AvPlan EFB (iOS)

NZ User Manual

Version 7.0

www.avplan-efb.com

Table of Contents

List of Figures

1. INTRODUCTION

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

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

- Download and save copies of all aviation maps and AIP volumes 1 - 4. 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 to Airways NZ. AvPlan EFB incorporates the functionality to sync your plans and aircraft between your various Apple devices.
- Download and save weather briefings from 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.

1.1 Help

AvPlan EFB for iPad incorporates an inbuilt quick-tip system. Tap the **Life Belt** icon on any screen for tips on functionality.

Figure 1 – Life belt icon

1.2 Licensing and subscriptions

The App is available with a one month fully featured free trial via the Apple App Store (http://itunes.apple.com/au/app/avplan/id417674282?mt=8). The app is then sold on a subscription basis. There is a compulsory VFR subscription, and then an IFR upgrade pack can be added.

Subscriptions purchased inside the App will not automatically renew at the completion of the subscription period (Note that this has been changed from the auto renewing subscriptions in AvPlan EFB version 1).

Subscriptions purchased via www.avplan-efb.com can be set to automatically renew if selected at the time of purchase.

Note: Subscriptions are valid for a single pilot on a maximum of three devices.

The AvPlan EFB VFR subscription enables full use of the app, with the AIP volumes 1 & 4 and VNC map. At the completion of the subscription period, the app will no longer function.

The IFR Upgrade adds AIP volumes 2 & 3, plus IFR enroute charts and some higher-level flight planning functionality.

1.2.1 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** on the opening window.
2. Enter the email address and password used when purchasing the subscription.
3. Press **Sign In** under your password. If you haven't registered your email and password yet, tap **Sign Up** instead. A confirmation pop-up will appear when successfully signed in.
4. 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.

1.3 User Manual

A current copy of the AvPlan EFB User Manual can be accessed at:

www.avplan-efb.com/avplan/avplan-user-manual/

This can be downloaded and stored in **iBooks** on your device. To store the manual on your device:

1. Navigate to the manual on our website using Safari on your device.
2. Tap on the link to download the file.
3. Tap on the page and a bar will appear, with an icon, **Open in iBooks.**
4. Tap **Open in iBooks** and the manual will be installed into **iBooks.**

The user manual is also available under the **Text** pane within AvPlan EFB. Swipe right-to-left and they will be listed under **Documentation**.

Note: The **Open in iBooks** option only displays if **iBooks** is installed.

1.3.1 Manual revision history

Version	Date	Summary
3.0	May 2013	Initial Release
3.4	December 2013	Reformatting
4.5	August 2014	Inclusion of Changes and New Features
5.0	February 2015	Inclusion of Changes and New Features
6.0	December 2015	Inclusion of Changes and New Features
7.0	July 2016	Inclusion of Changes and Synthetic Vision

1.4 Getting started

To launch and start using the app:

1. Download and install the app from the Apple App Store, then tap the AvPlan icon on your devices' Home Page.
2. Visit the Data Downloads section (tap **Settings > Data Downloads**) and download the maps and AIP files you require (See Section 9.1).
3. Enter your IFIS login details (tap **Settings > User Settings > IFIS Details**)
4. Create an aircraft type if one does not already exist. Go to our online type database at www.avplan-efb.com/avplan/aircraft-model-database/ (See Section 10.1).
5. Create a flight plan and select your aircraft.
6. Submit your flight plan.
7. Go flying!

1.5 Support

For support enquiries, contact support@avplan-efb.com

General support information is also available at:
www.avplan-efb.com/about-2/

FAQs are available at:
www.avplan-efb.com/avplan/faq/

1.6 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.

This page is intentionally blank.

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 flight plan is always visible (if required) and does not obscure any detail or functionality inside the rest of the application.

The flight plan appears on the left in landscape mode, and on the bottom of the screen in portrait mode. When in Portrait mode, the flight plan can be enlarged or reduced in size depending on your viewing needs. Simply drag the grey bar (with three lines in the centre) up or down accordingly.

The flight plan can be displayed and hidden using the **Flight Plan** icon on the top menu bar. (see 3.2.1)

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

- Flight planning information.
- En Route information (Maps and Synthetic Vision).
- Terminal information (Weather information at a point, ERSA, DAP charts).
- Weather information.
- Text information (AIP, ERSA/DAP/AIP SUP General Pages, POH if available, Dropbox link).
- Notepad.
- Settings.

3 FLIGHT PLAN

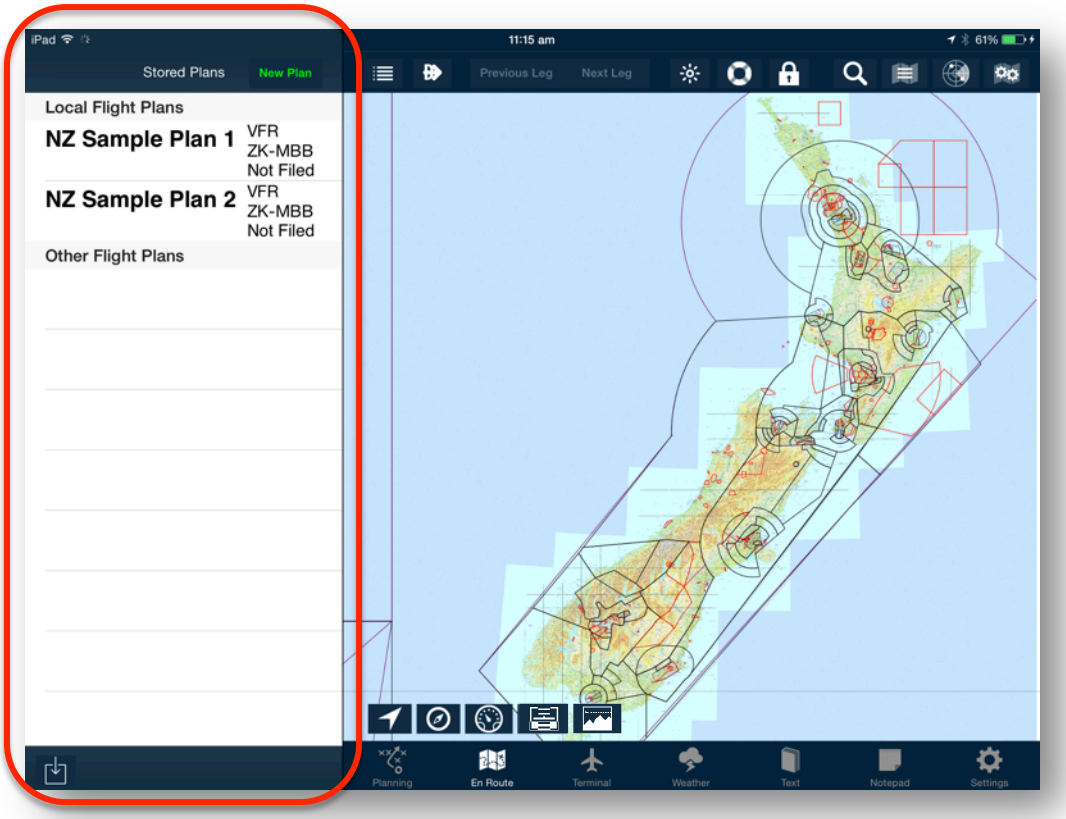

Figure 2 – Flight plan index view

3.1 Flight plan index

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 IFIS).
- **Filed OK** (Plan has been successfully submitted).
- **File Failed** (Plan failed to submit correctly).

3.1.1 Creating a flight plan

To create a new flight plan:

- Press the **'New Plan'** button at the top right hand side of the flight plan index.

3.1.2 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 the plan will also be deleted.

Note: The same flight plan stored on 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.

3.1.3 Syncing a flight plan

Flight plans can be synchronised between multiple devices (iPhone and iPad). They are automatically saved and uploaded when returning from a plan to the flight plan index.

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.**

Ensure **AvSoft Cloud Services (**found within the *User Settings* menu: **Settings > User Settings)** is enabled to sync plans between your devices, flight plans will be colour coded as follows:

Black – Changes synced.

Blue – Upload in progress.

Red – Local changes not synced.

3.1.4 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 close your plan. Tap OK.

AvPlan EFB will then store your flight plan and all associated data (track logs, times, etc). If you have Sync Flight Plans selected and are connected to data, a sync will also be completed at this time.

3.2 Flight plan view

Figure 3 – Flight plan view

3.2.1 Flight plan table

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 of the **En Route, Terminal, Weather** and **Text** pages. i.e. All in-flight related pages.

All fields that appear within the flight plan table shaded green can be manually edited.

3.2.2 Flight plan header

The flight plan contains two toggle icons at the top of the flight plan:

- VFR | IFR
- Plan | Fly

The **VFR|IFR** toggle switch changes the entire plan to be under that flight rules.

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** view for those track points.

3.2.2.1 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.

When *Fly* mode is active:

- The GPS in your device is turned on.
- Flight plan altitudes *do not* 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.

The callsign of the current selected aircraft and selected aircraft performance profile is displayed at the top of the flight plan. A description of the plan can be entered in the description field.

The current UTC time appears in the bar at the top of the flight plan.

3.2.3 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:

NZNS NZCH

Or

NZNS H110 NZCH

Or

NZNS Q787 BELEE Y496 DUKOP Y676 NV NZNV

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.

3.2.4 Route Button

Another option for entering waypoints is to type the departure airfield and the destination airfield identifiers, then tap the **Route** button. This will bring up the *Select Route* dialogue, allowing you to select between direct, IFR routes (shortest, stored, etc) or any recently filed routes within the last two weeks between those two places.

3.2.5 Adding individual tracking points via search

The + icon at the top of the flight plan opens the search window to add a single new leg to the plan.

To manually add a new tracking point/waypoint to the plan:

1. Either:
   - Enter the *Waypoint Identifier* and results will automatically appear,

     or
   - Enter the full or partial name and press **Search.**
2. Tap the blue plus to add the desired waypoint to the plan.
3. The **Primary/Alternate/Direct To** selection changes whether the leg 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.**

When adding a track point to a flight plan, the weather information is automatically downloaded in the background, and winds information applied to the plan. This can be changed under **User Settings > Automatic Weather Downloads.**

Note: The **Search Field** is case sensitive. All internal waypoints and names should be in uppercase.

You can also add waypoints to your plan directly from the map. See 5.3 Visually edit plan.

3.2.6 Flight plan controls

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

- Edit mode
- Refresh weather/re-calculate plan
- Aircraft Profile Selection

- Winds on/off toggle
- Send Plan

3.2.7 Manually entering a cruise altitude

An altitude can be entered for each leg of the plan. In **Plan** mode, altitudes will automatically fill down the plan. In **Fly** mode, only the actual leg will change. Altitudes can be entered as feet (e.g. '2500'), in *A.. format* (e.g. A035) or *F… format* (F310).

Note: Invalid data will not change the field.

3.2.8 LSALT

If you are planning to fly along a published airway, the LSALT for that route will be automatically entered in the LSALT field. If flying off-airways, AvPlan EFB will automatically retrieve the Grid LSALT for that waypoint. These will appear within the field in parentheses.

A user LSALT can also be entered for each leg. These are then saved and reused if the same points are added in another flight plan. Changing a user LSALT between two legs will also change any other plans using the same two points. See 12.4 for more information about helpful features for adding user LSALTs.

3.2.9 Estimated time of departure (ETD)

An **ETD** can be entered per stage in a plan. A four digit format **HHMM** or six digit **DDMMHH** format can be used. These are in **UTC.** If a four digit time is entered, then the day is automatically added.

Figure 4 – Leg settings menu

3.2.10 Leg settings menu

If you tap and hold on a leg in the flight plan, a menu is displayed (See Figure 4) which allows you to:

- Delete leg.
- Activate a leg. i.e. fly that particular leg right now.
- Track direct to a leg waypoint. (note: does not close plan – helpful when ATC instruct to track direct to a future waypoint in your plan)
- Leg details (flips to the **Terminal** page).

- Insert leg before (this leg).
- Land at a leg point.
- Pass abeam point (rather than overfly point).

3.2.11 In flight

The following times will automatically update:

- Arrival time.
- Departure time.

- Estimated time.

The active leg is marked with *TO*, and the GPS is used to predict arrival times, work out groundspeeds, altitudes and ground track.

In *Direct To* mode to a waypoint in your plan, the active leg is marked with a **D**. When tracking direct to a point, which is not in your plan, the leg is marked with a **D** and grey background.

3.2.12 Direct-to navigation

AvPlan EFB supports direct-to navigation, either within a plan, or without an open plan.

To track directly to a waypoint *within* your flight plan:

If you tap and hold on a leg in the plan, the option to track direct to a point appears. A magenta line will appear from your present position to that waypoint in the plan.

To cancel direct to navigation, tap and hold on a leg in the flight plan. Select **Activate Leg.**

There are two ways to begin a Direct To track to any other point:

1. *With an active flight plan* - Tap near intended point on the map and **Nearest Items** appears. Tap **Direct To** and then tap **+** to track direct to that point. A magenta track line will appear from your present position to that point.
2. *With or without an active flight plan* - Tap the **Direct To** button, visible at the top of the any pane except for Planning or Settings. A list of nearby items to your current position will be populated – scroll down and tap a line to select. Or, if your intended destination does not appear on that list type in the name or identifier and tap the Search button on the keyboard. Tap the line to begin navigation.
3. To cancel Direct To navigation that has been selected using this method, tap the **TO** field on the HUD (see 5.14).

3.2.13 Editing a plan

Figure 5 – Edit icon in flight plan

The **Edit** icon puts the plan in **Edit** mode.

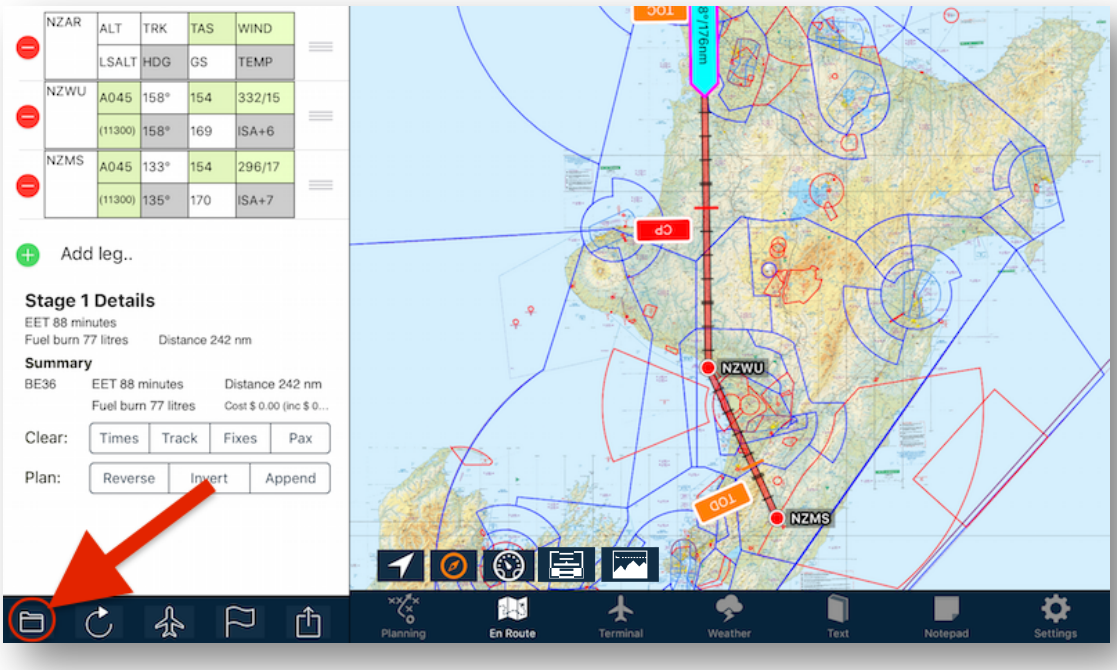

Figure 6 – Edit mode

Edit mode allows you to:

- Delete individual legs (with red icon on the left)
- Pick up and move individual legs (with the grey icon on the right)
- 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).

In *Edit* mode, a number of icons appear at the bottom of the flight plan. These allow you to:

- Clear flight times, track logs, and fixes from the plan, so the plan can be reused. When clearing the flight times, the NAIPS status (Filed OK/File Failed/Not Filed) is also cleared.
- 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 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 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).

3.2.14 Refreshing weather and calculations within a plan

Figure 7 – Refresh plan icon

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, a full recalculation is performed.

The **Refresh Plan** icon will cancel any weather downloads currently in progress.

3.2.15 Applying an aircraft profile

Figure 8 – Aircraft icon

The **Aircraft** icon allows you to apply an aircraft profile. See Section 10 for more information on creating performance models.

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

5. Select the aircraft callsign.
6. If more than one *detailed performance model* is available for the type, select desired performance model.
7. If no *detailed performance model* is available, the basic performance values are used.
8. To add a new aircraft, tap the **+** icon at the top of the aircraft pop-up view.

3.2.16 Winds On/Off

Figure 9 – Winds icon

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). Icon turns red when off.

3.2.17 Sending a flight plan

Figure 10 – Send icon

The **Send** icon allows you to:

- Submit flight plan (via IFIS).
- Email flight plan in GPX format.
- Send flight plan in GPX format to another app.
- 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.
- 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 (see 3.2.16.1, below)
- Send a plan to Jeppesen FliteDeck if installed on your device (see 3.2.16.2, below)

3.2.17.1 Sending a flight plan to Dynon SkyView

Prerequisites:

- Dynon Skyview 1000 or 700 unit
- SkyView 13.0 System Software (minimum)
- Dynon WiFi adaptor installed in SkyView unit

Process:

1. Power up the Dynon SkyView unit.
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 Send/Share icon (see Figure 10).
4. Select **Send to Dynon.**
5. A confirmation will appear on the Dynon screen. Select **Accept** to import the flight plan.

NOTE: This option will only appear in the Send/Share list when your device is connected to the Dynon's WiFi Hotspot.

3.2.17.2 Sending flight plan to Jeppesen Mobile FliteDeck app

PRO Upgrade or Premium Bundle subscribers that also have the Jeppesen Mobile Flite Deck app installed on their device can send a flight plan directly from AvPlan EFB to Mobile FliteDeck.

NOTE: This option will only appear in the Send/Share list if the you have a valid PRO subscription and the *FliteDeck* app is installed on your device.

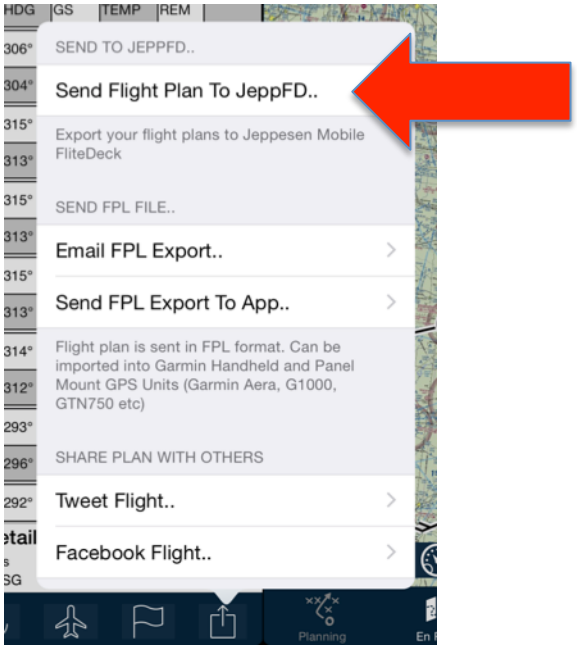

Figure 11 - Send flight plan to Jeppesen Mobile FliteDeck

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**.

4 PLANNING A FLIGHT

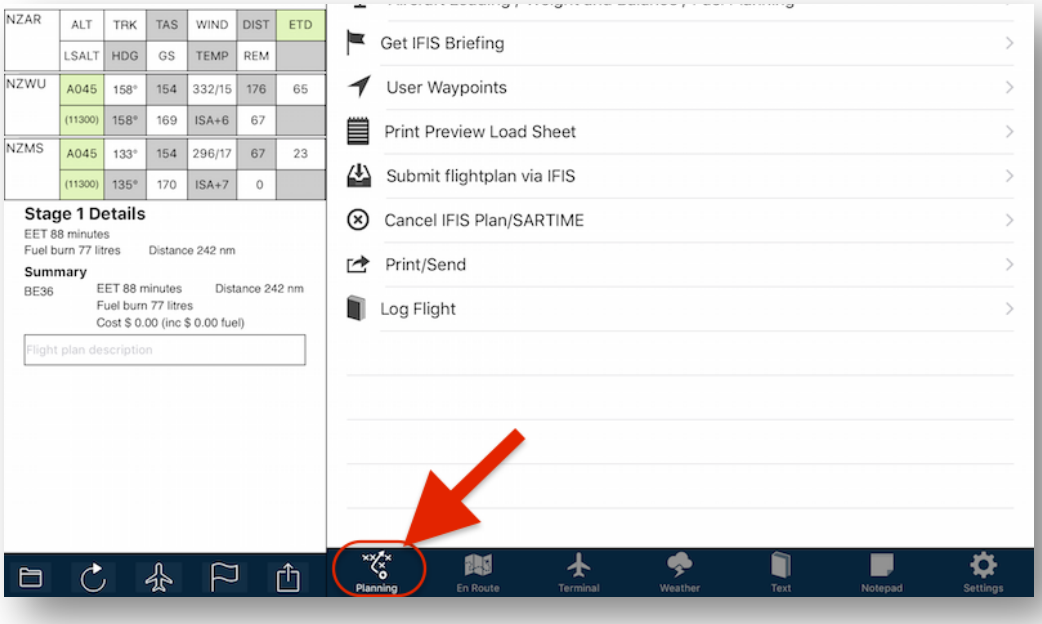

Figure 12 – Flight planning tab

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. This page contains the following options:

- Create a new flight plan
- Select the optimal cruise altitude for your flight based on time, fuel burn and/or cost.
- Complete Aircraft Loading / Weight and Balance / Fuel Planning.
- Request an IFIS Weather Briefing
- View/Edit/Add User Waypoint(s)
- Print Preview Aircraft Load Sheet.
- Submit Flight Plan and SARTIME via IFIS.
- Cancel a IFIS plan and SARTIME
- Print/Send flight plan, Weather and AIP pages.
- Log your flight to logbook app **LogTen Pro**. Find out more: http://coradine.com/logten-pro-x/

4.1 Insert Waypoints

At this point in time, the list of items in the Planning pane remains small. Once you've entered at least one waypoint into your flight plan, the list of available options will grow. For more detail about entering flight plan waypoints, See section 11.2.

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 to a particular flight plan stage.

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 (See section 3.2.2.)

4.3 Weight and balance

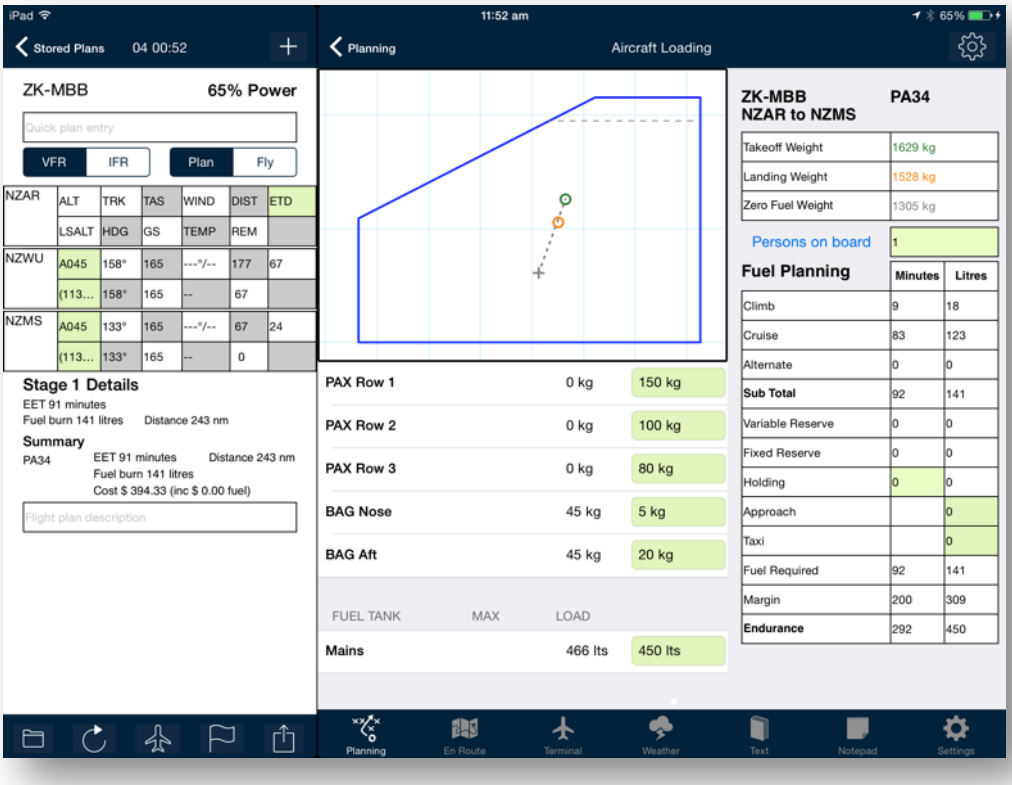

Figure 13 – Weight and balance view

The **Weight and Balance** view displays the following:

- Loading envelope.
- Loading stations.
- Weights and fuel plan.

Swipe the screen left or right to view the loading for each stage of a multi stage flight plan.

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

If there is important weight and balance data yet to be entered into your aircraft profile, you will be prompted by a pop up in the top right-hand corner. Any missing data will be highlighted in red text. Once entered, the text will turn black. Common omissions are *Basic Empty Weight* and *Empty Arm*. If all details are now correct, (and there are some waypoints are 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. Loads on previous legs will be reused on subsequent legs, and unburnt fuel is reused on subsequent legs. Enter weights for each load station in the green shaded fields.

The loading table is in the following format:

Load Station **Maximum** **Actual Load**

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

Scroll the **Loading** view down or up to see all load stations if there is a long list. Fuel tanks will be found at the bottom of the table.

4.3.2 Fuel

Fuel can be added to any stage and any tank. Fuel is burned in the order the tanks appear in the table. The fuel tank burn order can be altered by changing the order which they appear in the Weight and Balance section within the aircraft type profile (See 10.1.2).

Any unused fuel for a stage in the plan appears as the tank contents for the next leg.

4.3.3 Loading and planning

The POB, taxi fuel, approach fuel and holding time can be entered in the green shaded boxes per stage.

4.3.4 Passenger manifest

1. To navigate to the *Passenger Manifest* view, tap **Persons On Board** (just above the words *Fuel Planning*).
2. Add names and weights for all occupants, and the seat/row in which they are sitting.
3. AvPlan EFB will automatically update the weights for those rows, and the overall **POB** for the flight plan stage.
4. If you enter passenger weights, previous weight settings for these load stations will be overridden.
5. Passengers, when added, are also added to all subsequent stages in the plan.

6. 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 (See Section 4.8).

4.3.5 Relationship between weights table, fuel planning table and CofG envelope

Figure 14 - Relationship between sections

4.4 User waypoints

User waypoints can be added, edited or removed from within this window.

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

User waypoints can be created from a bearing/distance from another known location.

When a flight plan is submitted to IFIS 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).

User waypoints can also be emailed or sent by using the *Waypoint Management* tools at the bottom of the page. You can also **Delete All** in one hit if you choose to do so.

4.5 Flight plan submission

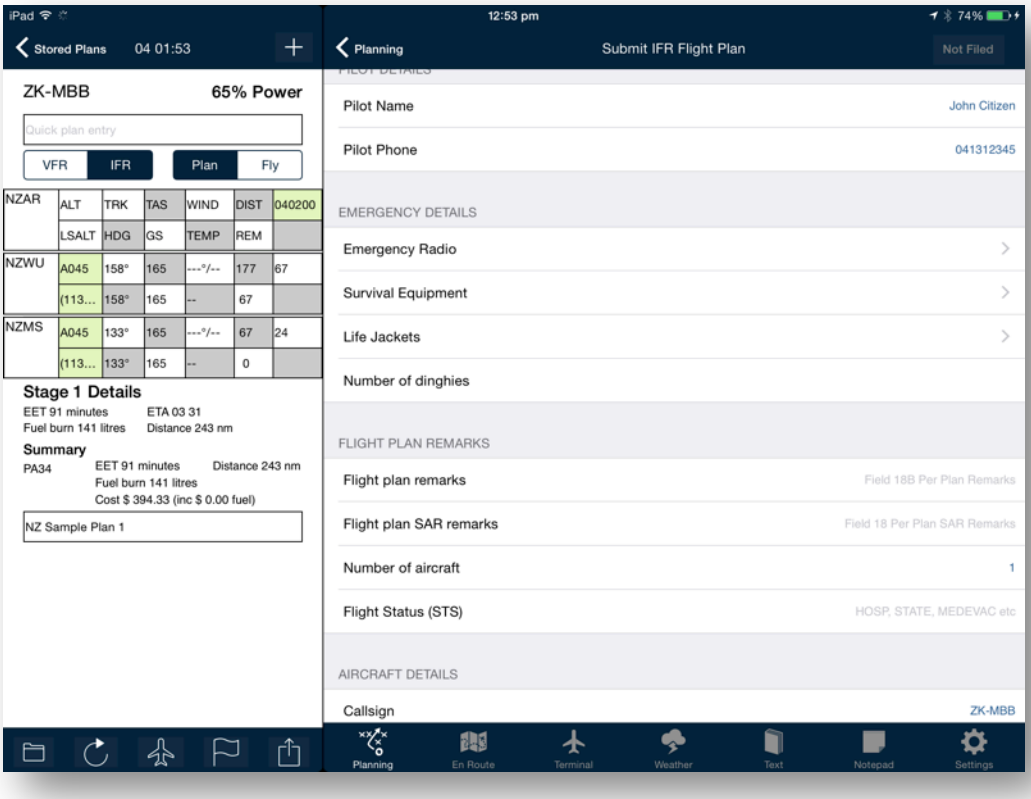

Figure 15 – Flight plan submission view

The **Flight Plan Submission** window contains the following information:

- Pilot details.
- SARTIME details.
- Emergency details.
- Flight plan remarks.
- Aircraft numbers for formation flights.
- Aircraft callsign when using flight number callsigns.

Note: A red warning banner will be appear if a plan is attempted to be submitted with 0 persons on board, 0 altitude or insufficient fuel on board.

4.5.1 Pilot details

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

4.5.2 SARTIME

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

SARTIMEs are entered in six-figure format: DDHHMM. Once a SARTIME has been successfully submitted, a warning message will appear on your device 10 minutes prior to its expiry.

4.5.3 Emergency details

Enter any emergency equipment on board the aircraft.

4.5.4 Flight plan remarks

Add any flight plan remarks applicable to the entire plan (Field 18B). The number of aircraft can also be specified.

4.5.5 Aircraft details

Edit this field when using flight number callsigns. Enter the relevant flight number.

4.5.6 Submitting a test plan

The **Submit** icon sends the plan to IFIS. If a test plan is only required, set *Test Plan* to **ON**.

The status of the plan submission appears in the window below the *Submit* button.

4.5.7 Flight plan messages

When your IFR flight plan has been accepted, you will get a message on your device(s) that ATC have received your plan. In addition we send you your expected routing as well. If ATC change your flight planned route, you will see this message and can be ready for the new routing when you call for a clearance.

If a revised route has been allocated to your submission, it will be available for viewing under **Planning > Submit Flight Plan**.

4.6 Submit SARTIME notification

You may send a SARTIME notification to IFIS when the plan is set to *VFR*. As there is less information needed, the form is shorter.

4.7 Cancel IFIS plan/SARTIME

If a flight plan needs to be cancelled after submission, tap this row to cancel the plan. This will contact IFIS and delete your flight notification.

4.8 Print/Send

The *Print/Send* screen allows individual pages to be printed, or emailed to another App on your device. Tap on the plan, weather forecasts and charts to print or send them. The **Toggle** icon on each section selects or deselects all items in that section.

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

- Flight plans.
- Load sheets.
- Blank plan forms.
- IFIS Briefing
- AIP pages for each leg in the active flight plan.

4.9 Log flight

The **Log Flight** screen displays your flight record details including:

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

For each stage it displays:

- Departure and destination.
- Block off/block on times.
- Wheels off/wheels on times.
- Flight time.

These parameters can then be logged directly into the **LogTen Pro** app (purchased separately – find out more at: http://coradine.com/logten-pro-x/).

5 EN ROUTE

Figure 16 – En Route view

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.

AvPlan EFB combines all NZ charts into three seamless maps:

- NZ VNC (otherwise known as *MegaVFR)*,
- *En Route Lo,* and
- *En Route Hi* maps.

On top of these maps you can selectively overlay:

- Airports, navigational aids VFR and IFR waypoints and IFR routes
- Runway centreline extensions (colour coded to show the most into-wind runway where current METAR information is available)
- Controlled airspace
- Infrared satellite cloud or satellite rain prediction animations
- Lightning animation

- METAR with wind direction
- Significant Weather (SIGWX) overlay, both Mid-Level and High-Level
- Graphical SIGMET areas.
- Fuel prices.

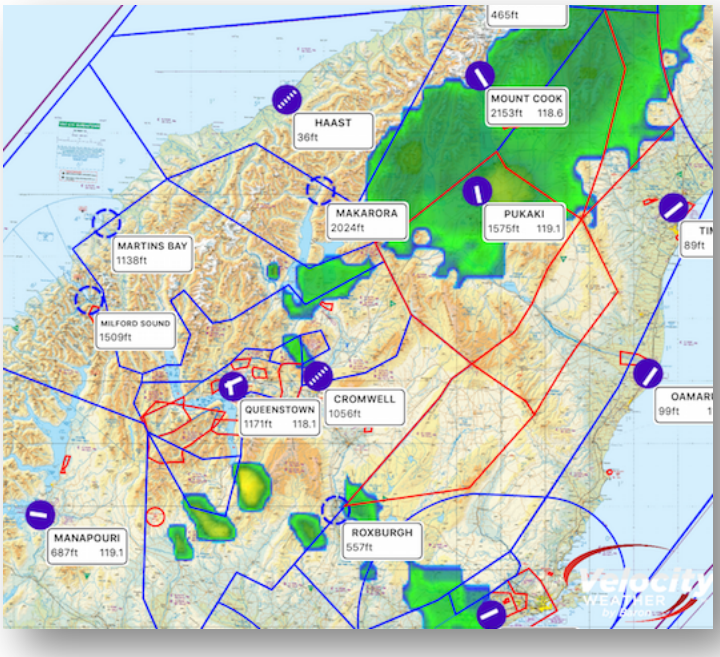

Figure 17 – Some map overlay examples

Figure 18 – Search icon

The **Search** icon allows points and airspace names to be searched and located on the map.

Figure 19 – Map icon

The **Map** 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 is saved on your device.
- **Sections Saved** denotes that parts of the map are saved on your device. This 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 (See section 9.1).

Figure 20 – RADAR icon

The RADAR icon displays weather-related overlays on the map. Select from animated overlays, such as the Global Infrared Satellite cloud cover or Global Satellite rain prediction. In addition, static images can also be overlaid: METARs, SIGMETs, surface pressure and lightning strikes (that have been sensed within the last 15 minutes) can also be displayed on the map.

Note: Multiple static overlays can be selected, whereas only one animated overlay can be displayed at a time.

Figure 21 – Map settings icon

The **Map Settings** icon allows a number of features shown on the En Route pane to be selected or deselected:

5.1 Map settings

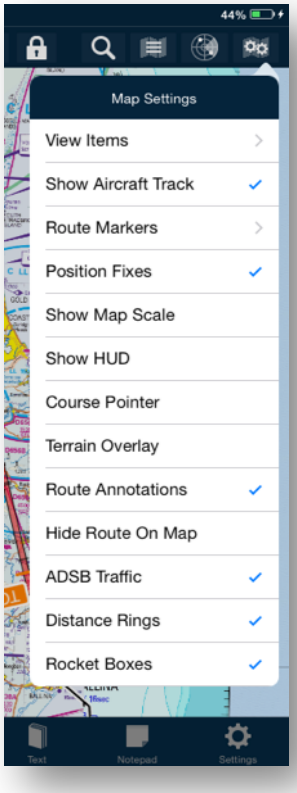

Figure 22 – Map settings view

Map settings include the following menus:

- **View Items** menu item allows the following items to be overlaid on any *Mega* type map:
    - Runway Centreline extensions (5 Nautical Mile) for airports with paved runways set as takeoff or landing sites within the current plan. Note: If no plan is open, extensions won't display.
    - Airport Glide Range (see 5.13)
    - *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)
    - *Private Airstrips:* Authorised Landing Areas (ALA)

        - Label displays Name and Height AMSL. CTAF Frequency is displayed if available.
    - Fuel price (see 5.1.1)
    - Obstacles
    - *Navigation Aids*
    - *VFR Waypoints*
    - *IFR Waypoints*
    - User Waypoints
    - Airspace boundaries
    - Active Airspace (highlights red on the map when PRD is active)
    - IFR Routes – High and Low

    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.

- **Show Aircraft Track** toggles the visibility of the aircraft track log.
- **Route Markers.** Select none, 10 minute, 6 minute or 10 Nautical Mile markers to be shown along planned track.
- **Position Fixes** menu item toggles the visibility of user fixes on the map.
- **Show Map Scale** toggles the visibility of the map scale view at the top left of the map.
- **Show HUD** overlays live information about the current flight plan leg, current speed/course and ETA over the map.
- **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).
- **Terrain Overlay** option enables or disables the terrain warning map overlay. See 5.12 for more information about how it operates.
- **Route Annotations** toggles the visibility of Top of Climb (TOC), Top of Descent (TOD), Critical Point (CP – otherwise known as Equal Time Point) 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.
- **Hide Route on map** option toggles the visibility of the route on the map. Only the waypoints remain displayed – useful when reviewing ground track.
- **Traffic** toggles traffic icons plotted on the map. There may be two sources for this feature: AvPlan Live (see or an External ADS-B receiver device is present and connected (see 9.3.2 for more information about External Devices).
- **Distance Rings** toggles 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.

5.1.1 Fuel price overlay

When enabled, known fuel prices are displayed on the 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.

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.

5.2 Aircraft symbol

The aircraft position is overlaid on the map 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 **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**. The aircraft icon for individual aircraft can be changed under **Settings > Aircraft Type Database > (your aircraft type) > Basic Details**.

5.3 Visually edit plan

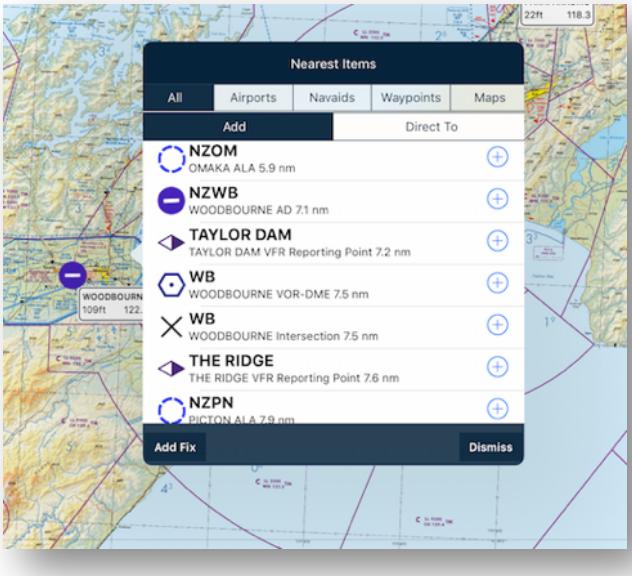

Figure 23 – Nearest items view

On all maps waypoints can be selected and moved around.

1. Tap and hold on a waypoint. The icon will grow and dim, and a blue ring will appear around your finger.
2. Move your finger to the new point, dragging the waypoint.
3. When you release your finger, the **Nearest Items** view appears. See 5.7 for more information.
4. To select a new point, tap the blue (+) icon, or a user waypoint created at that point.

Figure 24 – Blue (+) icon

The current flight plan is overlaid on the map. The legs are colour coded as follows:

- All future legs are **RED**
- The current leg is **MAGENTA**
- The legs already flown are **BLUE**

5.4 Waypoint search

1. Tap the **Magnifying Glass** icon on the **En Route** page. A search location window will appear.
2. Tap the text in a row to zoom in and show item on the current map. (see a similar example within Figure 26 for clarity)

3. If the location is not on the current map, a new map is opened of the same type (if possible) or a map of lesser scale in the same flight rules category (VFR charts or IFR charts).

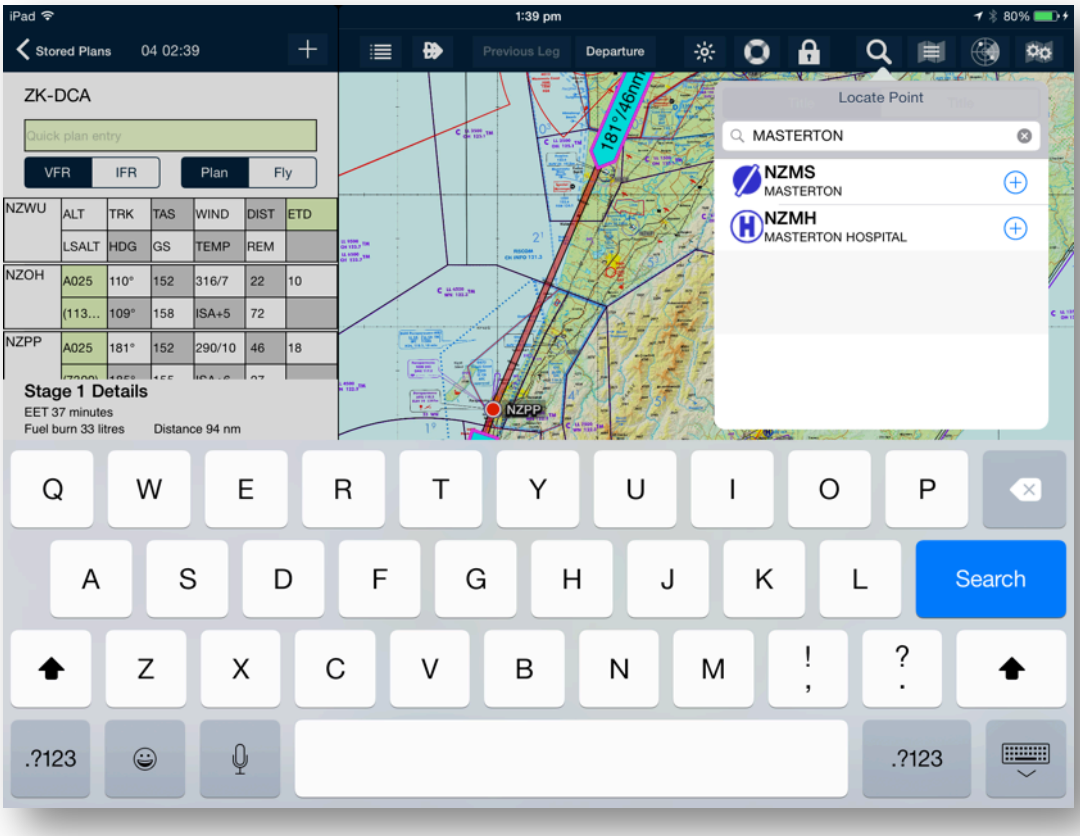

Figure 25 – Locate point view

4. Tap the **blue (+)** icon (See Figure 24), to add lines joining locations.

Note: This function is useful for drawing arbitrary lines on a map to display items such as forecast subdivision areas.

5. Multiple locations may be entered at the same time (for example 'YMMB YFLI YMCO'). Tap the **blue (+)** icon on each row and you can draw a line joining those three points.
6. Tap on the line and select **Delete** to remove it from view.

Figure 26 – Locate point view with a line drawn on the map.

You can also enter a name of a PRD area and it will be located on any map, with the boundary highlighted.

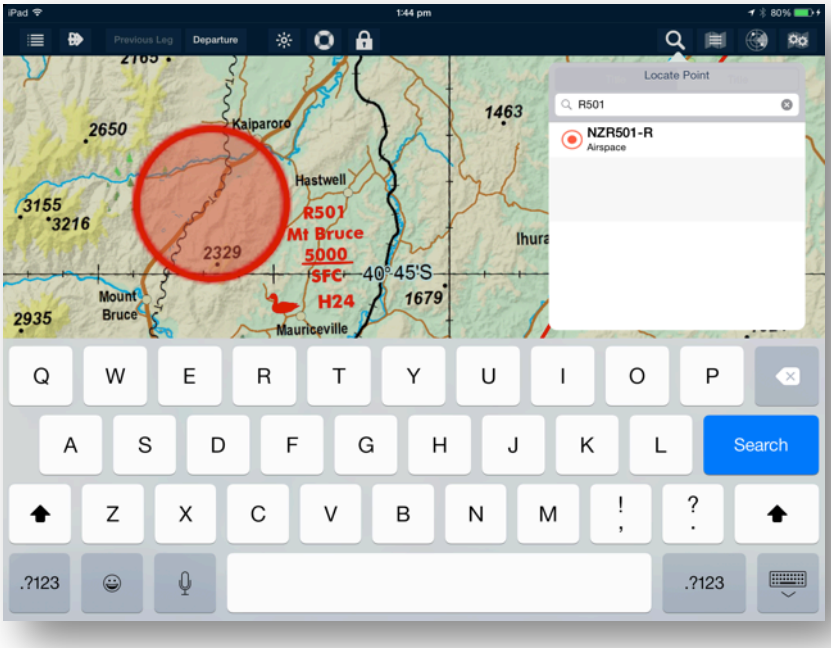

Figure 27 – Locate point view for PRD area search.

5.5 Map control icons

The three icons on the bottom-left of the map perform the following functions:

- The left icon () toggles between centring the map on the aircraft (**RED**) or free (**White**).

> **Note:** You cannot pan round the map when it is centred (red).

- The middle-left icon () toggles the map rotation function. The options are *Free Rotation, North up Rotation, Planned Track up Rotation and Heading Up Rotation.*
- The middle icon () toggles the HSI on and off. See 5.6 for more information about the HSI.
- The middle-right icon () toggles the Synthetic Vision. See 5.17 for more information about Synthetic Vision.
- The right hand icon () toggles the Flight Profile View. See 5.12 for a detailed overview.

5.6 Horizontal Situation Indicator (HSI)

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

- 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 zooms slightly, drag it to the new location then release your finger.
- To change the size of the HSI, use a pinch gesture.

5.7 Nearest items

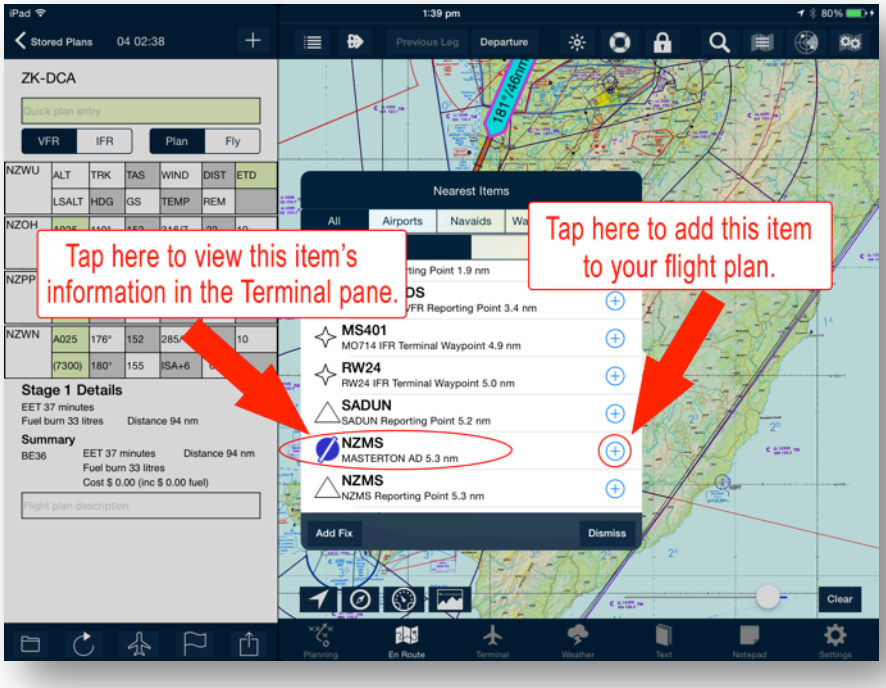

Figure 28 – Nearest items view

- When you tap on a map, the **Nearest Items** view appears. This view shows the **Nearest Airports. Navigational Aids, Waypoints** and **Maps** at the location tapped.
- 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).
- When you tap on the **Facility Type** icon, the **Terminal** pane will open and display all the **Weather, ERSA** and/or **DAP** pages for that location.

The **Add|Direct To** toggle switch changes the behaviour when the **+** 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.

5.7.1 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.

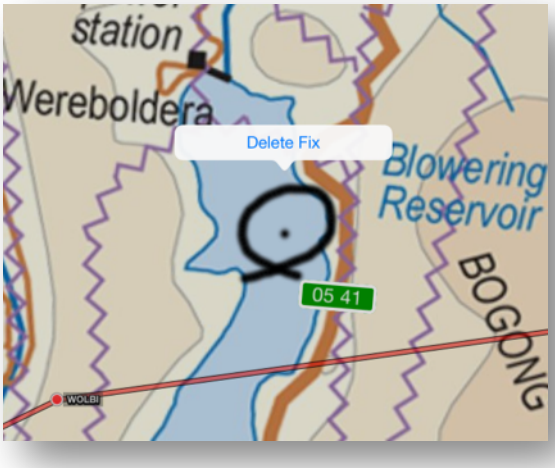

Figure 29 – Delete fix view

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).

5.8 Animated RADAR overlay

Figure 30 – Satellite rain prediction overlay view.

The Global Satellite Rain overlay displays a continuous loop of radar information. The feed is refreshed every few 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.

You can also select from *Global Infrared Satellite* (cloud).

5.9 Static Weather overlays

AvPlan EFB will also overlay **METARs, SIGMETs** and **Lightning** on the map.

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

Multiple *Static Weather Overlays* can be selected at one time. Once selected, the selection will be stored and displayed next time AvPlan EFB is launched.

5.9.1 SIGMETs

When selected, any current SIGMETs will display on the map.

Tap a **SIGMET Identifier** label to view the SIGMET text. While it is selected 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.

Figure 31 – SIGMET view

5.9.2 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.
- METARs with unknown or missing data (some only collect wind and/or QNH) are displayed as grey icons.

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.

Tap on a **METAR** icon to display its full text.

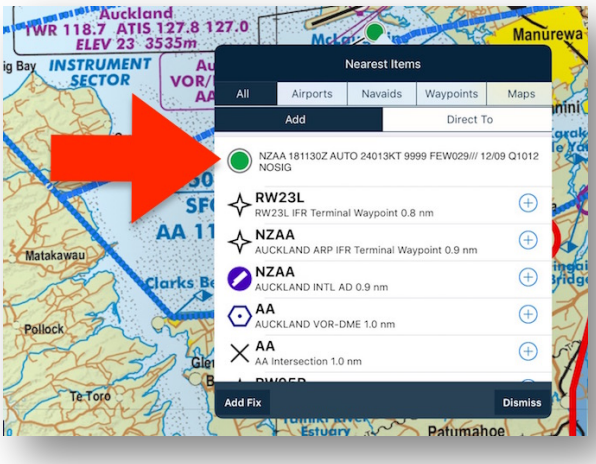

Figure 32 – METAR view

5.10 Airspace

Double tap the map to display all airspace information above that point

- All controlled airspace will be listed.
- Any PRD areas.

Tap an entry in this list to highlight the boundaries on the map for ten seconds.

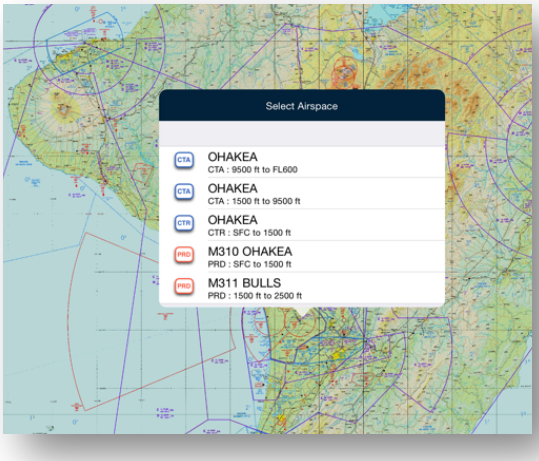

Figure 33 – Airspace information

5.11 Terrain overlay

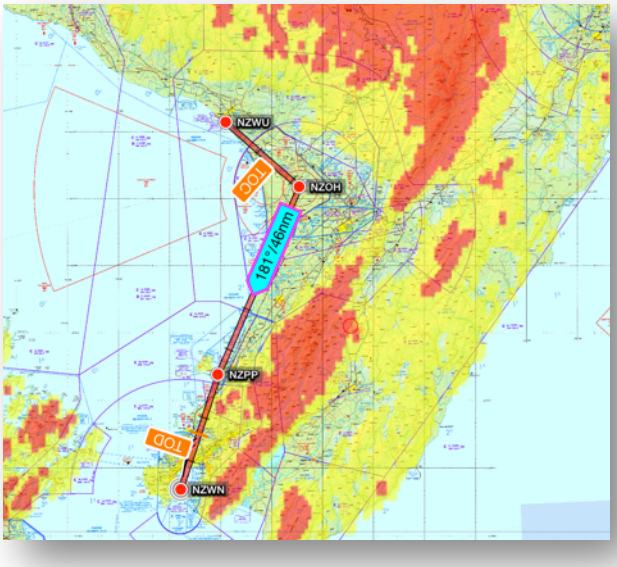

Figure 34 – Terrain overlay view

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

Terrain that is 1500 feet below to 500 feet below is highlighted **yellow**.

Terrain that extends from 500 feet below to above is highlighted **red**.

5.12 Flight Profile View

This view is an excellent tool to assist with planning vertical navigation and enhancing terrain or obstacle awareness during flight.

Figure 35 - Flight Profile view

Terrain less than 500 feet below planned altitude is shown in red

Terrain between 500 and 1500 feet below planned altitude is shown in yellow

Obstacles are also shown as red vertical lines (If Terrain Warnings is set to on - See Other settings)

Airspace along your route is also depicted in the Flight Profile view.

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 heading, looking 30 NM ahead.

5.13 Airport glide range

Selecting *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.

5.13.1 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 glide to 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.

This shape will change as you fly around 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 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.

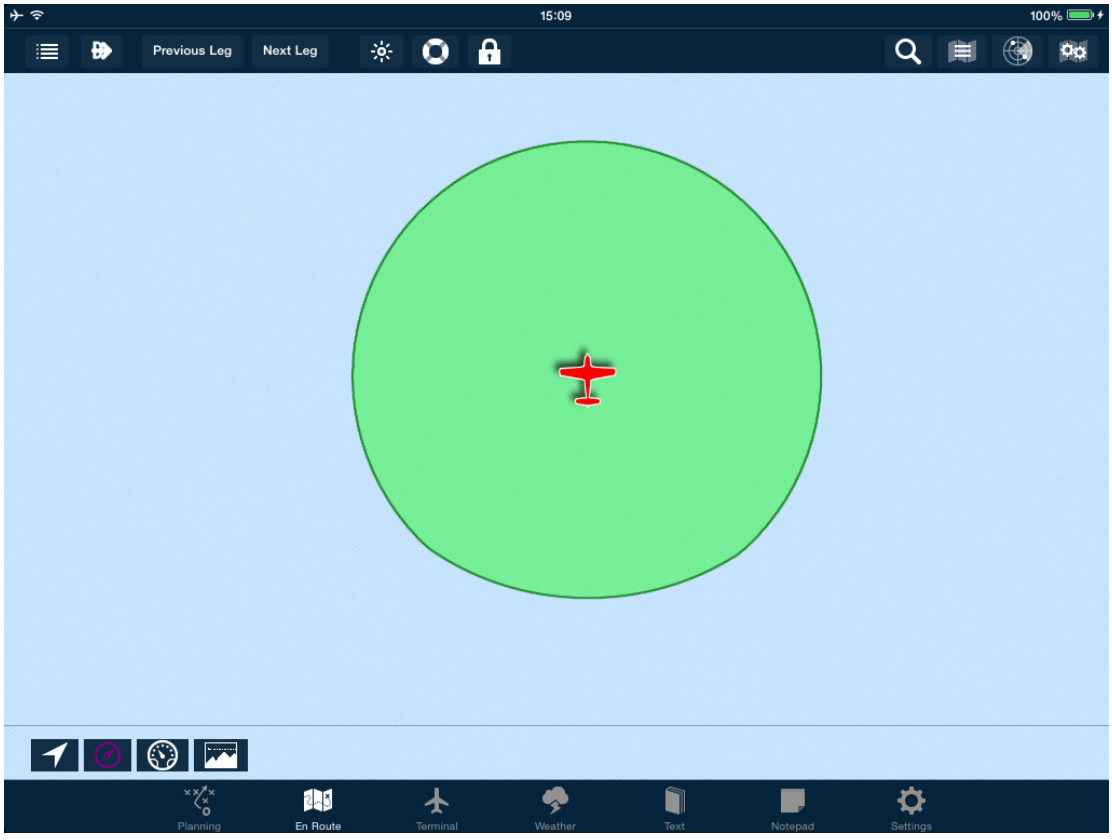

Figure 36 Aircraft glide envelope example - nil wind or terrain

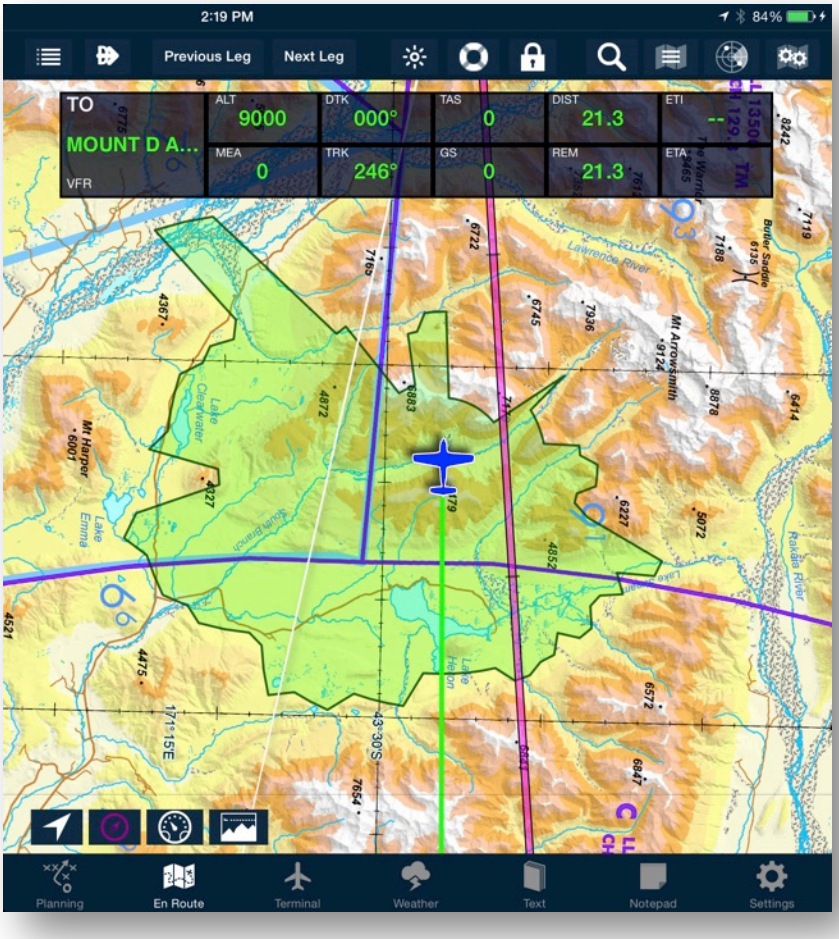

Figure 37 Glide envelope: low altitude, high terrain example

The example above (Figure 37) 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.

Area forecast wind effects are taken in to account by the simulation. When winds are strong enough, 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.

5.13.2 Airport glide envelope (IFR 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 to a manoeuvring height of 1500 feet above airport level. These could be considered *catchment areas* for each airport at your highest 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.

Figure 38 Airfield and aircraft glide envelope overlap

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

5.13.2.1 Maximizing glide during flight planning

By displaying the glide envelopes along 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 with-in glide range of an airfield.

The pilot in this instance has created a flight plan that maximizes the amount of time spent in areas where the aircraft is in glide range of an airfield.

Figure 39 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 the grey area, a safe glide to around 1500’ above a suitable airport is possible (see below).

Figure 40 Merged airport glide envelope example

5.13.2.2 Dynamically calculating closest airfield in flight

While in flight, AvPlan EFB 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. Airfield within current glide range and with suitable runway. 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 aircrafts 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. Airfield 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 or alternatively can use the same weighting mechanism used in algorithm 1 above. 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 best 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 best airfield based on the shortest glide distance. This selection is denoted by red text within the airport label.

See Figure 38 for an example of a designated airport label.

5.14 HUD

Figure 41 – 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. When the app is first launched; default settings show the following details:

- Current leg of the flight plan (TO)
- Current GPS Altitude (ALT)
- Lowest Safe Altitude for current leg (LSALT)
- Desired Track (DTK)
- Aircraft current heading (TRK)
- True (planned) Airspeed (TAS)
- Ground speed (GS)
- Distance in Nautical Miles to next waypoint (DIST)
- Distance Nautical Miles to destination (REM)
- Minutes to next waypoint (ETI)
- Estimated UTC time of arrival at waypoint (ETA)

5.14.1 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. **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**.

5.15 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.

As with any geo-referenced chart placed on the map (see 6.2.2, 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 Screen brightness and Fade To Black

Tapping the *sun* icon at the top of the EnRoute pane brings up options for controlling screen backlight.

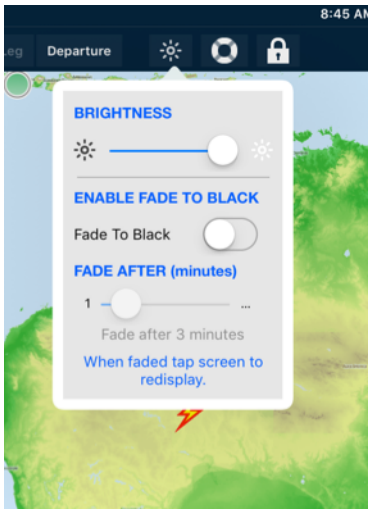

Figure 42 - Brightness and Fade to Black

5.16.1 Screen brightness

Sliding the upper slider left or right will have an instant effect on the brightness of the screen behind it. Once you've selected the correct brightness level, tap outside the menu to dismiss.

AvPlan EFB is able to reduce the brightness to a far lower level than purely using the backlight slider found in the *Control Centre* (i.e. drag finger up from the very bottom of the screen).

5.16.2 Fade to Black

When enabled, the Fade to Black feature will fade the screen and turn off the backlight completely after the screen has not been touched for the specified time interval. Tap the switch (will highlight green to indicate it's on) and then move the lower slider to select the desired time interval.

If you wish to view the screen once the screen has faded to black, simply tap the screen a single time to return it to normal mode. The screen will fade back to black once the screen is untouched for the specified time.

Whilst the screen is faded to black, the application is still in the foreground and remains fully functional. This is in contrast either to closing the smart cover, pressing the sleep/wake button or backgrounding the app (i.e. pressing the Home button).

Advantages for using Fade to Black:

- iPad runs a little cooler – less internal heat created by the backlight
- Lowers the risk of high temperature shutdown
- Reduces battery drain

5.17 Synthetic Vision

New to AvPlan EFB version 7, 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.

5.17.1 Turning on Synthetic Vision

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

Figure 43 - Show/Hide Synthetic Vision

When turned on, the Synthetic Vision appears on the right half of the map page (one third if the flight plan is also visible).

Figure 44 - Synthetic Vision layout

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.

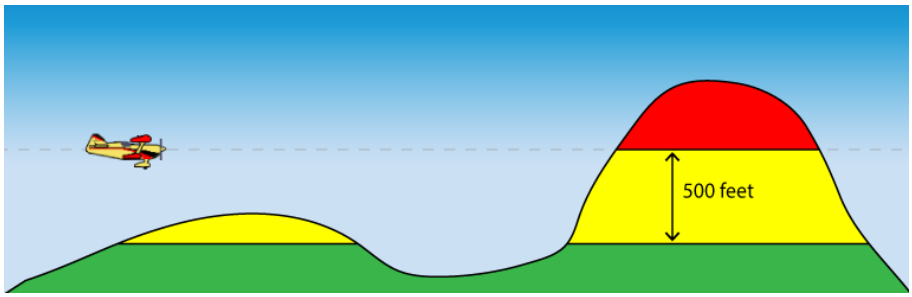

Figure 45 - Terrain Shading

Charted obstacles and certified runways are also depicted to scale on the landscape:

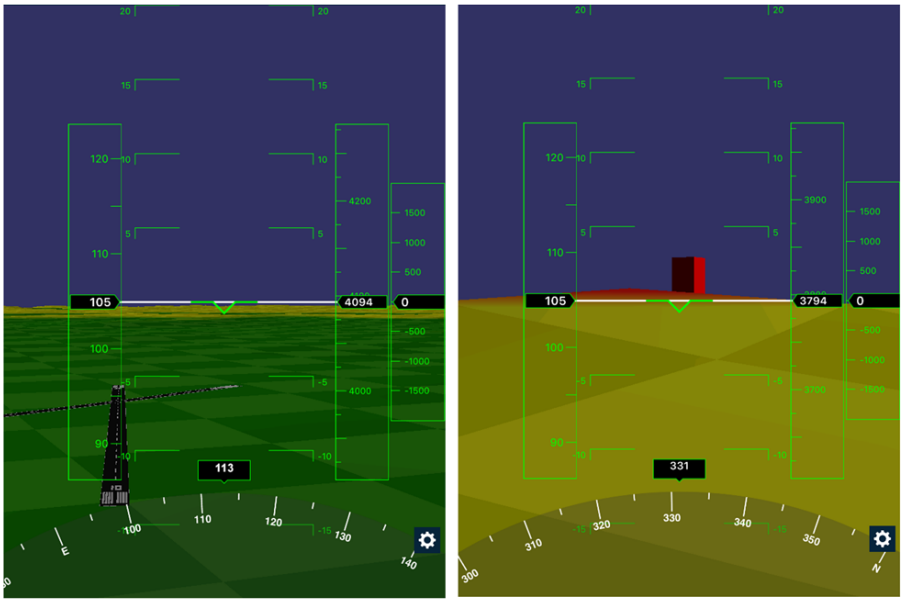

Figure 46 - Runways and Obstacles in 3D

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.

5.17.2 Limitations

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.

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.

6 TERMINAL

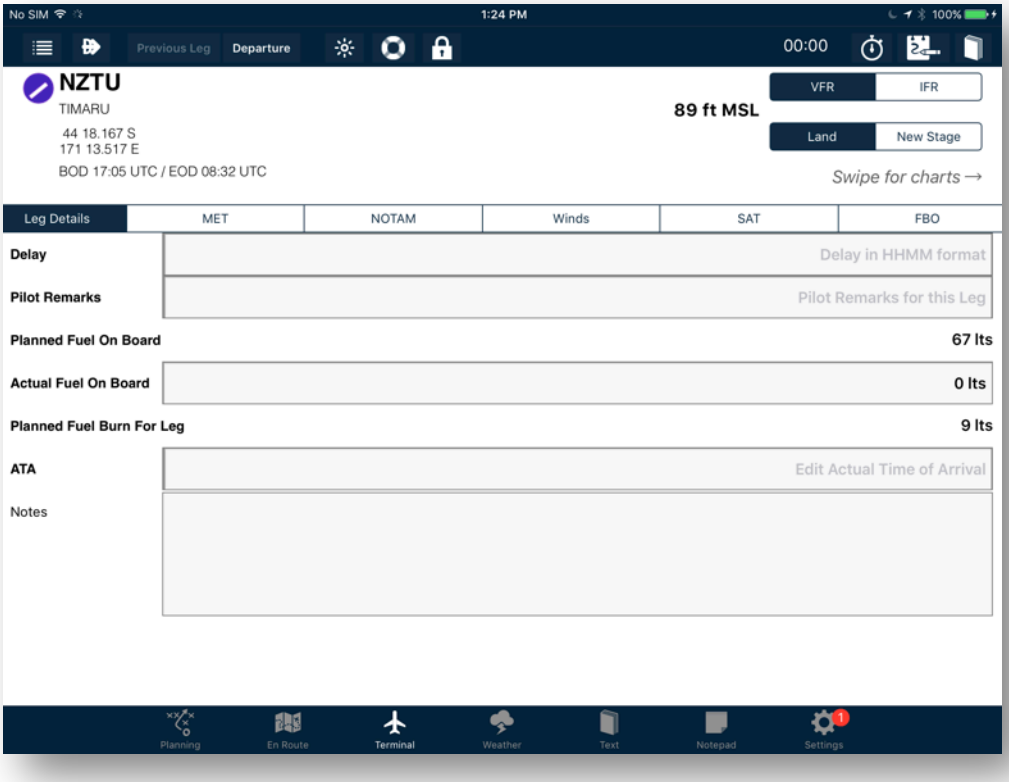

Figure 47 – Terminal pane

The **Terminal** pane displays information about a particular location on the flight plan, or any specific location.

1. Swipe the screen right–to-left to display associated pages from the AIP.
2. Tap three fingers on the view to display a series of icons representing each page at the bottom of the screen. You will now be able to find a specific chart quickly by scrolling this right and left.
3. 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.
4. The **Terminal** pane includes an approach timer. Tap the **Stopwatch** icon to start/stop/reset the time. When landing, the **Terminal** pane will automatically switch to the ERSA page, or the Airport taxi diagram (where available).

6.1.1 Leg Details/Weather/NOTAMs page

The **Weather** page on the **Terminal** pane displays the plan details at that flight plan leg, plus applicable NOTAM and decoded TAF/METAR information.

The **Weather** page can change the flight rules for a leg from VFR to IFR (or vice versa), and change that point to be a landing point.

It includes the beginning of daylight (BOD) and end of daylight (EOD) for the current day at that location. Times are in UTC and correspond to the beginning and end of civil twilight.

When viewing a flight plan track point on the **Weather/NOTAMs** page;

1. To add a delay, enter a time in the **Delay** field (in the format HHMM). Aerial work at a point is added as a delay in this section.
2. To clear a delay, enter nothing, or enter '0000'.
3. Add comments for a flight plan stage in the **Remarks** row. This will then be applied to Section 18A of the flight plan.

Fuel Burn and **Fuel on Board** are also displayed for each leg of the flight plan. The Fuel on Board figure can be updated in flight as appropriate to increase the fuel planning accuracy.

Communications information and winds aloft information (if the point is a leg in the current flight plan) are also displayed on the **Weather** page.

6.1.1.1 Plain Text MET

Selecting the MET tab displays the TAF and METAR information for select major airports.

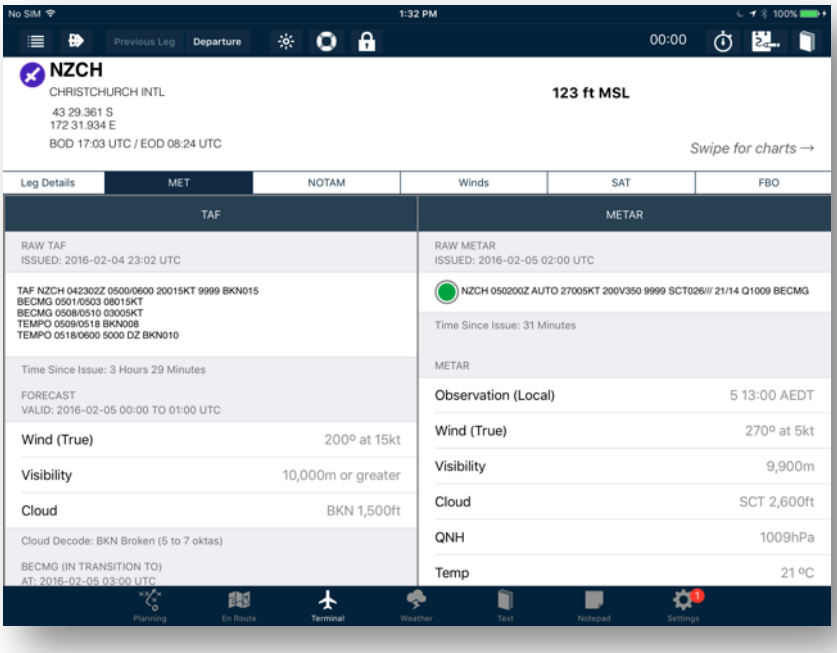

Figure 48 - Decoded TAF and METAR

The raw reports are displayed at the very top of the columns. Scroll down either the left column (TAF), or the right column (METAR) to view the decoded versions.

AvPlan EFB will attempt to refresh these automatically in the background when *Automatic Weather Downloads* option is selected within **Settings** > **User Settings**.

6.1.2 Landing points

When you create a landing point, a new stage is added to the plan. Landing points can only be created at airfields, navigational aids with an associated airport, or user waypoints.

Remove landing points by selecting the take-off point on the next stage and then tap the **Overfly button.**

6.1.3 AIP volumes 3 & 4

The **AIP** aerodrome pages are available by scrolling from right-to-left from the **Weather** page. These are always in the order of **Aerodrome** and then all **Arrival/Departure** pages.

The App retains specific pages and points viewed. If you use the **Flight Plan** page to switch between leg view on the **Terminal** page, it will reopen at the page, last viewed at that point.

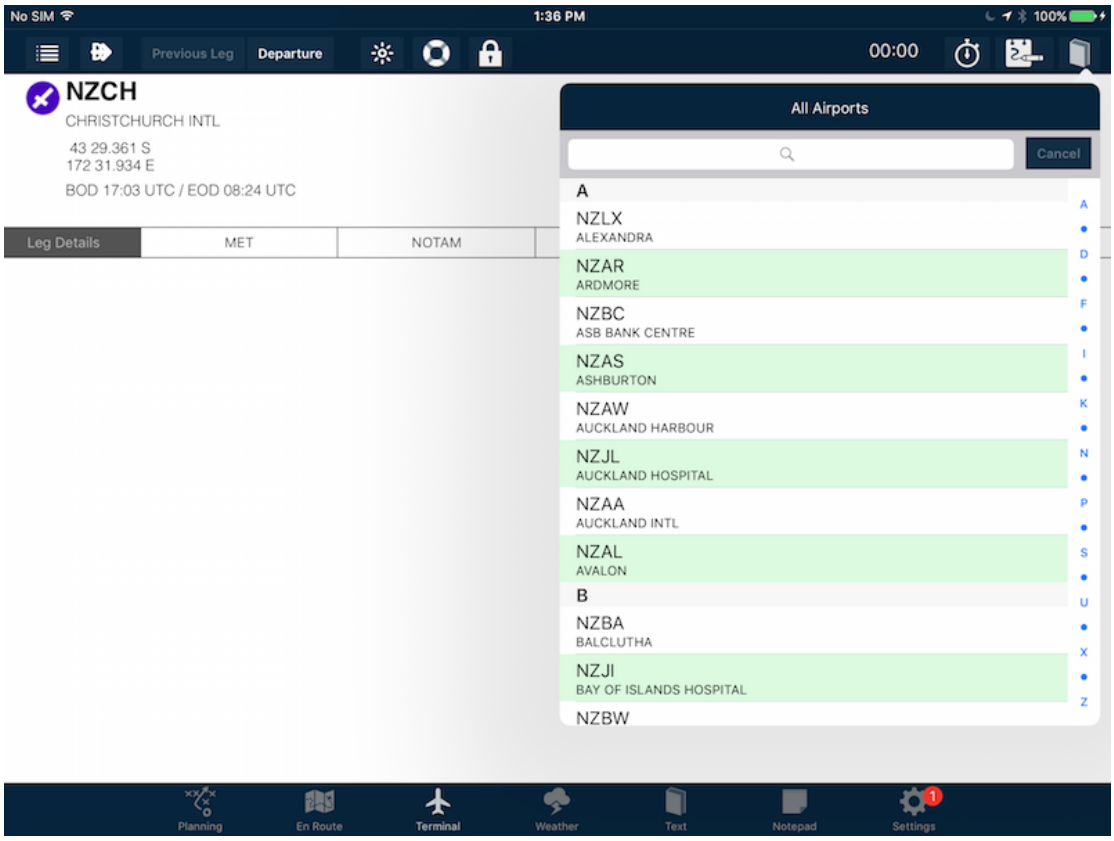

Figure 49 – Terminal pane

1. Tap on the Book icon to view all **ERSA** pages.
2. Tap the **All Charts** icon.

6.1.4 Chart notation

Any chart in the Terminal pane can be highlighted or have important information written on them. The quickest way to begin notating is to double-tap the chart. A banner at the top of the screen will display *Editing.*. and you can now notate or highlight text on the page. To exit Editing mode, double-tap the page once more.

More options for editing/notating can be accessed by tapping the **Chart Overlay** button: Second from the right (see Figure 51 – Position, route and ground track). Any notes can be cleared from this menu by tapping **Clear Chart**. Different colour *pens* can be selected here also. 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.

6.2 Geo-referencing

Figure 50 – Flight plan route and ground track overlay

The airport taxi diagrams and instrument approach procedures are geo-referenced. Your current position, flight plan route and ground track are overlaid on the map.

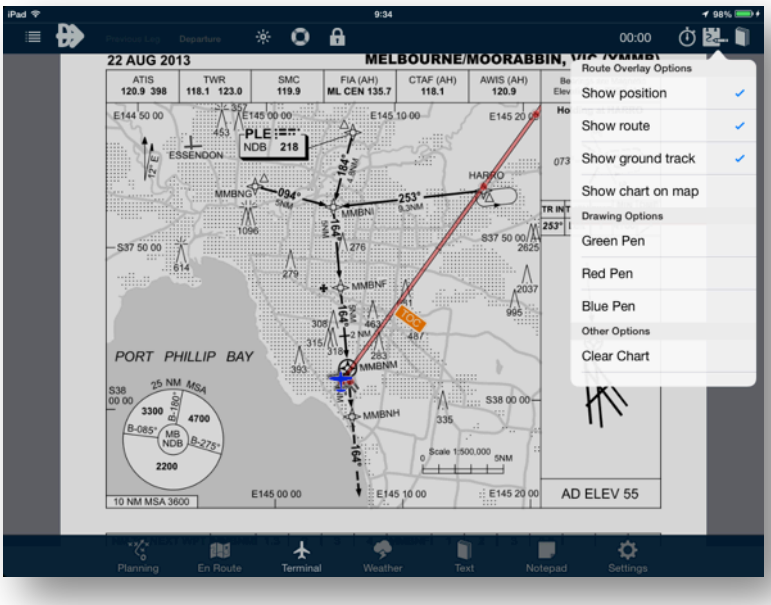

Figure 51 – Position, route and ground track

Items overlaid on a chart can be hidden/un-hidden by tapping the second button from the right on the top of the window. You can individually turn on and off the aircraft position, flight plan route or saved ground track.

6.2.1 Geo-referencing status

The top left of the chart indicates the current state of geo-referencing for that chart, and current GPS accuracy.

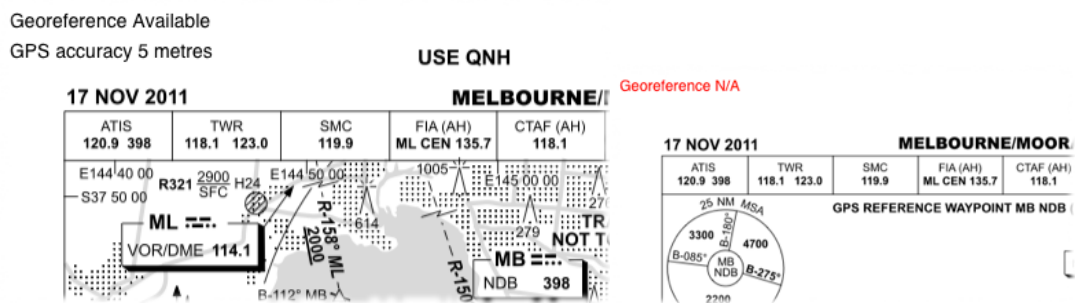

Figure 52 – Geo-referencing status

6.2.2 Geo-referenced Chart Overlay

Figure 53 Geo-referenced chart overlay

Geo-referenced charts can be overlaid on *Mega* maps. To overlay a chart on the current map:

1. Locate the desired chart on the Terminal pane
2. Tap the chart overlay button: Second from the right (see Figure 51 – Position, route and ground track).

The En Route pane will open and the chart will appear. The **Clear** button on the bottom right removes the chart, and the slider can change the transparency of the chart.

6.2.3 Mega-Zoom

A convenient way to access detailed airport diagrams is to zoom in on the airport you wish to see. Once you get close enough, the diagram will automatically appear on the map.

Note that the drawing feature (see 6.1.4) is not available when in Mega-Zoom mode.

7 WEATHER

The **Weather** pane displays weather related information.

Scroll the views left and right to display the following:

- MetService web portal (MetFlight GA and JetFlight)
- Saved Forecasts
- Worldwide IR Satellite images
- SIGWX images

Tap on the text of the item you want to view.

Tap **Close** to dismiss the chart.

7.1 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** icon deletes **all but the last seven days** of weather forecasts from your device.

7.2 Satellite images

1. Scroll the **Weather** pane to view the list of available satellite images.
2. Tap on the name to view the current image.
3. When viewing is complete, tap **Close** to return to the list.

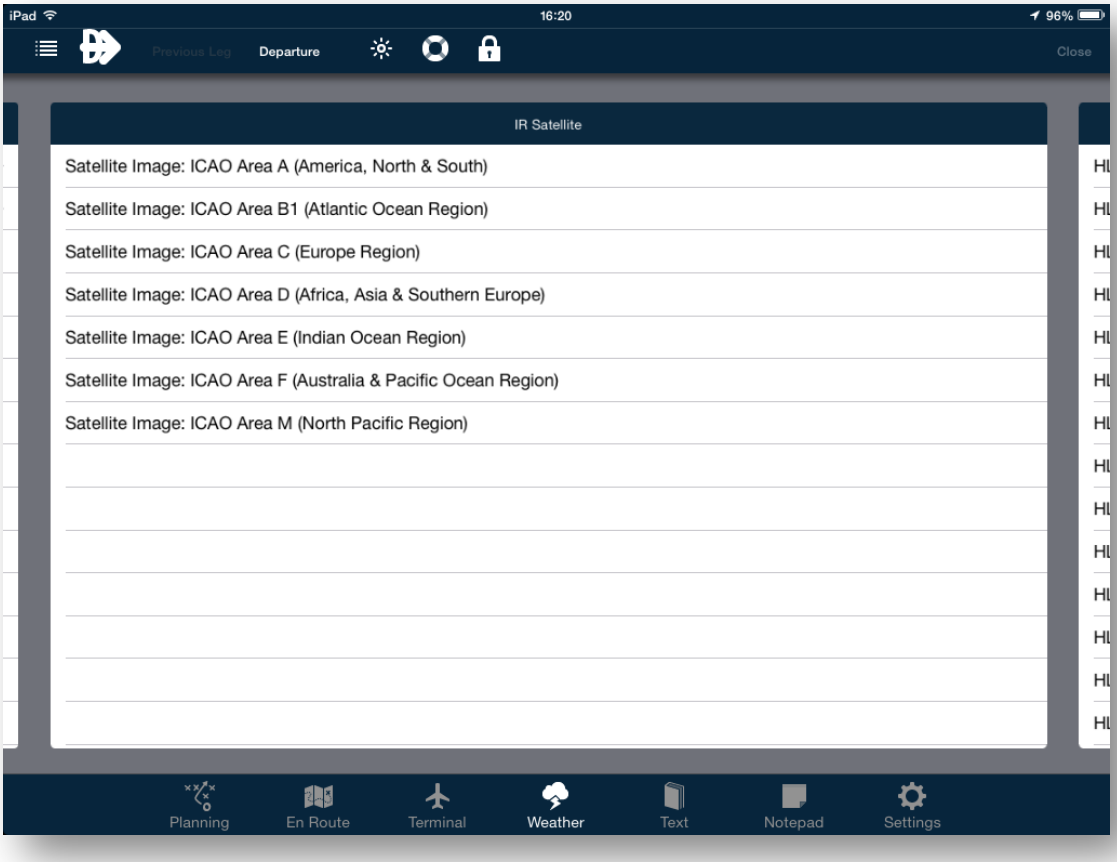

Figure 54 – IR satellite list

8 TEXT & NOTES

The **Text** pane displays various documents and allows access to the following:

- Table of Contents.
- Add Bookmarks.
- Text searches.

The following documentation sections are available:

- AIP.
- Pilot Operating Handbooks (in .PDF format).
- Documents in Dropbox (in .PDF format).

All documents in this section support Table of Contents, Bookmarks and full text search. Tap the magnifying glass icon to view the search bar.

8.1 Bookmarks

Bookmarks can be created for all documents.

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.
3. You can sync your Bookmarks to other devices using iCloud.

8.2 Search documents

All documents are searchable.

1 Tap on the **Magnifying Glass Icon** to display the search bar.

4. Tap the **Magnifying Glass** icon on the search bar. Enter your text and then tap on the row corresponding to the desired location in the document.

8.3 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 documents into that folder that you wish to make available inside AvPlan EFB.

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

8.4 POH

If you have added a link to your aircraft Pilots' Operating Handbook (POH) in the aircraft profile (see 9.6), it will appear in this list. Tap an entry to download (for the first viewing) and view the POH.

8.5 Chart Legends

Tap any listed 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.

8.6 Documentation

This window contains a convenient shortcut list of current AvPlan EFB user documentation and tutorials.

8.7 Notepad Pane

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** icon is pressed.

- Press **Erase** (rubbish bin icon, top right corner of screen) to erase all notes.

NOTE: Notes remain for the current AvPlan EFB session only. If AvPlan EFB is shut down and re-started for any reason, any previous notes will be lost.

9 SETTINGS

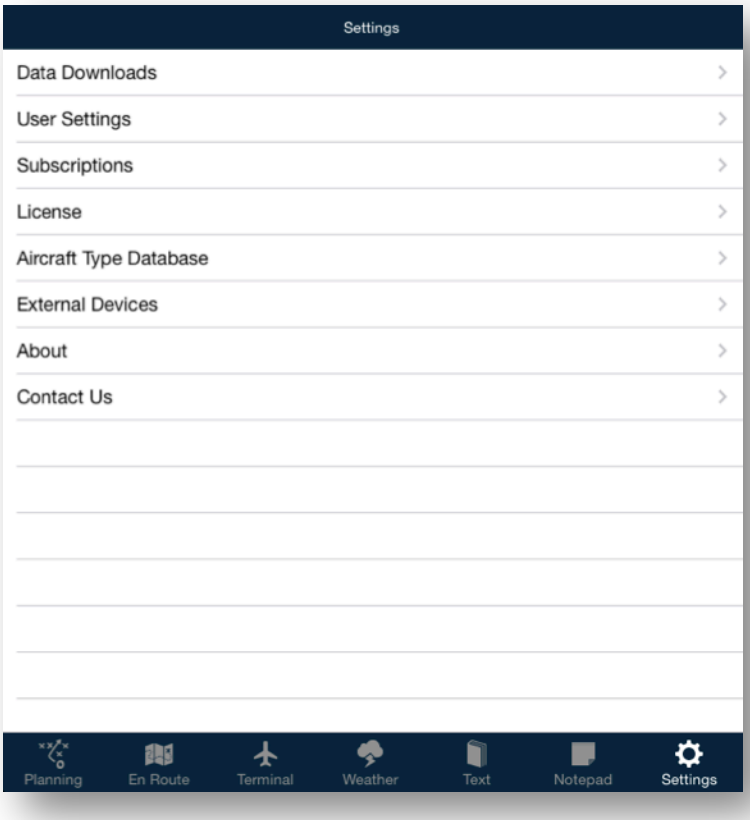

Figure 55 – Settings pane

9.1 Data downloads

The **Data Downloads** page allows charts (applicable for your subscription type[s]) to be downloaded and saved on your device for offline use.

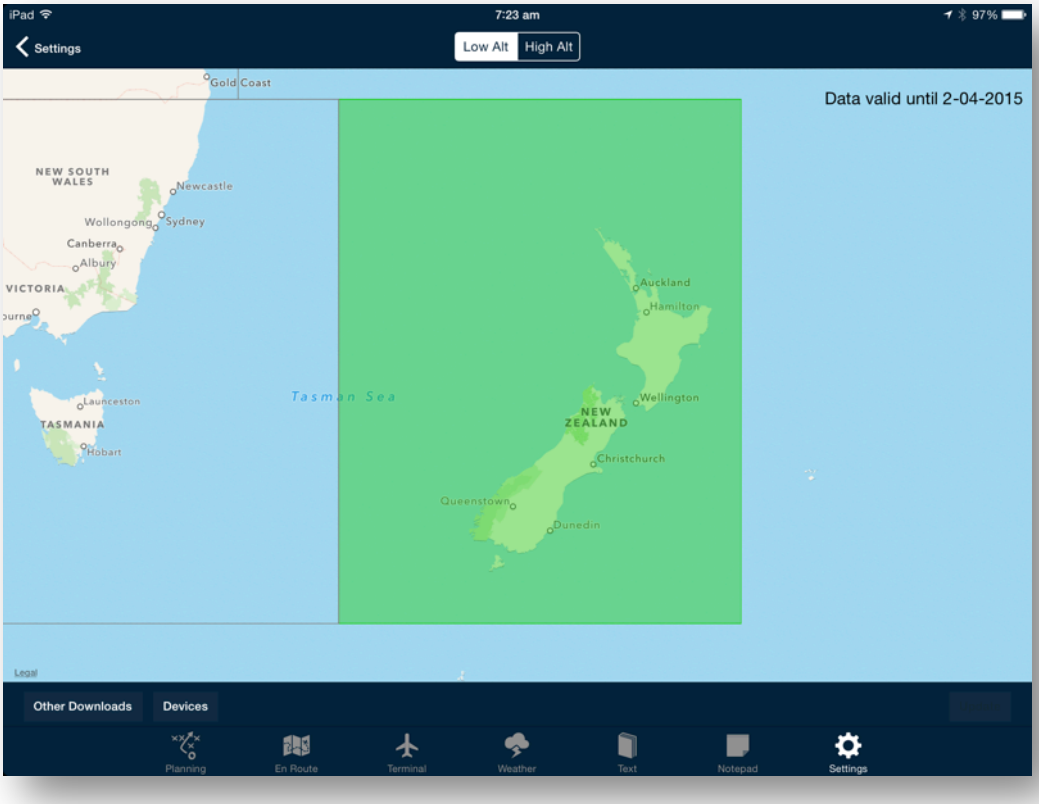

Figure 56 – Data downloads page

To download the **Mega Maps (VNC and EnRoute LO)** and **AIP** pages tap an area on the map. This will download all information for that area.

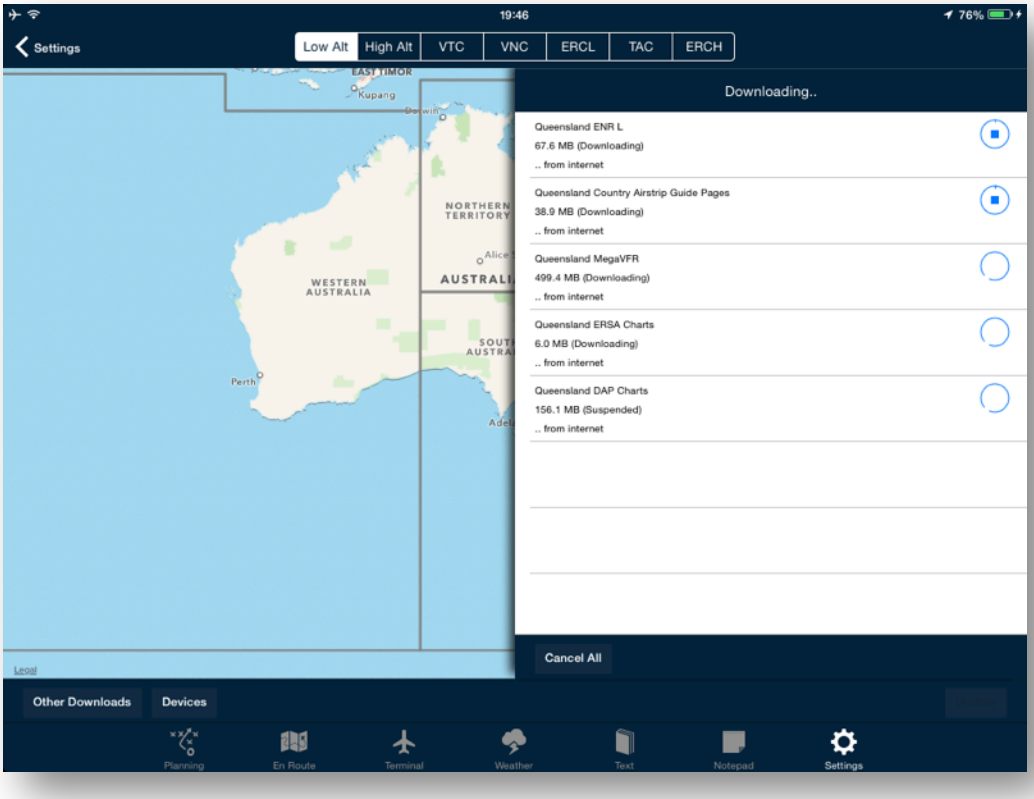

Figure 57 – Downloading page

Depending on the current download status, the colour of the area changes:

- **Clear** when no data has been downloaded.
- **Yellow** when the area is being downloaded.
- **Orange** if the area is only partially downloaded.
- **Green** when all information in that area has been downloaded.

When new data is available, the **Update** icon at the bottom of the screen turns red.

- Tap this icon to download new data for all areas previously downloaded.
- To cancel a download in progress, tap **Cancel.**
- To hide the **Current Downloads** view, swipe the window to the right.

AvPlan EFB will continually prompt you to update if a region is not fully downloaded. To stop this occurring, the region must be **deleted** (see 9.2). Once it has been deleted, you will not be prompted to update it again.

9.2 Deleting an area

Figure 58 – Delete pane

- To delete a section, tap on the area. The questions in Figure 58 above will be displayed.
    - **Delete** will remove the area 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.

9.2.1 Other downloads section

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

Terrain data is downloaded automatically. Other map types information can also be downloaded here, such as the *250k Topographic, or User Maps* (if enabled).

9.2.2 Downloaded data sharing

If 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**. Any nearby devices in this state will be listed.
3. 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.
4. 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.

9.2.3 Maintenance section

The maintenance section at the bottom of the **Other Downloads** page contains the following options:

- **Delete old data** deletes all expired maps and AIP pages from your device.
- **Delete all flight plans** deletes all your saved flight plans.
- **Delete all NavData** deletes all saved navigation database versions. Any user LSALTs and user waypoints are preserved. Once tapped a new database must be downloaded.
- **Delete all forecasts** deletes all saved forecasts from your device.
- **Delete all track logs** deletes all track logs associated with your flight plans.
- **Delete all saved data** deletes all saved AIP and map pages from your device.

9.3 User settings

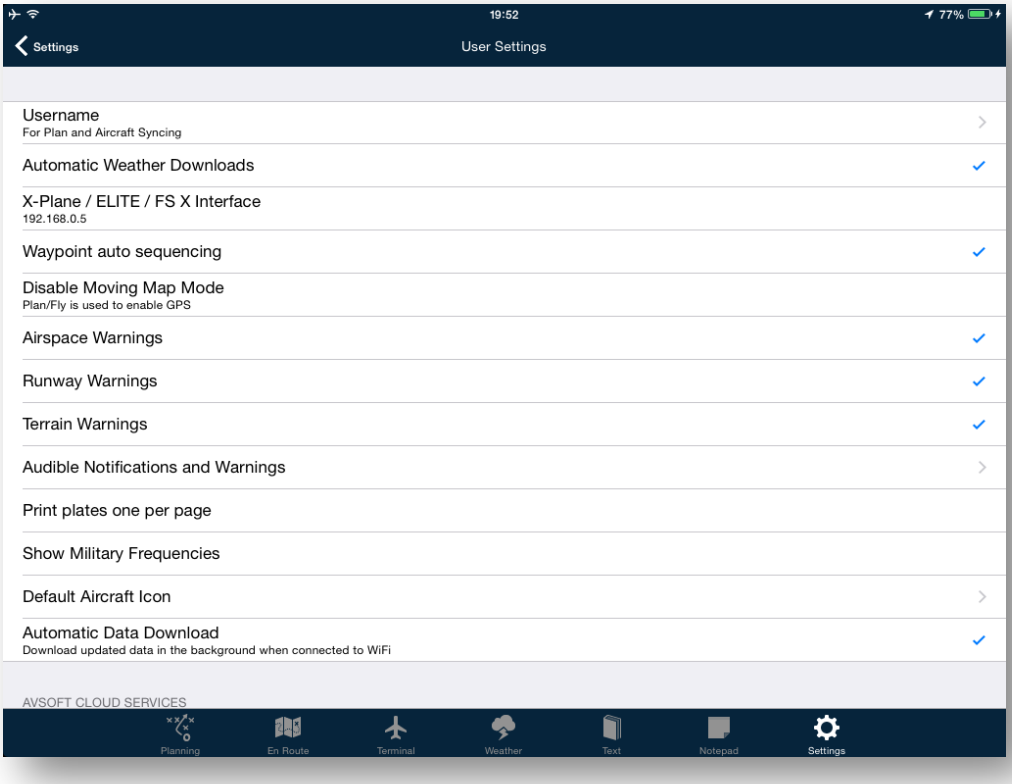

Figure 59 – User settings

9.3.1 Username

The *Username* page allows you to link the app to the AvPlan EFB Cloud server, which allows syncing of your aircraft profiles, flight plans and subscription details. You can sign up here or use login details to sign in.

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

This page also allows you to manage your password by changing or resetting a forgotten password.

9.3.2 Other settings

Other **User Settings** that can be changed include:

- Automatic Weather Downloads.
- X-Plane Interface.
- Leg auto-sequencing.
- Flight plan syncing.

- Disable moving map mode.
- Terrain warnings.
- Default Aircraft Icon.
- Aircraft model syncing.

- Disabling automatic weather downloads will stop AvPlan EFB autonomously downloading weather as a plan is built or during flight. When this option is set, you can download new weather by tapping the **Refresh** ↻ icon at the bottom of the flight plan.
- Enabling the X-Plane interface will disable the inbuilt GPS and enable input from **X-Plane**. The IP address for your iPad will appear in this row. See Section **Error! Reference source not found.** for more details.
- Enabling the leg auto-sequencing will automatically sequence to the next flight plan leg as each waypoint is passed. 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).
- 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 pre-flight planning and preserving battery life.
- Disabling Terrain Warnings disables the look-ahead feature for terrain.
- 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.
- 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.
- AvPlan Live is a live traffic service utilizing your iPad's data connection. Position reports are sent every 15 seconds, which enables other AvPlan EFB-equipped traffic in your area to be sent back to you and displayed on your En Route page.

9.3.3 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.

9.3.3.1 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.

9.4 Subscriptions

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

Note: For cheaper rates, we suggest subscribing via **www.avplan-efb.com** as it bypasses the Apple royalty.

9.5 License

This view displays the license information for the App that was agreed to when initially installed.

9.6 Aircraft type database

This view displays the current types defined in the aircraft type database. These types can be used to create aircraft.

Aircraft types can be copied and uploaded and shared with other AvPlan 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

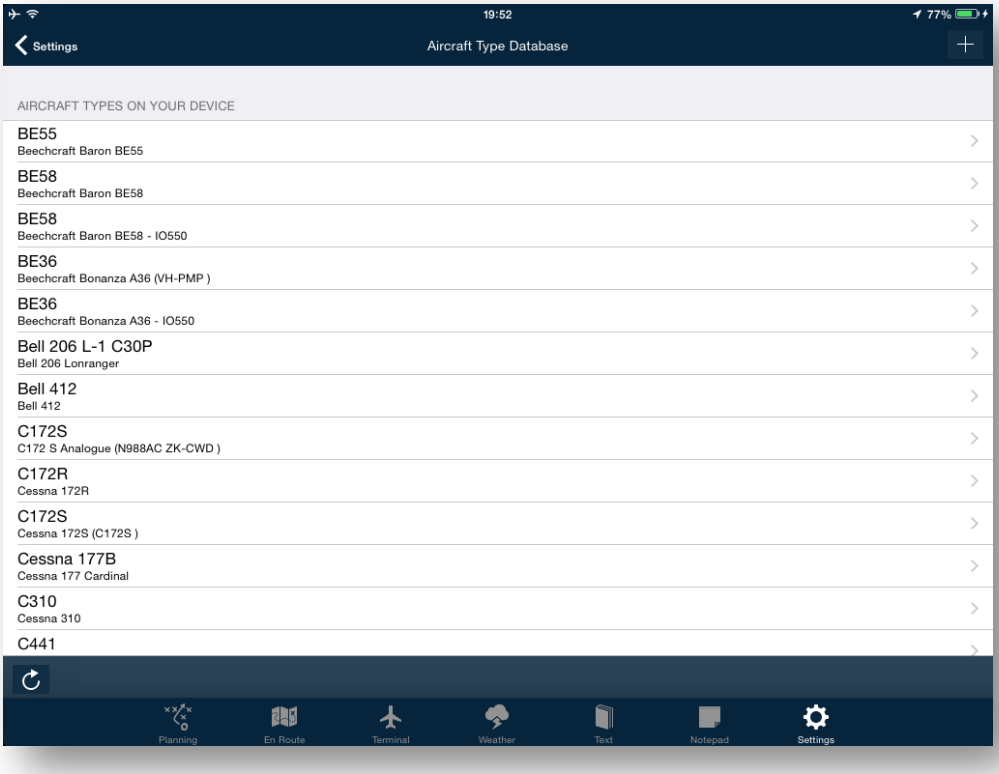

Figure 60 – Aircraft Type Database

10 AIRCRAFT PERFORMANCE PROFILES

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.

The App has a concept of aircraft models, 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 can be created from an aircraft type. This has a distinctive callsign, weight, empty arm, avionics, etc.

The list of aircraft types is divided up into two sections:

- Aircraft types on your device, and
- Other available aircraft types

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 EFB 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.

These profiles are supplied as-is. Ensure you check these details against those in your POH before use.

You can see the online aircraft type database from any internet browser by visiting:
http://www.avplan-efb.com/avplan/aircraft-type-database/

10.1 Creating/editing an aircraft type

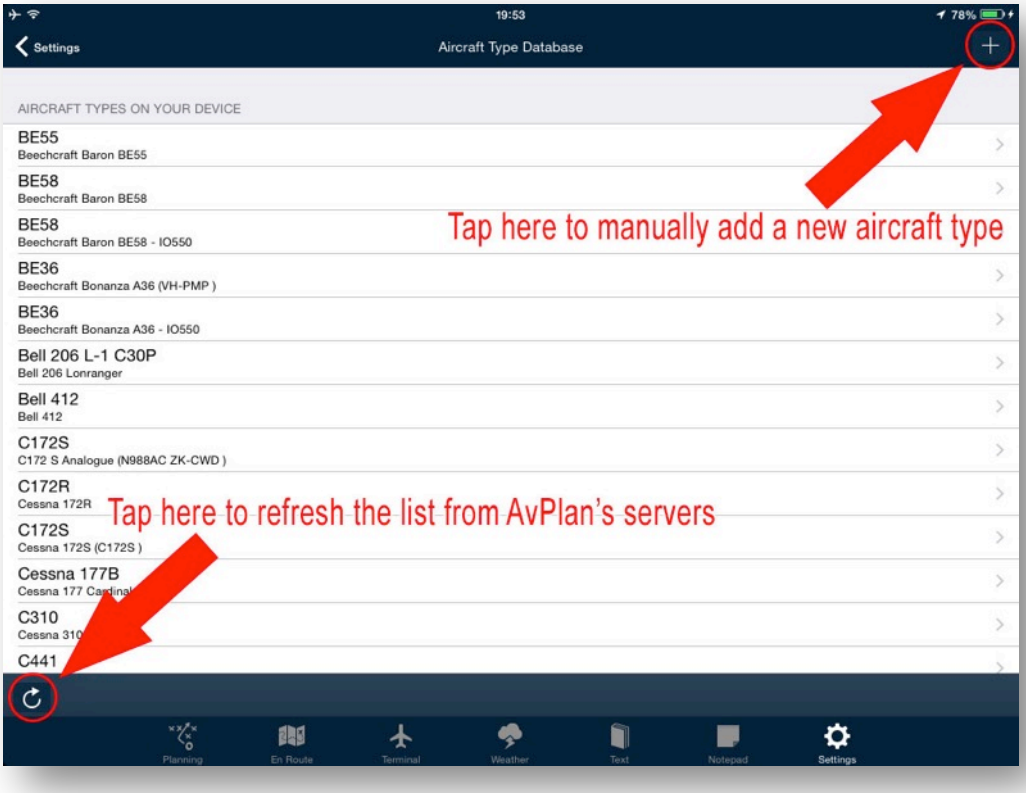

Figure 61 – Aircraft models

To create or edit an aircraft type:

- Tap **Settings** then **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.**

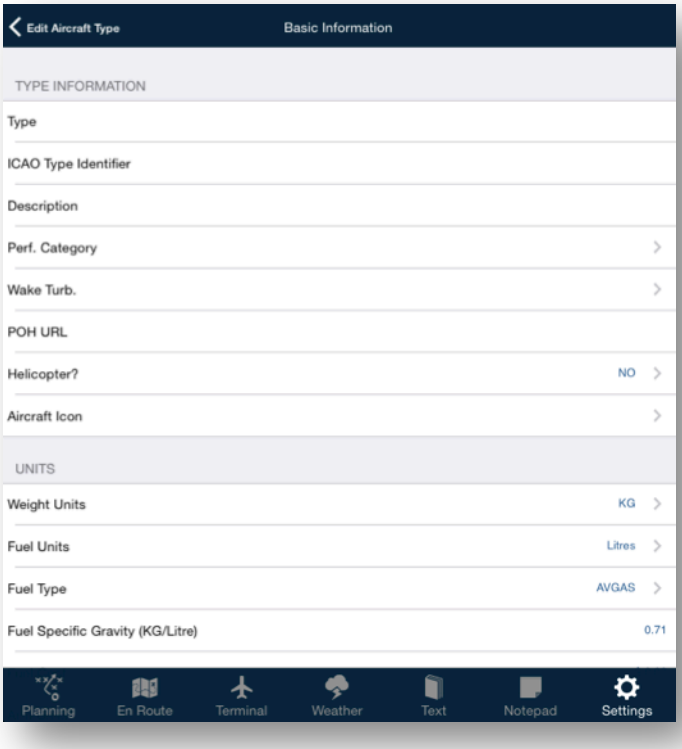

Figure 62 – Edit aircraft type

10.1.1 Basic performance

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

- Type Name (e.g. C182T)
- ICAO aircraft code (required when submitting a plan to IFIS)
- Description (e.g. Cessna C182T)
- Performance category. Select whichever reflects normal approach speed category.
- Wake turbulence category. Select most appropriate from a list of MTOW.

- Pilots Operating Handbook .PDF URL (e.g. http://www.jabiru.net.au/Manuals/Pilot%20Operating%20Handbooks/J160-C_Section0-9_Rev3.pdf)

- Is this aircraft a helicopter? If the aircraft is specified as a helicopter, then the **Select Nearest** view 5.7) will display nearby helicopter landing sites. If this setting is set to **NO,** then HLSs are hidden.

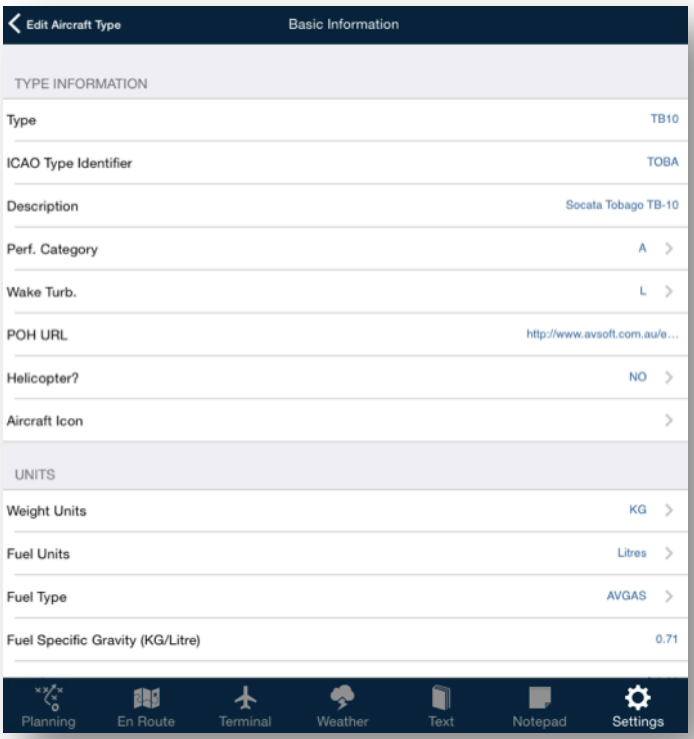

Figure 63 – Basic information example.

The **Units** section allows various units for data entry to be selected. These can be changed and any existing data will be automatically updated. The details from the POH can be entered in Pounds and USG, and then the units changed to KG and Litres for NZ use.

The **Basic Performance** section allows a generalised performance model to be entered.

You can optionally set your aircraft to 'Plan using High Level routes'. This will make the Auto Routing engine take high routes over low – very helpful if you are flying a jet or turboprop.

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, enter ZZZZ.

10.1.2 Weight and balance

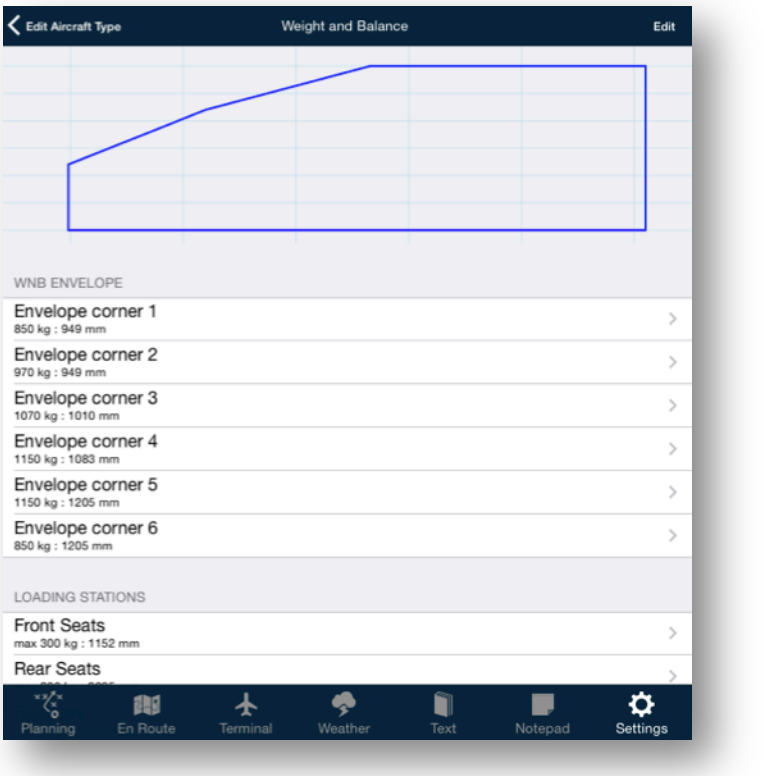

Figure 64 – Weight and balance pane

To edit the loading values for an aircraft type:

- Select the **Weight and Balance** row.
- Select the **Edit** icon at the top of the view.
- Green **Add** icons for the loading envelope, loading stations and fuel tanks will appear.
- Add the loading envelope as a series of points, starting at one edge of the envelope, and working clockwise around the envelope. Points can be moved in the table using the button on the right hand side of the row.
- Load stations can be similarly added. They can be rearranged in a logical order and this will appear in the same order on the **Weight and Balance** page.

Fuel tanks can also be added.

Note: The order of the tanks in this view determines the fuel burn order. Fuel is burnt from the top tank down.

Advanced fuel tanks can also be added. These allow different moment arms for different fuel levels (e.g. swept-wing aircraft). Moment arms are linearly interpolated between values in the table.

10.1.3 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 per type is supported) and then a model built-up of series of altitudes and the performance at that altitude. Performance values at intermediate altitudes will be interpolated by AvPlan.

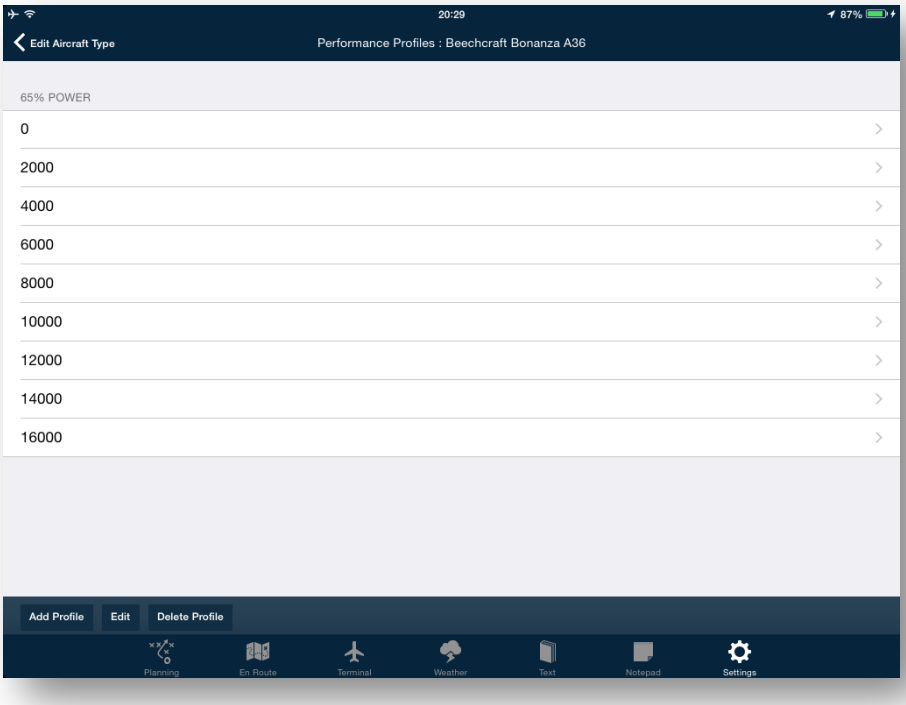

Figure 65 – Performance profiles

To create a detailed model, select the **Performance** tab:

- Press **+** to create a new performance model.
- Enter a suitable name (e.g. '75% Power').
- Press **<Performance** to go back.

You will notice that the new performance model has been created, but is empty.

To build the performance model:

- Select the **Edit** icon on the bottom of that window.
- 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.
- Values from the flight manual can then be added for each row. Go back to the **Performance** view and add rows as required.
- 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.
- AvPlan will interpolate values between altitudes listed in the performance profile.

10.1.4 Delete an advanced performance profile

- To delete a performance profile tap **Delete Profile.** A window will pop up asking which profile is to be deleted.

10.2 Creating an aircraft

After creating an aircraft type, an individual aircraft of that type can be created.

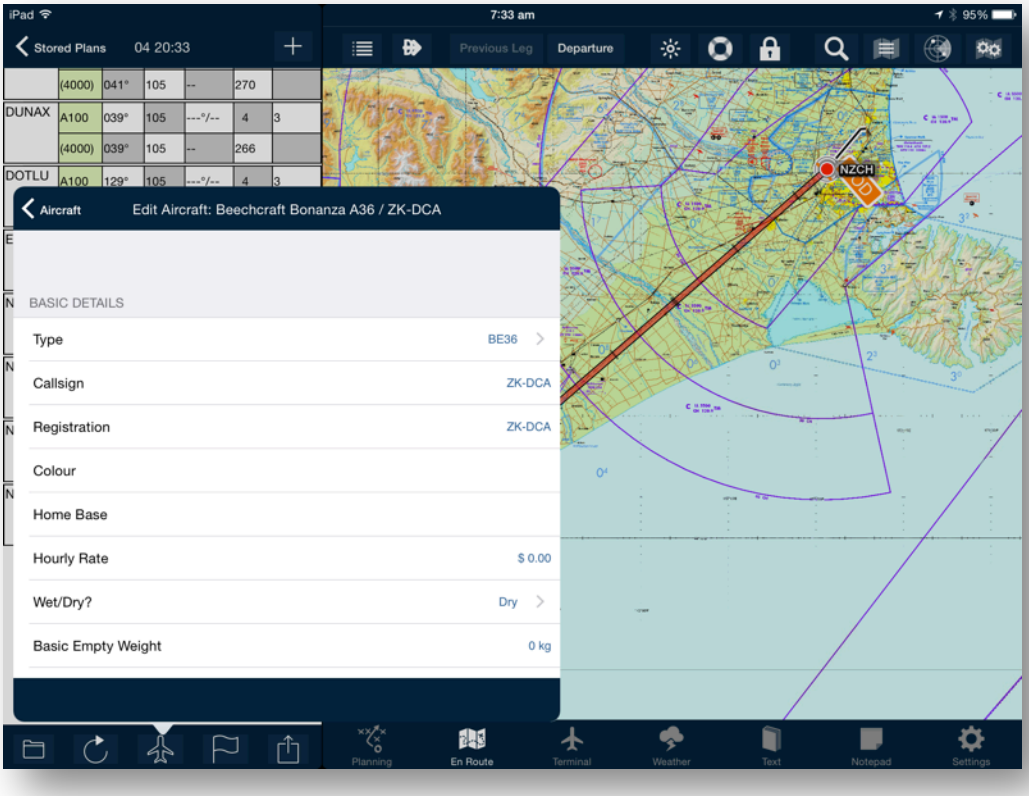

Figure 66 – Select aircraft view

- Select an aircraft type in the **Select Aircraft** view.
- Tap the **Aircraft** icon under the flight plan.
- To add a new aircraft tap **+** at the top right hand side of the pop-up window.
- To edit an existing aircraft tap **'>'**.
- The **Edit Aircraft** view will appear. This enables various details about the aircraft to be set such as colour, avionics, hourly rate, empty weight and arm to be set.
- To set the aircraft type (from the Aircraft Type database), tap on the **Type** row (top row).

10.2.1 Basic details

These details are required for the planning and weight and balance functions to operate.

10.2.2 FAA domestic plans

These details are required when sending FAA domestic flight plans.

10.2.3 ICAO flight plans

These details are needed when sending ICAO compliant flight plans. These are a requirement when sending flight plans in NZ/Australia and USA, for higher performance aircraft.

10.2.4 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.

10.3 Deleting an aircraft

An aircraft type or individual aircraft can be deleted by swiping the particular row in the aircraft type, or aircraft table. When this is done, a **Delete** icon appears and the aircraft is removed.

11 A TYPICAL PROCESS FOR CREATING A FLIGHT PLAN

11.1 Adding a plan

Figure 67 – Add a new flight plan pane

- To create a new flight plan, select New Plan from the *Stored Plans* section.

11.2 Add the first leg

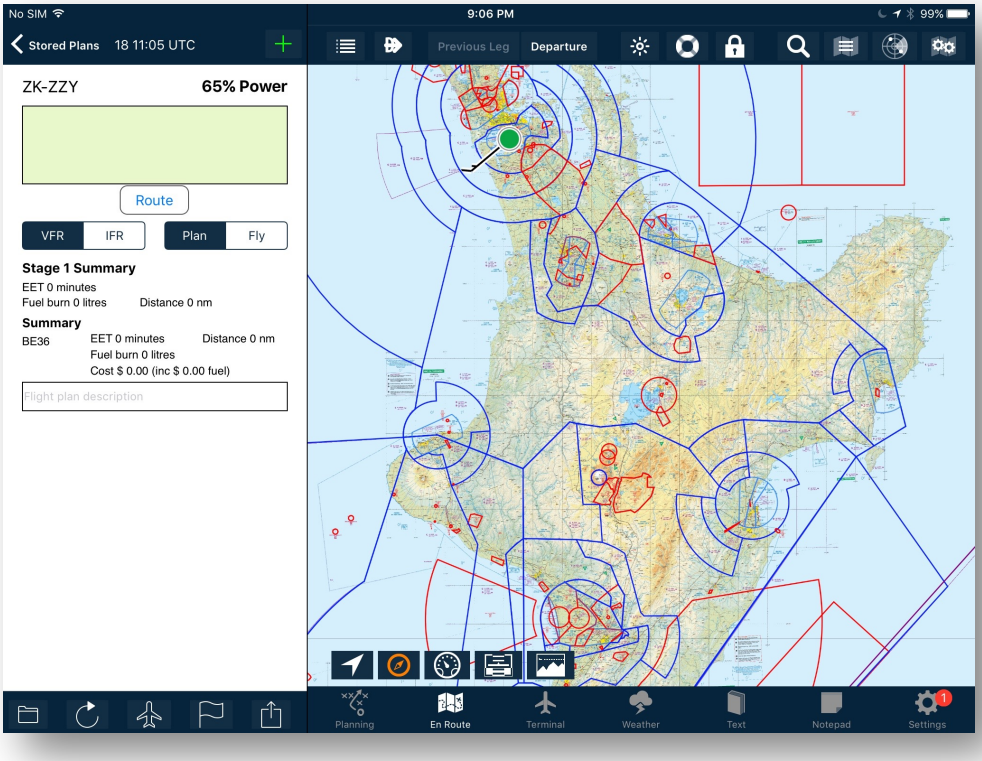

Figure 68 – Add legs view

Flight plan legs can be created in a number of different ways:

- You can add legs 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.
- 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. You can type the departure and arrival airfield codes, then tap Route to select the desired air route (intermediate waypoints will be added once the desired route is selected).

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 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 have been applied the airway designator in the flight plan displays **User**.

At any point, an altitude can be entered or aircraft selected. Various TAS and time intervals will then be calculated. An example aircraft is a TB-10 Tobago, callsign ZK-DCA.

- Select **Aircraft** at the bottom of the flight plan table, then TB-10 and then ZK-DCA.

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.

High level 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 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** page.

11.3 Inserting a leg

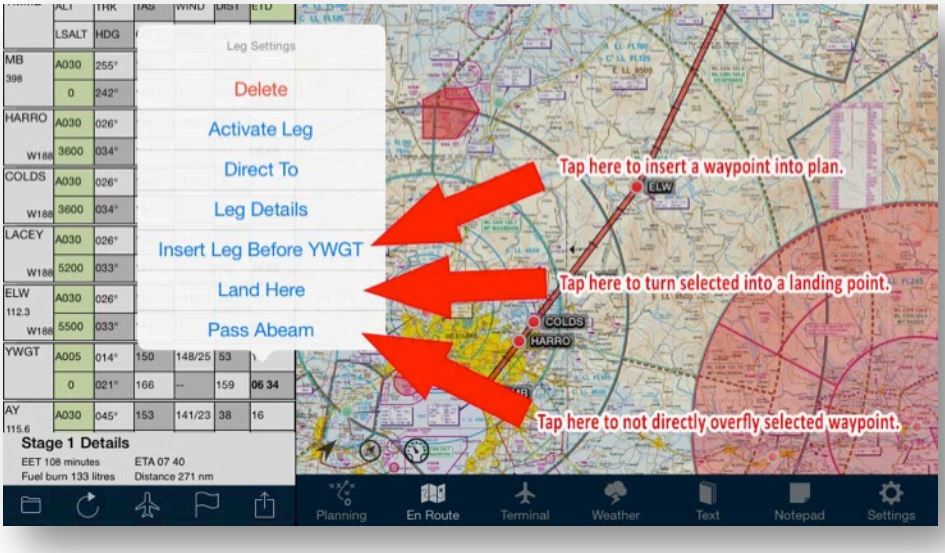

Figure 69 – Insert leg view

There are a number of ways to insert a new leg in an existing flight plan stage.

- To add a point at the end of the plan:
    - Place the plan in **Edit** mode (press the icon at the bottom left of the flight plan). Select the icon that looks like three horizontal lines, to move the cell up to where you want it.
- To add a point in the middle of a plan:

- Tap and hold on the leg of the flight plan in the flight plan table. Select **Insert before.**

  or

- Tap and hold on the **Track Line** (a blue ring will appear around your finger). Drag your finger to where the new waypoint is. Lift your finger and the **Nearest Items** view appears again. Press the blue **+** corresponding to the required waypoint.

  or

- Type the identifier into the Quick Plan Entry field and tap return.

11.4 Entering an altitude

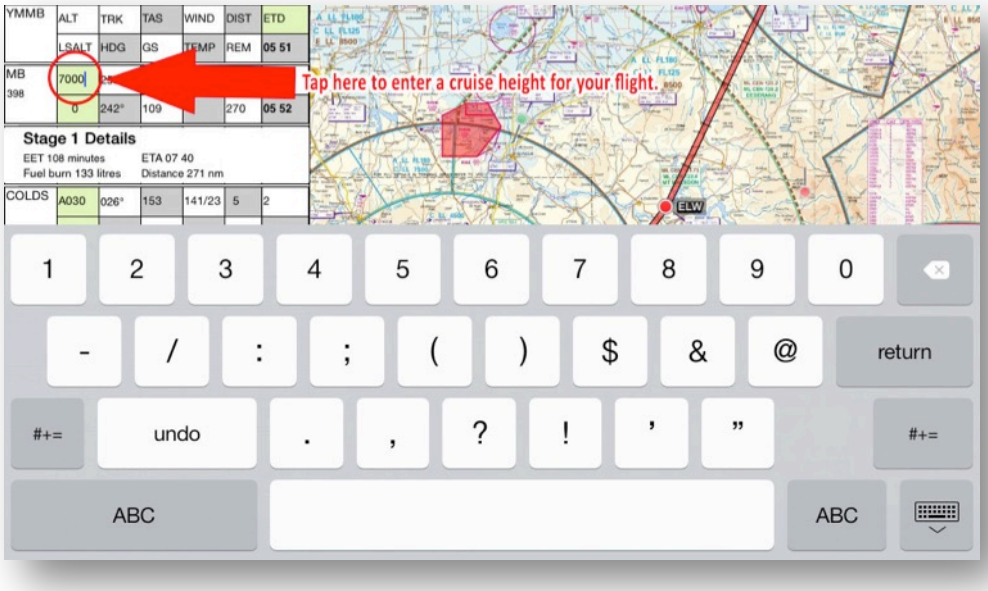

Figure 70 – Enter an altitude view

An overall altitude for the flight can be easily added by going to **Planning > Optimise Altitudes** and selecting an appropriate cruise altitude from the list.

At any point, an altitude can be manually entered and then various TAS and time intervals will be calculated or re-calculated. Altitudes manually entered will auto-fill down the plan when in **Plan** mode.

11.5 Applying an aircraft

- To select an aircraft, select the **Aeroplane** icon under the flight plan. A fully populated example aircraft is a TB-10 Tobago, ZK-DCA.
- To add a new aircraft, select the **+** icon at the top right hand side of this window. Refer to 10.2 for more information about creating an aircraft profile.

11.6 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. If HHMM is entered, AvPlan will assume today's date.

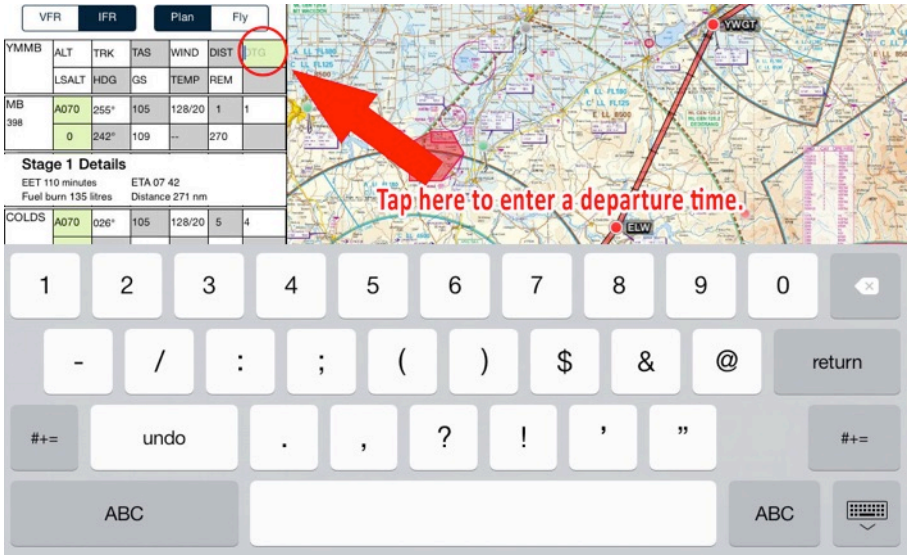

Figure 71 – Enter a departure time view

11.7 Adding landing points

- To add a landing point, tap and hold on a leg in the plan, and select **Land Here** from the list of icons. You can also tap on a leg in the plan. This will open the **Terminal** pane, which also allows a landing point to be selected.

11.8 Adding fuel

- To add fuel to your aircraft, select the **Planning** pane and tap **Aircraft Loading/Weight and Balance/Fuel Planning.**

11.9 Submitting your plan

- To send your flight details to IFIS, tap the **Send/Sync Flight Plan** icon (Square with an arrow pointing up) and select **Submit Plan** from the pop up menu. Enter your details and a SARTIME appropriate for your flight.
- You can also submit your flight plan via the **Planning** pane. Tap **Planning > Submit Flight Plan via IFIS**.

Common submission errors can include:

- **Invalid endurance** – Check fuel load on the **Aircraft Loading/Weight and Balance/Fuel Planning** page.

- **Invalid ETD** – Check and re-enter departure time (it may be the wrong day if it was entered over 24 hours ago).
- **Zero Persons On Board (POB)**. Go to **Planning > Aircraft Loading/Weight and Balance/Fuel Planning** and enter the correct POB in the field just above fuel planning.

11.10 Printing your plan

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)
- Weather forecasts
- Any applicable AIP 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 the selection. You can also toggle an entire section by tapping the blue 'Toggle' to the right of each subheading.

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 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.

12 ADVANCED FLIGHT PLANNING

12.1 Adding an Alternate

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 one more time.

Figure 72 – Inserting an Alternate 1

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.

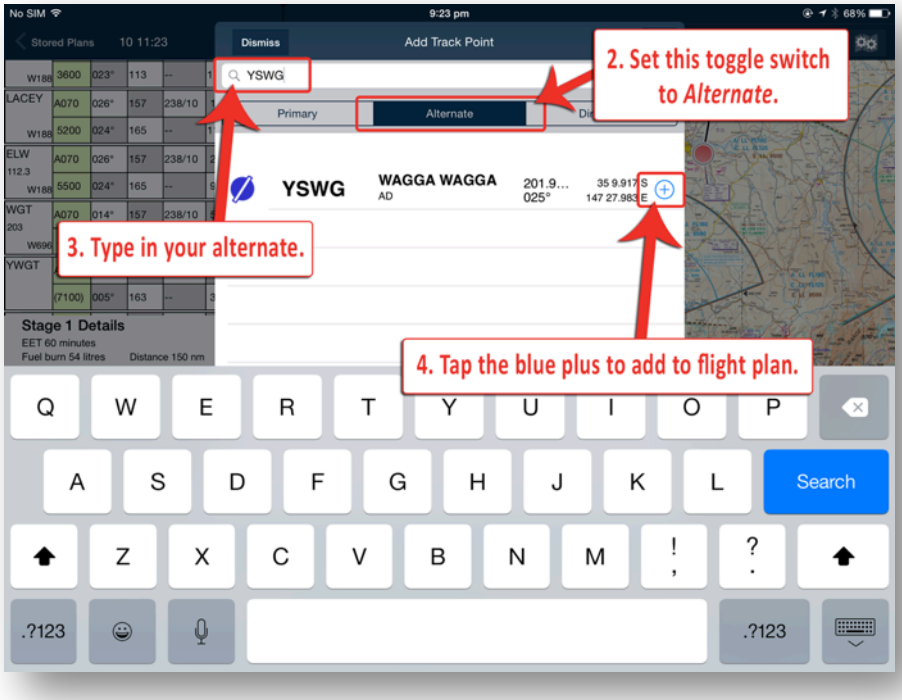

Figure 73 – Inserting an Alternate 2

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).

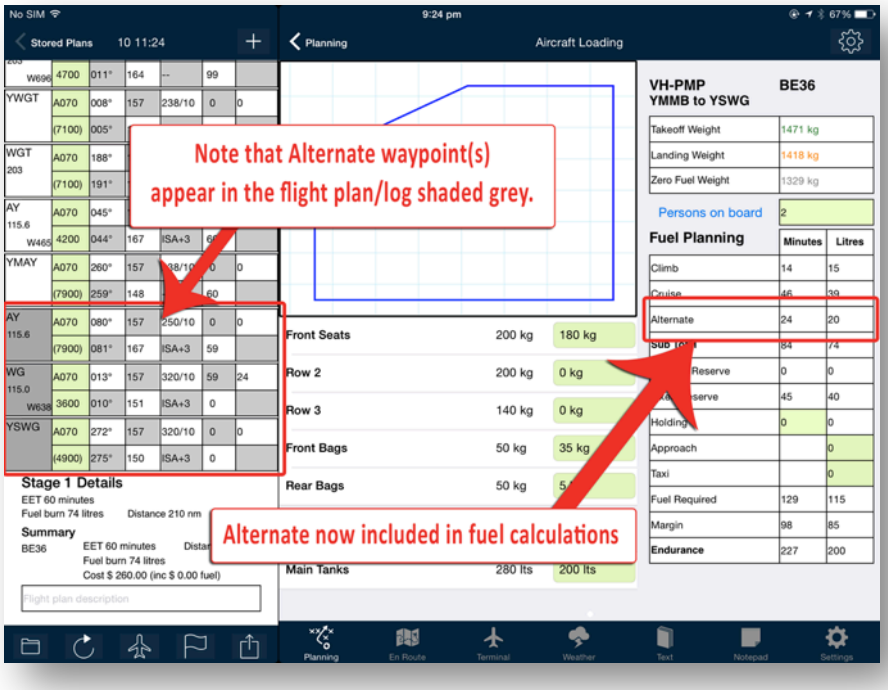

Figure 74 - Inserting an Alternate 3

12.2 Area work

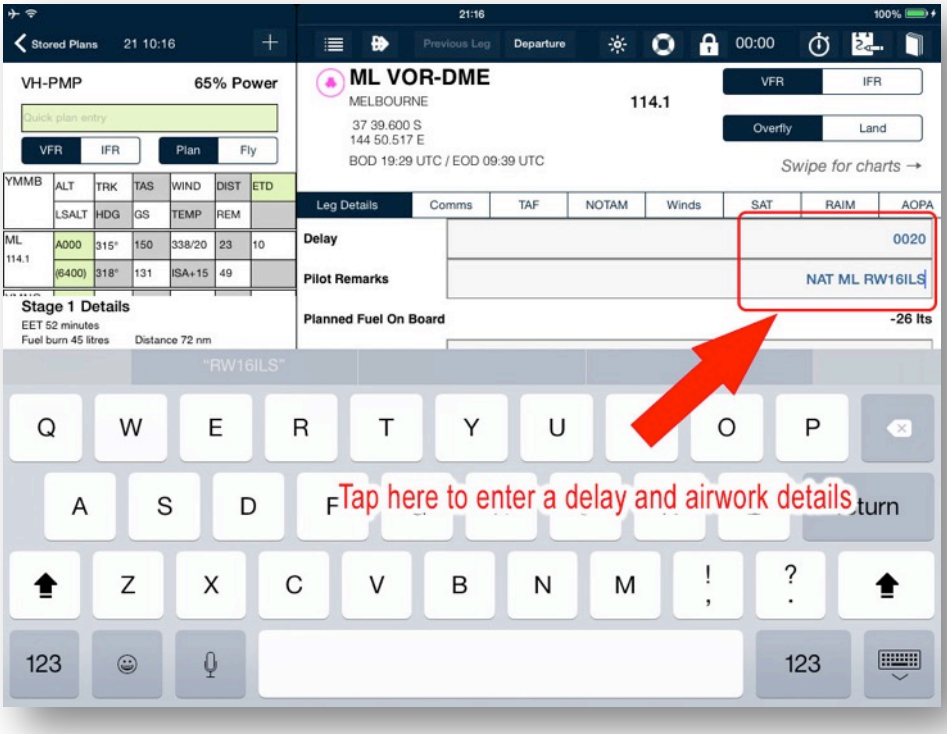

Figure 75 – Enter aerial work details view

Area work can be specified for any leg in a flight plan.

- Tap on the desired leg, and the **Terminal** pane will open.
- Go to the *Weather/NOTAMS* page (first page) and tap on **Details.** Enter the area work time in the first green field in the format HHMM (Hours, Minutes) and then enter the description of the activity (For example 'NAT AV ILS'), into the second field.

Once the plan is submitted, the appropriate delay time and description will be sent via IFIS.

12.3 VFR to IFR

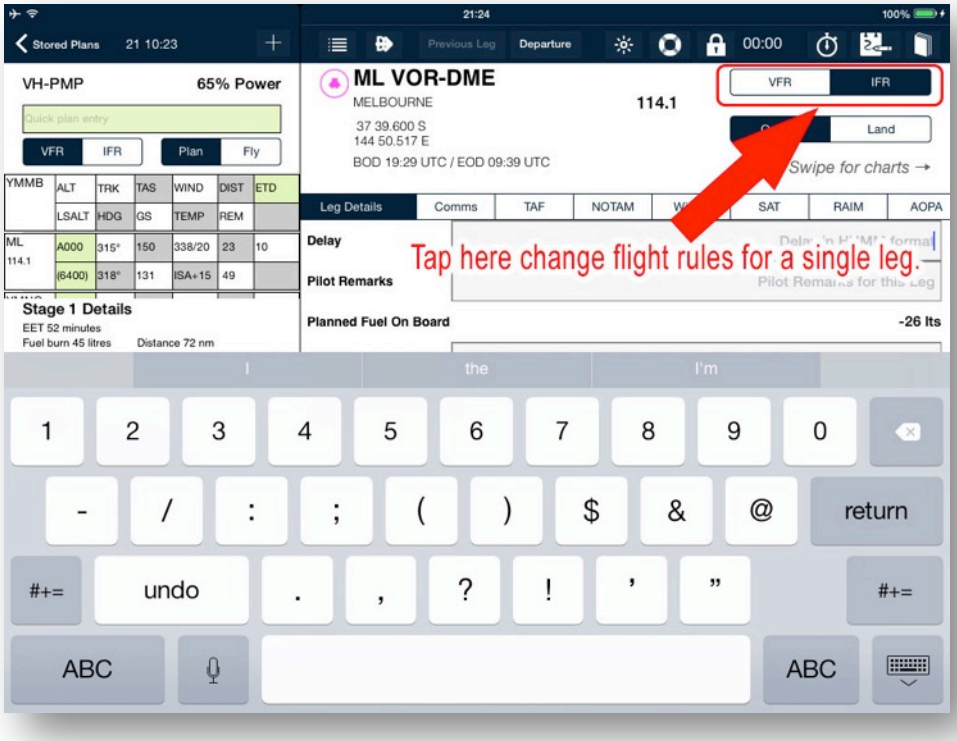

Figure 76 – VFR to IFR toggle.

VFR to IFR flight plans (or the reverse, IFR to VFR) may be specified.

- Change all legs to the appropriate flight rules for the majority of the legs, tap on the **VFR|IFR** icon, above the flight plan, then:
- Tap the legs which need the other flight rules, and change the VFR|IFR icon on the *Weather/NOTAMs* page to the other flight rules.

Once submitted via IFIS, the appropriate set of flight rules will be sent.

12.4 LSALT

When two waypoints are added to a flight plan, AvPlan will automatically enter the Grid LSALT for that leg into the flight plan pane. This will be denoted by the altitude appearing in parenthesis.

If a published IFR route has been selected, that LSALT will take precedence over the Grid LSALT and will be entered instead.

12.4.1 LSALT RNP2 Boundary

Double-tapping any leg on the flight plan line will bring up the RNP2 boundary line to assist with easy calculation of user LSALTs.

12.4.2 LSALT Calculation Tool

Further to the RNP2 Boundary, Pro subscribers will also then have highlighted the height and position of the highest terrain and known obstacle within that area.

Figure 77 - LSALT Calculation Tool

- Highest 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 be easily selected and entered into the flight plan by tapping **Accept**. Ensure you have read and understood the disclaimer.

13 TERRAIN AND OBSTACLE WARNINGS

AvPlan 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.

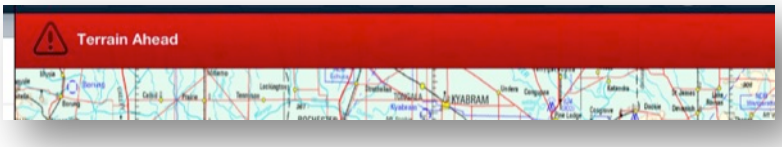

Figure 78 – Terrain ahead warning

- 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. (see 9.3.3)

13.1 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 Figure 72 for an example of planning mode.

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

NOTE: When in flight, obstacle warnings appear in reference to your current altitude; not planned altitude.

Figure 79 - Flight Profile and Obstacle Warnings

14 DATA SHARING

14.1 Exporting data

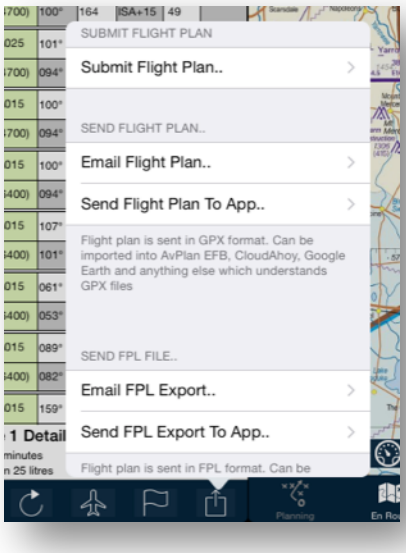

Figure 80 - Export /Send/Submit plan options

Options marked **Send** will bring up further options depending on what apps are installed on your device. E.g. Send to Dropbox/CloudAhoy/Evernote/Jeppesen FliteDeck, etc.

14.1.1 GPX format

Flight plans can be exported from AvPlan via email in GPX format. This is a standard format that can be read by other AvPlan users, by other mapping programs (such as Google Earth) and also imported into GPS units.

- To export a flight plan via email, tap on the **Send** button and select **Email GPX export.**

14.1.2 FPL format

Flight plans can be exported from AvPlan in FPL format. This format can be imported into many Garmin Avionics products such as late model Aera range (early models – use GPX), and the Garmin G1000 glass panel avionics.

Note: .FPL files are for export to Garmin devices only. If the file is to be sent to another AvPlan user, the use of a .GPX file is recommended. If an .FPL file is re-imported back into AvPlan, flight plan data for that plan may be corrupted or missing.

14.2 Importing data

AvPlan supports a variety of formats for importing data from email attachments including:

- AvPlan flight plans in GPX format from other AvPlan users.
- Command Flight Planner flight plans in GPX format.
- Champagne Flight Plan 3000 plans in GPX format.
- Garmin flight plans from Jeppesen FlightStar (and potentially others).
- FltPlan.com flight plans in GPX format.
- Flight plans from iVFR.net.
- Waypoints in CSV format.

To import data:

1. Email the relevant files to the email address that is set up and connected to your iOS device.
2. Open the email on your iPad/iPhone
3. Tap and hold on the **Attach** icon in the email.
4. Select **Open in AvPlan** from the menu.

14.2.1 User waypoints

User waypoints can be easily imported using a GPX file. Import via Email a GPX flight plan containing all your user waypoints and these will be imported into AvPlan.

14.2.2 Pilot operating handbooks

Pilot operating handbooks can be imported in PDF format via email. When imported they will appear under the **Text** pane inside AvPlan. Follow the instructions in 16.2

14.2.3 Flight Plan Import

Flight plans that are publicly available can be easily searched, downloaded and imported into AvPlan EFB.

- With no flight plan open, the import icon can be seen at the bottom of the *Stored Plans* list.

After tapping the Import Flight Plan icon, you can search for a flight by aircraft registration or callsign.

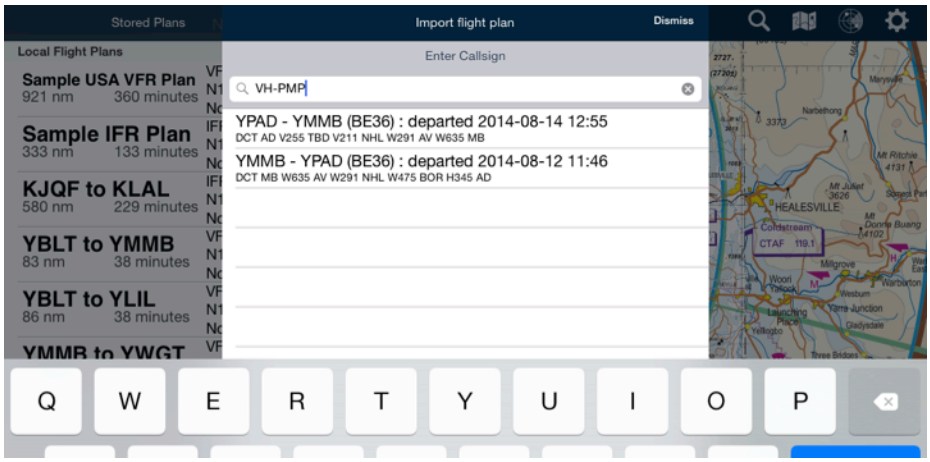

Figure 81 - Flight plan search

- Tap the desired entry and AvPlan will import all relevant data.

15 SYNCING DATA

AvPlan supports syncing the following data between your iOS devices (iPad and/or iPhone) on any version of iOS:

- Flight plans.
- Aircraft models.

If you have iOS 5 installed and have enabled iCloud, then your user settings will also automatically sync.

To enable flight plan and aircraft model syncing, ensure that the same AvSoft username (your email address) and password has been entered on all devices.

Flight plan syncing and aircraft model syncing must also be enabled in your **User Settings** (see 9.3).

15.1 Flight plan sync

Flight plans will automatically be synced between iOS 7+ devices via AvPlan Cloud. Note: internet connection is required.

When the same flight plan is opened 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.

A sync can be forced at any time by tapping the Export icon and selecting **Sync Plan via Cloud.**

The Flight plan index has two sections:

- **Local Plans** – (stored on the device in your hands).
- Other Plans – (saved plans on your other devices).

To load a plan on your local device, locate the desired plan in the **Other Plans** section and tap. It will download and import, and appear at the bottom of the **Local Plans** list. This can then be viewed and edited.

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**.

This page is intentionally blank.

AvPlan EFB can be used in conjunction with X-Plane, Elite, Microsoft Flight Simulator and Prepar3D flight simulators.

15.2 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:
    - Click on **Settings > Data Input and Output.**
    - Tick only the first checkbox in the row labelled **'20 …… lat, lon, alt'.** Close the window.
    - Click on:
        - X-Plane 9: **Settings > Net Connection**s > **Advanced.**

          or
        - X-Plane 10: **Settings > Net Connections > Data.**
    - Enter your device IP address, and the port number is **49002**.
- AvPlan EFB will now receive location information from X-Plane.

15.3 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 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.

15.4 Elite simulator interface

Contact support@avplan-efb.com for details of Elite simulator connection.

15.5 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**

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 will ignore the last setting start using iOS

.

Figure 90 - Save simulator input setting option

16 AvPlan Cloud

AvPlan Cloud is a collection of server-side technologies that allows for a multitude of live functionality and interconnectivity within AvPlan EFB.

Such functionality includes:

- AvPlan Live
  - Live traffic from other AvPlan EFB users displayed on your EnRoute pane
  - Live flight sharing to website so friends and loved ones can follow along using a web browser
- Groups
  - Allow group members to upload and access specific User Maps
  - Allow for system administrators to view grouped devices' status (up to date maps, data, etc)
  - View centralised map of group members' current or last reported position from their devices
- My Location
  - 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)
- The Credits option is for future worldwide flight plan submission functionality.

Figure 91 - AvPlan Cloud webpage

To access AvPlan Cloud, visit www.avplan-efb.com/avplan/avplan-cloud/ Sign in with your same credentials you use within AvPlan EFB or the My Flights section of the website.

Technical support: support@avplan-efb.com

General support: www.avplan-efb.com

FAQs: www.avplan-efb.com/avplan/faq/

Video Tutorials: www.avplan-efb.com/avplan/tutorials/