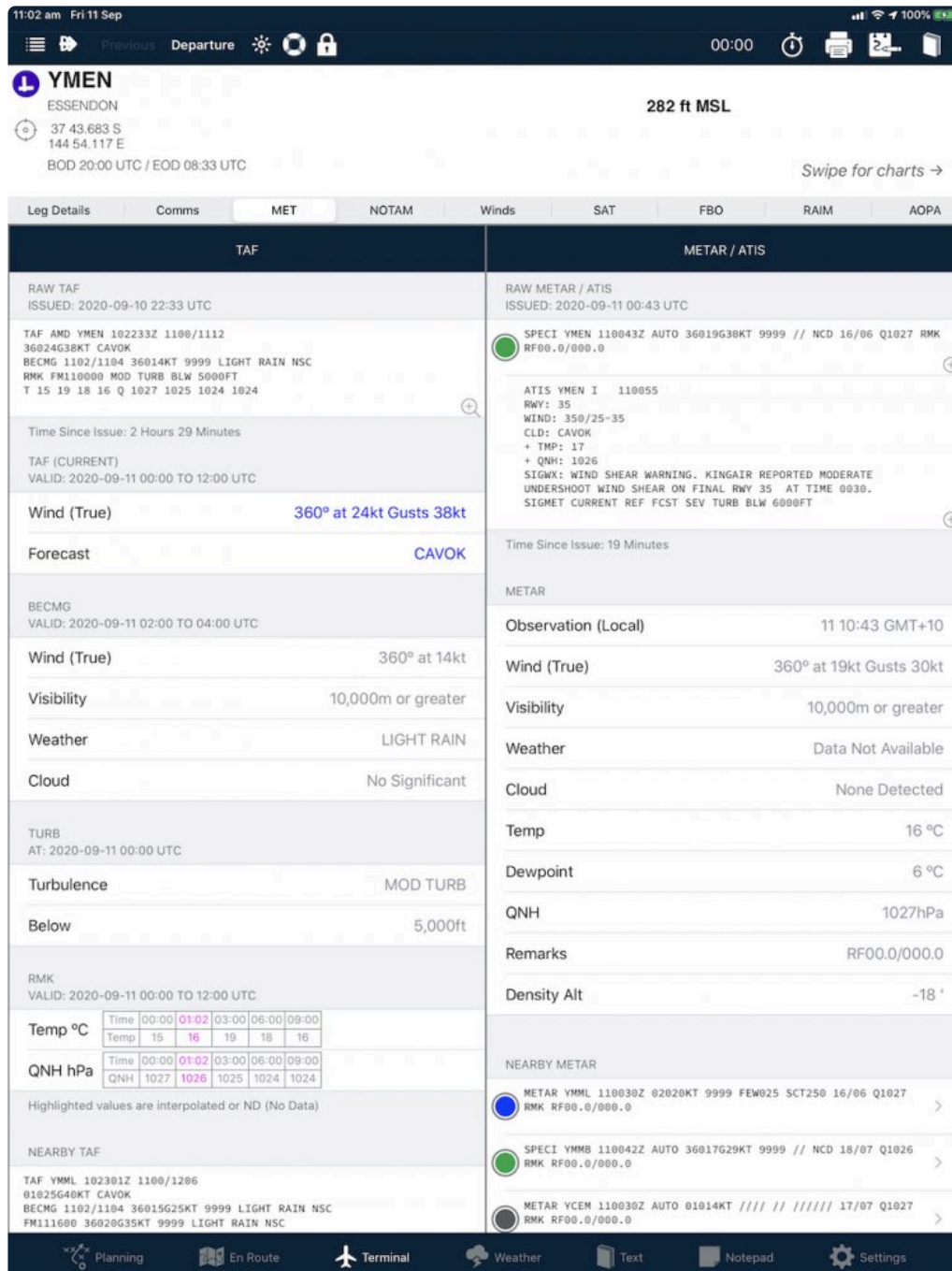
6.4. NOTAM

AvPlan EFB makes keeping up with airfield NOTAMs easier, by reducing the possibility of double-handling and re-reading. Any NOTAMs associated with the currently selected airfield will appear under the NOTAM tab. Each NOTAM will appear on its own card.
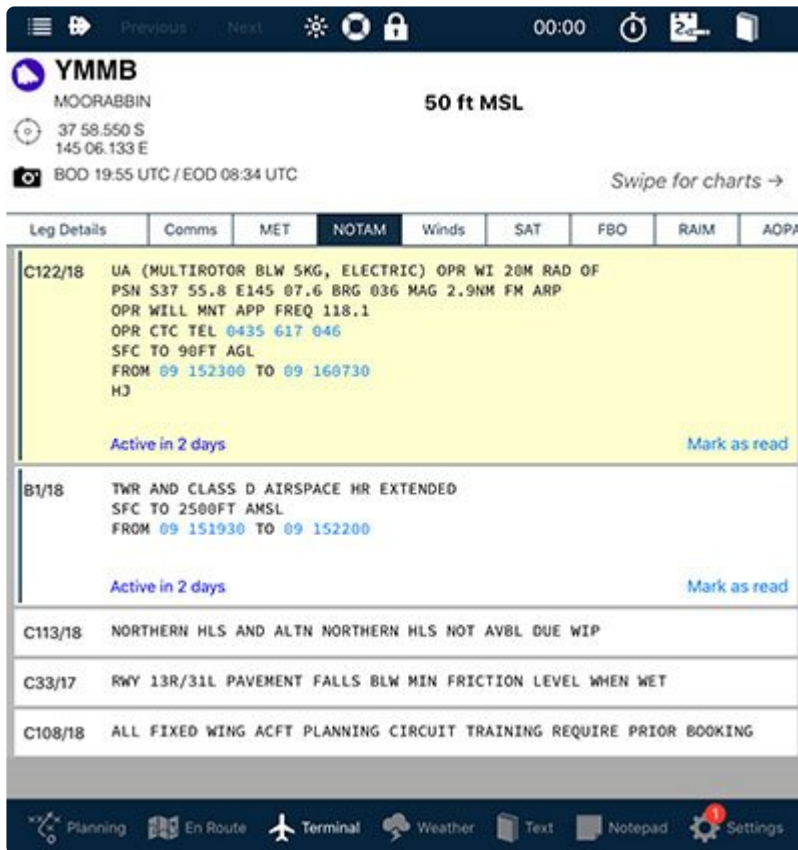
Airport NOTAM management

The age of the NOTAMs can be quickly established visually:

Less than 8 hours since issued	NOTAM card shaded yellow
Less than 2 weeks since issued	NOTAM card contains a black bar down the left-hand edge
More than 2 weeks since issued	NOTAM card completely white

In the bottom-right corner of each card there is a *Mark as Read* button. When tapped, the NOTAM card will fold up into a single line to signify that you've read that particular one.

The read/unread status of a NOTAM is instantly shared and updated to your other devices in near real-time (data connection is required).

If you wish to re-open an already read NOTAM, simply tap its card and the full text will be visible again.

Phone numbers within the text are highlighted. Tap them to begin a phone call to that number with the dialer/phone app.

6.5. Winds

This section of the terminal pane shows winds and temperatures aloft up to 50,000 ft at the location. The Altitudes will be standard VFR altitudes or standard IFR altitudes taking into account the hemispherical rules for the leg leading to the location (i.e. waypoint).

Temperatures are expressed both in °C and as (ISA+) or (ISA-). All temperatures below zero are

coloured blue, allowing a fast visual interpretation of freezing levels.

Winds are presented at all locations, with a calculation of the headwind(-) or tailwind(+) component for the leg to the waypoint, for all locations except the departure point.

Altitude	Temp	Winds
1000 ft	17° C (ISA+3)	330/36 kt (-7 kt)
3000 ft	13° C (ISA+3)	330/36 kt (-7 kt)
5000 ft	9° C (ISA+3)	330/36 kt (-7 kt)
7000 ft	11° C (ISA+9)	310/24 kt (-11 kt)
9000 ft	5° C (ISA+7)	303/18 kt (-10 kt)
11000 ft	-1° C (ISA+5)	301/20 kt (-12 kt)
13000 ft	-5° C (ISA+5)	314/21 kt (-8 kt)
15000 ft	-9° C (ISA+5)	308/23 kt (-11 kt)
17000 ft	-13° C (ISA+5)	285/25 kt (-20 kt)
19000 ft	-17° C (ISA+5)	273/29 kt (-26 kt)
21000 ft	-21° C (ISA+5)	274/30 kt (-27 kt)
23000 ft	-24° C (ISA+6)	276/30 kt (-26 kt)
25000 ft	-30° C (ISA+4)	282/30 kt (-24 kt)
27000 ft	-36° C (ISA+2)	292/29 kt (-21 kt)
29000 ft	-40° C (ISA+1)	302/28 kt (-17 kt)
31000 ft	-44° C (ISA+1)	294/30 kt (-21 kt)

6.6. SAT

Opening the SAT tab brings up a satellite view at the location, with an unmovable pin at the Lat/Long coordinates of the location as contained in the navigation database, or as set by the user for a User Waypoint. The Satellite view can be panned and zoomed in the normal manner.
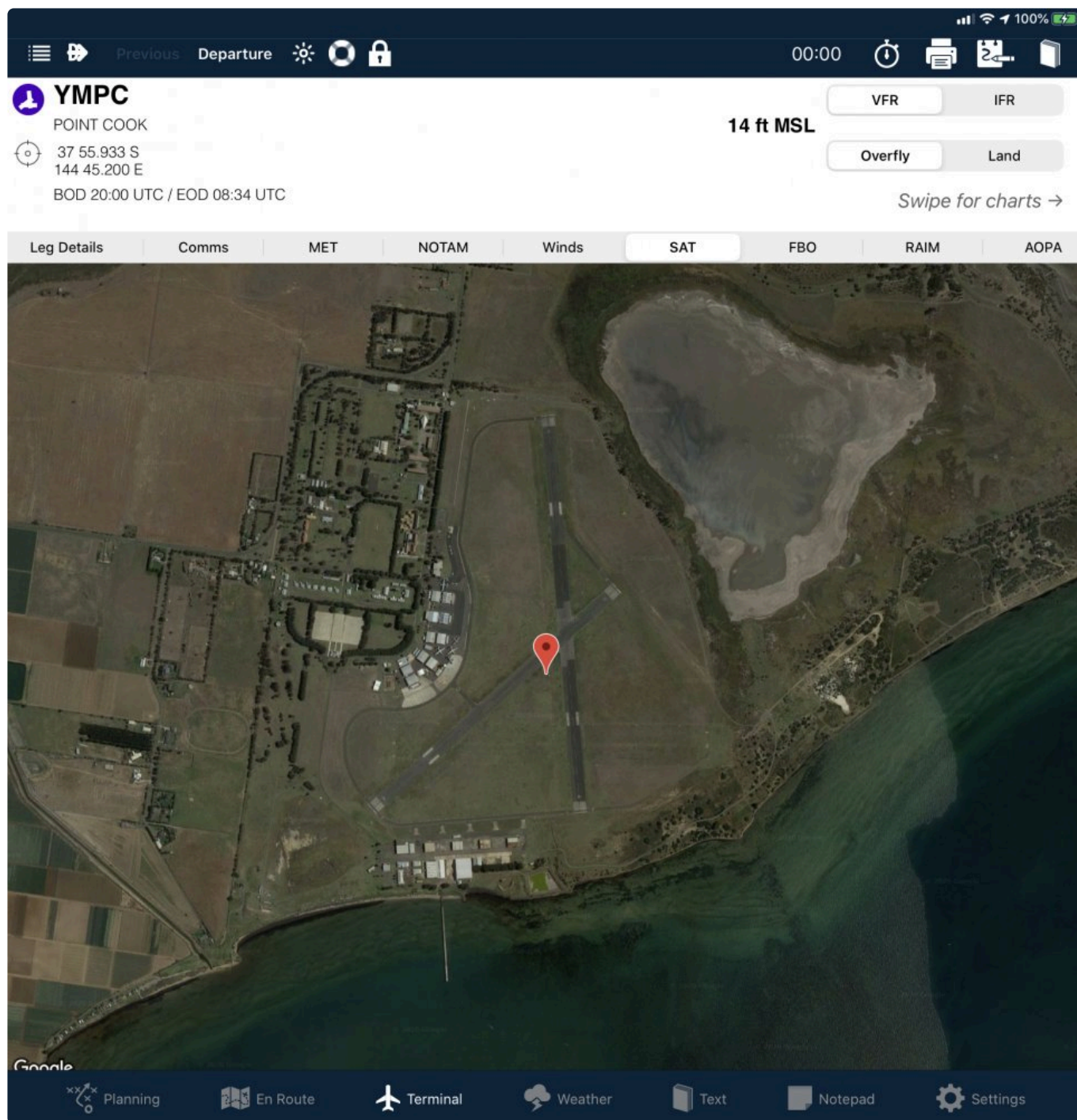
6.7. FBO

The FBO tab is a facility that allows AvPlan users to update fuel prices at airports. As the information is User-updated the prices shown reflect the most recently updated values.

If an airport has no FBO, you can add one by pressing the blue add button [+] then Giving the provider a name and phone number.

Having created a provider, press the [+] button again to add a fuel type. A menu will appear listing possible fuel types- select the one you want to add. Repeat the add fuel process if more than one type of fuel is available, and repeat the add provider process if there is more than one fuel provider.

This will create an FBO page for the airport that can now have fuel prices entered. FBO entries created in this manner become available and visible to all AvPlan users.

When enabled in the Map view, known fuel prices are displayed on the current map. Fuel type (Jet-A or AvGAS) is automatically selected depending on the current aircraft profile within the flight plan. When no flight plan is currently open, the fuel type from the last used aircraft profile is displayed.

The colour coding of the displays is explained in the EnRoute Fuel Availability section

6.8. RAIM

> ✳ For IFR Pilots

The RAIM Tab will present the current *Receiver Autonomous Integrity Monitoring* status for different

classes of GNSS receivers at the location, but only if the location is an airport where RAIM status is available via the briefing system.

> **!** This is useful when planning to arrive at a destination requiring an RNAV instrument approach, but does not remove the requirements to check RAIM status on your GNSS navigator prior to performing an approach.

If the briefing system does not provide RAIM status at the location, this page is simply blank

6.9. AOPA

> **✱** The AOPA guide is available via a separate subscription service

The AOPA tab accesses user-provided airfield data. Such data exists if users have supplied it. Subscribed users can also send updated information via AvPlan for inclusion in the database.

Below is an example of an AOPA guide entry:

6.10. Airfield Documents & Approach Plates

There are several ways to access ERSA, DAP or AIP pages (that pertain to a particular airport):

1. Swipe the screen right–to-left to display associated pages from the ERSA/DAP/AIP.

- The first page to show will be the Aerodom (AD) Chart page from the DAPS, if it exists, followed by;
- the ERSA pages, if they exist, followed by;
- The Runway Distance Supplement pages, if they exist, followed by;
- The Country Guide page if it exists and you have a Country Guide subscription, then;
- Arrival procedures, if they exist;
- Departure procedures, if any exist and:

- Instrument Approach procedures, if any exist, then;
- AIP SUPs, if any exist, and finally;
- Any user files that have been uploaded via DropBox

1. Tap the screen one single time with three fingers – a dark bar should appear at the bottom of the screen. Along this bar will be thumbnails of the available pages, which can be easily swiped left or right. Tap on a thumbnail to select it. If you wish to dismiss the shortcut bar without selecting a page, simply tap the screen once more with three fingers.
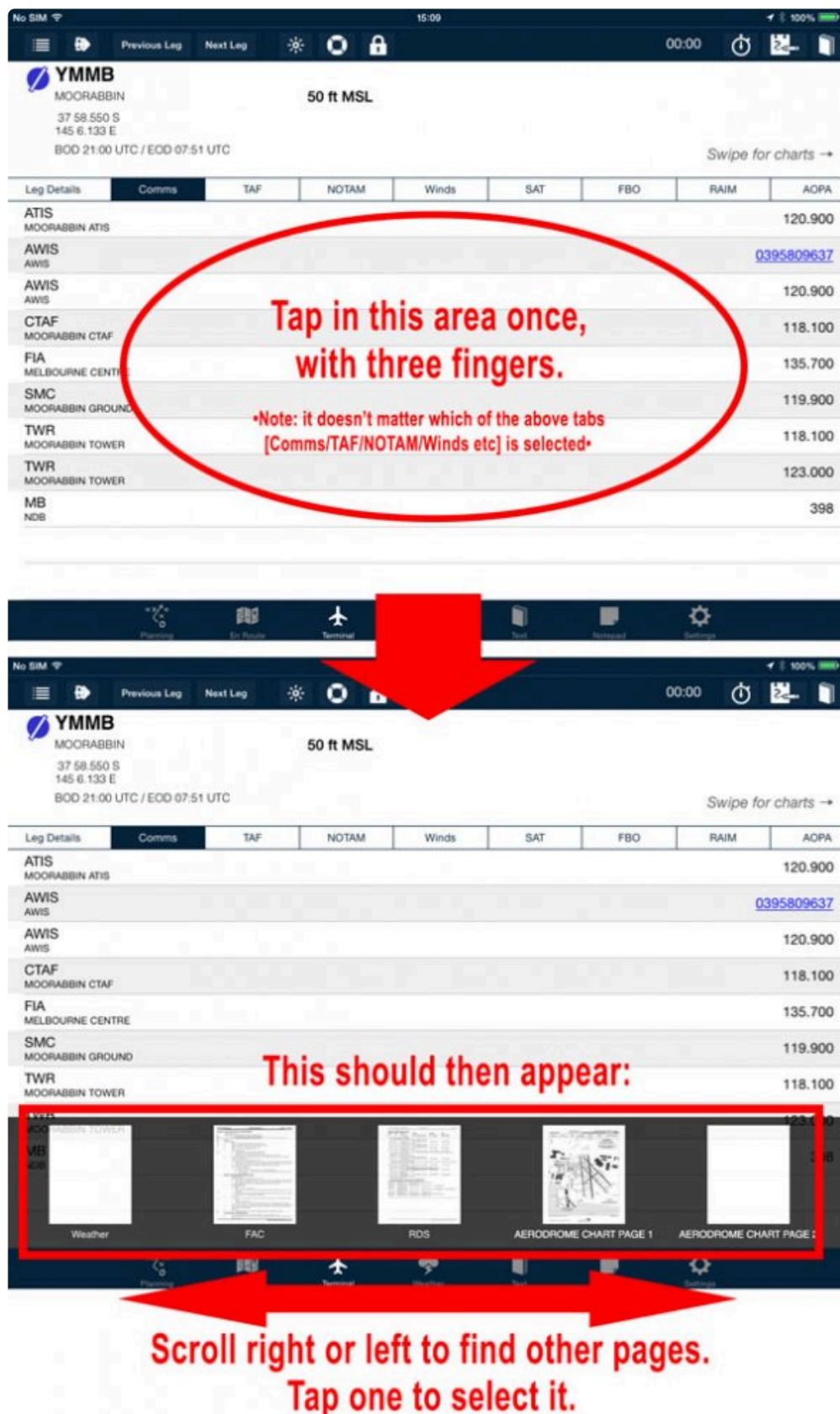
2. Select the Book icon (on the top right of the screen) to display information about any other airport or navigational aid (not associated with an airport). An airport or navigational aid can be searched, and if automatic weather downloads are enabled, a weather forecast is available on the weather page.

Searching for airfields
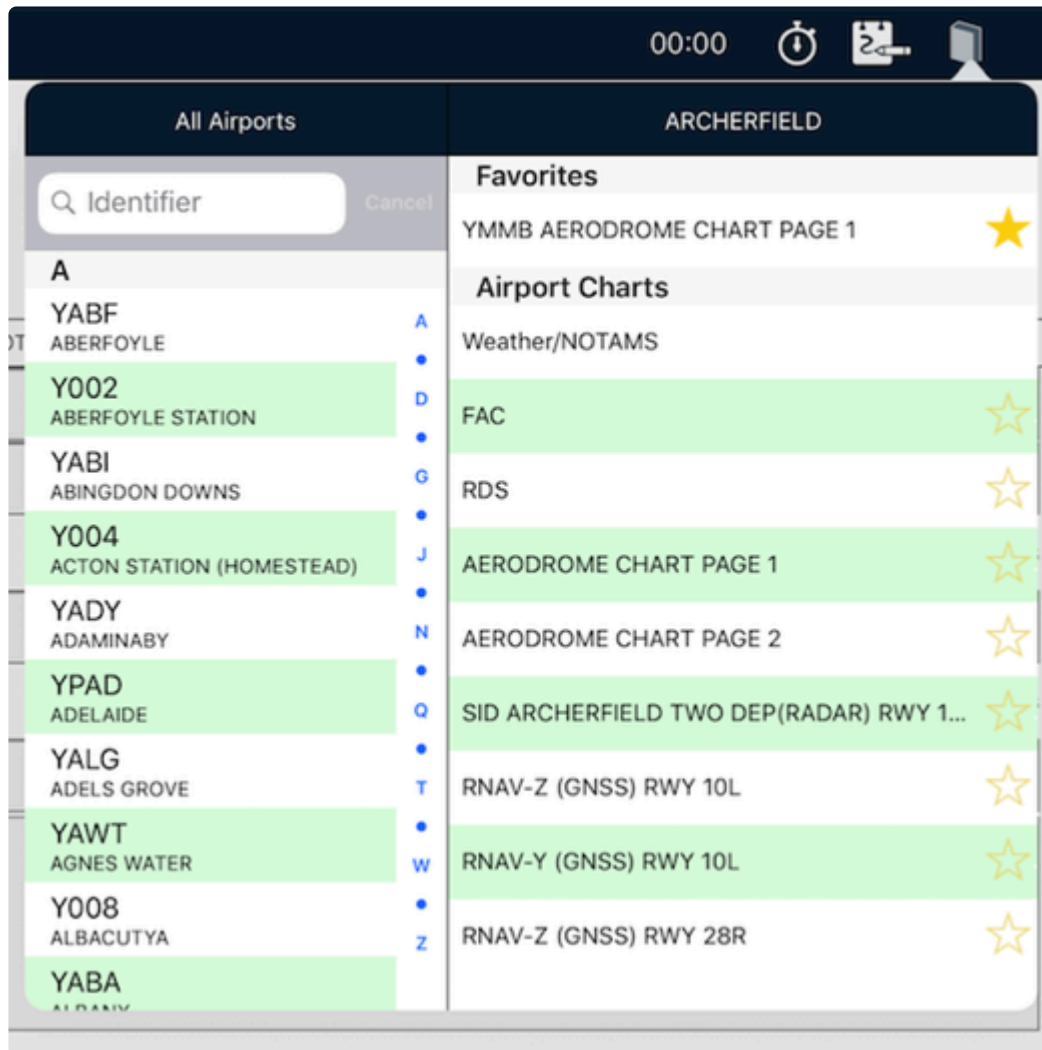
Tapping the book icon brings up a list of all available airports/heliports (left column), with a search field at the top.

Tap in the search field and either search for the identifier, or the full name.

The right column then displays available documents for that field. Scroll the list down/up if there's many listed.

Starring favourites
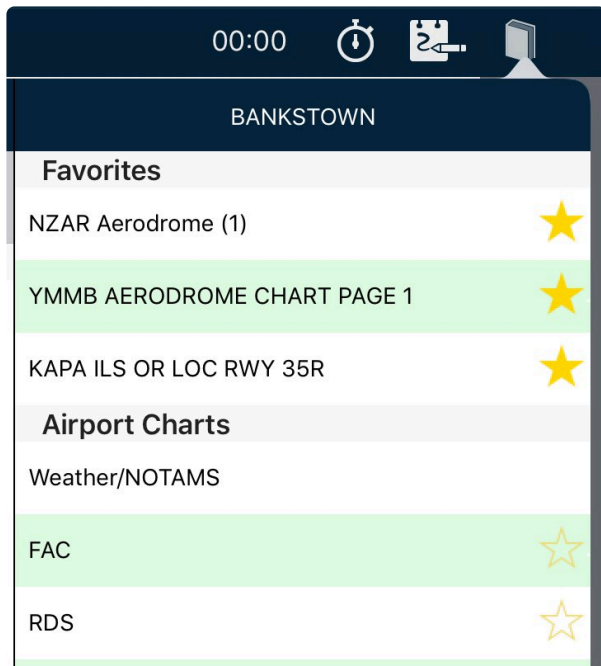
Terminal Favourites

Tap the star icon to the right of the page you wish to always appear at the top of the list, regardless of which field is selected at the time.

To un-star a page, tap the star once again and it will disappear from the favourites.

6.10.1. Plate options

Plate options (not georeferenced)

Plate options (georeferenced)
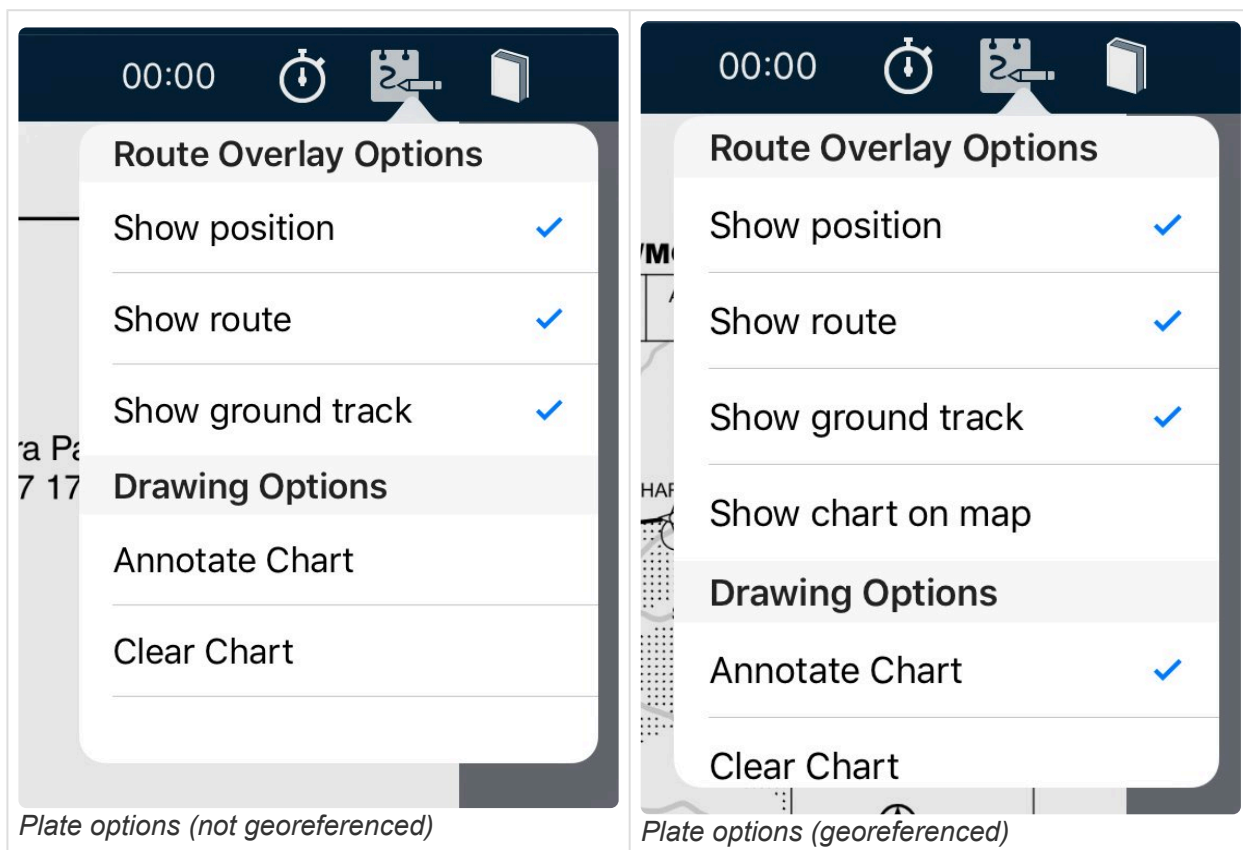
Georeferencing status

The Georeferenced/Not Georeferenced status is displayed in the top-left corner of each page.
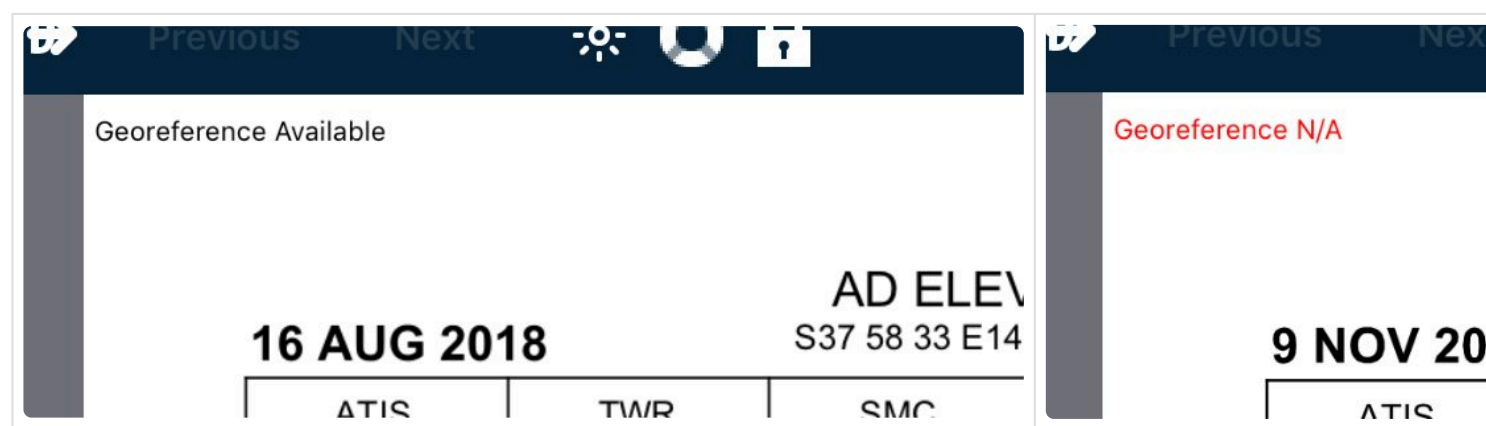
Georeferenced pages also display the current GPS accuracy in the top-right corner.
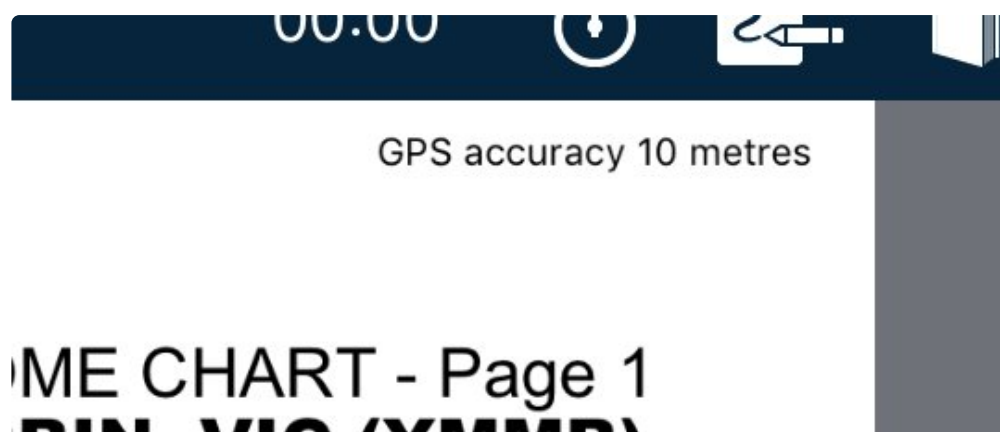
Show chart on map

> ✱ This is a Pro Upgrade subscription feature only, and will be available on georeferenced plates.

Tapping this option opens the En Route tab, then places the plate on the map in the right position and orientation. You can then fly from map to plate without changing a thing.

Show chart on map example

 Use the opacity slider to change the opacity of the plate, then use the *Clear* button when the plate is no longer needed on the map.

Annotate chart

Any chart in the Terminal pane can be annotated with free notes or typed text.

Tap the Plate Options button at the top of the screen, then select *Annotate Chart*. A banner will appear at the top of the viewing area with the word **Editing** in the middle. this indicates that editing is live. You can now notate or highlight text on the page.

- Select different colours by tapping the palette button.
- Add typed text by tapping the notepad icon
- Add freeform notations by tapping the pencil icon
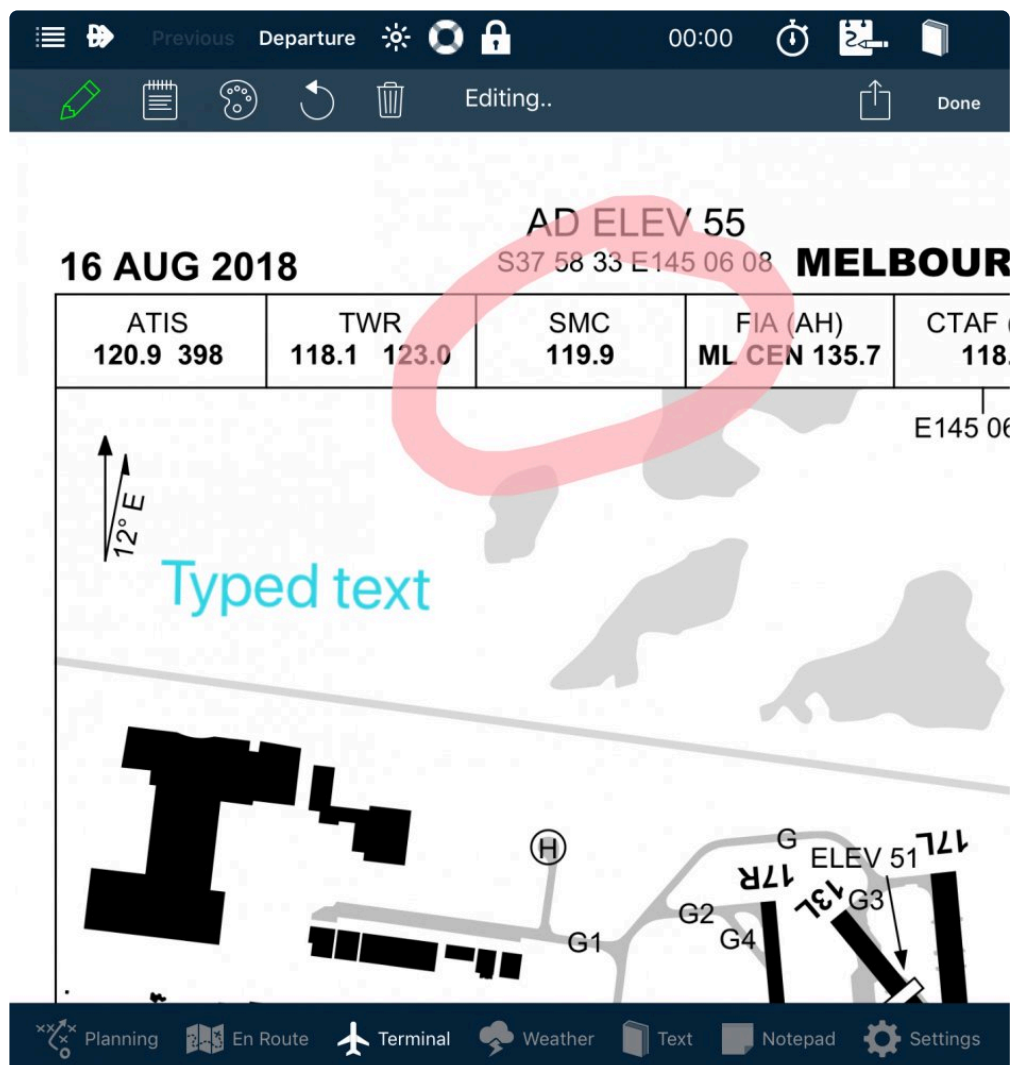
Annotation examples

When finished, to exit Editing mode, tap *Done* and the Editing banner will go away.

Any notes can be cleared by tapping the bin icon, or selecting *Clear Chart* from the Plate Options menu. Choose from green, red or blue.

All notes are saved to the chart and will appear each time they are subsequently viewed, until the Clear Chart option has been selected.

Notes and annotations sync between your devices.

> ✳ Short cut: Editing mode can be entered and exited quickly by double-tapping the plate.

6.11. Approach timer

At the top of the Terminal tab, you'll find a handy timer.
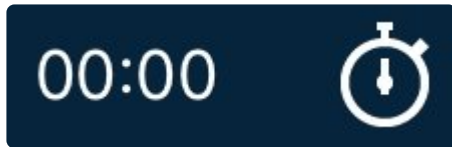
- Tap the icon to begin a count-up timer.
- Tap again to stop
- Tap a third time to reset to zero

✱ There is also a timer option available within the HUD

7. Weather

The Weather tab displays a plethora of weather related information.

Scroll the list on the left-hand-side to display the following Australian Weather:

- Graphical Area Forecasts
- Area Briefings
- NAIPS Charts
- Satellite imagery
- Winds Aloft (Windy.com)
- BoM Charts
- Australian SIGWX Charts
- Australian Low Level GPWT Charts (Grid Point Wind and Temperature)
- Surface Pressure Forecasts
- Various Wind Forecasts: 5000, 10000, 18000 and 38000 ft.

For New Zealand:

- Winds Aloft
- MetFlight GA
- MetJet
- Satellite Imagery
- Surface Conditions
- Wind Forecasts: 5000 and 18000 ft.

Tap on the text of the item you want to view. Tap Close to dismiss the chart.

7.1. Australia

- [Graphical area forecasts](#)
- [Area briefings](#)
- [Grid point wind and temperature charts](#)

7.1.1. Graphical area forecasts

The Graphical Area Forecasts interface works in two modes; Overview Mode and Interactive Mode. Zoom in or out to move between the two different modes. Interactive mode is identified by the individual subdivisions dynamically appearing. This is still the same data as is in the GAF document, however the raw information is gathered by AvPlan EFB and drawn dynamically.

Graphical area forecasts interface

Tapping on the map within a region results in two different outcomes; depending on which mode you are currently operating in:

- Overview Mode
    - Tap within a forecast region to view the original Graphical Area Forecast file exactly as supplied by the Bureau of Meteorology.
    - You can pan around this document, and pinch to zoom.
    - Tap the Close button to go back to the map.
- Interactive Mode
    - Tap within a division region (for example, Area 'A') to view a pop-up containing the text pertaining to that area only.
    - If you've tapped within a subdivision (for example, Area 'A1'), any reference(s) to A1 within the text are highlighted.
    - AvPlan EFB extracts data from the text and depicts them on the map. For example, if the text references an individual airport/waypoint, or if a line between various airports/waypoints is referenced, they will automatically be depicted on the map so you don't have to go searching for them.
    - Any current AIRMETs will also be depicted on the map as a purple shape. If you tap within the AIRMET, the AIRMET text will be appended at the bottom of the pop-up window's list.

In both modes, you can select between the first forecast period and the second by tapping the *0-6 HR* or *6-12 HR* buttons.

7.1.2. Area briefings

Area Briefings are collected and stored here. AvPlan EFB will periodically download the appropriate briefings for the areas of interest.

The area(s) downloaded depends on two things:

1. The area(s) your flight plan travels through, or
2. The area(s) you are viewing on the EnRoute map.

For example: if your flight plan is entirely contained within Area 20, but you have the EnRoute map zoomed out to show all of Australia, all regions will be periodically downloaded.

GAFs and GPWT charts are included in the Area Briefing. Scroll down to the very bottom of the briefing to view them.
AvPlan EFB uses the briefings downloaded to display important information throughout the app, including graphical SIGMETs, PRD Airspace status, NOTAMs, TAFs and METARs.

When the Refresh/Recalculate button is pressed an immediate retrieval of the latest briefing(s) is commenced. Otherwise, the app automatically retrieves them every 60 minutes. To turn this automatic feature off, see User settings.

> ✱ Note: Areas 98 and 99 will always be downloaded, as many SIGMETs, Head Office NOTAMs, etc are contained within these briefing areas.

7.1.3. Grid point wind and temperature charts

When the Aus LL GPWT option is selected, thumbnails of all available GPWT charts are displayed in a grid view, grouped in the validity times. Tap on a thumbnail to view a chart.

GPWTs outline wind and temperature profiles for a three-hour period, from the Surface to 14,000 feet. Your flight plan route is overlaid as a red line on the charts, so you can visualise which grids your planned track passes through.

Each grid square contains three columns of data:

*   Left column: Wind direction in two figures, rounded to the nearest 10° (e.g. 270° is displayed as 27, 090° is displayed as 09, and so forth)
*   Centre column: Wind velocity in three figures
*   Right column: Temperature (red for positive temps, blue for negative)

And six rows, each one representing an altitude AMSL:

- 14,000 ft
- 10,000 ft
- 7,000 ft
- 5,000 ft
- 2,000 ft
- 1,000 ft

7.1.3.1. Wind data used in flight plans

AvPlan EFB also receives the same information seen in GPWT charts, in a database format. The winds database package is downloaded in the background and applied to the flight plan automatically when planning below 14,000 feet AMSL. Where the flight is planned above 14,000 feet, AvPlan EFB moves seamlessly to the upper level global wind model.

> ✱ The wind strength/direction for a planned leg is sampled from overhead the arrival waypoint for that leg, at the cruise/passing altitude set in the flight plan and expected time of arrival.

> ✱ If your planned cruise altitude sits in between levels found within the database (e.g. 4,500ft AMSL), AvPlan EFB will perform a linear interpolation between the level below to the level above for both wind velocity and direction.

7.2. NZ

- Requesting briefings
- Surface conditions
- Charts GRAFOR/SIGWX

7.2.1. Requesting briefings

1. Select the Weather pane to access and view weather forecasts. All downloaded forecasts are saved and are available offline for seven days. After this, the forecasts are automatically deleted.
2. Tap on MetFlight GA or JetFlight, log in and request appropriate briefings. Your login details are saved and will be pre-filled for the next time weather is required.
3. Once an area forecast has been requested through this portal, it is saved to the device and accessible by swiping across to the Forecasts page.
4. To go back to the list, tap Close (top right-hand corner).
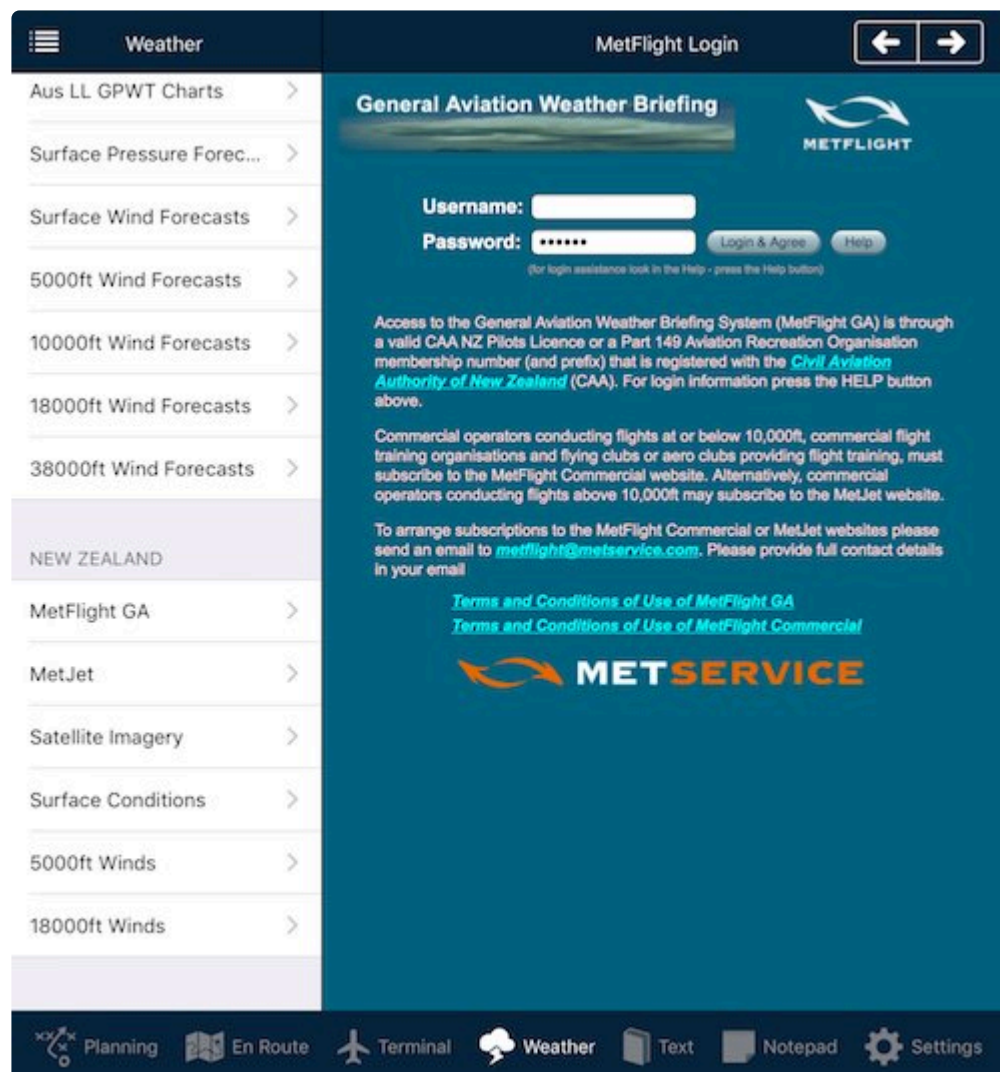
> ✱ The *Delete all Forecasts* button deletes all but the last seven days of weather forecasts from your device.

7.2.2. Surface conditions

Tap on a thumbnail to view the page. Tap close to return to the thumbnail list.
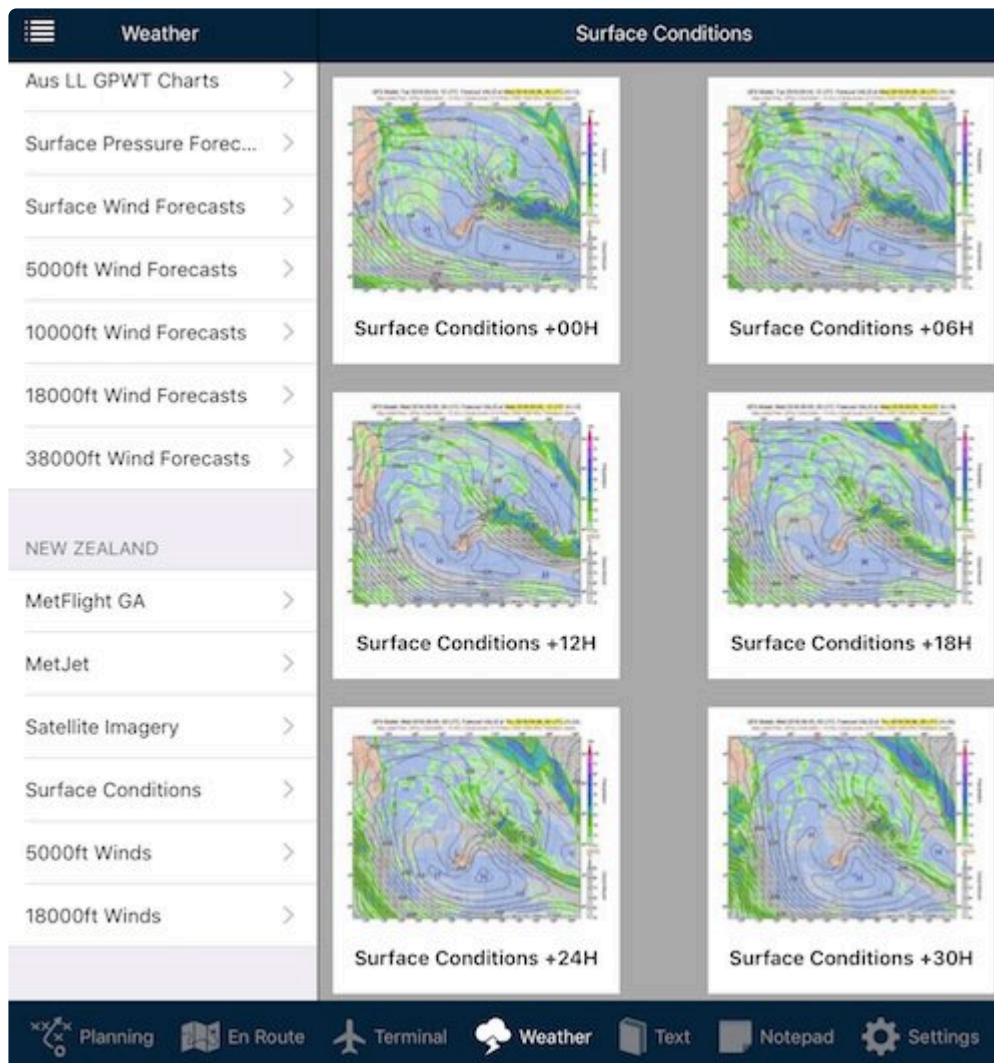
Surface conditions view

7.2.3. Charts GRAFOR/SIGWX

Tap the *Charts* option to view the latest Graphical Area Forecasts (GRAFOR), Graphical Significant Weather Charts (SIGWX) and Graphical SIGMET charts.
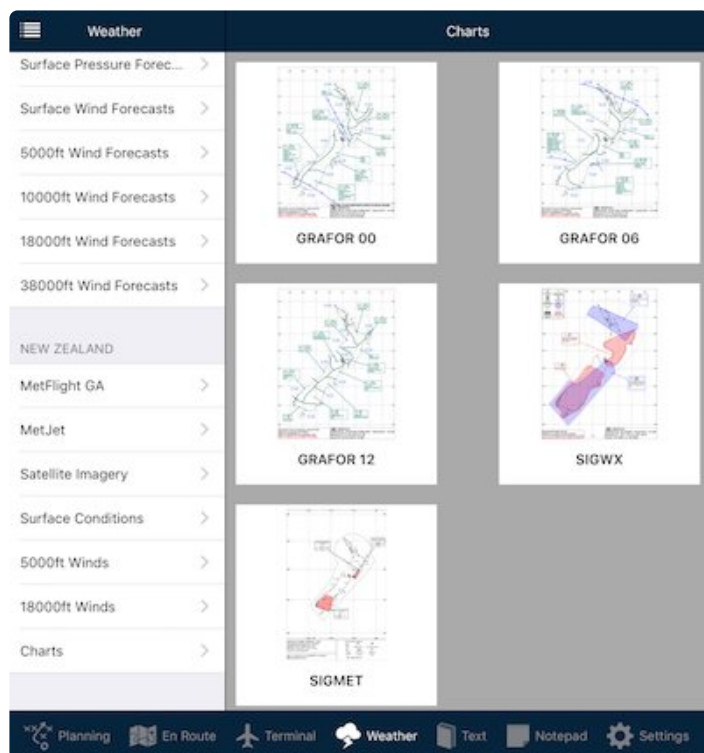
NZ Graphical Forecasts/SIGWX charts

Tap on a thumbnail to view the document.

Once they have been viewed once, that file is downloaded and stored on the device so it is available for viewing airborne when not connected to data.

7.3. Satellite imagery

These high-resolution images are sourced from Himawari-8 satellite, and are updated every ten minutes.
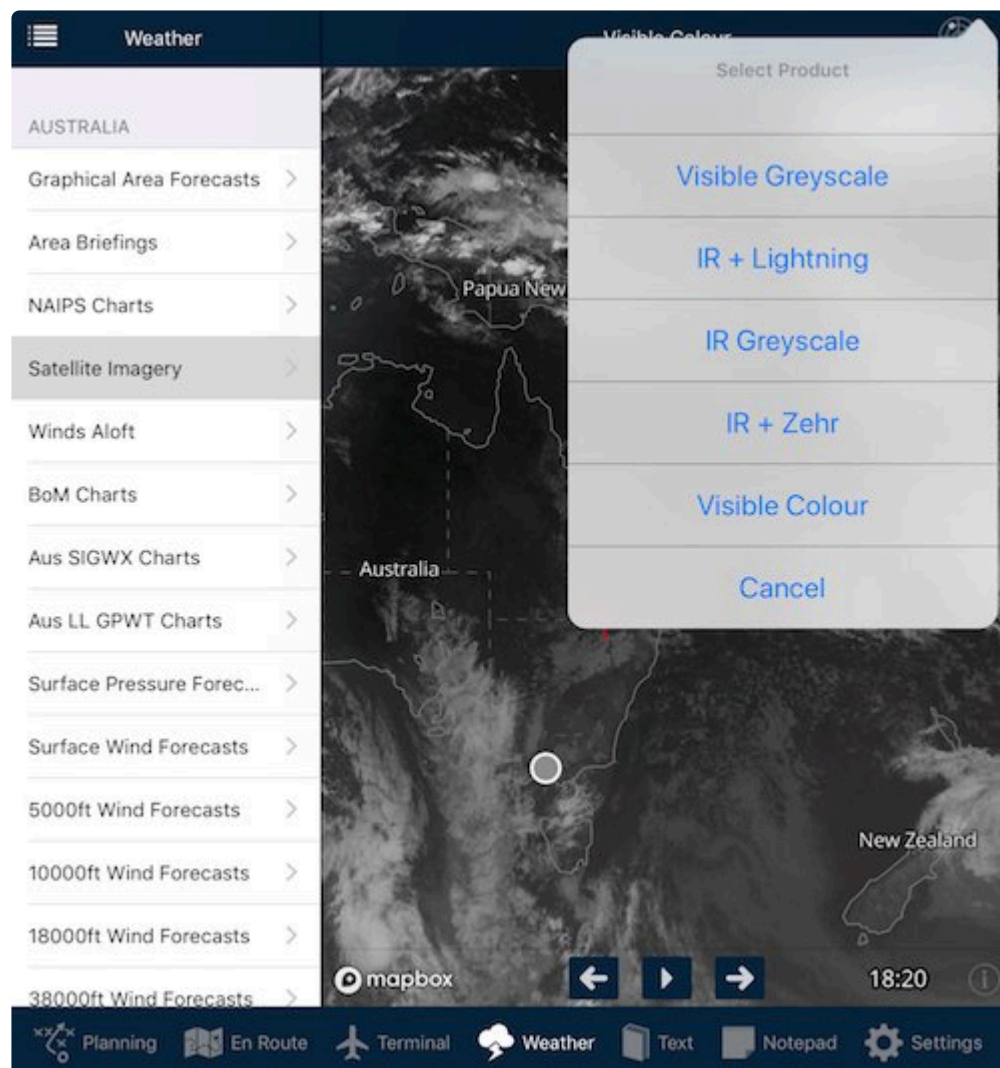
Satellite imagery view

Pan/Zoom around the map to view the satellite image. The planned flight route and your current position are overlayed on the images.

Tap the RADAR icon in the top-right corner to select between different products offered by this service:

- Visible Greyscale
- Infrared and Lightning
- Infrared Greyscale
- Infrared and Zehr (cloud top temperature)
- Visible Colour (default)

Use the arrow buttons to move backward/forward through the last ~3 hours of images. Tapping the Play button will animate and loop through all available images.

The capture time for each image is displayed in the bottom-right of the screen (in local time).

7.4. Winds Aloft (Windy.com)

Native inclusion of Windy.com provides an elegant animated visualisation of winds aloft. While this site is not an official source of aviation wind information, it serves as an excellent visual supplement to the officially-sourced wind data.
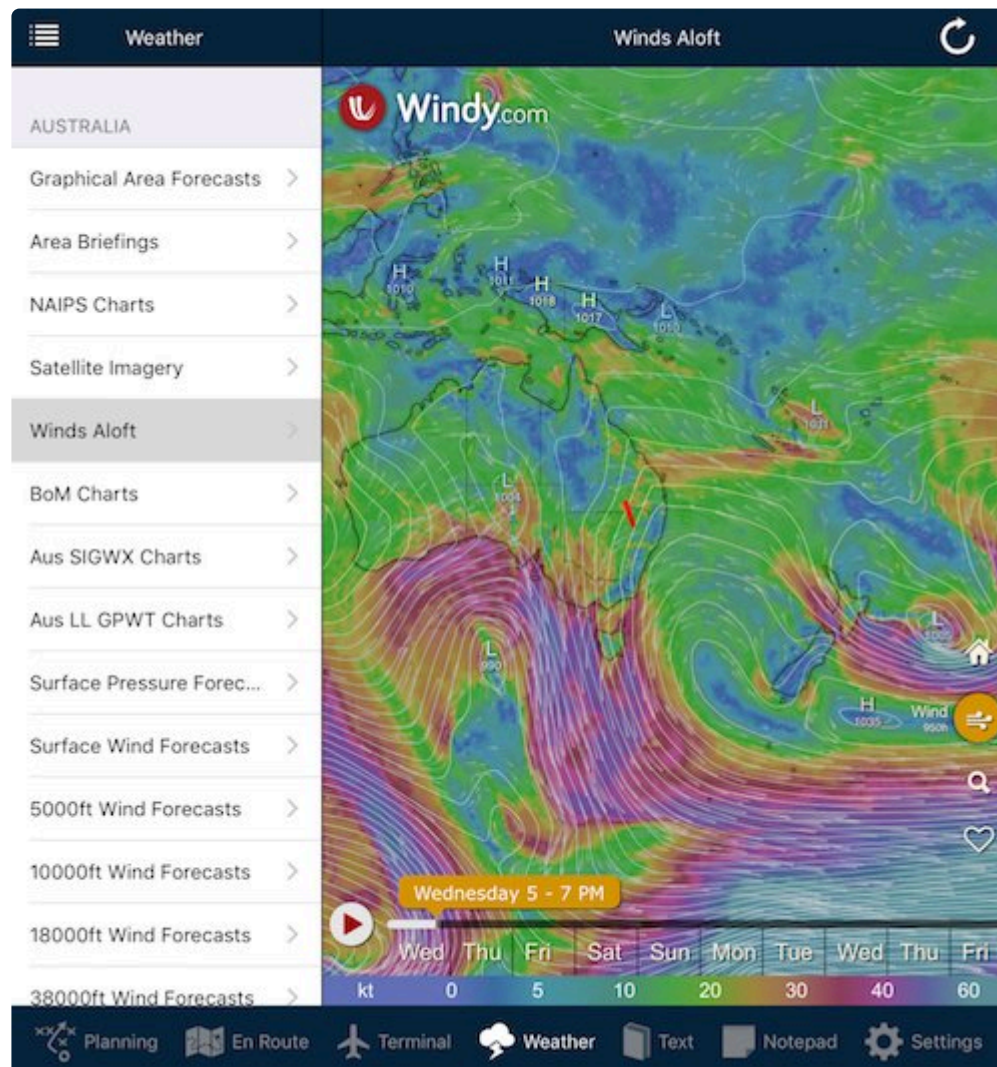
Windy interface

Tap on the map to view a sample of the wind at that position.

Use the timeline slider at the bottom of the screen to project forward in time.

The planned cruise altitude from your flight plan (or the closest level within Windy) will automatically be selected. If no flight plan is open, 2000ft AMSL is selected by default.

If you wish to change the altitude to visualise, tap the *Wind* icon in the lower-right of the window.

Half way down the menu list that pops up you'll see an altitude slider. Move it right or left to select a different level.
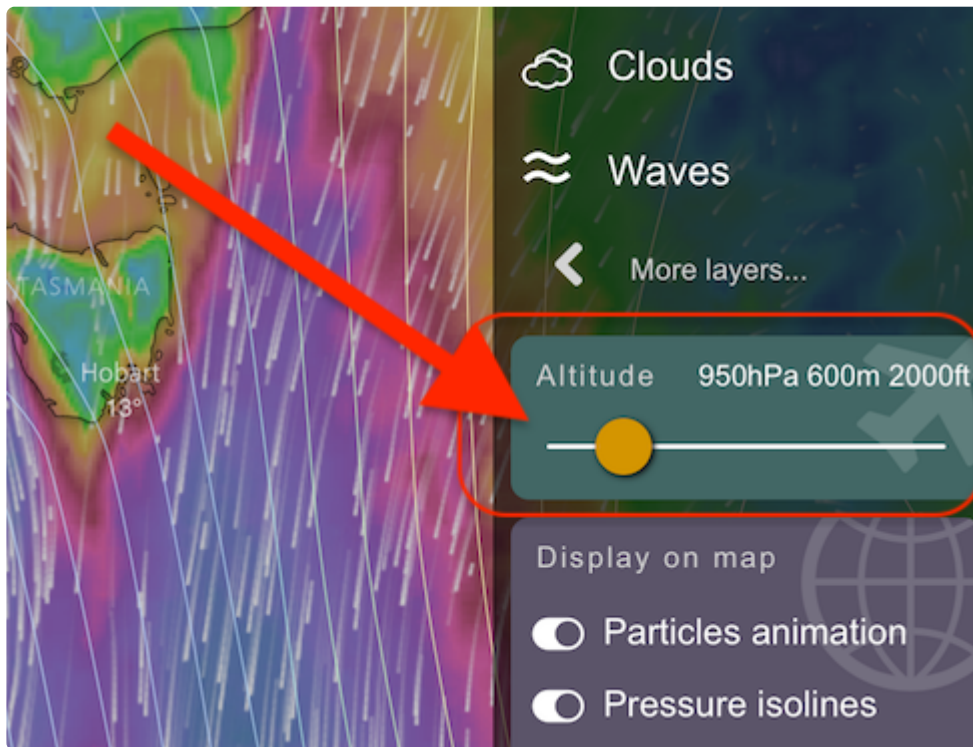
Windy altitude slider

If the page does not load properly, you can use the refresh button in the top-right corner to force the page to reload.

8. Text (Document access and management)

The Text pane displays the following documentation:

- AIP ("Book")
- AIP SUP
- ERSA General
- DAP General
- CAO (Civil Aviation Orders)
- CAR (Civial Aviation regulations; includes the Civil Aviation Act and the CASR's)
- AC (Advisory Circulars)
- CAAP (Civil Aviation Advisory Publications)
- MOS. (The Part 61 MOS- Australian Licensing standards)
- Airservices Documents: A complete set of Australian Visual Terminal Charts (VTC) and the Sydney Basin Guide

✱ The VTCs provided here are complete in the sense that the borders of the paper chart are included. There is valuable explanatory information printed on the borders of VTCs that cannot be shown on the MegaVFR Map

- CASA Documents; Specifically, the Visual Flight Rules Guide (VFRG)
- NZ AIP
- Other AIPS (as subscribed)
- Pilot Operating Handbooks (.PDF files)
- Documents in the AvPlan-EFB Dropbox folder (.PDF files)
- Chart Legends
- AvPlan EFB Documents (A QuickStart guide, this User manual and links to tutorials).
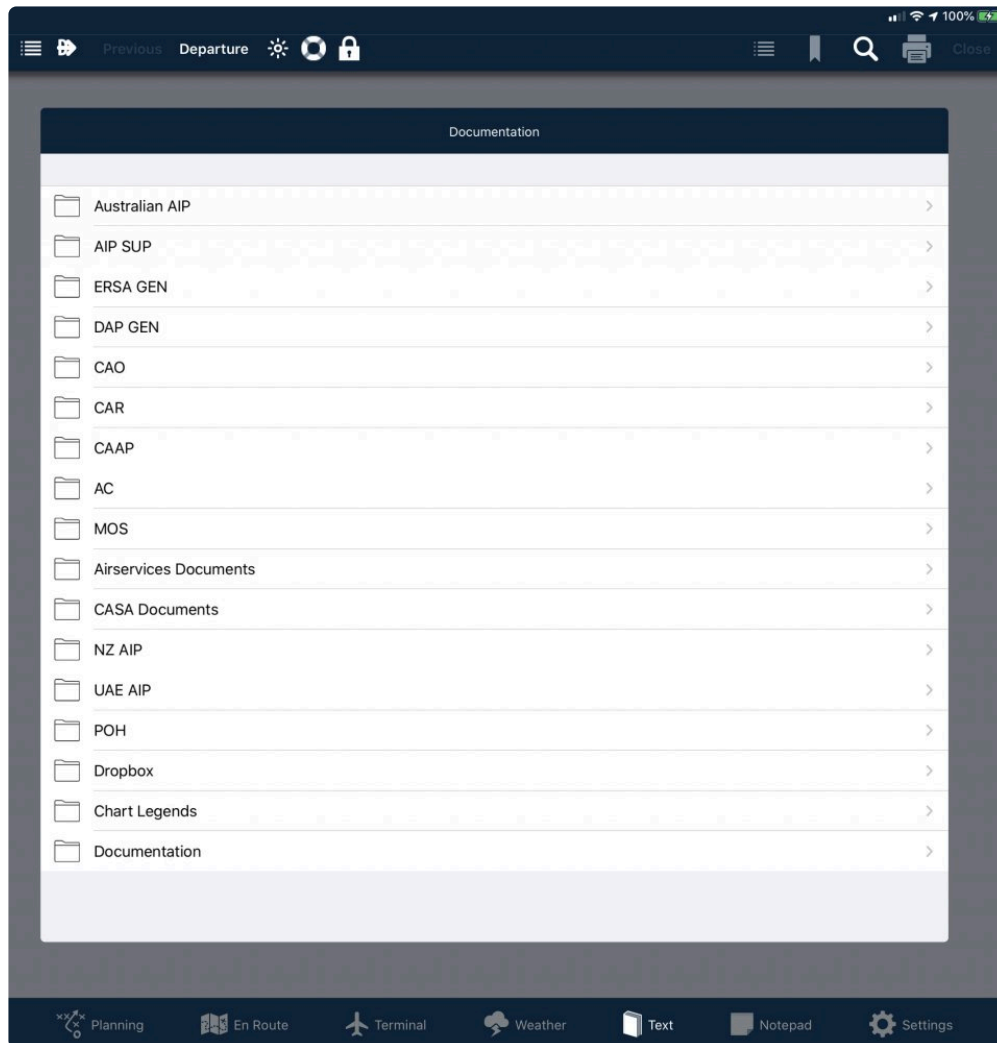
8.1. TOCs, Bookmarks & Searching

Table of contents
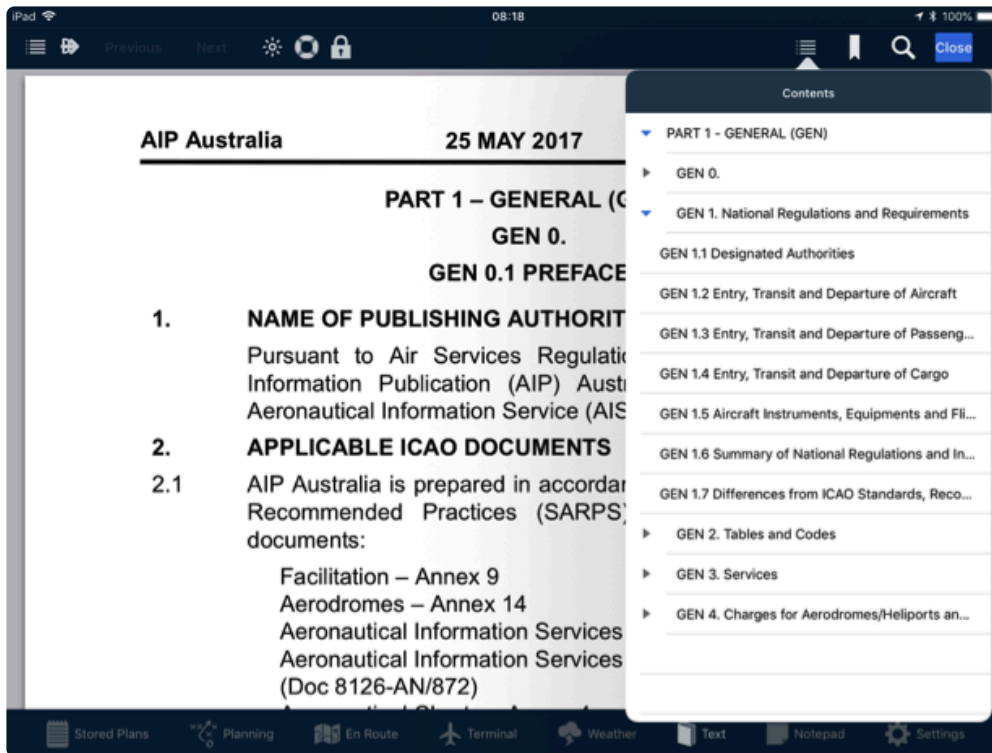
Table of contents view

1. To display the Table of Contents (where available) for a selected document, tap on a document to view it.
2. Select the options icon (to the left of the bookmark icon).
3. Tap a line to view that section.
4. Tap away from the menu to dismiss.

Bookmarks

Bookmarks can be created for any document.

1. Tap on the document to display the search bar, and select the Bookmark icon.
2. Tap Edit if you wish to change the bookmark name.

Searching documents

Most documents are searchable.

Searching occurs at the current level and all levels below; initiating a search before opening a folder in the Text pane will therefore search the entire text library. Opening a folder and initiating a search will search all documents within the open folder. If a specific document is open, then only that specific document will be searched.

To initiate a search:

1. Tap on the Magnifying Glass Icon to display the search menu.
2. Enter your text and then tap on the row corresponding to the desired location in the document.

8.2. DropBox Integration

AvPlan EFB can be linked to Dropbox to enable quick importation of PDF documents. When you link to Dropbox a folder in your Dropbox account called 'AvPlan EFB' will be created. Copy any PDF documents into that folder that you wish to make available inside AvPlan.

> ✱ Only PDF files can be shown in the terminal pages. Other formats must be covered too PDF before they can be displayed.

1. Ensure you have the <u>Dropbox app</u> installed on the device, and that app is signed in to the particular Dropbox account you with to use for storage.
2. Within AvPlan EFB, tap *Text > Dropbox*, then tap on the *Link Account* button and follow the prompts to allow permissions etc. This process will also create a folder in your Dropbox folder/file structure called *AvPlan EFB* (inside the *Apps* folder).
3. Any .PDF files you add to this folder will sync via the cloud and be visible in AvPlan via *Text > Dropbox*. The first time you open the file it will save to the device.

In addition, if you create sub-folders in your 'AvPlan EFB' folder named with an airport name or identifier, navaid identifier or the name of a user waypoint, then these documents will appear on the Terminal pane when viewing that airport, navaid or user waypoint,

For example, you are invited to a fly-in event at Echuca. The organisers send you taxiing and parking instructions in a PDF file.

To do this:

1. Open your Dropbox app, or open Dropbox on your desktop computer.
2. Create a subfolder called *YECH* within the *AvPlan EFB* folder.
3. Inside the newly created *YECH* folder, place the document(s) and it/they will appear at the end of the usual documents in the <u>Terminal</u> page for Echuca. (i.e. swiping right-to-left)

8.3. POH, Chart Legends, AvPlan Documentation & Tutorials

POH

If you have added a link to your aircraft Pilots' Operating Handbook (POH) in the aircraft profile (see 10.6), it will appear in this list. Tap an entry to download (for the first viewing) and view the POH.

You can also email yourself the POH in a PDF format, and import it into AvPlan EFB. It will then appear in this list.

- Attach the PDF to an email, then send the email to an address that you can open on your device.

- Open the email app, find your email.
- Tap and hold on the email's attachment and select *Open in AvPlan EFB*
- The document will appear in *Text > POH*

Chart Legends

Select an item from the list in this window to view the chart legend area of an available map. You can pan around and pinch-to-zoom. Tap Close in the top right hand corner of the screen to return to the list.

✳ Note: The currency date on the map legend does not indicate the actual currency of the map. It only indicates when the image for the legend was last updated. AvPlan EFB never uses mapping data past its validity date.

Documentation & Tutorials

This window contains a convenient shortcut list of current AvPlan EFB user documentation and tutorials, including this document. Now, if we had put a link to this document inside this document, would that constitute an infinite loop? The first correct answer emailed to the support guys will win a free Mars bar.

9. Notepad

The notepad allows you to take notes during or just prior to flight. You could note down the AWIS details before departure. Any notes placed here will remain until the Erase (rubbish bin) icon is pressed.
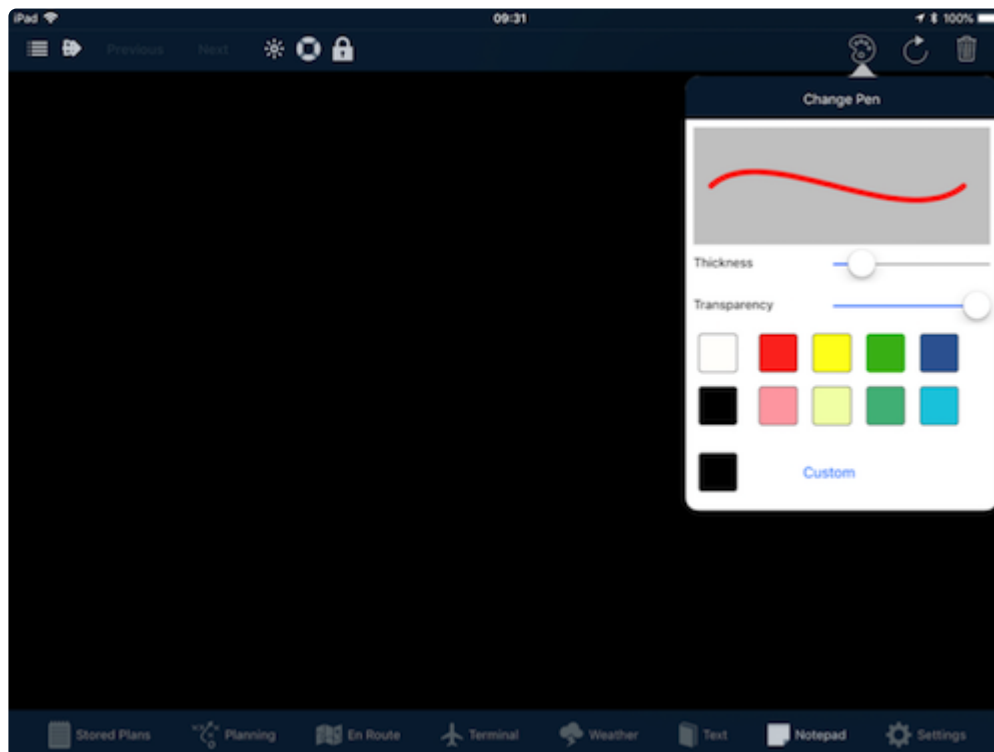
Notepad

Tap the artist's palette icon (see above) to select between different pen widths and colours.

If an error is made, you can step back one stroke at a time by using the circular arrow icon.

The rubbish bin icon can be used to clear the entire notepad in one sweep.

> ✳ NOTE: Whilst the device is connected to data, any notes drawn will automatically sync to a user's other device(s).

10. Settings

The Settings tab is where AvPlan EFB options can be controlled. From the main Settings menu, select the desired sub menu.
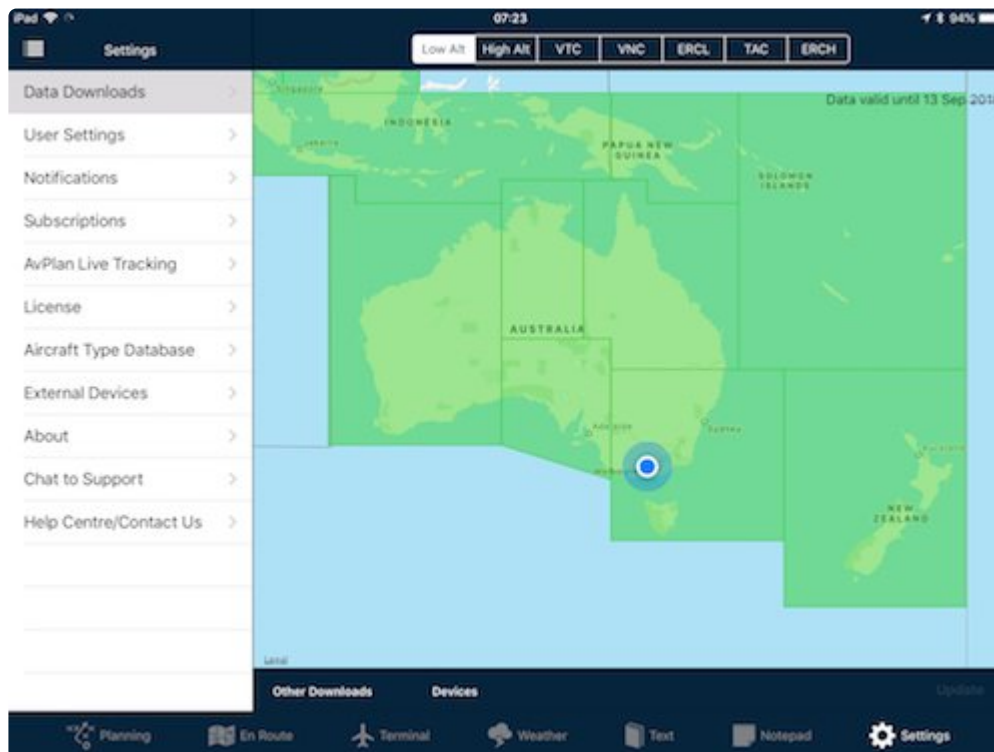
Settings tab

10.1. Data downloads

The Data Downloads page allows charts and documents (applicable for your subscription type[s]) to be downloaded and saved on your device for offline use.
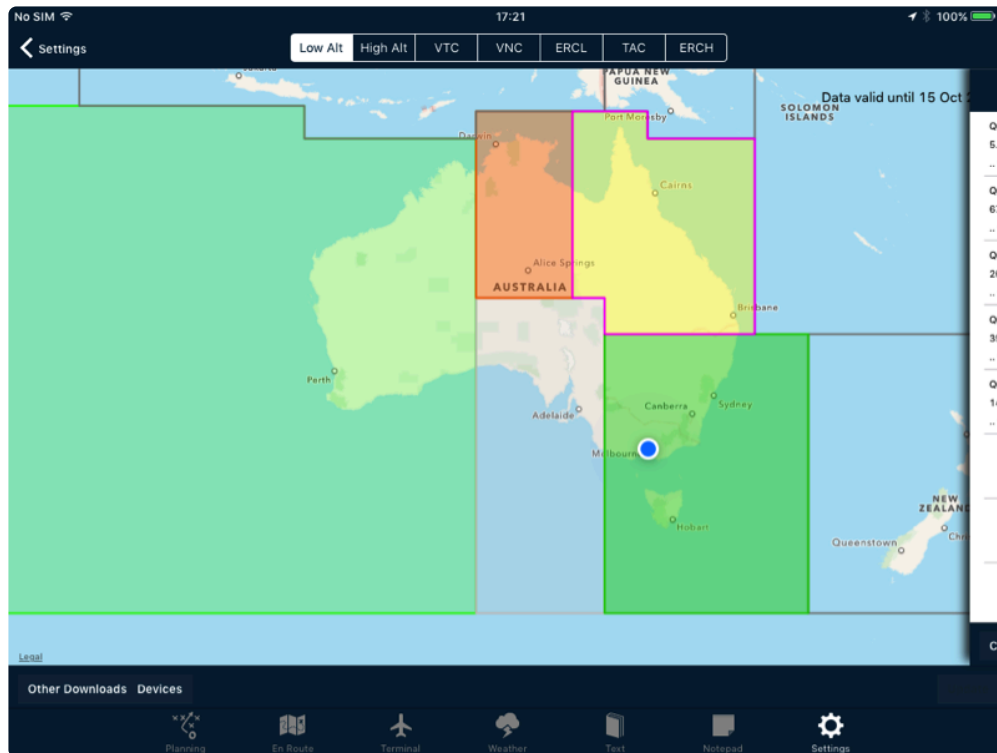
Data downloads page, displaying all colour combinations

Downloading a Region

To download the core information for a Region (VFR/IFR Mega Maps, ERSA and DAP pages), tap an area on the map and select *Download* from the menu.

This will begin the download for all relevant information that you're subscribed to for that Region.
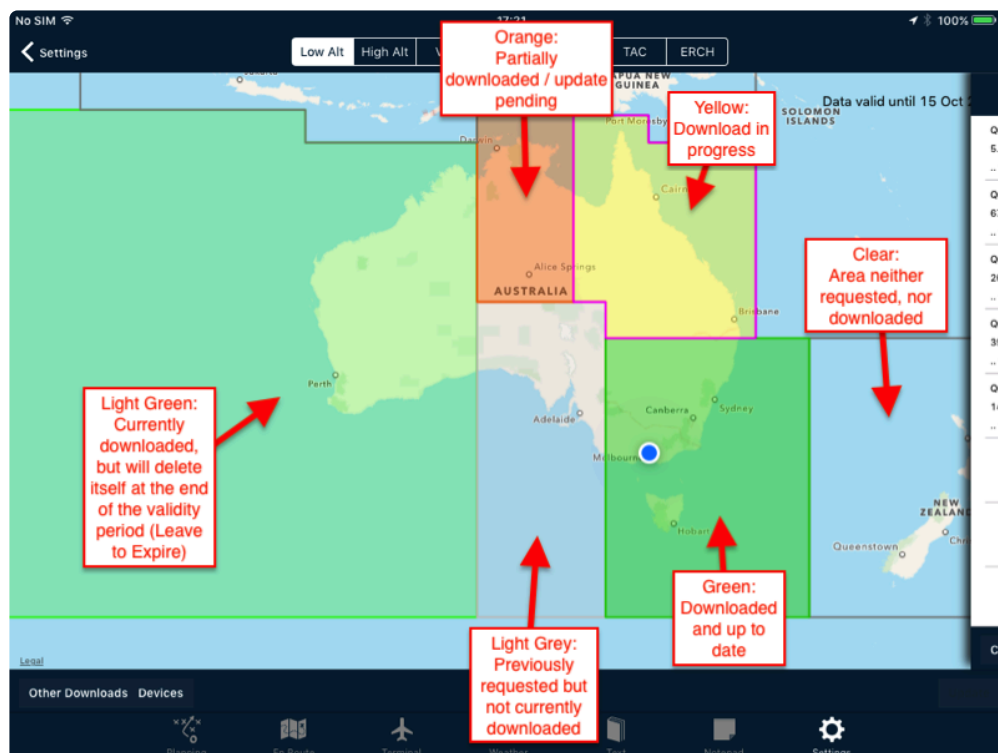
Note: By default the individual VTC, VNC, ERC L, WAC charts are not downloaded as these are all contained in the MegaVFR and Mega IFR Enroute Low charts.

- If you wish to download these charts as well:
    ◦ tap the map type selection at the top of the page (VTC, VNC etc):

    ◦ tap on the box(es) for the charts you wish to download.

Depending on the current download status, the colour of the Region changes as follows; (see above for examples)

- Clear when no data has been downloaded (as per New Zealand)
- Light grey when this Region has been previously been requested, but is not currently saved (as per South Australia)
- Yellow when the Region is currently being downloaded (as per Queensland)
- Orange if the Region is only partially downloaded (as per Northern Territory)
- Light Green when the Region is set to Leave to Expire (as per Western Australia).
- Green when all core information in that Region has been downloaded and saved to the device (as per South East Australia).

When new data is available, the red Update button appears at the bottom-right of the screen.

- Tap this icon to download new data for all Regions previously downloaded.
- To cancel a download in progress, tap the small blue square inside the download progress circle, or tap Cancel All.
- To hide the Current Downloads view, swipe the window to the right.
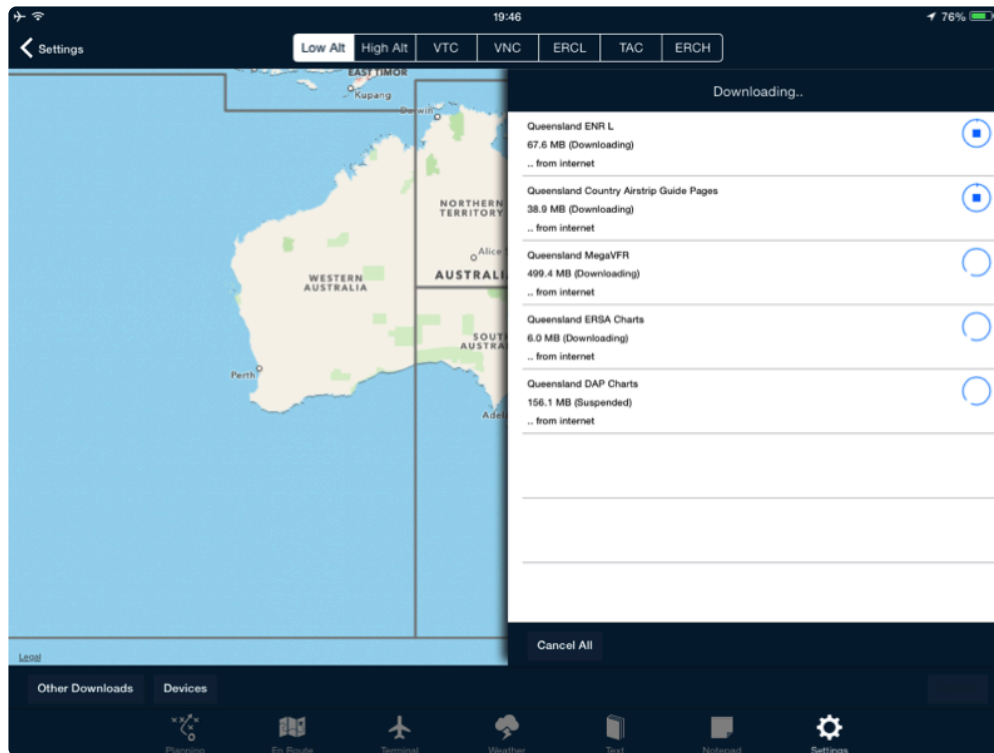
Downloads in process

AvPlan EFB will periodically prompt you to update if a Region is not fully downloaded. To stop this occurring, either all data for the Region must be deleted (see 10.2), or the update for the Region must be completed.

Once it has been deleted, the region will display as clear and you will not be prompted to update it again.

If AvPlan makes repeated requests or attempts to download data for a Region without your input, it will be caused by the Region having been inadvertently selected for data download at some previous time. If this happens, the Region will be shaded light-grey rather than clear. To prevent further unwanted download attempts, all data for the Region must be deleted.

10.1.1. Deleting a Data Region
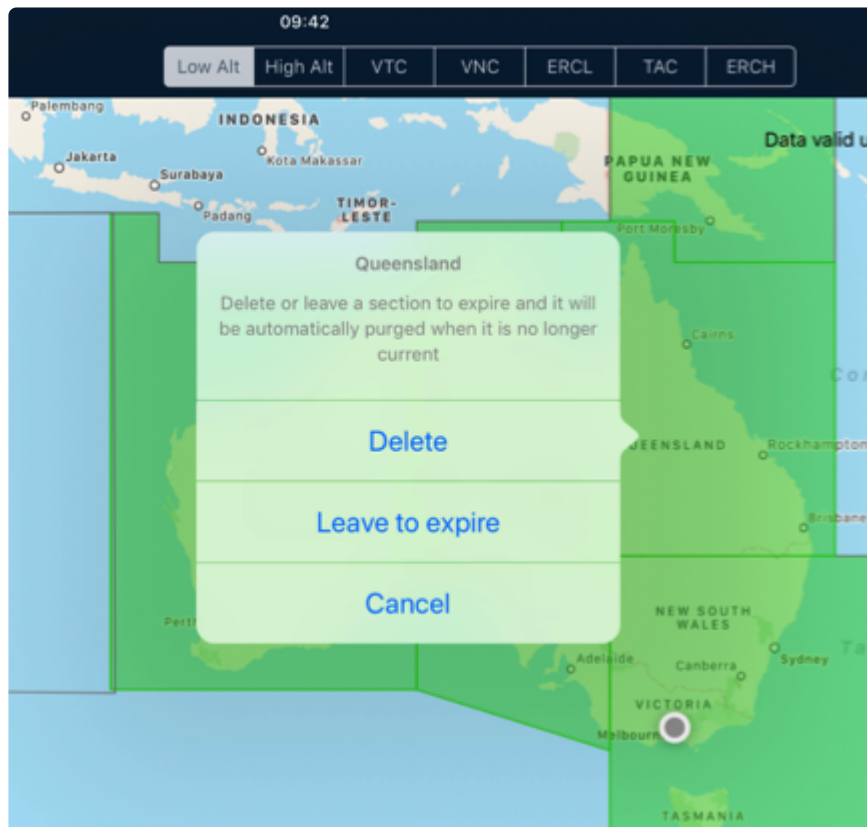
Delete region dialogue

- To delete a section, tap on the region. The options above will be displayed.
    - **Delete** will remove data for the region from your device.
    - **Leave to Expire** will leave the data on your device until it reaches its expiry date. This area will not be downloaded again when you tap Update.
    - **Cancel** will abort the deletion operation.

10.1.2. Other downloads

The Other Downloads section allows individual maps to be downloaded at your discretion.

Terrain data (found under the section marked Worldwide Other) is downloaded automatically. You may temporarily delete it, however it will automatically re-download when connected to WiFi.

Other specialist map types information can also be downloaded here, such as the 250k Topographic, Planning Chart, or User Maps (if enabled).

Bulk downloads

Tapping this option will set AvPlan EFB to download all data that you're subscribed to (except for WAC charts).

Use with caution, as the downloads can be large – both initially, and for each map update.

Maintenance

Use the options below the MAINTENANCE subheading to perform the following options:

Delete old data	Deletes downloaded data that has since expired
Delete all flight plans	Clears all saved flight plans on the device
Download NavData	Downloads and reinstalls a refreshed NavData database
Delete all forecasts	Clears all downloaded area briefings and forecasts
Delete all track logs	Clears all logged tracks
Delete all saved data	Deletes all maps and documents saved to the device

> **!** Use the maintenance options with care

10.1.3. Download data sharing

Tapping the Devices button will bring up the Download Sync menu.

When AvPlan EFB sees that the data is available from a local source (i.e. another iPad or iPhone on the same WiFi network), that source will be automatically chosen over downloading via the internet. This reduces the amount of data downloaded by only needing to download it once.
Data can either be pushed from a master device to other devices, or the necessary data can be pulled to your device from another device on the network.

To use Download Sharing:

1. Ensure your devices are connected to the same WiFi access point.
2. Ensure all devices are open to the Data Downloads page. Then tap *Settings > Data Downloads > Devices*.
3. Switch the *Enable Download Sync* to *ON* (switch will turn green). The devices will need a few moments to quietly contact each other and work out what elements each has currently stored. After this has occurred (this may take up to a minute or two depending on device types), any nearby devices in this state will be listed.
4. To send data from a master device to another:
   a. Select the destination device from the list.
   b. Tap *Send Data To Device*.
   c. The receiving device will show a list of downloads and progress icons.
5. To pull data from another device, tap an area and select *Download*, or tap *Update*. If that region is present on the master device, the requesting device will get the data from the local source in preference to the internet.

> **✳** Note: This function even works across devices that are subscribed to different pilots. It

could be helpful in places of limited internet bandwidth. If another AvPlan EFB user has updated data on their device, once both devices are logged on to the same WiFi access point, data sharing can occur.

10.2. User settings

- **Username**
The Username page allows you to link the app to the AvPlan Cloud server, which allows syncing of your aircraft profiles, flight plans and subscription details. You use login details to sign up with your email address and nominate a password or to sign in (if you've previously registered).
This page also allows you to manage your password by changing or resetting a forgotten password.

✱ The same username (email address) and password used here is also used when interacting with our website. For example: For online subscription purchases (recommended!) and flight plan sharing to the internet via the My Account page of our website.

- **Automatic Weather Downloads**
  - Disabling automatic weather downloads will stop AvPlan EFB autonomously downloading weather (upon building a flight plan, then once per hour) as a plan is built or during flight. When this option is set, you can manually force AvPlan EFB to download the latest weather (if your most recent downloaded forecast is >15 minutes) by tapping the Refresh icon (circular arrow icon) at the footer of the flight plan.
- **X-Plane/FSX/Elite flight simulator Interface**
  - Enabling the X-Plane interface will disable the inbuilt GPS and enable input from a flight simulator. The IP address for your iPad will appear in this row. See Flight Simulator Interface for further information about simulator connection.
- **Waypoint auto-sequencing**
  - Enabling the waypoint auto-sequencing will automatically sequence to the next flight plan leg as you fly past each waypoint. Auto-sequencing will only start after the Departure icon is pressed, and will stop at landing points, or points with a delay in your plan (for example when performing aerial work).
- **Airspace, Runway and Terrain warnings**.
  - Disabling Terrain Warnings disables the look-ahead feature for terrain.
- **Audible Notifications and Warnings**
  - See below for a detailed discussion of the options found within this menu item
- **Automatic Data Download**
  - When enabled, the app can perform data download updates (maps, documents, approach plates, etc) when the device is idle and connected to WiFi.
- **Show Military Frequencies**
  - Enables specialist military-only frequencies to be displayed in the Terminal tab and Waypoint Details window.

- **Default Aircraft Icon**
  - The default aircraft icon on the maps can be changed here. You may choose from a Jet, Helicopter Piston Twin or Piston Single. The aircraft icon set within a currently selected aircraft will take precedence over this setting.
- **Print Plates one per page**
  - This sets the Print/Send function to only print one approach plate per A4 page. When un-ticked, AvPlan will fit two to a page (i.e. A5 size)

- **Auto Waypoints in Plan**
  - When enabled, AvPlan will add Top of Climb (TOC), Critical Point (CP) and Top of Descent (TOD) waypoints into the flight plan. If you have a Pro subscription, you may also see multiple Critical Points based on normal and degraded operations (i.e. single engine, depressurised, etc) as set up in your aircraft profile.

> ❗ There is an issue whereby *AutoWaypoints in Plan* will cause flight plan submission (to NAIPS or to ISIS, for example) to fail. Do not select *AutoWaypoints in Plan* prior to plan submission.

- Full Screen Flight Plan
  - When this option is enabled, the electronic flight log becomes its own tab (rather than being a slider from the side or top/bottom of screen). More info here.

- Flight plan syncing / Aircraft model syncing.
  - Enabling the flight plan and aircraft model syncing will sync aircraft and flight plans via the AvSoft cloud service to your other iDevices. This also provides an off-device backup capability.
  - Disabling flight plan and aircraft model syncing will also disable this back-up capability (which allows individual flight plans or aircraft to be restored). A full restore of the App will continue to be available via iCloud or iTunes back-ups.

- Pilot Details
  - Here you can enter your contact details, as well as NAIPS/IFIS/RocketRoute credentials.

- Detailed data areas
  - Choose between different regions that AvPlan EFB will display navdata-based information for (for example, airport locations, navaids, waypoints, air routes, etc)

- Display MGRS Coordinates
  - Enables/disables military coordinate system throughout AvPlan EFB.
- Disable user content syncing
  - Turn this off if you are a large organisation and don't wish for approach plate or map annotations to be synced between devices.
- Add turning points only

◦ Enable this option to reduce the number of waypoints added in an IFR flight plan. Only waypoints at turning points will be added to the flight plan along a route.
- Disable moving map mode.
    ◦ Disabling Moving Map mode requires that a flight plan be loaded and in Fly mode for the GPS to be enabled on your device. Disabling Moving Map mode is useful when performing extensive pre-flight planning and preserving battery life is a priority. This is an advanced setting; only enable this setting if you can remember to enable the GPS (through the PLAN|FLY switch) before takeoff. If the switch remains in PLAN mode, the moving map features will not operate as normal.
- Display flight plan below map (portrait mode)
    ◦ When the iPad is in portrait mode (i.e. taller than it is wide), the flight log will appear at the bottom of the screen (below the map).

- Application Colours
    ◦ Here you can control the displayed colours of the following features:
        ▪ HUD (Head Up Display) Text
        ▪ Recorded track (Enroute tab)
        ▪ SIGMET
        ▪ Subdivision (line[s] drawn on map)
        ▪ CTR (Controlled airspace)
        ▪ CTA (Control Zone)
        ▪ PRD (Prohibited, Restricted, Danger Airspace
        ▪ ARFOR (Area Forecast)
        ▪ FIA (Flight Information Area)
        ▪ Aircraft (Course) Pointer

- Advanced Settings (NOTE: these options are only visible to Pro level subscribers)
    ◦ LSALT Calculator – DEM Level 0
        ▪ Forces AvPlan's LSALT Calculator tool to refer to the worldwide Digital Elevation Model (DEM) for lowest safe altitude calculations. May result in a lower calculation than when using Hypsometric Tints, but will still be conservative.
    ◦ LSALT Calculator – Hypsometric Tints
        ▪ Forces AvPlan's LSALT Calculator tool to refer to the Hypsometric Tints (terrain tints as seen on WAC charts). May result in a slightly higher (i.e. more conservative) calculation than when using the DEM.

For more details about the DEM and Hypsometric methods see the LSALT calculator section.

Audible Notifications and Warnings

Select this option to enter the sub-menu to enable or disable various voice annunciations. These can be delivered via the devices' inbuilt speakers, a cable (for headsets with a music input), or via Bluetooth.

- Tapping the voice gender also provides a short demonstration of an annunciation. Helpful for setting the volume within your headset.

- Types of annunciations that are available include:
  - Airspace notifications
  - Runway notifications
  - Terrain warnings
  - Altitude warnings
  - FIA frequency change notification
  - New track heading
  - iPad not charging/battery level warnings.

✳ NOTE: With the exception of runway notifications and battery level warnings, most annunciations are inhibited when flying below 500 feet AGL.

Bluetooth settings

Select from different Bluetooth protocols, depending on your headset/Bluetooth link.

- Hands free protocol (HFP). Used by products like BOSE A20 headset.
- Advanced Audio Distribution Profile (A2DP). Used by products like Pilot Communications BluLink adaptor.
- None (internal speakers).
  A stereo headphone cable could also be used if headset allows a direct connection – select None when using this connection.

10.3. Notifications
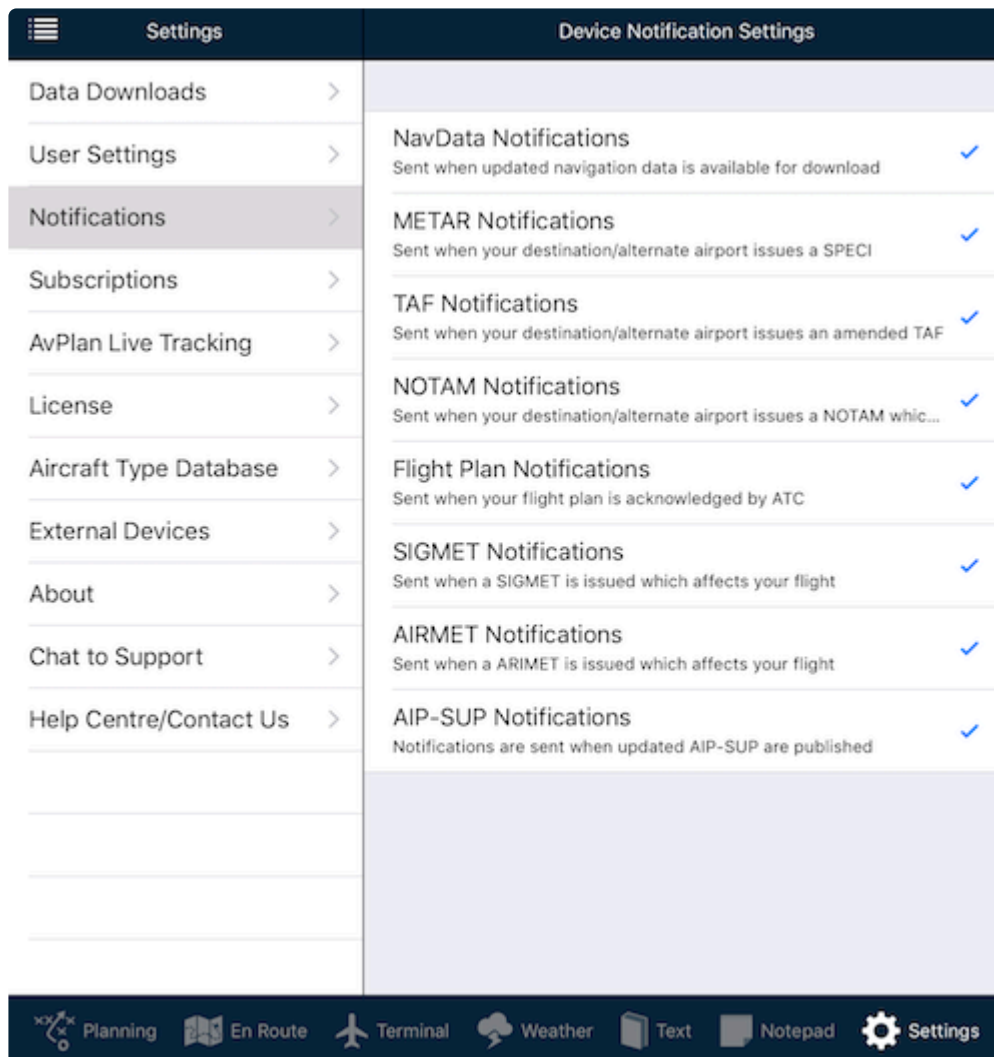
Notification settings

In the Notifications section, you can tune the types of notifications the AvPlan EFB server sends to your device.

Un-tick any you do not wish to receive.

> ❗ In NZ, METAR updates are the only notifications supported by IFIS.

10.4. Subscriptions

Tap the *Subscriptions* row to view your current subscription list.
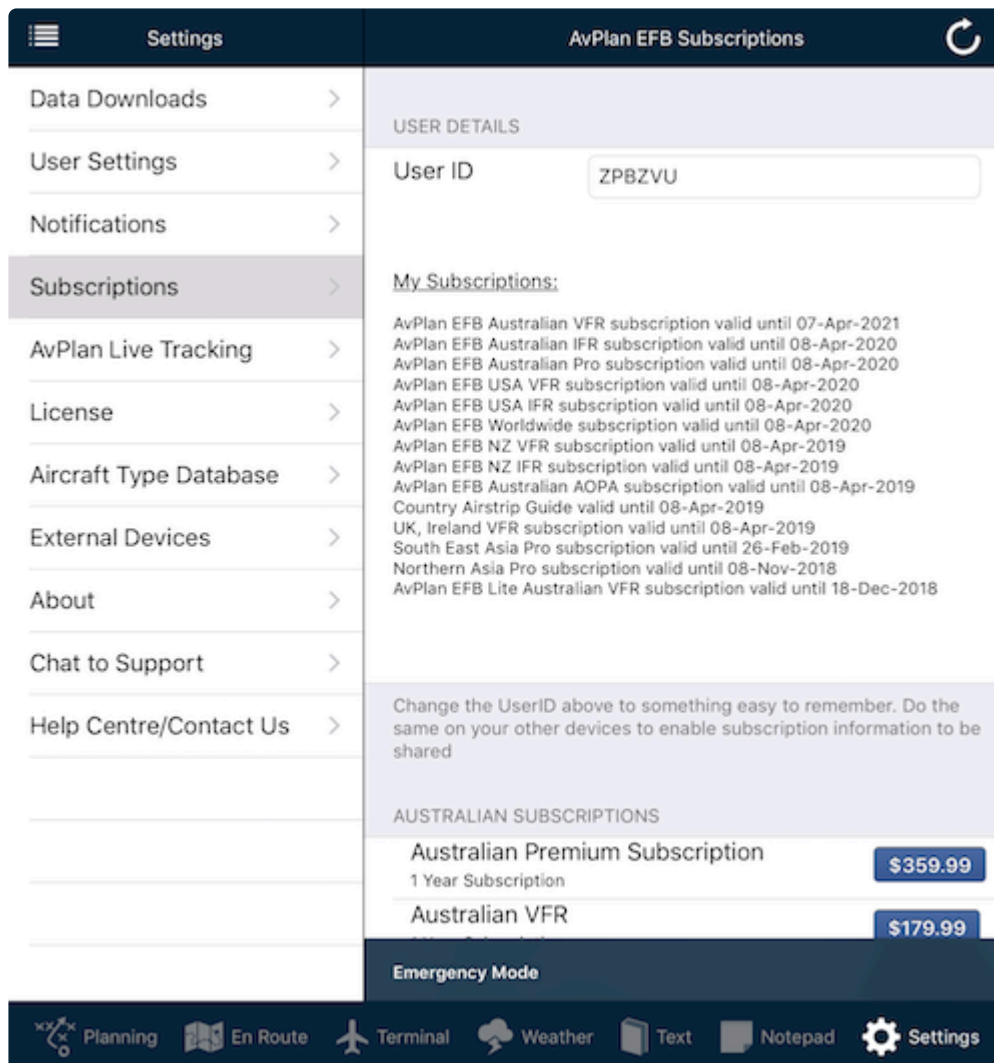
Any of your currently connected subscriptions will be displayed in a list directly underneath the words My Subscriptions:

If you don't see your purchased subscriptions here, visit the *Settings > User Settings > Username* page and ensure you're signed in correctly. Once you're signed in correctly, return to the Subscriptions page

and tap the refresh button in the top-right corner of the screen.

You can directly purchase subscriptions from within the subscriptions page if you choose. This procedure utilizes your iTunes account for the transaction, and thus attracts an Apple royalty.

> **!** Note: For the most cost-effective subscription rates, we suggest subscribing via www.avplan-efb.com as it bypasses the Apple royalty. There is no difference to the access that either purchasing method brings.

User ID field

The User ID field performs an important role early on when you're testing out AvPlan EFB, and you haven't yet signed up with your email address/password. In order to sync aircraft or flight plans between

two devices not yet signed up, you'll need to make the code match on both devices.

> ✳ Once you've been through the process of signing up, your AvPlan EFB login takes precedence over the code in the User ID field.

> ❗ If you've purchased via iTunes (i.e. in-app), don't alter the User ID code as there is a chance you may disassociate your subscription from your device. If that happens, contact AvPlan EFB support, outlining the current User ID code and we can advise how to resurrect the subscription.

10.5. AvPlan Live tracking
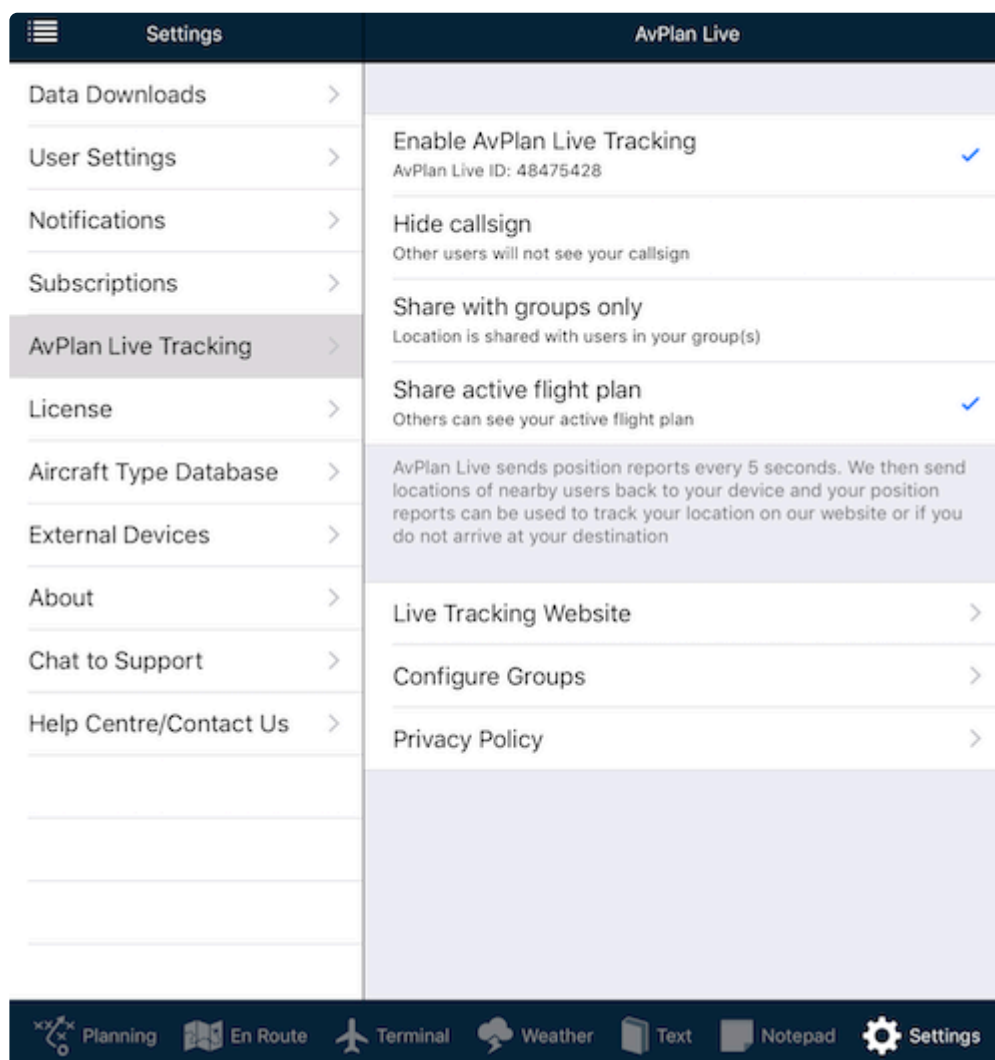
AvPlan Live options

AvPlan Live is a feature included with all subscription levels. When the feature is active and combined with a data connection, AvPlan Live provides:

- Live traffic from other AvPlan EFB users displayed on your EnRoute pane (updated every 8-10 seconds)
- Live flight progress sharing to a website so friends and loved ones can follow along using a web

browser
- Create and send a special link to friends or loved ones so they can view your aircraft position any time you're in the air (i.e. not tied to a specific flight plan)

These settings allow you to control how much information about your flight is shared with other AvPlan EFB users.

- If you only wish to share your traffic position, tick *Hide Callsign* and untick *Share active flight plan*.
  - Other AvPlan EFB users will then only see a traffic target with height and groundspeed figures.
- Advantages of sharing your details include:
  - The ability for others to contact you over the radio directly if they wish to ask you a question or let you know they're in the vicinity
  - The ability to see where you're heading, and possibly whether you'll be in conflict at some stage in the flight

10.6. Aircraft type database

AvPlan EFB supports any number of aircraft types – from a simple ultralight, right up to twin-turbine jets. Detailed performance profiles can be created and applied to any flight plan. AvPlan EFB also supports weight and balance calculations.

Aircraft profiles consist of two main parts: Aircraft Type, and then individual aircraft of that model type is created.

Aircraft types are a particular aircraft that share performance and loading characteristics. These may be aircraft of a particular model type, year etc (C172R, V35B Bonanza, TBM-850 etc). An aircraft has a single set of performance characteristics, loading scheme, etc.

An individual aircraft instance can be created from an aircraft type. This has a distinctive callsign, weight, empty arm, avionics, etc. If you have a fleet of the one type, you can have many instances under the one type.
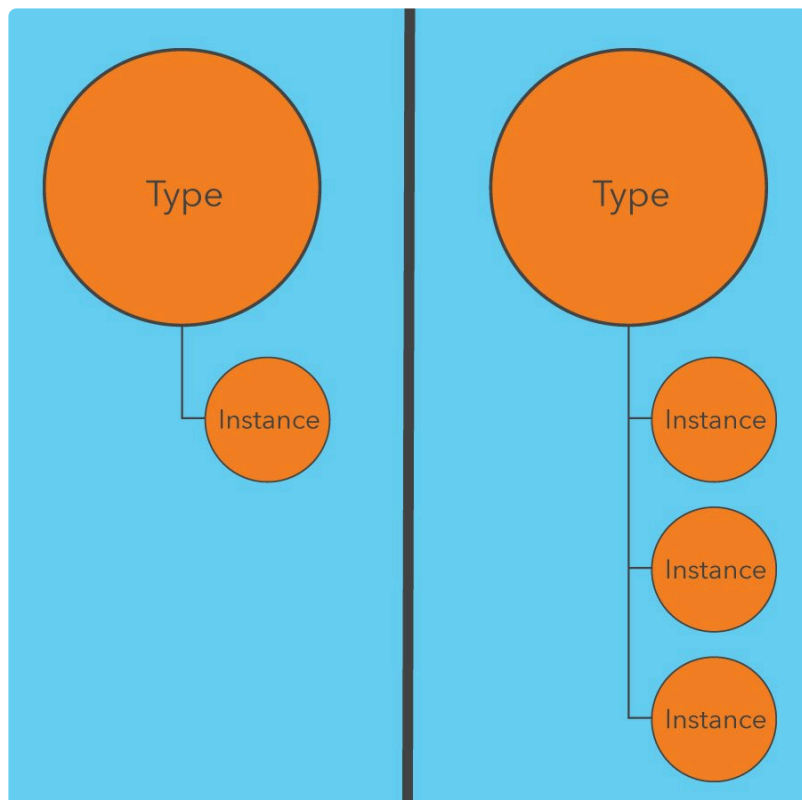
Type/instance relationship. Single instance and multiple instance example

When viewing this list of types on your device, any aircraft registrations associated with a type will be printed beside each listing in parentheses.

Other available aircraft types are those that have been shared by other AvPlan users to our website. These are not stored on your device, so they take up no storage room – nor can they be deleted like the locally stored ones. Tapping a desired other type will instantly import it into your 'on device' list. A data connection is required. If one of these types are tapped when not connected to data, an error message will appear. Connect to a data source (WiFi or 4G, etc) to import.
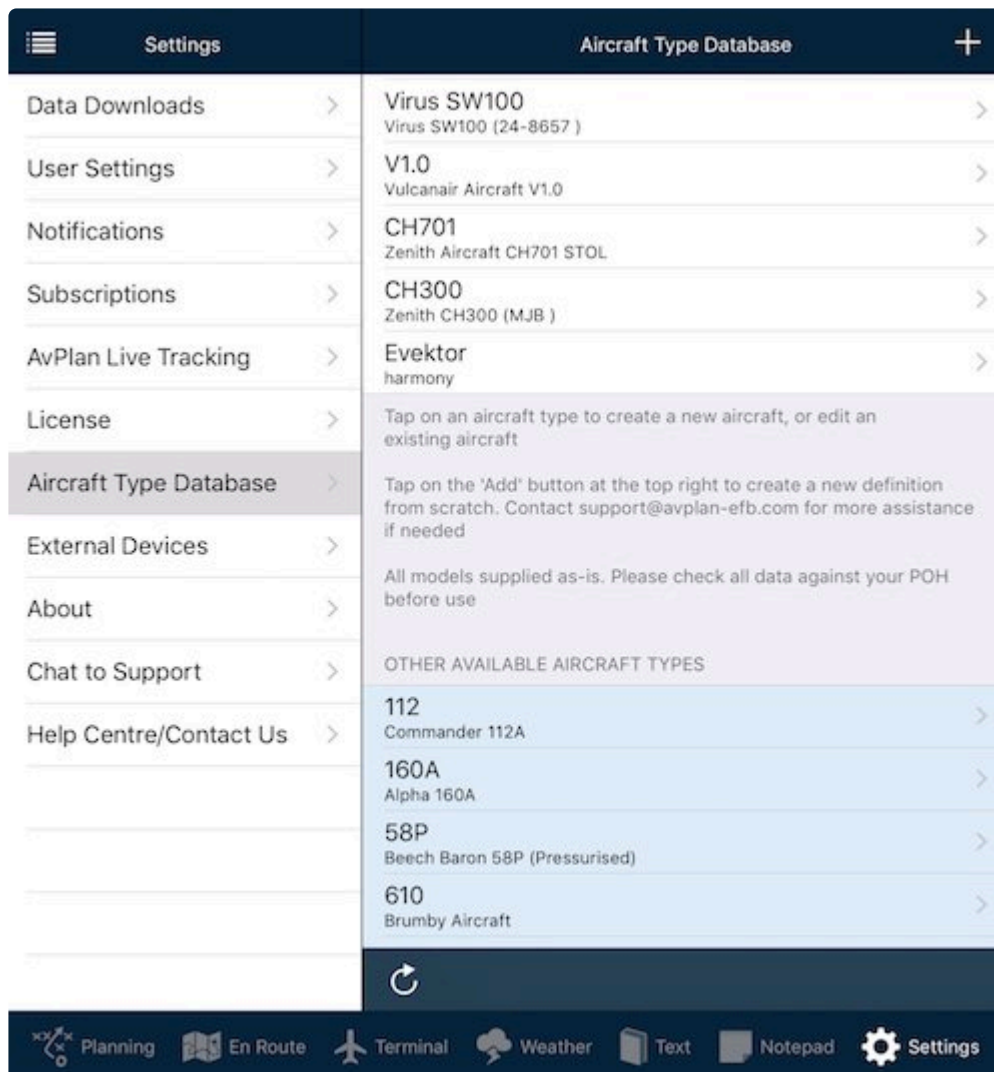
Aircraft Type Database list

This view displays the current types defined in the aircraft type database. These types can be used to create your aircraft profile(s).

Aircraft types can be copied and uploaded and shared with other AvPlan EFB users.

- Tap an aircraft type listing to view the various sharing options, which can be found under the Options subheading. These include:
    ◦ Copy type
    ◦ Share type on AvPlan EFB website
    ◦ Email aircraft details
    ◦ Send aircraft details

The list is divided into two sections:

- Aircraft Types on Your Device (white list)
    ◦ This list includes all aircraft profiles that are saved to the memory of that device. This list may grow or shrink if you add/delete aircraft types. Swipe right-to-left to reveal a Delete button. Tap it to delete an aircraft profile from your device.
    ◦ Any registrations associated with a particular type will appear in parentheses next to the description.

- Other Available Types (light blue list)
  - Scroll past the first part of the list to find a list of Aircraft Type profiles that other AvPlan EFB users have created and kindly shared.
  - To import an aircraft from this list, tap it. The newly installed type will now appear in the upper part of the list (see Aircraft Types on Your Device, above). An instance of that type can now be created. Tap Add New Aircraft. Enter callsign/registration (at the very minimum). Tap the back < button several times until you have the option to Save.

> **!** Shared Aircraft Types have been shared by other AvPlan EFB pilots and are supplied as-is. Check all data against your Pilot Operating Handbook before use.

- If you have completed an Aircraft Type profile that isn't already on the list, please consider tapping Share Type on AvPlan-EFB Website so other AvPlan EFB pilots might also benefit from this.

10.6.1. Creating/editing an aircraft type
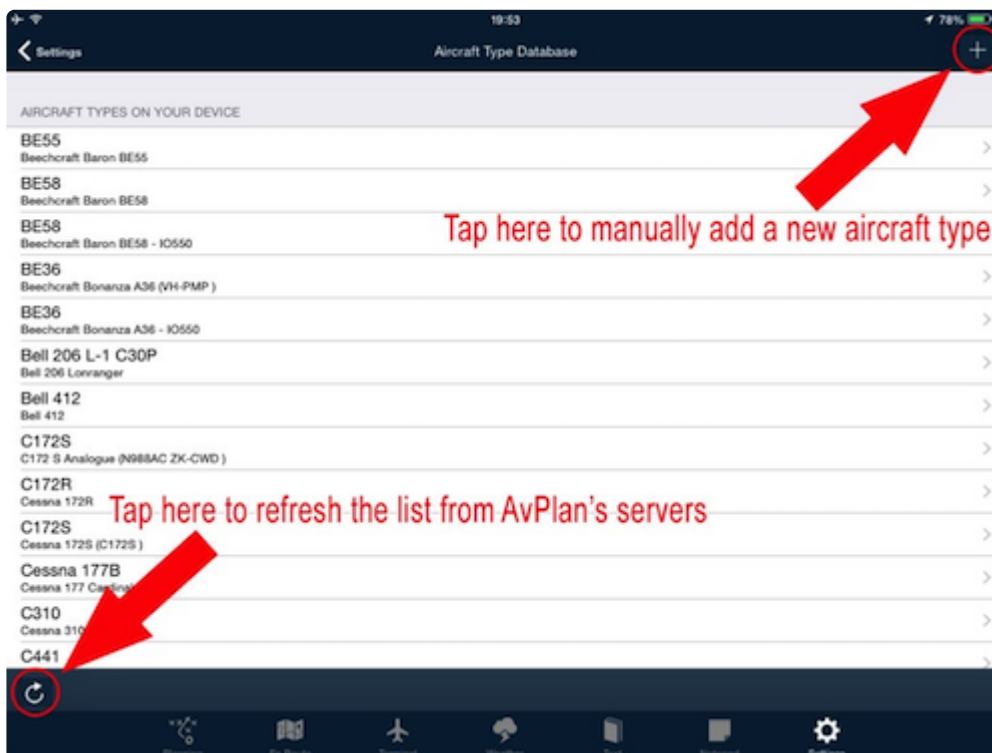
To create or edit an aircraft type:

- Tap *Settings > Aircraft Type Database* to enter the Aircraft Type Database.
- To create a new aircraft type, press + at the top right hand side of the window.
  OR
- Tap on a type to edit an existing type.
  A window is displayed with two sections: **Basic Aircraft Details and Advanced Details.**
  Rows are displayed as: **Basic Performance, Weight and Balance, Detailed Performance**.

Basic performance

Basic type information example

The Basic Information window allows you to enter information such as:

	Type information
Type Name	e.g. C182T or P2002
ICAO Type Identifier	e.g. PA44 or EC30. Required when submitting a plan to NAIPS/IFIS. The ICAO type identifier for your aircraft can be found at: http://www.icao.int/publications/DOC8643/Pages/Search.aspx NOTE: If your aircraft has no ICAO type code, enter ZZZZ
Description	e.g. Cessna 182T or Tecnam Sierra
Performance category	Select whichever reflects the normal speed in approach configuration (Note: this is NOT cruise speed)
Wake turbulence category	Select most appropriate from a list of MTOW levels.
Pilots Operating Handbook .PDF URL	e.g. http://www.jabiru.net.au/Manuals/Pilot%20Operating%20Handbooks/J160-C_Section0-9_Rev3.pdf. This will make that document available for easy download and viewing in the POH option within the Text tab

Is this aircraft a helicopter?	If the aircraft is specified as a helicopter, then the Nearest Items view will display nearby helicopter landing sites. If this setting is set to NO, then HLSs are hidden.
Aircraft icon	Select from the various icon options. This icon will be displayed on the map when this particular aircraft type is selected in an open flight plan. To change the icon displayed when no flight plan is open, you'll need to change the Default Icon in ":#user-settings.

	Units
Weight Units	The units used for passengers, baggage or cargo to be loaded in the aircraft
Fuel Units	The units used by the fuel calculations – both in filling the fuel tanks and the fuel burn calculations
Fuel Type	Select between AVGAS, AVTUR, MOGAS or OTHER
Fuel Specific Gravity	Used by AvPlan to calculate the weight of the fuel load. This will be entered automatically when a *Fuel Type* is selected. Only adjust if you know what you're doing
Fuel Cost	Will allow flight costings in the flight plan or stage summary
Arm Units	Used in the weight and balance setup, select between *mm* or *inches*

✳ Data entered in the aircraft profile is stored within AvPlan EFB as standard units. The figures are then adjusted on the fly for display within the app (depending on the unit settings seen above). For Example: The details from the POH can be entered in Pounds and USG, and then the units later changed to KG and Litres for operational use. You are not stuck with the units provided in the POH for operations.

	Basic Performance
Cruise TAS	Planned cruise true airspeed in knots
Climbing IAS	Cruise climb indicated airspeed
Climb fuel flow	Aircraft's fuel flow during an enroute climb
Cruise fuel flow	Aircraft's basic fuel flow at cruise
Holding fuel flow	Aircraft's fuel flow when at endurance power settings
Fixed reserve fuel flow	Fuel flow for fixed reserve fuel component
Rate of climb	Average rate of climb for an enroute climb in feet per minute
Rate of descent	Cruise descent average rate in feet per minute
Total fuel	Total amount of fuel capacity for the aircraft
Service ceiling	Important for app performance during wind/altitude calculations, the app won't calculate winds above the service ceiling
Glide Ratio	The :1 is assumed. e.g. if the glide ratio is 10:1, enter the figure 10. If it's 12.7:1, enter 12.7

Glide IAS	The best glide indicated airspeed – assume the worst-case scenario: i.e. at MTOW
Minimum Runway Length	Used in the Pro feature Glide Planning, where appropriate airfields are pointed out on the map in flight. Any with runways below this length will not be displayed

	Some extra features for Pro subscribers
Plan Using High Level Routes	Switching this *on* forces AvPlan's IFR auto-route function to select high air routes over low ones – good for turbine aircraft
Reduced TAS For CP Calculations	Specifying values here will allow AvPlan to calculate up to three Critical Points along the route; a default CP corresponding to normal cruise TAS and two optional CPs at reduced TAS values corresponding, for example, to single engine flight in a multi engined aircraft, or depressurised flight at lower than optimum levels. The default CP is labelled simply 'CP' when displayed on the en-route chart and in the Flight Plan Table. The two optional CPs can be given short custom names such as, for example, '1INOP' or 'DEPR'. The custom names will display on the enroute chart and Flight Plan Table if optionally enabled
Reduced TAS fuel flow for CP Calculations	Allows AvPlan to calculate the fuel burn at the the reduced TAS values specified for each CP

> **!** When you've completed your aircraft editing, it's important to tap the *back* button (< symbol, top-left) to get back to the main list level, where you'll be prompted to save your changes or discard. Ensure you tap *Save Changes*.

Editing an existing profile

If you're wishing to change the details of an aircraft profile already installed on your device:

- Tap *Settings > Aircraft Type Database > [your type] > Basic Performance*.
- Scroll down to the *Basic Performance* section:

BASIC PERFORMANCE

Cruise TAS	90 kt
Climbing IAS	70 kt
Climb Fuel Flow	28 lt/hr
Cruise Fuel Flow	18 lt/hr
Holding Fuel Flow	15 lt/hr
Fixed Reserve Fuel Flow	18 lt/hr
Rate of Climb	500 ft/min
Rate of Descent	500 ft/min
Total Fuel	95 lt
Service Ceiling	10000 ft

Basic performance details

- Edit the figure(s) required. When editing a figure, only the number needs to be entered then tap the return key – no need to enter kt or lt/hr for example.
- If some of the figures are greyed out (see below), it indicates that a Detailed Performance Profile is associated with this aircraft.

Detailed performance profile active

- If you don't require a detailed profile on this particular aircraft and would rather use the Basic Performance details, tap *Settings > Aircraft Type Database > [your type] > Detailed Performance*, then tap the *Delete Profile* button at the bottom of the screen.

Saving your changes

Once you've created or updated your profile, you'll need to tap the back button . It appears up in the top-left corner of the editing screen. Each time, the text next to it will display the page you're returning to.

- Tap the back button two or three times, until the app prompts you to save or discard your changes. Tap *Save changes*.

10.6.2. Weight and balance

Weight and Balance setup

Creating the envelope

AvPlan EFB uses two pieces of data for each corner, a weight and arm length, to build the envelope. The Moment Limits are not used, as this is a combined figure of both of the above.

From your POH, use this type of graph (from a C172):
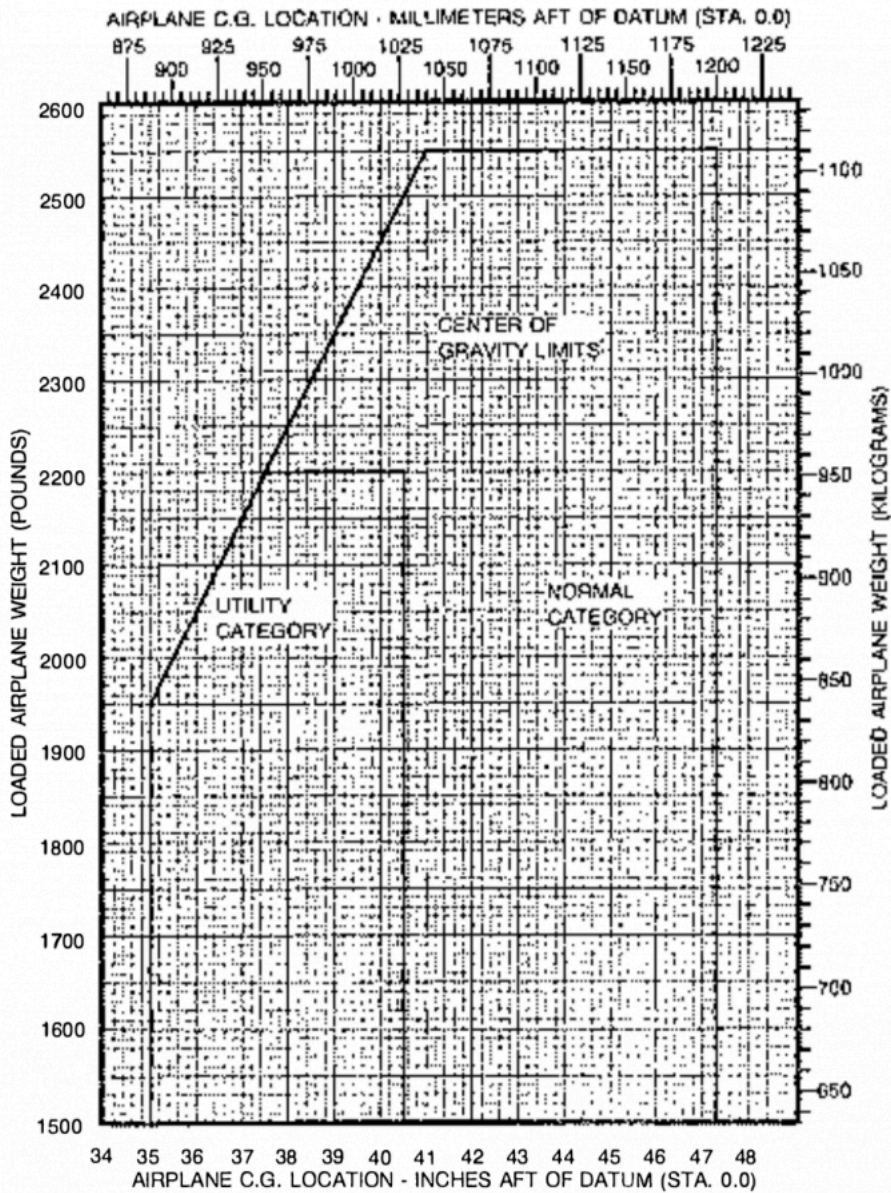
Figure 6-8. Center of Gravity Limits

Not this type (i.e. the Moment Envelope from the same aircraft):
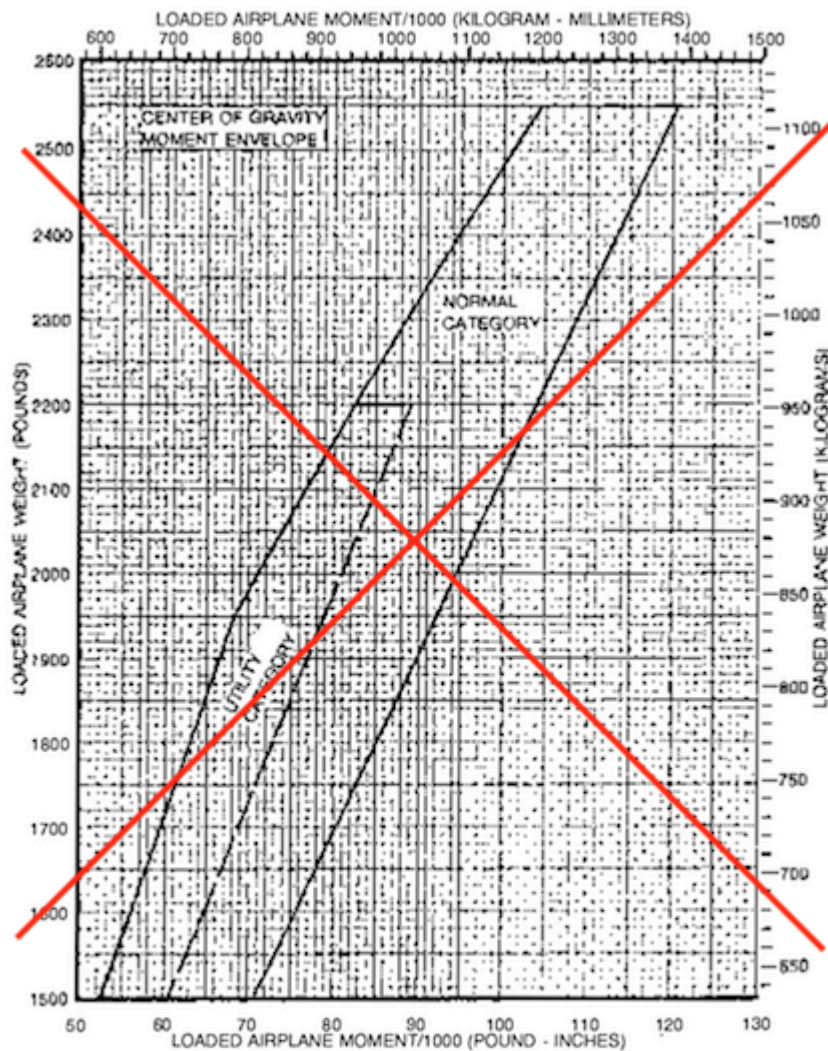
Figure 6-7. Center of Gravity Moment Envelope

- Tap *Settings > Aircraft Type Database > [your type] > Weight and Balance*.
- Tap the Edit button in the top-right corner of the screen. You should see green plus signs appear down the left side of the window.
- Tap a green plus to add a corner. This will form Corner 1. It doesn't matter what corner you start in, AvPlan always moves clockwise around the envelope. However, it's always a good idea to start in the bottom-left of the envelope.
- You'll need the weight and the arm. In the above example (figure 6-8), Corner 1 would be 35 inches at 1500 lbs. Note that you can set the weight and arm units on the Basic Details page of your aircraft profile.
- Tap the back button to return to the list. There should now be one entry.
- Tap the green plus, and add Corner 2's details. In the above case, it'll be 35 inches at 1950 lbs. Corner 3 will be 41 inches at 2550 lbs.
- Continue around the envelope until the complete shape is created. The amount of corners will depend on the structure of the shape. In the above C172 example, there are five corners required. (note, there is no need to create Corner 1 twice)

It may look slightly different as the scale of the graph may differ to the one in the POH. This doesn't mean the graph is incorrect, as long as the relative shape is correct.
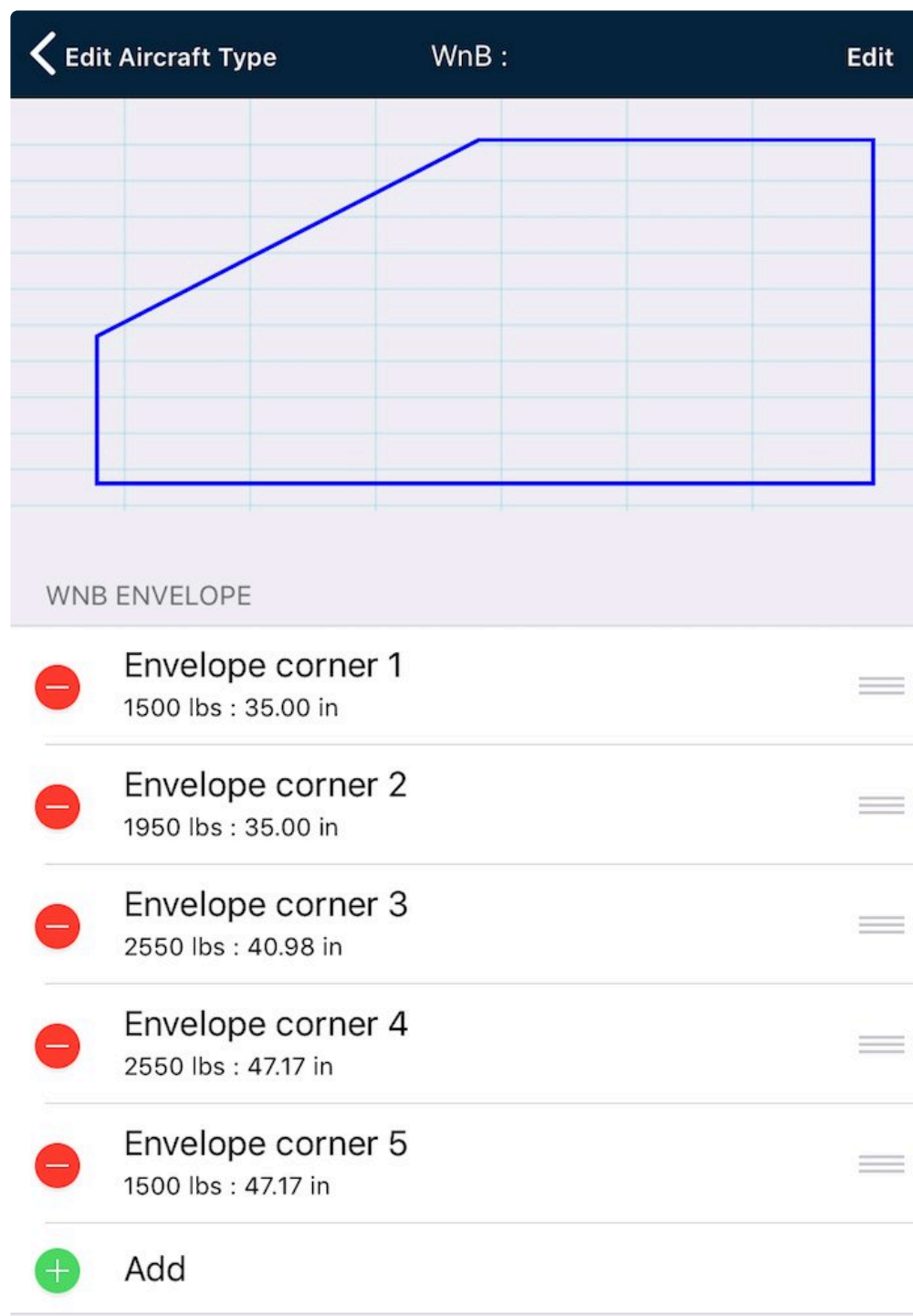
C172 completed envelope

If you wish to also add the Utility Category envelope to the display, continue around the envelope for a second time, but with the corners associated with the reduced limits. You'll end up with around 10 corners.

Sometimes, a graph is not provided by the manufacturer in the POH, so the envelope needs to be created from a word picture. These are usually found somewhere in the Limitations section.

Consider this scenario:

2.8.   Center of Gravity

FWD Limit	19% MAC	All weights
	1.86mt [73.3in]	
AFT Limit	32% MAC	All weights
	2.04mt [80.3in]	

You'll also need to know the MTOW, which will give you half the corner details.

2.7.   Weights

MTOW	1320 lb	599 kg

So, the only other figure you'll need to obtain is the empty weight of the aircraft. For the purposes of the example, we'll use 306 kg.

Corner 1 will be 1860 mm at 300 kg. (a weight just below the empty weight)
Corner 2 will be 1860 mm at 599 kg. (MTOW)
Corner 3 will be 2040 mm at 599 kg
Corner 4 will be 2040 mm at 300 kg.
This will create a rectangular envelope, which most two-seat wet-wing GA aircraft have.
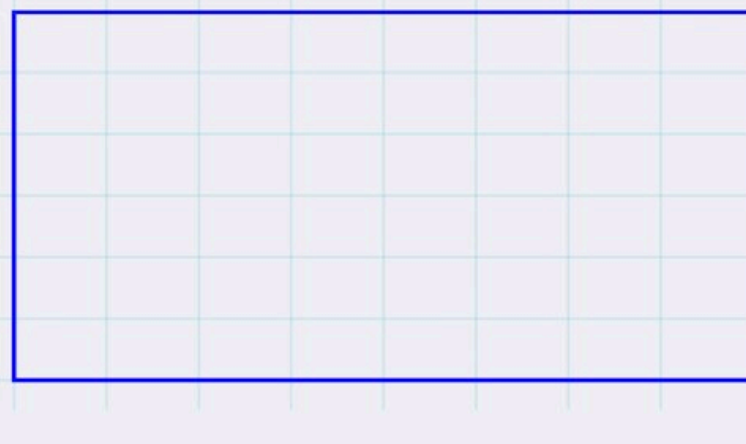
Completed envelope

Adding load stations

Load stations are added in a similar way to envelope corners. Tap the Edit button in the top-right to reveal an *Add* button.

At a minimum, each station requires the *Load Station Name* and *Load Station Arm* to be entered.

Load station edit example

The *Load station max weight* is optional, as not all stations have a promulgated maximum weight. Mostly, this will be used for cargo/baggage storage locations with a placarded maximum weight. In the *Aircraft loading / weight and balance / fuel planning* page, if a weight is entered higher than the station's maximum weight the row's text will turn red.

p(banner tip). If there's no maximum, leave as zero.

> ✳ Whether you combine load stations with the same station length together or separate them out is up to you. i.e. you can combine the seats so you have Front Seats and Rear Seats if you choose, or you can set up Seat 1, Seat 2, Seat 3, Seat 4.

Adding Fuel tanks

Fuel tanks are added below the FUEL TANKS subheading.

Add a row. You'll need to name the row, set the maximum capacity and provide the fuel tank's arm figure.

Fuel tank entry example

Note, in the above example that L and R wing tanks have been combined into one entry. If you have a second fuel tank with a different arm, add a second (or more) row.

> ✳ Note: The order of the tanks in this view determines the fuel burn order. Fuel is burnt from the top tank down. You can quickly reorder fuel tanks (and load stations too) whilst in edit mode by dragging the row from the handle on the far right (three horizontal bars icon).

Advanced fuel tank arms can also be added. These allow different moment arms for different fuel levels (e.g. for swept-wing aircraft, or those with an unusually-shaped fuel tank system). Moment arms are linearly interpolated between values in the table. Only use this option if you are given an advanced fuel burn arm table in the POH.

< Fuel	Advanced Tank Details	+

199 lbs : 190.90 in	>
1793 lbs : 184.40 in	>
2990 lbs : 180.80 in	>
3587 lbs : 179.70 in	>
4326 lbs : 178.65 in	>

Advanced tank example

10.6.3. Advanced performance

The Advanced Performance page provides a detailed performance model for the aircraft type. This is given a name (more than one performance model associated with an aircraft type is supported) and then a model built-up of series of altitudes and the performance values at that altitude.

> ✳ Performance values at intermediate altitudes will be linearly interpolated by AvPlan EFB.

Creating a profile

To create a detailed model, select the Performance tab:

1. Press + to create a new performance model.
2. Enter a suitable name (e.g. '75% Power').
3. Press < Performance to go back. You will notice that the new performance model has been created, but is empty.

To build the performance model:

1. Select the Edit icon on the bottom of that window.
2. To add a new row, press Add. Each row is a snapshot of the aircraft's performance at a given altitude, power setting, or even temperature.
3. Values from the flight manual can then be added for each row. Go back to the Performance view and add rows as required.
4. The more entries, the more accurate fuel/flight planning will be. A single engine piston aircraft may only need a handful of entries to cover its performance spectrum, whereas a turbine powered aircraft will benefit from more entries as the performance values change rapidly with altitude.

5. AvPlan EFB will linearly interpolate values between altitudes listed in the performance profile.

> ✳ The number of rows you add is up to you, and will depend on the performance characteristics of your aircraft. The simplest example might be for a small piston aircraft to add one row for sea-level, and another for 10,000ft. For some aircraft, such as turbojets, performance will be most important to be detailed in the flight levels, with only a couple of rows to represent low-level flight.

Deleting an advanced performance profile

To delete a performance profile tap Delete Profile. A window will pop up asking which profile is to be deleted.

> ❗ When a profile is deleted, any rows associated with that profile will also be deleted.

10.6.4. Creating/editing an aircraft instance

In order to utilise an aircraft model for flight planning purposes, an aircraft instance needs to be created.

An aircraft instance contains the particular details for an individual aircraft, i.e. the registration, the avionics or radios installed. Previously, the aircraft type is dealing with settings for the whole fleet. Although two aircraft might be the same type and year (sharing the same limitations, etc), different features may have been installed over the years affecting the basic empty weight, etc.

To add an aircraft instance, tap *Settings > Aircraft Type Database > [your type] > Add New Aircraft..*

Enter as much detail as you can. At a bare minimum to use the aircraft for flight planning, you'll need to add:

*   Callsign
*   Registration
*   VFR reserve

Should you wish to submit flight plans using AvPlan EFB, a much more complete profile will need to be created. As well as the above details, add:

*   Colour
*   Operation type
*   Avionics (radios, navigation equipment, etc)
*   Transponder (Mode C, Mode S, ADS-B, etc)
*   PBN codes (required for IFR only)

> ✳ In the Avionics section, only one from each transponder type group should be selected. e.g. only one Mode S type, only one ADS-B, etc.

> ✳ If 'Z' is nominated in Avionics, an extra row will appear in the ICAO FLIGHT PLANS section 'Other Avionics NAV/'. If you need to nominate RNP2 for your flight plans, select Z, then put RNP2 in the Other Avionics row.

Default loading

Default values for weights, fuel load and survival equipment can also be specified on a per aircraft basis. These defaults will be immediately applied to the plan when the aircraft is selected, but can be altered as necessary for the particular loading condition on that flight or stage. This will reduce entry of these items each new flight plan.

> ✳ When you've completed your aircraft editing, it's important to tap the back button (< symbol, top-left) to get back to the main list level, where you'll be prompted to save your changes or discard. Ensure you tap Save changes.

10.6.5. Deleting an aircraft type or instance

An aircraft type or individual aircraft can be deleted by swiping from right-to-left the particular row in the aircraft type, or aircraft instance. This action reveals a Delete button and when tapped, the aircraft is removed.

Deleting a type
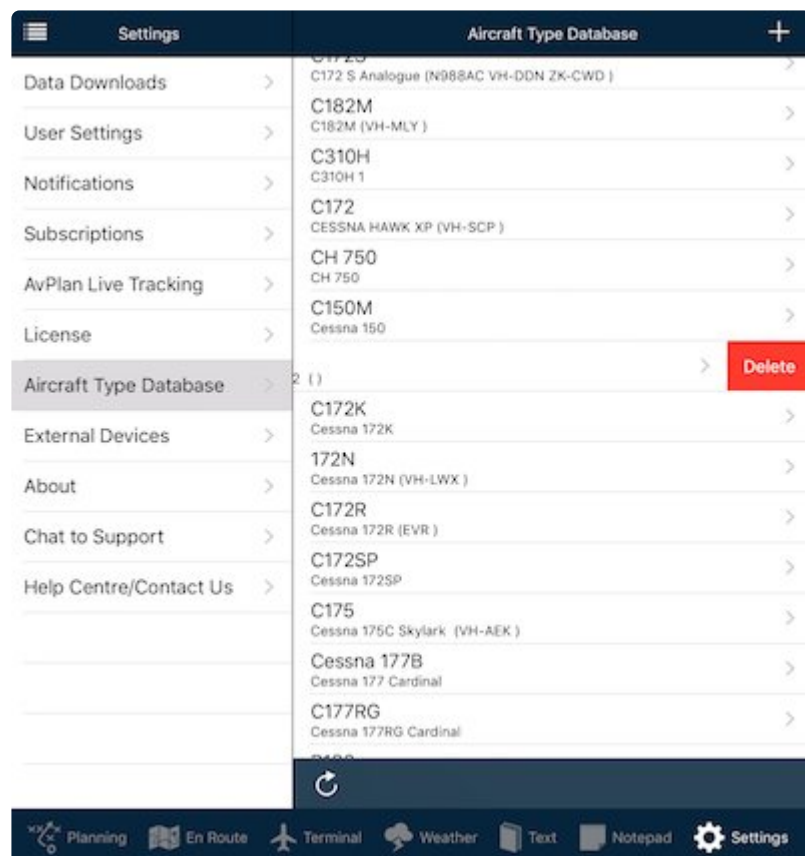
Deleting an aircraft type

Deleting an instance
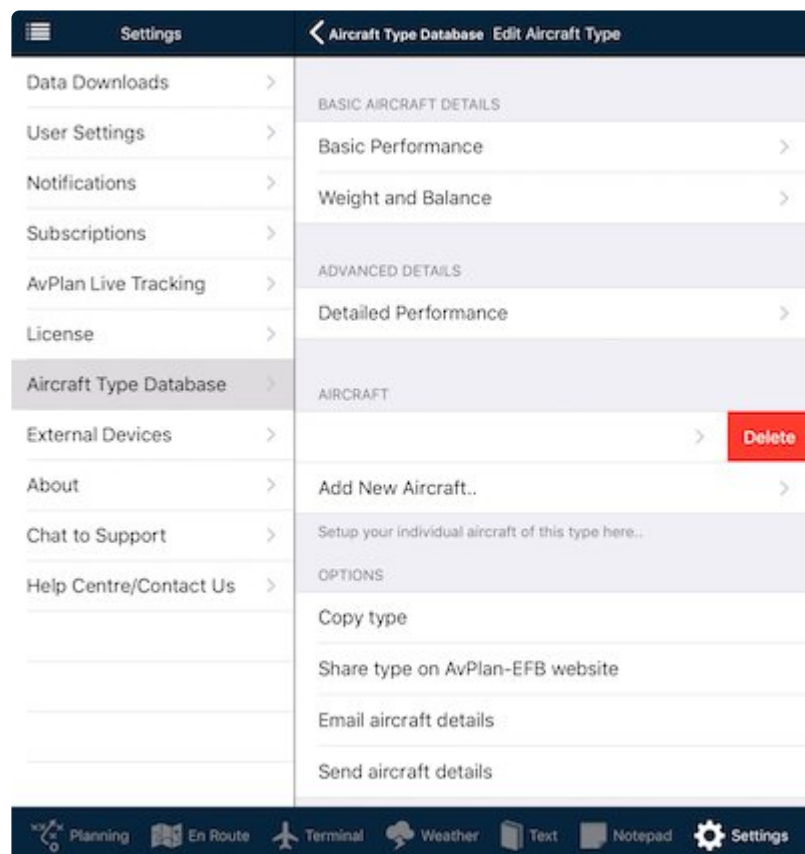
Deleting an aircraft instance
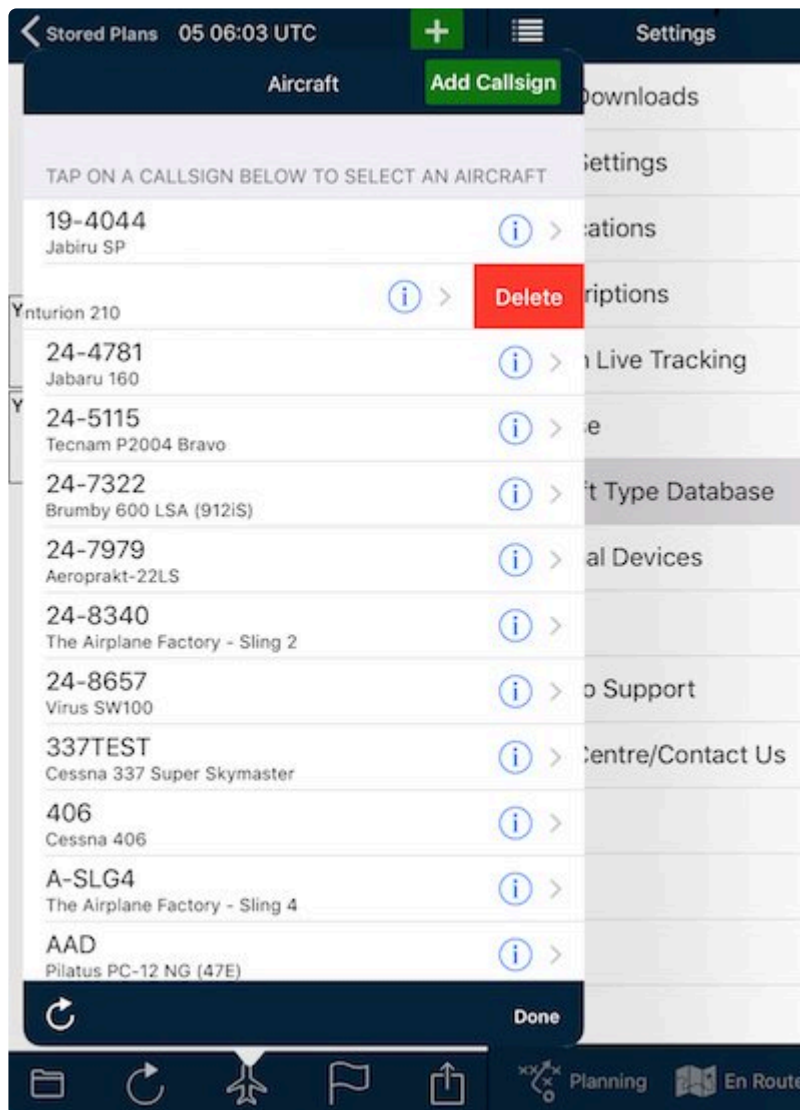
Delete instance via select aircraft menu

As a shortcut, you can remove an unneeded aircraft from the Select Callsign menu in the flight plan view.

10.6.6. Manual aircraft transfer via AirDrop

If no internet access is available, it is possible to manually send aircraft models from one iOS device to another locally via AirDrop.

To transfer an aircraft using this method:

1. On your first (source) device, tap Settings > Aircraft Type Database and select your aircraft type from the list
2. Power up your second (target) device and start AvPlan EFB
3. Ensure both devices have Air Drop activated:
   a. Swipe up from the bottom of your screen to reveal Control Centre
   b. Press and hold on the Aeroplane Mode icon
   c. Tap *AirDrop*
   d. Select *Everyone*

e.   Dismiss Control Centre by tapping the AvPlan EFB screenshot

4.   On your source device, tap *Settings > Aircraft Type Database > [your type] > Send aircraft details*

5.   Wait until your target device appears in the AirDrop section of the popup

6.   Tap to select

7.   On your target device, tap *Accept* from the popup options

8.   A confirmation will appear. If that aircraft type is already on the device, a *Duplicate Type Found* warning will pop up. In this case, select *Remove Old* to replace the existing profile with this correct new one.

10.7. External Devices

This page will show the status of any currently attached external ADSB devices, Panel devices and Satellite Tracking devices.

Devices currently supported by AvPlan are listed on the AvPlan-EFB website

ADSB Devices

Information presented here may be helpful for diagnosing connection issues.
There are two parts to the ADSB section depending on the type of ADSB-in device connected:

1.   The first part lists the Status of a variety of ADSB devices that have been connected to AvPlan, with diagnostic data as follows:

- Device name
- Device Software Version
- Device Serial number
- Device Battery level
- Traffic count- the number of ADSB targets currently being received and processed
- TAFs received- where NEXRAD weather is available over ADSB, the number of TAFs received
- METAR's received- where NEXRAD weather is available over ADSB, the number of METARs received
- NEXRAD Status (the time of the most recent update)

If in the USA and available from the device, a list of ADSB (UAT) transmitter locations is presented below the diagnostic information.

2.   The second part lists devices based on a Raspberry Pi processor.

- the IP address of the device
- The device startup status (connected / disconnected)
- The number of 1090-ES ADSB targets currently acquired
- The nature of the most recent data or connection error, if any.

Panel Devices

This section also allows you to *enable*, set up and examine the status of connections to Avidyne and Dynon panel displays.

For both kinds of display the key interface element is an *Enable* Button.

For Dynon displays no other interface information is available.

For AviDyne displays, as well as an *Enable* button, the following diagnostics are presented:

- Connection state
- Device IP address
- Device software version
- Device State
- Flight Plan Upload status
- Flight Plan Download status
- AHRS availability

Satellite Devices

This section provides information about a connected Satellite tracking device.

11. Flight simulator interface

AvPlan EFB can be used in conjunction with X-Plane, Elite, Microsoft Flight Simulator and Prepar3D flight simulators.

Enabling X-Plane interface

To enable and use X-Plane interface:

- Ensure your iPad/iPhone is connected to the same WiFi access point/local network as your desktop computer/laptop.
- Open AvPlan EFB and tap *Settings > User Settings*. Enable *X-Plane / Elite / FSX interface*. Note the IP address of your device (displayed directly below in small font).

In X-Plane, enable sending of data:

- X-Plane 9:
  - Click *Settings > Net Connections > Advanced*.
    - Enter the IP address of your iPad/iPhone in the "IP for Data Output" section (set (or leave) the port as 49002)
  - Click *Settings > Data Input and Output.*
  - Select the *Data Set* tab
  - Tick only the first checkbox in the row labelled '20 …… lat, lon, altitude'.
  - Tick only the first checkbox in the row labelled '21 …… loc, vel, dist travelled'.
  - Close the window.
    or
- X-Plane 10:
  - Click *Settings > Net Connections > Data*.
    - Enter the IP address of your iPad/iPhone in the "IP for Data Output" section (set (or leave) the port as 49002) .
  - Click on *Settings > Data Input and Output.*
  - Tick only the first checkbox in the row labelled '20 …… lat, lon, alt'.
  - Tick only the first checkbox in the row labelled '21 …… loc, vel, dist travelled'.
  - Close the window.
    or
- X-Plane 11:
  - Click *Settings > Data Output > General Data Output*
  - Tick only the last (in right-hand column, under "Network Data via UDP") checkbox in the row labelled '20 latitude, longitude & altitude'.
  - Tick only the last (in right-hand column, under "Network Data via UDP") checkbox in the row labelled '21 …… loc, vel, dist travelled'.
  - Ensure *Send Network Data Output* is ticked.
  - Enter your device IP address, and make sure the port number is 49002.
  - Press the *Done* button when complete.

AvPlan EFB will now receive location information from X-Plane.

Enabling Microsoft Flight Simulator/ Prepar3D interface

Connecting AvPlan EFB to Microsoft Flight Simulator or Prepar3D requires additional modules and settings need to be completed before being able to connect. This procedure is beyond the scope of this particular manual. For more detailed instructions, download the AvPlan EFB – FSX Connection Guide for further guidance on this process:
http://www.avplan-efb.com/ext/AvPlan_FSX_Connection_Guide_v1-0.pdf

Follow the same instructions/settings for Flight Simulator X as for Prepar3D, as Prepar3D is built from the core of FSX.

11.1. Save simulation input setting

Regular users of flight simulators may wish to enable the ability for AvPlan EFB to save the Simulator mode setting between app sessions.

This option can be found in the general *Settings* app for your iPad/iPhone:

- Tap the *Home* Button to return to your Home screen
- Select the iPad's *Settings* app
- On the left, scroll down to find and tap on *AvPlan EFB*
- On the right, scroll down to the bottom of the settings list.
- Set *Save Simulator Input Setting* to *ON*
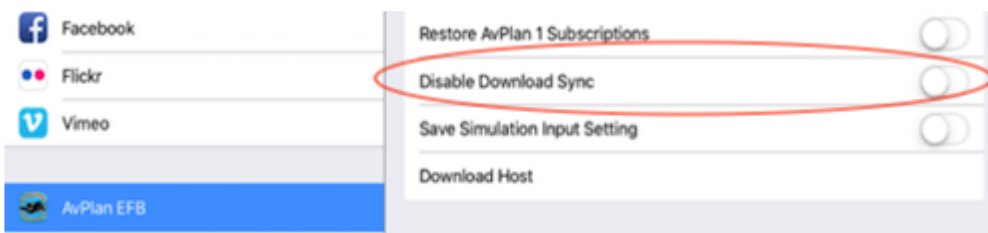
Save simulation input setting

The app will now start up with the same Simulator Mode setting as it was last shut down.

When the above mode is switched to OFF, AvPlan EFB start up using iOS Location Services automatically.

12. Basic flight planning

Begin a new flight plan

Tap the *New Plan* button from the Stored Plans list.

Add waypoints

Add at least two waypoints to create a leg in a single stage flight plan. Add a third waypoint to create a second leg, and so forth.

Waypoints can be added in a number of different ways:

- You can add waypoints using the *Add Waypoint* icon (+ icon on the top right of the flight plan table). Waypoints can be searched using the identifier or full name.
- Tap on the desired waypoint to add it to your flight plan.
- Using the Nearest Items view, tap on a map close to the waypoint and press + on the row, corresponding to the waypoint to be added.
- Typing the waypoint identifiers in order in the Quick Plan Entry field, then tap the Route button

When creating an IFR plan, intermediate navigational aids, intersections and reporting points can be automatically added, when the beginning and end point share the same designated IFR routes. A Select Route menu will appear asking whether you wish to fly direct, use an automatically generated shortest IFR route, or find recent routes that have been filed in the last two weeks.

LSALTs for a published route are added automatically when they are available. If not available, AvPlan EFB will populate this field with the Grid LSALT in its place. User LSALTs can be added and will be reused when the same points are used in subsequent plans.

When user LSALTs are applied the airway designator in the flight plan is set to User, to indicate that a User LSALT has been applied.

Select an aircraft

- Select Aircraft at the bottom of the flight plan table, then TB-10 and then VH-TOI.
  Weather information for your plan is automatically downloaded and winds applied to your plan as it is created. If a forecast division is active, you will be prompted to select the correct side.
- To refresh forecasts select the Refresh icon at the bottom of the flight plan. When you don't have internet access, winds can be manually entered for each leg when the plan is in Edit mode.
  Winds are downloaded and are valid at the ETA for that track point, or two hours from the current time, if no planned ETD has yet been set for the plan.
- To add a new stage tap on a leg in the plan (Terminal pane is displayed) and select Land on the Weather/NOTAMs page.

Entering a departure time

- To set an estimated departure time for your flight, select the green field marked ETD. This must be in the format HHMM or DDHHMM (see next point below regarding DTG).
- As a handy shortcut, if HHMM (i.e. just the time) is entered, AvPlan EFB will assume today's date.
- When you initially tap in the field, a flashing cursor will appear inside along with the grey text DTG. This refers to the Date Time Group, an internationally accepted standard six figure format for representing a date and time.

Adding fuel and passengers

- To add fuel to your aircraft, select the Planning pane and tap Aircraft Loading/Weight and Balance/ Fuel Planning.

Submitting your plan

- To send your flight details to NAIPS/IFIS, tap_ Planning > Submit ICAO Flight Plan via NAIPS_ or *Planning > Submit flight plan via IFIS*

Printing your plan's associated documents

Within the Planning pane's Print/Send menu item, you can print from any or all of:

- Your flight plan sheet
- A blank flight plan sheet
- Load sheet(s)
- NAIPS submission report
- Weather forecast(s)/ SPFIB
- Any applicable ERSA and/or DAP pages for your flight.
  Any page marked with a green 'tick' icon will be included in the print run. Tap the item to toggle on/ off each selection. You can also toggle an entire section by tapping the blue Toggle to the right of each subheading.
  At the top of the page, you can optionally also tap Toggle All to Off, which will remove the selection from all pages (except the Flight Plan, which remains selected unless specifically deselected). Once tapped, the button will then display Toggle All to On.

Tap the send icon (top right-hand-corner of the screen) and select from the following options:

- Email – using your device's default email app (creates a single .PDF document)
- Print – using Apple's AirPrint (if available)
- Send To App – this brings up any apps installed on your device that can view .PDF files. Possibilties include iBooks, AirDrop, Dropbox and any others you have installed on your device. The resultant product is a single .PDF document.

Go flying!

13. Advanced flight planning

13.1. Multi-stage flight planning

Adding a new stage

To create a multi-stage flight plan:

1. Tap on the final leg of the flight plan to open the Terminal tab for that place
2. Tap the *Land|New Stage* toggle to *New Stage*. (Top-right corner of the Terminal tab)
    a. A new stage is created
    b. The last waypoint is from the previous stage is added as the first waypoint
3. Add the waypoint(s) to complete the second stage flight plan
4. You can do the same again to the final waypoint of the second stage to create a third, and so on.

- Each stage will have its own summary, with a whole flight plan summary at the bottom

Removing a stage

If you wish to remove the extra landing point, tap the *Overfly* button that appears in the stage summary.

YMMB	ALT	TRK	TAS	WIND	DIST	ETD
	LSALT	HDG	GS	TEMP	REM	
AV 116.1	A040	250°	139	---°/--	31	15+20
	(6400)	250°	139	--	31	
YMMB	A040	070°	139	---°/--	31	13
	(6400)	070°	139	--	0	

Stage 1 Summary

EET 48 minutes

Fuel burn 9 USG   Distance

Overfly

Stage 2

YMMB YTYA

Route

YMMB	ALT	TRK	TAS	WIND	DIST	ETD
	LSALT	HDG	GS	TEMP	REM	
YTYA	A040	156°	139	---°/--	18	10

Pressing the *Overfly* button will stitch the two stages back together and removes the duplicated waypoint.

13.2. Alternates

How AvPlan works with Alternates

It is helpful to understand the logic behind the use of Alternates in a flight plan.

As well as having the ability to be able to navigate to an Alternate, we must also:

- recalculate the equi-time or Critical Point (CP) or Critical *Points* for multi engined / pressurised aircraft, and
- calculate the fuel required to get to the Alternate, including any *'Additional Fuel'* requirements due to an adverse aircraft state (i.e. one engine out or cabin depressurisation)

> ✳ AvPlan calculates and presents required fuel according to the rules described in CAAP 234-1(2.1), *Guidelines for aircraft fuel requirements* and the examples in CAAP 234-1(2) Annexe A, Annex B, and Annex C.

For **Destination Alternates**, this is straight forward. AvPlan will present a picture of the plan with a new CP or set of CPs *between Departure and Alternate* aerodromes rather than between *Departure and Destination* aerodromes. The extra fuel requirements that relate to getting from the Destination, performing a missed approach, flying to the Alternate and approaching to land are calculated. Note that there is no requirement in the CAAP to increase the variable reserve for the leg between Destination and Alternate.

For an **En-route Alternate** AvPlan calculates the fuel required to fly to that aerodrome from the worst case Critical Point in either a single-engine or depressurised aircraft state, and compare it to the fuel required to fly to the Destination Alternate assuming normal aircraft performance.

- The worst case corresponds to the CP between the En-Route Alternate and the most demanding of either
  - the Destination or the Destination Alternate locations
  - at the worst (most fuel demanding) of single engine or depressurised conditions for the aircraft type, as defined in the aircraft Type settings.
- If no Destination Alternate is specified, then the calculation will be based on the worst case CP between the En-Route Alternate and the Destination.

If Destination and En-Route Alternate locations have been specified and your multi-engine aircraft has been defined with single engine and depressurised performance taken into account, this will result in a number of En Route Alternate track lines being drawn on the chart. AvPlan then calculates the fuel quantity required to arrive and land at the Enroute Alternate from the worst of the CP cases.

If the calculated fuel requirement to get to an En-Route alternate in an adverse aircraft state is greater than the fuel required to get to the Destination or to the Destination Alternate in normal configuration, then this difference is shown as "Additional fuel" In the *Planning/Weight and Balance / Fuel Planning* page and in relevant Flight Plan reports.

Addition of Destination and/or Enroute alternates

This method is available in AvPlan EFB version 7.8 and newer.

> ✳ Enroute alternates are only available for Premium or Pro Upgrade subscribers

1. Build the core of your flight plan using any waypoint addition methods you choose. You can even build multiple stages before adding alternates.
2. Tap on the EnRoute map near the place you wish to add as an alternate.
3. From the Nearest Items list, select the intended place by tapping its row. This will bring up the *Waypoint Details* menu for that place.
4. Scroll down to the very bottom of the list (below the CHARTS section), you'll see options to *Add Destination Alternate* or *Add Enroute Alternate*. Tap on the appropriate option.
    a. If you have multiple stages created, you'll see options to add to the various stages.
5. A grey track line (or lines) will be drawn from your primary track to the alternate. The Destination alternate waypoint will also be added to the flight plan. Enroute alternates are added to the flight log as a RMK, and a line is drawn from your Critical Point to that location.
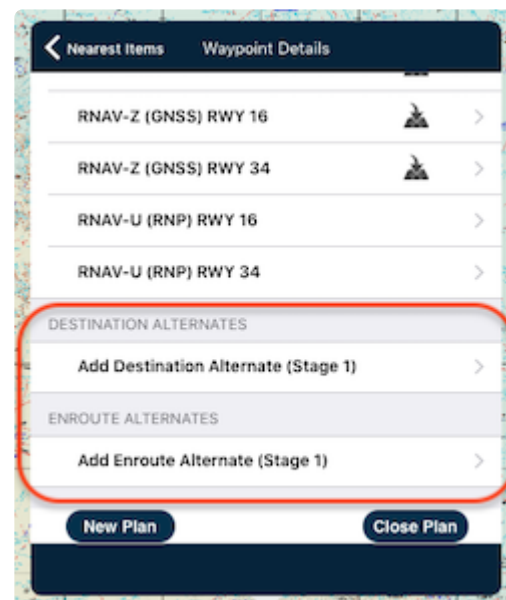
Add alternate options

    a. If you have multiple Critical Point calculations set up for your particular aircraft (such as *single engine*, or *single engine and depressurised*) and they are , you may see multiple grey lines from the enroute alternate to the various critical points.
    b. If you are utilising enroute alternates, it's recommended you enable the *'Auto Waypoints in Plan'* option within *Settings > User Settings*. Then waypoints like TOC, CP, TOD, etc are added as separate waypoints within your flight log, not just as annotations on the map.

Destination and Enroute alternates on map

6. If you have nominated an Enroute Alternate:
    a. It will automatically be added to the RALTN remark in the ICAO Flight Plan submission page. This is also an alternative way of entering an Enroute Alternate. Type the airport code in this field, and it will be added to the flight plan.

Enroute Alternate remark

b. A remark will also be visible in the full screen and printed flight plans (when *Auto Waypoints in Plan* is enabled. See User Settings)

Flight log remark

Removing alternates

1. Tap on the EnRoute map on the place you wish to remove as an alternate.
2. From the Nearest Items list, select the place by tapping its row. This will bring up the *Waypoint Details* menu for that place.
3. Scroll down to the very bottom of the list (below the CHARTS section), you'll see options to *Remove Destination Alternate* or *Remove Enroute Alternate*. Tap on the appropriate option.
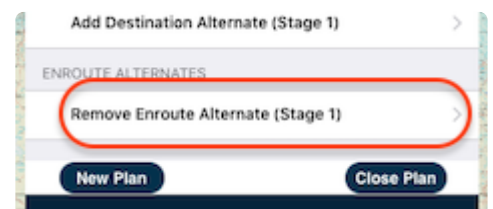
Remove Alternate

Legacy destination alternate addition method

After completing the main part of your flight plan (i.e. your departure airport, destination airport and intermediate waypoints as needed), tap the plus above the flight plan.
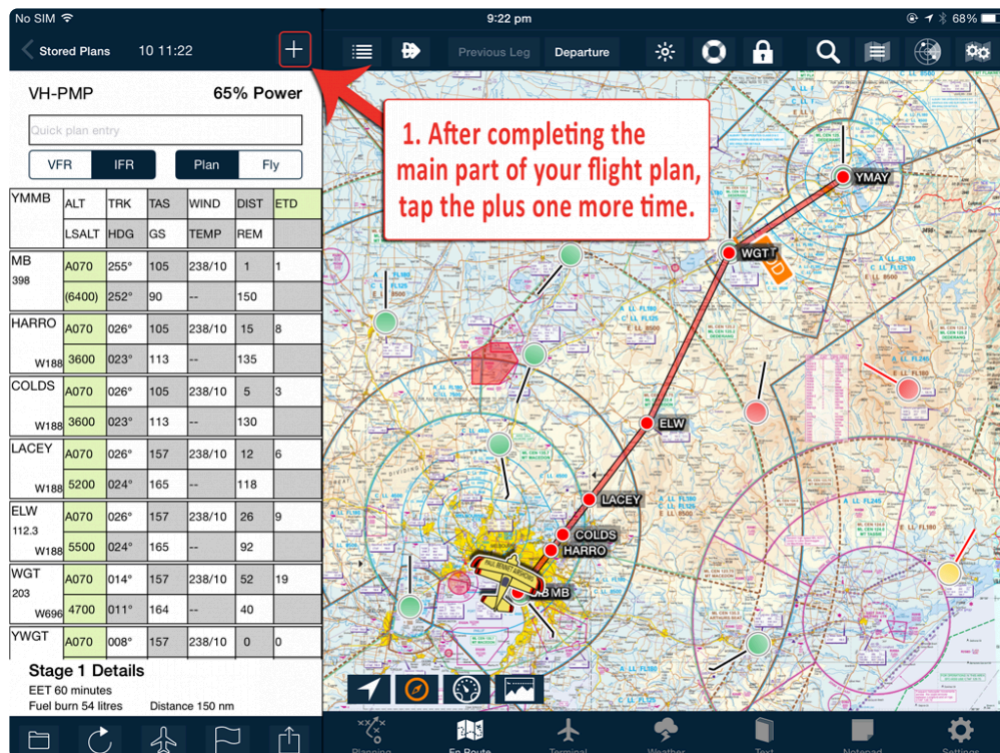
In the 'Add Track Point' popup, ensure the switch is set to Alternate. You can then type in the name or airport code. From the results, tap the blue plus next to the desired airport. If you have the flight plan set to IFR, you'll be given the option to select connecting routes (just like when planning to your primary).
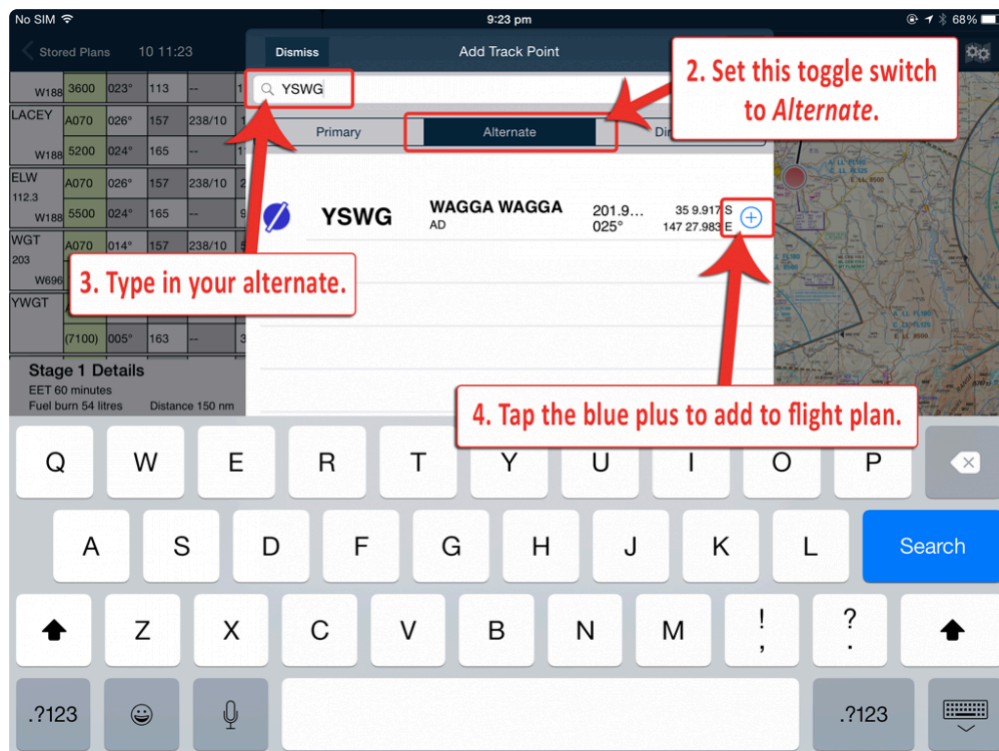
Your alternate will now be submitted as part of the flight plan. Each stage in a multi-stage flight plan can have an alternate. Alternates are also not limited to IFR planning – they can be added to VFR plans, too (handy for night VFR!).

While in flight, having made the decision that your primary is no longer appropriate, you can activate navigation to your alternate by either tapping the Next Leg button (top-centre of En Route pane) or pressing and holding the first alternate line in the flight log then selecting Activate Leg from the Leg Settings menu.

Adding an alternate to a multi-stage plan

Adding an alternate using the above method, it will naturally be attached to the final landing point. If you've already split a plan into a multi-stage one and you wish to add an alternate to an earlier stage, do the following:

1. Place the flight plan in Edit Mode.
2. Scroll the flight plan to the end of the stage you wish to add. Below the stage, you'll see an *Add Leg* option.
3. The *Add Track Point* search menu appears. Select *Alternate*.
4. Search for your alternate and select it
5. The Alternate will now be added to the end of that stage, not the final stage.

Add Leg option

13.3. Lowest safe altitude calculator

RNP2 Boundary

Double-tapping any leg on the flight plan line will bring up the RNP2 boundary line to assist with the easy calculation of user LSALTs.

To dismiss the border, double-tap the route line once again.

> ✳ Note: AvPlan EFB STANDARD subscribers are able to view the RNP boundary, however, the calculation tool is only available to PRO Upgrade/Premium subscribers.

LSALT calculation tool

Pro Upgrade/Premium subscribers will also then have highlighted the height and position of the highest terrain and known obstacle within that boundary.

LSALT calculator tool RNP2 boundary

Highest Known Obstacle is shown with a red obstacle icon with height AMSL listed next to it

Highest terrain is circled in orange, with a corresponding height AMSL alongside
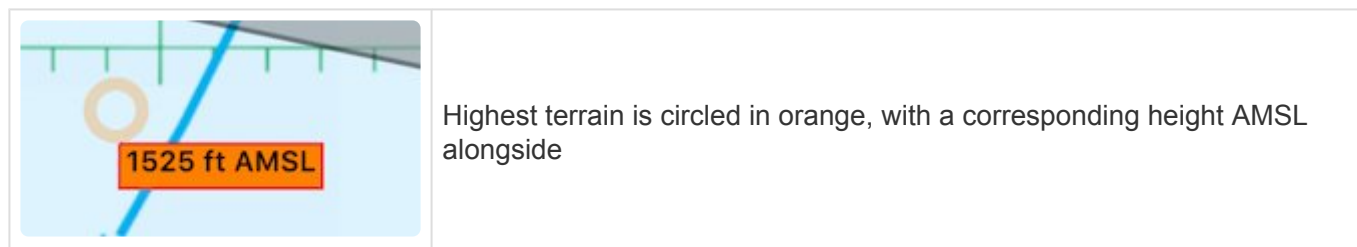
This user calculated LSALT is then easily selected and entered into the flight plan by tapping Accept. Ensure you have read and understood the disclaimer.

Tap the *Setup* button to reveal the other route calculation boundaries:
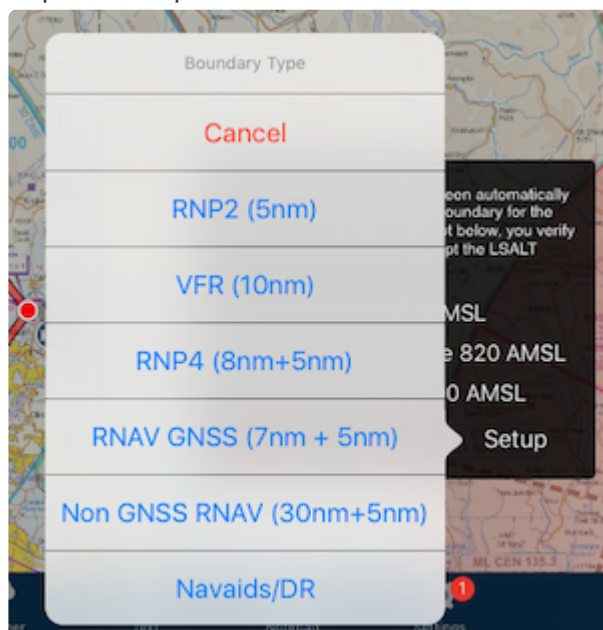
- RNP2 (5 nm either side of track)
- VFR (10 nm either side of track)
- RNP4 (15º splay to 8 nm with a 5 nm buffer)
- RNAV GNSS (15º splay to 7 nm with a 5 nm buffer)
- Non-GNSS RNAV (15º splay to 30 nm with a 5 nm buffer)
- Navaids/DR (varies depending on the strength of the navaid)

LSALT calculator VFR (10nm)

LSALT calculator Navaid/DR mode

The selection you make will be stored and automatically entered in the flight plan table as a User LSALT. The same figure will then be used the next time you fly between those two waypoints.

If you calculate an LSALT on a Direct To leg, the figure is then viewable in the LSALT cell of the HUD.

Notes on Terrain & Obstacle Elevation calculation

You can select between two different calculation modes: a worldwide digital terrain database (known as

a Digital Elevation Model, or DEM), or use the hypsometric tint from the map to determine heights. PRO users can select a preferred method by tapping *Settings>User Settings* and scrolling down to *Advanced Settings* at the bottom of the list.

The Digital Elevation Model

This is a model containing 'Level 0' Digital Terrain Elevation Data (DTED) as described here. Level 0 data has a spatial resolution of 30 arc seconds in both Lat and Long between the equator and ±60 degrees of Latitude. AvPlan samples the DEM to find the highest point within the LSALT boundary, adds the standard LSALT buffer of 1360', then rounds this value up to the next nearest 100'.

Hypsometric Tints

AvPlan analyses the hypsometric colour bands within the LSALT boundary to determine the top of the highest elevation band (which will always be at least as high as any published spot height, but will typically be higher), adds the 1360' buffer, and rounds up to the nearest 100'.

Obstacle Heights

AvPlan uses a published obstacle database that contains approximately four times as many obstacle references as are marked on Australian charts. The obstacle that is determined to have the greatest elevation within the LSALT boundary may or may not therefore correspond to a charted object, but will always be the highest known obstacle.

13.4. VFR to IFR or IFR to VFR planning

Flight rules for a whole stage can be selected in the flight log. If a change from VFR->IFR or IFR->VFR is needed during a part of the flight plan, then the flight rules for individual legs can be changed in the Terminal tab for those track points.
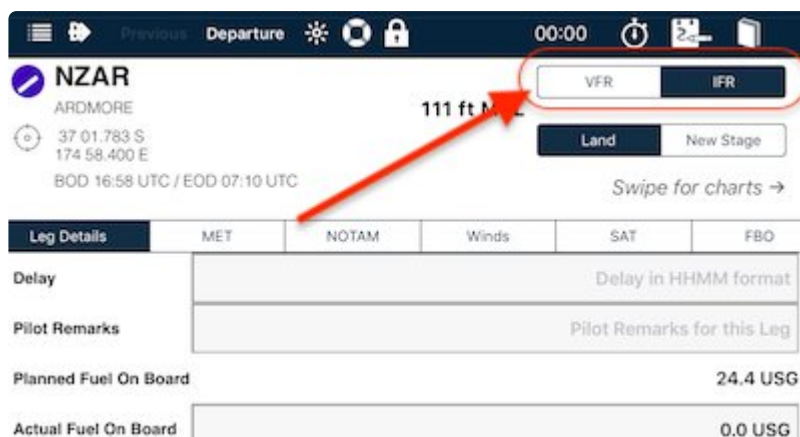
VFR|IFR toggle for this and subsequent legs

1. From the Flight Log, tap on the waypoint's row associated with the flight rules change. The Terminal tab will open for that place.
2. In the top-right corner of the page is another VFR|IFR toggle switch. This switch only changes the presently displayed and subsequent legs in the stage.
3. The correct flight rules code will be transmitted to NAIPS/IFIS (Y or Z) when submitting.

13.5. Adding an RNAV Approach to the plan

AvPlan allows Premium subscribers to add an RNAV (GNSS) Approach to a Flight Plan. This is easily accomplished by using the drag and drop technique to insert the Initial Approach Fix (IAF) of an RNAV approach prior to the terminal waypoint in the plan.

> ❗ Adding an RNAV approach to a plan should be performed *after* the plan has been submitted. Submitting a plan with an RNAV approach will cause the approach points to be submitted, which may cause the plan to be rejected.

The drag and drop method of waypoint insertion can be used on any chart; whether VFR or IFR, or on the Approach plate itself. It may be helpful to turn on show IFR waypoints in the Map Overlays menu to aid in selecting the desired IAF waypoint.

> ✳ Before adding an RNAV approach to the plan it may be helpful to define a User Waypoint at a location, for example, 25nm before the destination on the inbound track. This has been done in the following example. If created, the user waypoint should ideally not be added to the Flight Plan until after plan submission.

Step 1 (Optional). Add a waypoint to the inbound track

By adding a User Waypoint about 25 miles out from the destination we allow AvPlan to create a sensible looking route *from that point* to the RNAV IAF. Otherwise, when we insert the RNAV the track line will be drawn to the IAF from wherever the previous waypoint was. If this is a long way from the 25 mile point, then the track line may not be sensible.
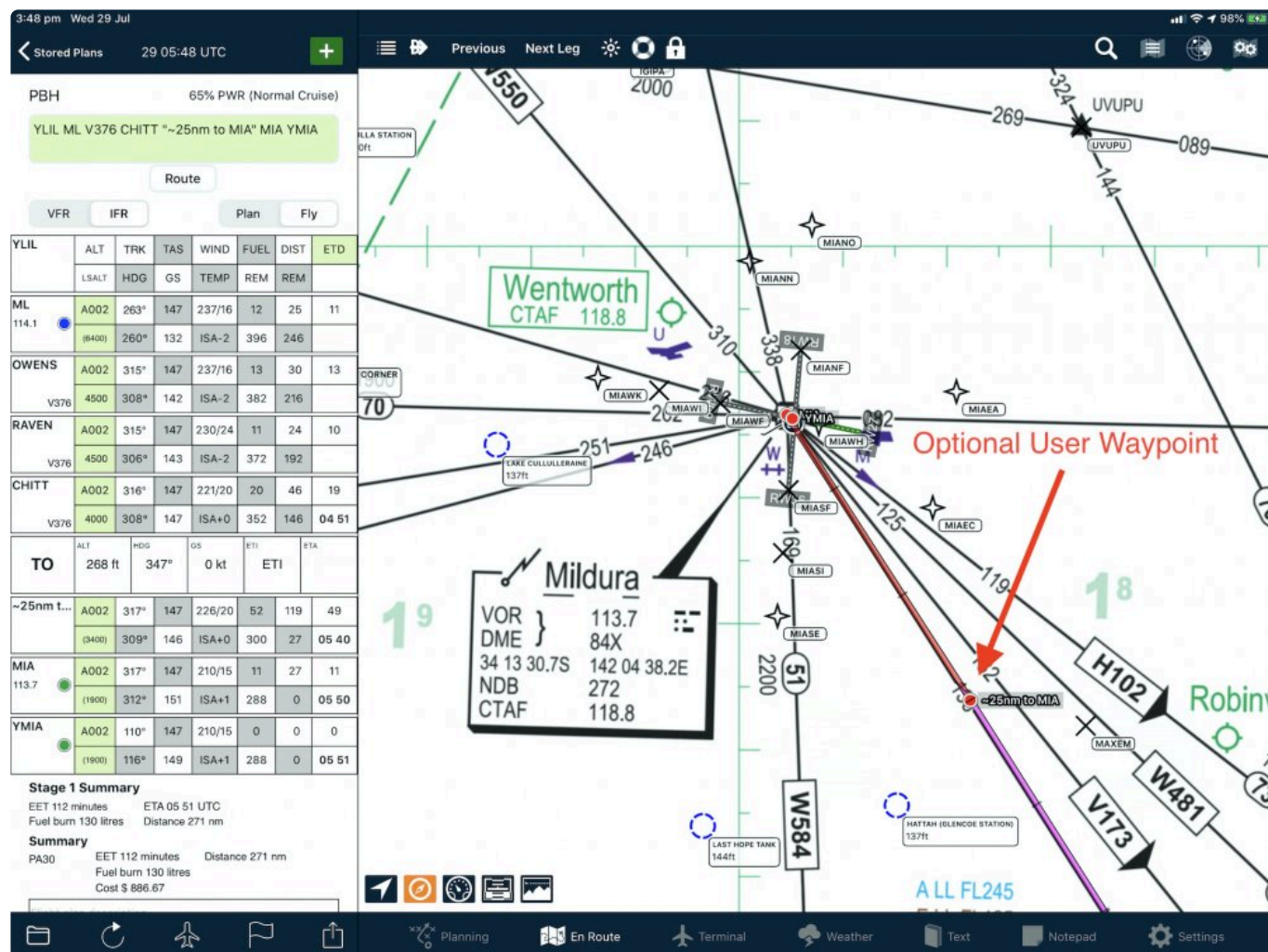
Step 2. Drag a point on the inbound track close to the location of the desired RNAV IAF

In this case we have dragged the track line to MIAEC; the *Echo Charlie* IAF of the Mildura 27 RNAV

Step 3. Confirm selection of the IAF waypoint

The waypoint dialogue box will offer a list of waypoints near the "dropped" location. Hit the ⊕ button to add the desired waypoint to the plan.
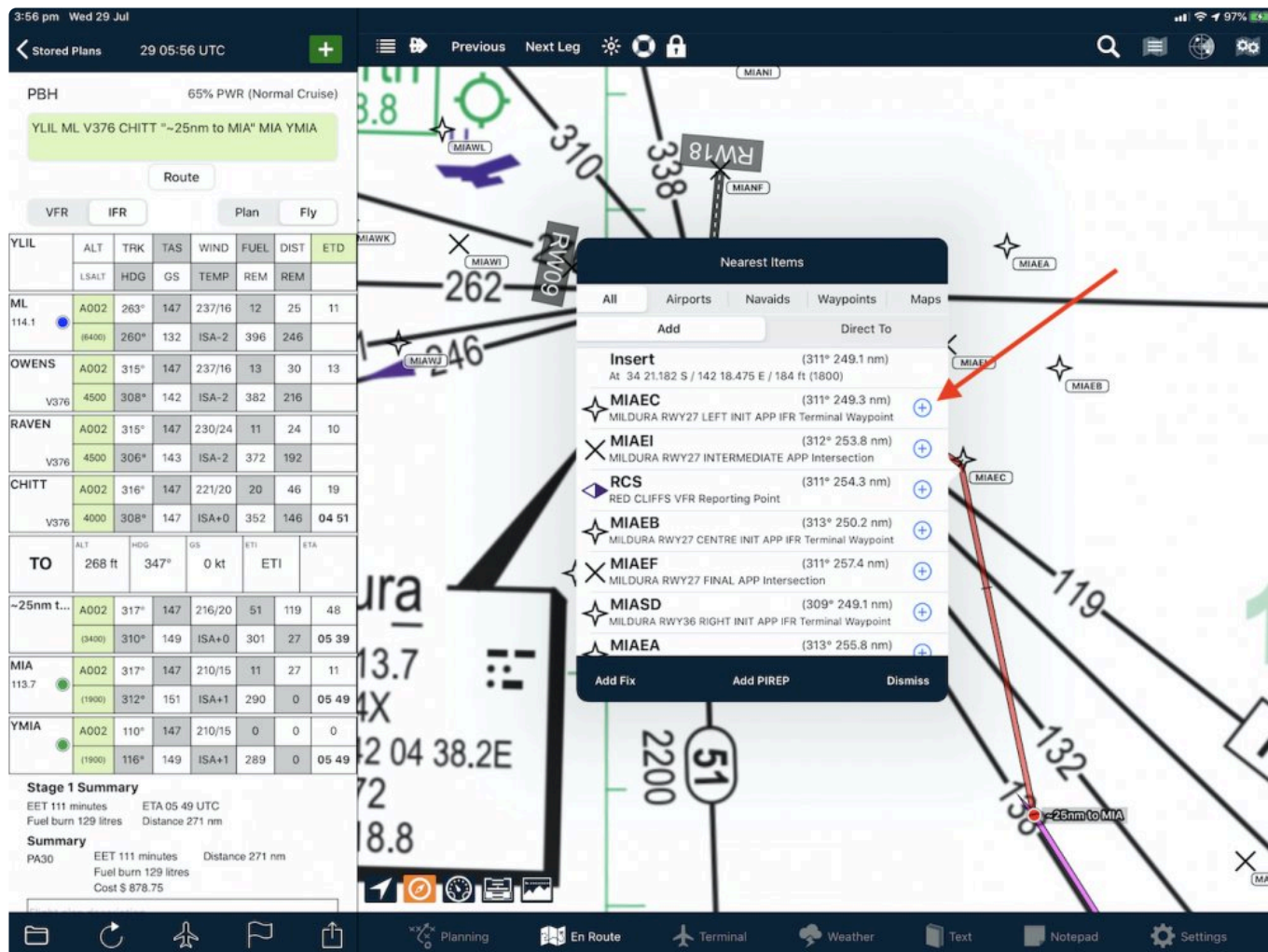
Step 4. Confirm the RNAV Approach

At this point AvPlan will automatically offer to insert the chosen RNAV. To confirm that this is the desired action, simply tap on the approach name. If the intention is to only add the IAF, without the Intermediate Fix (IF), the Final Fix (FAF) and the Missed Approach Point (MAPt), then tap on Cancel.

The RNAV approach is inserted into the plan.

AvPlan inserts the rest of the RNAV Approach into the plan starting at the selected IAF, and draws it on the chart.

⁕ Note 1. AvPlan does not behave like the GNSS Navigator in your instrument panel; it does not LOAD and ACTIVATE approaches. AvPlan simply inserts the approach into the flight plan at the point you choose.

⁕ Note 2. Missed Approach Holding Fixes (MAHFs) are not added to the flight plan.

14. Go flying!

After you've prepared your flight plan, it's time to go fly it!

14.1. Startup, Taxi & Takeoff

- After starting your engine and waiting the for temperatures and pressures to stabilize, set the app

  | Plan | Fly |

  to Fly mode . This will log your Off Blocks time and begin logging your aircraft's track.

- At the moment of your choosing (it may differ between VFR and IFR pilots), tap the *Departure* button along the top of the En Route or Terminal panes. This will log your actual Departure time, and will be displayed in bold within the first waypoint of your flight plan stage.

> ✳ Note: Tapping the *Departure* button will also set the plan to *Fly* mode if it hasn't already been set.

- Now your flight plan is active, and your flight plan effectively becomes an electronic flight log.
- You will notice a TO row entered between your previous and next waypoints within the list. This row contains live GPS derived data updated every second, and you can easily compare between planned versus actual performance. If actual enroute winds turn out to be vastly different from those predicted in the Area Forecast(s), you'll be able to spot it quickly and easily. The flight log now becomes a powerful decision making tool.

YCWR	A065	213°	167	238/19	7.0	54	23
	(6100)	216°	149	ISA+2	83.0	322	03 07
YCTM	A065	214°	167	238/19	6.4	54	22
(Abeam)	(6100)	217°	148	ISA+2	76.6	268	03 28
YSWG	A065	214°	167	225/21	5.1	43	18
	(7700)	216°	146	ISA+2	71.5	225	03 44
TO	ALT 6462 ft	TRK 212°	GS 158 kt		ETI 18		ETA 04 17
YYWG	A065	211°	167	203/18	10.1	86	34
	(7100)	210°	149	ISA+0	61.4	139	04 19
YMNG	A065	212°	167	195/20	7.8	65	27
(Abeam)	(7100)	210°	147	ISA-4	53.7	74	04 45
KIM	A020	212°	158	168/17	2.8	25	10
	(6400)	208°	146	ISA-5	50.9	48	04 55

Electronic flight log in flight

In this example, the aircraft is performing better than planned, so it is expected to arrive at the next waypoint two minutes early (0417 versus 0419).

- If you are busy during startup and taxi, and you don't get a chance to tap *Fly* or *Departure*, AvPlan EFB will do those steps for you when you climb 100 feet above and depart beyond 3 NM of your departure airport. The Departure time noted may not be quite as accurate as when the pilot taps the *Departure* button at the correct moment, but at least it will be close.

- ◦ Note: This automatic departure feature requires two settings within Settings > User Settings to be in place:
  - ▪ Waypoint auto sequencing must be ticked
  - ▪ Disable moving map mode must be un-ticked

- Each time you pass a waypoint within the flight plan/log, the TO field will move down the list of waypoints accordingly. When moving" from one leg to the next, your Actual Time of Arrival (ATA) is logged.":#submit-sartime-via-naips
- If you are unhappy with the auto-sequencing, you can use the *Previous Leg* or *Next Leg* buttons as many times as necessary to manually cycle through to the correct leg.
- Tapping the name field (large white box on left edge of "flight plan table":#flight-plan-table) of an airport within your flight plan is a handy shortcut to the Terminal pane information about that place.
- AvPlan EFB will automatically sense when you land. Once you've taxied back to the parking area and shut off the engine, tap the *Plan* button. This will log your On Blocks time and cease track logging.

14.2. Cancelling & Changing SARTIME

> **!** If you have been flying under the VFR with a SARTIME you must not forget to cancel it after landing.

AvPlan helps you deal with SARTIME in two ways; first of all, if you have submitted a SARTIME it will have been added to your calendar with a reminder to cancel.
Secondly, in order to cancel SARTIME with minimal effort, you can tap on *Planning>SARTIME* to reveal the SARTIME associated with your plan. A list of SARTIMEs associated with your currently active (successfully filed, not-yet cancelled) flight plans will be displayed. Click on the SARTIME that you wish to change or cancel, to be presented with options to cancel or change it.

- You can *change* the selected SARTIME to some later or earlier time if, for example, you took off at a time significantly before or after the the ETD in your plan. Type in the new date-time group and tap the screen. *Change via app* is the default method. Unless you tap *Change via Voice* AvPlan will automatically submit the change.

- If you prefer to change a SARTIME by *phone*, tap on the *Change via Voice* button. Now, changing the SARTIME value will *not* send a changed value to NAIPS- AvPlan retains the changed time, but does not submit it. AvPlan assumes that will make the phone call.

- You can *cancel* the selected SARTIME by tapping the *Cancel* button and confirming. AvPlan will cancel the SARTIME for you, and display a confirmation message when succesful, or if you have nominated to change by *Voice*, it will delete the active SARTIME internally but *it will not cancel the SARTIME in NAIPS*.

Note. If you elect to cancel by *Voice*, but do not in fact make the phone call, AvPlan will no longer show the active SARTIME, even if you have not cancelled it. This is not recommended as it may lead to

confusion.

> ✳ If you were flying under the IFR you will have canceled SARWATCH with ATC in the circuit or on the ground, or it will have been cancelled for you by a tower controller. AvPlan does *not* cancel SARWATCH.

14.3. Logging the Flight

- Review the overall times for entry in your logbook by visiting *Planning > Log Flight.*
- Submit the details to LogTen Pro if you wish.
- Tap the < *Stored plans* button in the top-left of the flight log to place your plan back in the *Stored Plans* list.

15. Apple Watch App

The Apple Watch app extension of AvPlan EFB brings some extra situational awareness whilst in flight.
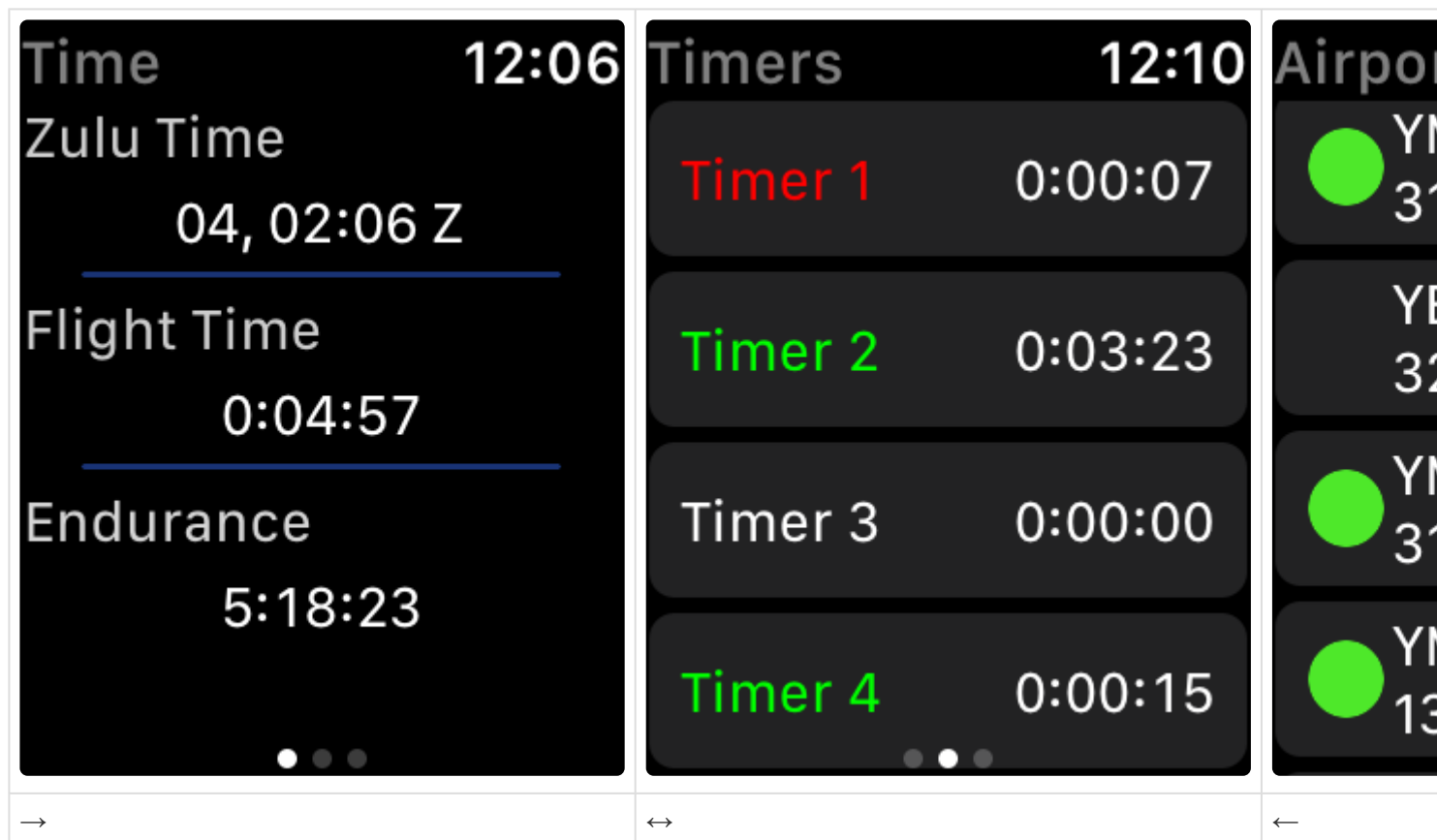
To launch the app, tap the AvPlan EFB icon.
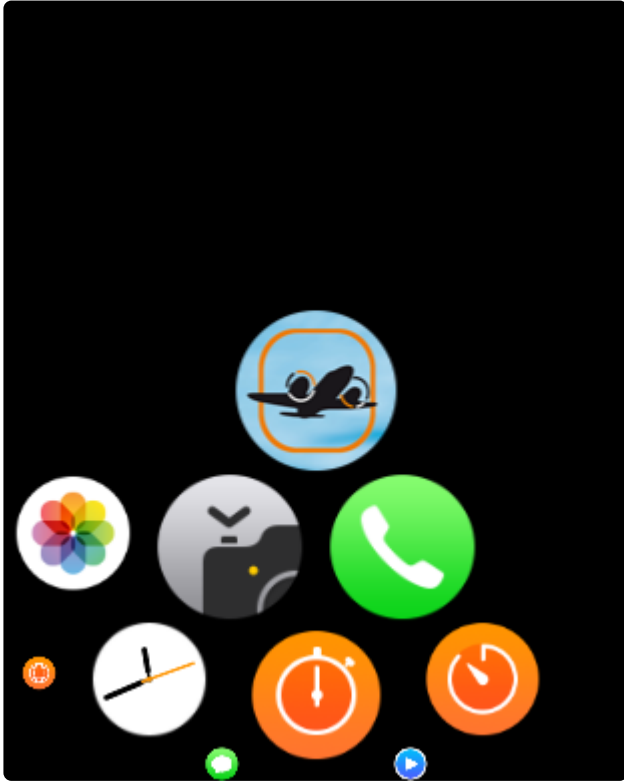
The app is navigated by swiping left and right between three main pages.

Swipe →	Swipe ↔	Swipe ←

Time 12:06	Timers 12:10	Airpo
Zulu Time 04, 02:06 Z	Timer 1 0:00:07	● YN 3
Flight Time 0:04:57	Timer 2 0:03:23	YE 32
Endurance 5:18:23	Timer 3 0:00:00	● YN 3
● ● ●	Timer 4 0:00:15 ● ● ●	● YN 13
→	↔	←

h4. **The first page is the Time page**:

Time   12:06
Zulu Time

04, 02:06 Z

Flight Time

0:04:57

Endurance

5:18:23

● ● ●

Here you'll see the current UTC/Zulu time, plus some information derived from your current flight plan:

- the Flight Time for the current flight plan (counts up), and
- the Endurance of your aircraft, derived from your planned fuel load/fuel burn calculations (counts down)

h4. **Screen two includes four independent timers**:
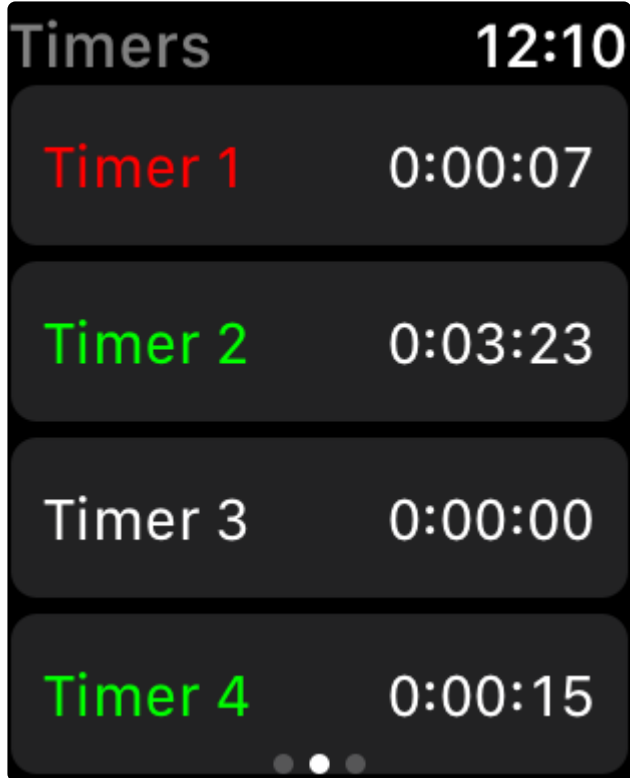
Tap a row to begin the timer (text will turn green).
Tap it a second time to stop the timer (text turns red).
A third tap resets the timer to zero (text returns to white).
Tapping the row once again begins the same cycle.

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h4. **The third screen is a *Nearest Airports* list, based on your current GPS position**.
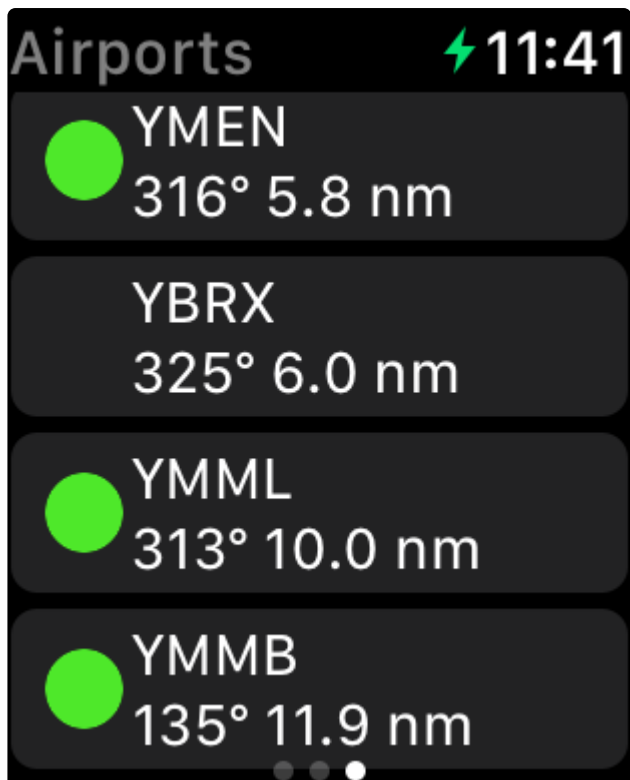
Each entry contains the Identifier, the bearing in ºmag and distance.
If a METAR station is associated with that airport, the at-a-glance METAR icon will also be displayed.
For a full explanation of the colour codes used, see METARs.
Tap on a airport to view the METAR text:

The Airport METAR data is displayed. Tap the AIRPORT text in the top-right corner to return to the Airports list.