



# SkyDemon Flight-Planning and Navigation User Guide

This documentation will take you through every significant feature of our flight-planning and navigation products. You can refer to a specific topic individually or read the whole thing to gain a deeper understanding of the products as a whole, and to learn tips and tricks to maximise the value you gain from it.

You can also watch some [videos](#) covering all of the basic SkyDemon Planning and Navigation features in the Get Started section of our website, where you might discover a few handy tips and shortcuts to optimize your SkyDemon experience.

[Overview of Changes to version 4.0.1](#)

## Table of Contents

<b>1. Getting Started .....</b>	<b>7</b>
Installation .....	7
SkyDemon User Interface .....	8
Installing Charts .....	8
Exploring the Map .....	9
Map Scale .....	9
The "What's Here?" Menu .....	10
Mapping .....	12
Colour High Terrain .....	13
Map Ruler .....	14
Locating Features .....	15
Other Setup .....	15
Your Home Airfield .....	15
Changing Units .....	16
User Waypoints .....	16
Folders .....	16
Create a New Waypoint .....	16
Enter Coordinates .....	16
Relative Waypoint .....	17
Aerial Photography .....	17

What's Here? Menu .....	18
Managing Waypoints.....	18
Custom Data.....	18
Find a Destination - Fuel, Fees and Facilities.....	19
Internet Usage .....	21
<b>2. Planning a Route.....</b>	<b>22</b>
Creating a Route on the Map .....	22
Creating a Route with the Keyboard .....	23
Altering your Route .....	23
Removing Turning Points .....	24
Specifying your Alternate Destination.....	24
Reversing the Route.....	24
Multiple Landings.....	25
Flight Details.....	25
Adjusting Altitude and Cruise Speed .....	25
Takeoff Time.....	26
Fuel Plan and Cost.....	27
Managing your Routes .....	28
<b>3. Configuring your Aircraft .....</b>	<b>29</b>
The Aircraft Library.....	29
Basic Properties and Fuel .....	30
Climb and Descent .....	31
Cruising Speed and Gliding .....	32
Weight and Balance.....	33
Loading Points .....	33
Acceptable Loading Envelope.....	34
<b>4. Route Analysis and Briefing .....</b>	<b>37</b>
Virtual Radar.....	37
Route Adjustment .....	38
TAF and METAR in Virtual Radar .....	38
Winds Aloft in Virtual Radar .....	39
Flyable Conditions in Virtual Radar .....	39
TAF and METAR Briefing.....	39
Weather Briefing .....	40
Flyable Conditions.....	40



Winds Aloft .....	42
Rainfall Overlay.....	43
Animate .....	43
Wind Analysis .....	44
Manual Wind Entry .....	44
GAFOR Forecasts .....	44
NOTAM Briefing.....	45
Hiding NOTAM.....	46
Planning Warnings and Prompts.....	47
<b>5. Airfield Information .....</b>	<b>49</b>
Fees, Fuel, Facilities.....	50
Airfield Plates.....	50
Georeferenced Plates.....	51
AIPs and Flight Guides .....	51
Downloading Plates .....	52
Instrument Plates.....	53
Adding User-PDFs.....	53
Aerial Photography .....	54
<b>6. The Pilot Log .....</b>	<b>56</b>
Producing a PLOG .....	56
Renaming Unknown Waypoints .....	57
Customising the PLOG .....	57
<b>7. Printing.....</b>	<b>59</b>
Controlling Output .....	60
What Can I Print?.....	60
<b>8. Sharing Data between your Devices .....</b>	<b>62</b>
Transferring Routes.....	62
Transferring Routes using Cloud Storage.....	62
Transferring Routes by Email - PC .....	63
Transferring Routes by Email - iOS/Android.....	63
Share by AirDrop or to other apps .....	63
Transferring Routes from PC to Android .....	64
Exporting Routes to Other GPS Devices .....	64
Sharing Aircraft Profiles.....	65
Sharing User Waypoints .....	65



Transferring Waypoints using Cloud Storage .....	65
Importing/Exporting User Waypoints .....	66
Transferring Logs.....	66
Transferring Logs using the Cloud.....	66
Sending Logs via Email.....	67
Transferring Logs between PC and Android.....	67
Saving Your Settings .....	67
Sharing Custom Data.....	67
<b>9. Ready to Fly .....</b>	<b>68</b>
Filing a VFR Flightplan.....	68
Filing a GAR.....	69
<b>10. In-Flight Navigation.....</b>	<b>70</b>
Simulation .....	70
Manual Logging .....	71
The Moving Map .....	72
Auto Zooming .....	72
Chart Orientation .....	73
Position Reporting .....	73
Track Waypoint .....	73
Track Radial.....	74
Live Pilot Log .....	74
Adjusting your route in the Live Pilot Log .....	75
Radio .....	75
Direct To .....	75
Adjusting your Route In Flight.....	76
Instruments .....	77
Direction Indicator / Course Correction Indicator .....	77
Groundspeed .....	78
Wind.....	78
Altimeter .....	78
Horizontal Situation Indicator / Pseudo ILS .....	79
Virtual Radar .....	80
Warnings and Navigation Aids .....	82
Runway Alerts.....	82
Airspace Warnings.....	82



Airfield Proximity Warnings .....	83
Obstruction Warnings .....	83
Airspace Notifications .....	84
Extended Runway Centrelines.....	84
Airfield Brief .....	85
Glide Range .....	85
Colour High Terrain .....	86
Other Tools.....	87
In-Flight Timers.....	87
Scratchpad.....	87
Drop a Waypoint .....	88
Flight Log Analysis .....	89
Merging Logs .....	90
View All Flight Times .....	91
Viewing Logs in Google Earth .....	91
The Debriefing Pack.....	91
Logbook.....	92
Explore Heatmap.....	93
Other Traffic.....	94
SkyEcho 2 .....	96
Verbal Traffic Information .....	96
Traffic Radar .....	97
Connecting to RS232 Devices via Bluetooth .....	98
Initial Setup .....	98
Notes for Avionics Engineers.....	99
Dynon SkyView.....	99
Avidyne .....	99
X-Plane .....	100
<b>12. Appendix .....</b>	<b>101</b>
Minimum System Requirements .....	101
Updating the Software .....	101
Changing the language .....	102
Getting the most out of your iPad and iPhone.....	103
SkyDemon Mobile Devices.....	104
GPS Navigation on PCs and Laptops .....	105



Map Key..... 106  
Circuit Key ..... 108

# 1. Getting Started

## Installation

To start a free 30-day trial of SkyDemon, simply head to the Start Using SkyDemon section of our [website](#), enter your personal details and we will send you an email containing your new evaluation username and password.

To install the software on your Windows PC you will need to download the latest version from our website. Hit 'Run', and Windows will guide you through the installation process to install SkyDemon onto your computer. A shortcut to SkyDemon is created in your Start Menu. When the software is launched you will be prompted to enter your username and password.

To install SkyDemon on your iPad, iPhone or Mac, just download the app directly from the App Store.

If you have an Android phone or tablet the app is found in the Google Play Store. The SkyDemon app is free to install, and you simply need to log in with your SkyDemon account details.

Read more about [Minimum System Requirements](#).

Read more about [Updating the Software](#).

You can watch a couple of [videos](#) to help you get started with some of SkyDemon's main planning and navigation features on our website too.



## SkyDemon User Interface

SkyDemon offers a great deal of features and exposes most of them through mini-windows spread around the main map, which is of course the focal point.

At the bottom is the Virtual Radar, which shows you a side-on view of your planned route including terrain, airspace, obstructions and other features of interest, or you can switch to the Route Plan tab on the PC, which presents your route textually.

To the right of the map you will find tabs for NOTAM, Weather and Airfields, as well as a Warnings tab that appears when a route is planned on your tablet or phone. PC users will also find a Flight Details window, which includes planning warnings, and flight-related settings such as the aircraft profile, planned cruising level, and takeoff date/time. The Flight Details settings are located in the Route menu or by tapping the distance/time bubble at the top of the map on iOS and Android.

**TIP:** In SkyDemon Plan for PC, the windows can be resized and moved to other locations on the screen by dragging on their edges, buttons or title bars. Feel free to move the windows around in order to optimise for your own preferred usage of space. Their position and size will be remembered next time you run SkyDemon.

There are two toolbars at the top of the screen on your PC. The upper toolbar contains buttons that allow you to change mapping layers, route options, weather features and more. The lower toolbars contain buttons that help you access many of the most common functions in SkyDemon.

On your tablet you'll see the planning toolbar at the top of the screen, with buttons for 'Home', 'Setup' and 'Find' to the left, and 'Simulate' and 'Go Flying' buttons on the right. The Mapping menu is located in the bottom right-hand corner of the map.



## Installing Charts

The first time you run SkyDemon, charts will be automatically installed for your country, and the surrounding countries too. If you want to load charts for other countries, you can do so at any time from the Charts list, which is accessed from the Charts button on the PC toolbar, or by clicking Setup and selecting Add/Remove Charts from the menu. The Charts list lets you choose which charts you want to view and automates the process of downloading, installing and updating them as required. Just put a tick (or toggle 'On' for iPad, iPhone and Android users) next to the charts you want to use

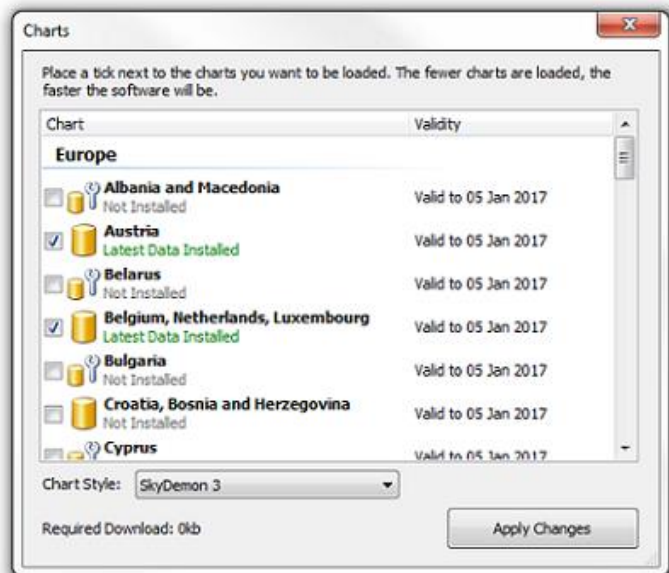




and press Apply Changes or Continue. You can observe progress as the charts are downloaded and installed. When finished, the window disappears leaving you with the map.

From time to time, SkyDemon will display a warning to notify you that the charts you have installed are out of date. When this happens, simply click on the warning and the Charts window will be displayed. It will show you which charts will be updated, then you can simply press Apply Changes/Continue and SkyDemon will take care of the rest.

You can change the visual style of the charts shown in SkyDemon to loosely match the style of many popular paper VFR charts. At the bottom of the Charts window on the PC is a dropdown menu allowing you to switch between the different styles. To change the chart style on your iPad, iPhone or Android, as well as adjusting the font size on the map for easier reading, choose from the menu



options within Mapping. SkyDemon supports three native chart styles as well as a high contrast version, UK VFR style, and German VFR style. This way, a pilot who is comfortable with the chart style of their own country can view charts for all supported countries in that style.

## Exploring the Map

The main map is the most powerful asset in SkyDemon. It presents one of the most intuitive, dynamically-generated views of terrain, airspace and geography available. To move the map around, click on an empty area (i.e. not a waypoint) and drag the mouse, or use your finger on your touchscreen device.

As you pan the map around, NOTAM, Rainfall, and TAF and METAR will be downloaded automatically.



### Map Scale

Zooming in and out of the map is easiest done by scrolling the mouse wheel, and you can also use the zoom buttons on the toolbar or press + and - on your keyboard.

If you are using a tablet or phone the map can be zoomed in and out by pinching the screen



and manipulating the map with your fingers, or there's a handy zooming interface in the bottom left-hand corner of the screen. Tap the + or - buttons to zoom in or out by one level, or press and hold the scale button to automatically revert to your preferred zoom level. You'll need to specify your default zoom level within the Planning Options section of the Setup menu before you can perform this function.

Some features disappear when you are zoomed out in order to save space, and some things appear clearer or reveal more information when you are zoomed in.

**TIP:** Touch the route distance/time bubble at the top of the map on your tablet/phone and tap the Zoom button to show your entire route.

### The "What's Here?" Menu

Hovering your mouse pointer above objects on the map allows you to inspect their properties. If there are multiple objects under the cursor, which there often are, all objects are shown. This enables you to instantly determine the vertical boundaries of a piece of airspace.

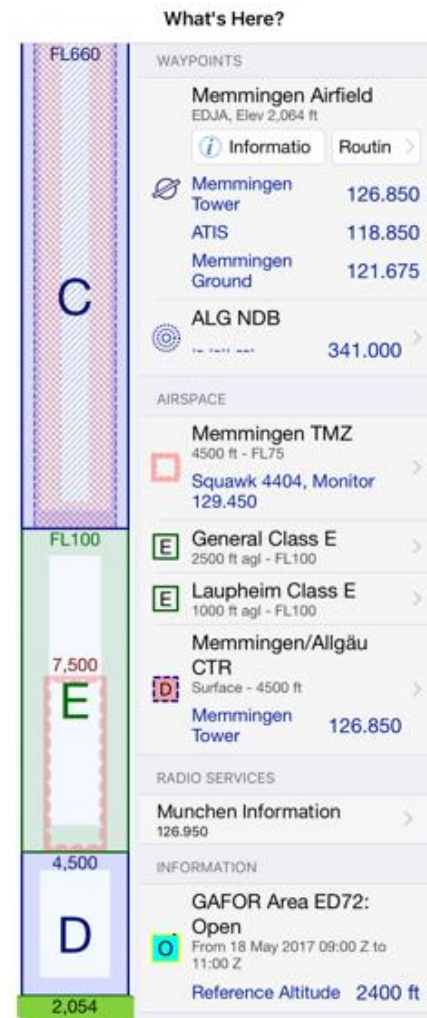
For iPad/iPhone/Android/Mac users, pressing and holding on an object will bring up the "What's Here?" menu. You will be able to select waypoints, leg properties and other information within the "What's Here?" menu to find out more.

Pressing and holding your finger on any item on the map, such as a piece of airspace, a VRP or weather symbol will bring up a menu displaying all the items under your finger allowing you to view more information. If you're using SkyDemon Plan for PC just hover your mouse over for information, or right-click for more options. Mac users just need to click and hold. This menu includes:

- **Waypoints:** tap on the waypoint for more options (listed above). If you are viewing the "What's Here?" menu for an unknown waypoint, the lat/long coordinates will be listed, and you'll see the option to create a user waypoint on that spot. If the unknown waypoint forms part of your route, you can rename it, which will display your chosen name, rather than lat/long coordinates in the Pilot Log.
- **Leg Properties:** when you press and hold or right-click on the magenta route line, you'll be able to bring up the information about that particular leg. This window allows you to adjust the level and cruise speed for the individual leg, as well as showing general leg statistics including distance, time and heading. You can also tap once on the magenta line on the map to show the distance, time and magnetic heading for that leg.



- **Airspace Information:** includes vertical limits of airspace, as well as airspace class, hours of activity and radio details, where available. The corresponding piece of airspace is outlined on the map.
- **Obstruction Information:** shows the altitude and height of the obstruction, and pinpoints it on the map.
- **Radio Services:** shows the FIS frequencies for the map point you're viewing. The corresponding FIS boundary will also be highlighted on the map when you tap a frequency in this menu.
- **TAF and METAR Information:** brings up the full decoded weather bulletin for that station.
- **NOTAM Information:** brings up the full NOTAM bulletin, including limits and effective dates. The corresponding NOTAM will be highlighted on the map.
- **AUP airspace activation:** If a piece of airspace is activated by AUP (Airspace Use Plan), the airspace will be highlighted orange on the map, and the "What's Here?" menu will give the time/date period and levels for the airspace activation.
- **Wind:** gives the wind speed and direction at that point, based on the planned level of your route, which is set in Flight Details. Tap on the wind information to see winds aloft at various altitude up to your aircraft's service ceiling.
- **Remove Waypoint:** when you press and hold your finger on a turning point along your planned route you'll see the option to remove the waypoint located at the top of the "What's Here?" menu.



When you press and hold your finger on an airfield, the "What's Here?" menu will give you the following options for the airfield in the waypoints list:

- **Information:** this window includes lots of useful information about the airfield, including frequencies, telephone numbers, Aerial Photography, plates and more.
- **Routing options:** such as inserting a waypoint in your route, starting a new route or setting an alternate. For airfields you'll also see the option to add a landing point in your route, as a fuel stop, for example.
- **Elevation:** gives the terrain elevation in feet at the selected map point.
- **Aerial Photography:** Under the Routing button, tap Aerial Photography, and this opens a satellite view at the selected spot. This satellite map allows you to easily create and edit your user waypoints as well as giving the option to search for most addresses in the world, and other waypoints in the SkyDemon database.

Tip: In SkyDemon Plan for PC, to see the lat/long coordinates for any spot on the map, as well as the elevation and magnetic declination, just hover your mouse over the map and they will be displayed in the very bottom left-hand corner of the window.



# Mapping

Most mapped features can be turned on and off or adjusted using the Mapping and Setup buttons on the toolbar. You will see there are options representing most types of airspace and point features within Mapping, as well as more Planning and GPS Navigation Options within the Setup menu on all platforms. Most of these buttons are on by default, but can be turned off. Some of the buttons within the Mapping menu bring up windows that allow you to more specifically define which objects are shown on the map. For example, by clicking on the Mapping button you can choose to hide features such as roads and railways, geographical names, and various types of airspace and waypoints.



You can access the Mapping menu on iPad, iPhone and Android via the Mapping button on the top toolbar when in Planning mode, or by touching the blue Map Layers button in the bottom right-hand corner of the map when planning and in flight, to bring up the same mapping options.

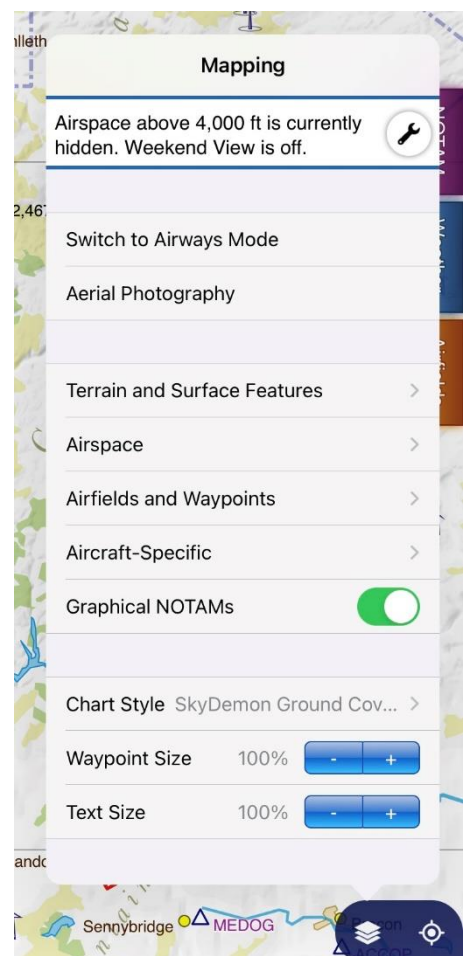
Below we will outline the options you'll find in the Mapping menu.

**Airways Mode** - This map mode displays a more uncluttered chart presentation, focusing on routes, their intersections and magnetic tracks. Towns, rivers, VRPS and other more detailed map layers are switched off by default in Airways mode to keep the map uncluttered. You will also find that airspace warnings are suppressed by default when planning routes using Airways mode, as they are normally not of relevance. Both Upper and Lower Airways will be displayed, depending on the limits you have set for airspace removal in the Mapping menu (see below).

**NOTE:** To access Airways Mode in the Mapping menu you will first need to ensure that 'Show IFR Features' is enabled in the Planning Options menu, under Setup.

**Terrain and Surface Features** - Includes the option to turn on/off surface features including terrain, geographical names, urban areas, roads, railways, road names, and maximum grid elevations.

In the Mapping menu you can also select your preferences for showing or hiding some different types of airspace, airfields and waypoints.



**Automatic Decluttering** - SkyDemon hides airspace higher than 4000ft by default to keep the chart clear and uncluttered. If you plan a route at a higher level, or adjust your Automatic Decluttering settings in the Mapping menu, airspace at higher levels will appear as it becomes relevant. Don't worry about missing any important airspace if you set your Automatic Decluttering settings too low; when you've plotted your route, all airspace at the levels you have set is shown regardless of the clipping level. Similarly, if you plan a route at a lower level, but end up flying much higher, the relevant airspace will still appear, so you'll never miss anything important.

Tip: You'll see a blue information box at the top of the Mapping menu on your phone/tablet so you can see at a glance the altitude at which airspace is being hidden. To adjust this tap the spanner symbol.

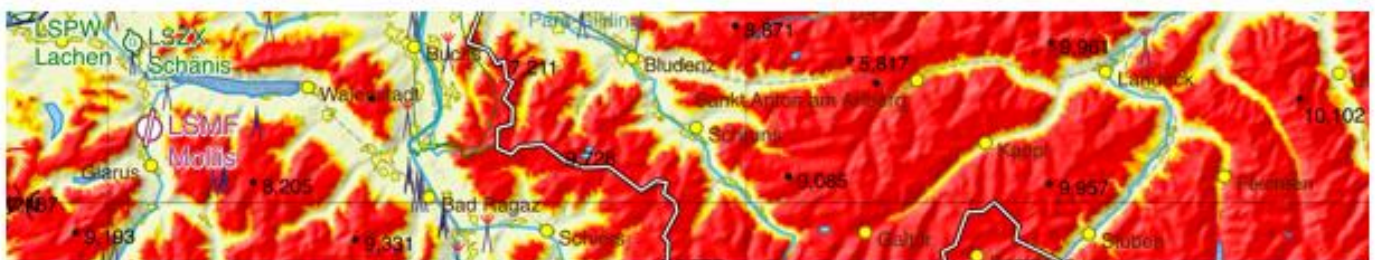
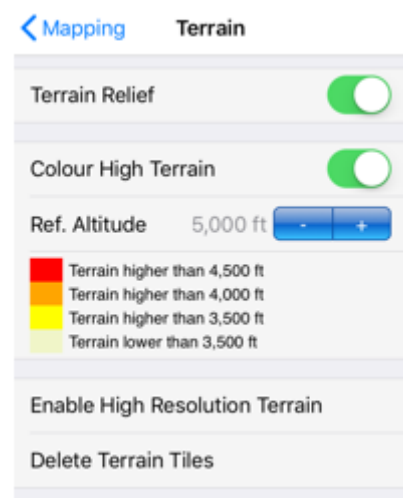
**Chart Style** - Gives the option to select different chart colour schemes that loosely match some popular paper VFR charts.

**Waypoint Size** - Allows you to adjust the size of the waypoint symbols on the map.

**Text Size** - Allows you to adjust the size of the text on the map.

### Colour High Terrain

Accessed via the Mapping > Terrain menu, the 'Colour High Terrain' feature makes it easy to visualise mountain valleys and passes whilst planning your route. A reference altitude is required, and SkyDemon will colour high terrain on the main map based on that altitude. For example, if a reference altitude of 5000ft is set, all terrain higher than 4500ft will be coloured bright red, then you'll see a band of orange terrain higher than 4000ft, then yellow higher than 3500ft. Terrain lower than 1500ft below your set reference altitude will be shaded a light green in contrast to the coloured high terrain. There's a simple key in the menu to help explain the terrain colouring based on the reference altitude you have set.



NOTE: The Colour High Terrain feature is also available in Go Flying mode, and uses your current GPS-based altitude as a reference for shading potentially hazardous terrain.

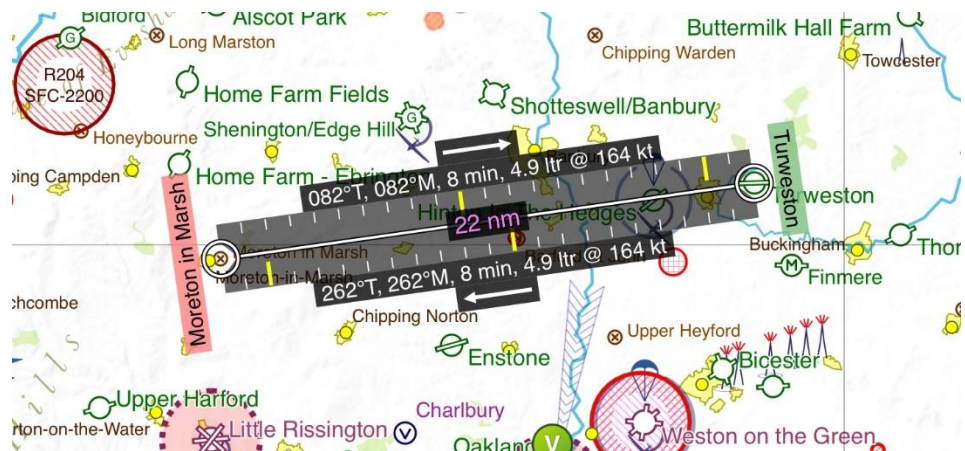
## High Resolution Terrain

SkyDemon gives you the option to download high-resolution terrain data, to improve the appearance of the terrain relief as you pan the map around, making it appear more crisp and clear. If you would like to allow SkyDemon to automatically download high-resolution terrain data, you'll find the option to enable it in the Mapping menu under 'Terrain'. This data takes up much more storage space on your device, so you can disable the download option at any time in the Mapping menu, and you can also delete downloaded terrain data to free up space if necessary.

## Map Ruler

The Map Ruler allows you to quickly and easily analyse the distance, time, True and Magnetic bearing and fuel consumption between any two points on the map, with the Virtual Radar showing the vertical terrain profile between the selected points so you can see any airspace, terrain and other obstructions within that cross-section at a glance. If you have the Flyable Conditions overlay switched on, the Map Ruler will also display a layer of forecast cloud ceiling and lowest tops between the two selected points in Virtual Radar.

To bring up the Map Ruler you just need to press and hold a finger on each of your chosen points on the map at the same time. In SkyDemon Plan for PC, hold the Ctrl button on your keyboard and click on the first



spot, then release Ctrl and click on the second waypoint on the map to extend the ruler. For Mac users, click and hold on the first point on the map to bring up the "What's Here?" menu. Select the waypoint in the menu and choose 'Measure from Here', then click on the second spot on the map.

To remove the ruler, just tap or click elsewhere on the map.

Aerial Photography mode also includes a ruler function to measure between two precise points on a satellite map. To activate it, tap the ruler button, which is located on the toolbar in Aerial Photography, then tap on the first point on the map, and then the second. The ruler will be drawn between the two selected points, showing the distance and bearing. You can move the ruler by dragging either end of it, or tap on the ruler itself to dismiss it.



## Locating Features

Instead of dragging the map around to try and find a feature, you can use the Find tool. Just click on the button in the toolbar labelled Find (on some platforms you'll see a magnifying glass symbol), or alternatively you can press Ctrl-F on your keyboard and type in the waypoint you are looking for if you're on the PC. Typing in this 'Find Waypoint' window brings up a list of results, with icons differentiating between the various feature types, so you can highlight the one you want. When you press OK the map jumps to the location of the feature you have selected.



You can enter a waypoint name, ICAO identifier, OS grid reference, MGRS (Military Grid Reference System) coordinates, UTM (Universal Transverse Mercator) coordinates or even an address and postcode. You'll find that it's also possible to search for airways and airspace by typing the corresponding designator into the Find window.

iOS Users can tap on the *i* button next to an airfield in the Find Waypoint window to quickly open the Airfield Information tab for the airfield in question.

The 'Find' window on your tablet or phone remembers your last few search results for quick access.

## Other Setup

### Your Home Airfield

The 'Home' button on the toolbar enables you to quickly zoom the map back to your chosen home airfield, avoiding the necessity to search for the waypoint each time you wish to view it on the map. In addition to zooming to your home airfield, SkyDemon also gathers local weather and nearby NOTAM, so you can see at a glance the conditions close to home without needing to first plot a route.

You can also choose your preferred map scale, so when the map pans to your home airfield after hitting the Home button it also zooms in or out to the scale you have specified. Pressing and holding the blue scale buttons in the left-hand corner of the map on your iOS or Android device will also have the effect of zooming in or out to your selected scale preference, wherever you are on the map.

To set your home airfield and preferred zoom level you'll need to open up the Setup menu and select Planning Options.

**TIP:** To zoom the map to your current location in planning mode, tap the target button in the bottom right-hand corner of the map on your tablet or phone.



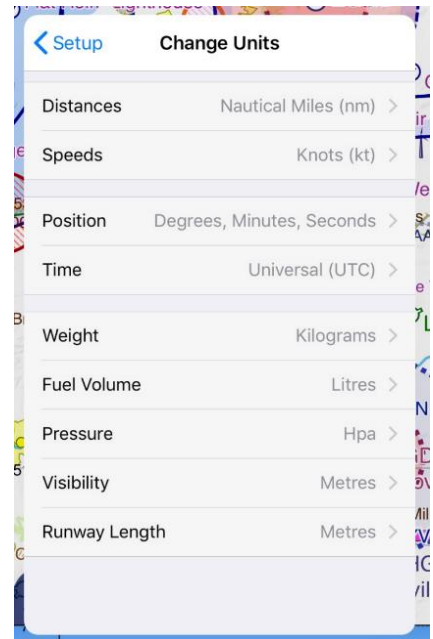
## Changing Units

Many of the distances, volumes and weights expressed throughout SkyDemon can be changed depending upon what you are familiar with or what your aircraft uses. To change units, open the Change Units window from the Setup menu.

Options for fuel measurements for individual aircraft can be altered when editing your aircraft profile by accessing the Setup menu, tapping on an Aircraft in the library and selecting Edit from the menu.

## User Waypoints

You can create an unlimited number of your own waypoints in SkyDemon for use in your flight planning. There are several ways to create new user waypoints, which we will detail below.



## Folders

User Waypoints are organised into folders to make them easier to manage, particularly if you have a lot of them. You'll find the 'New Folder' button at the top of the User Waypoints window, or you can simply tap an existing folder to view the contents or create/edit waypoints.

Folders can be synced, so the waypoints in those folders can be accessed on any of your devices, or you can lock a folder to the device so the contents will never be synced.

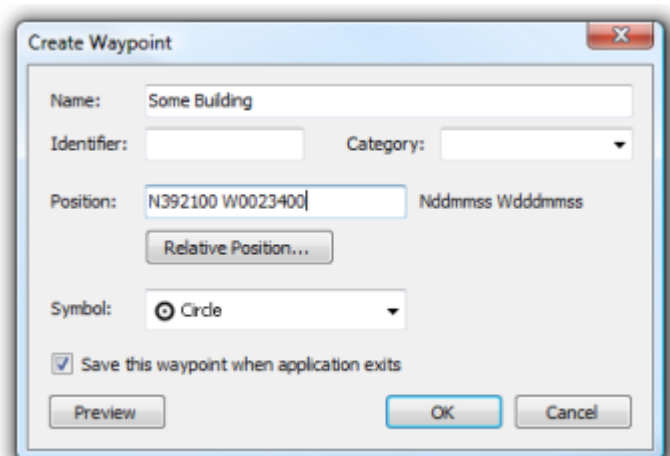
If you want to hide some of your user waypoints, so they don't show on the map, but you don't want to fully delete them, you will find a 'Show on Map' toggle in each individual User Waypoints folder.

## Create a New Waypoint

### Enter Coordinates

If you know the precise coordinates for the waypoint you want to create, you can enter them into SkyDemon using the 'New Waypoint' window. Go to the User Waypoints library in the Setup menu and select the folder you want your new waypoint to be stored in.

In the 'New Waypoint' window there are a number of waypoint characteristics to be entered. The first is the name, which appears beside the waypoint on the map. You can also specify an identifier, which can simplify searching for a waypoint and which is included in the PLOG if





you route via the waypoint. You can choose the symbol used to represent the waypoint on the map, as well as the folder your waypoint will be stored in.

The position of the new waypoint can be entered using standard latitude and longitude notation. On your iPad or iPhone SkyDemon presents a handy scroll wheel to ensure that you're entering the coordinates in the correct format, or you can type the coordinates manually if you prefer. *Degrees, minutes seconds* (Nddmmss Wdddmmss) is the standard format, but other formats (*degrees and decimal minutes*, and *decimal degrees*) will also be accepted.

### Relative Waypoint

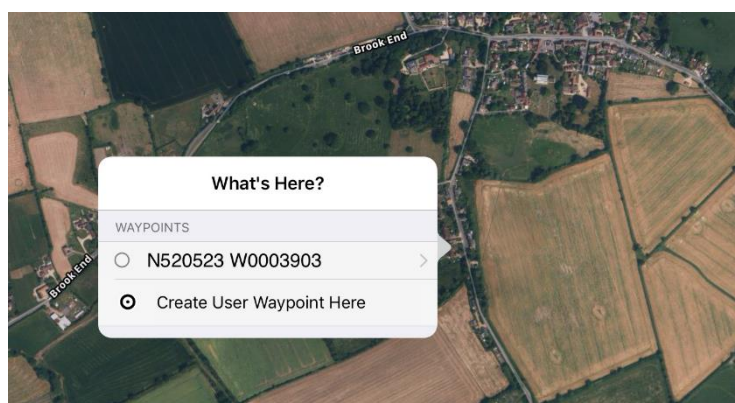
In some cases you may wish to create a user waypoint whose position is defined with reference to an existing waypoint; for example a distance and radial from a VOR or along the extended centreline from an airfield. Open the Waypoints window and choose your folder, then tap 'New Waypoint' and select 'Bearing/Distance from Waypoint' (or 'Relative Position' on the PC). Enter the name of the existing reference waypoint in the box, or you can even type a UK postcode or an OS grid reference, and select it from the list that appears in the Waypoint Finder window. Then enter the bearing and distance in the relevant fields.

When calculating the position of your new waypoint from an existing one, SkyDemon assumes that the bearing you have entered is magnetic if you specified a VOR or true for any other type of waypoint. The position field will be automatically generated, so all that's left is to give your waypoint a name, and choose a folder, symbol and identifier if you wish.

### Aerial Photography

If you're using SkyDemon on a tablet or phone, Aerial Photography is a great way of easily and precisely creating waypoints using satellite imagery to visualise ground features. There are several ways to access Aerial Photography. To access it from the map, just press and hold your finger on roughly the right spot, then choose 'Aerial Photography' from the waypoint options, or simply zoom in below 1:25,000 scale and an Aerial Photography button will automatically appear at the bottom of the map. You can also get to Aerial Photography from the Mapping menu in the bottom right-hand corner of the map.

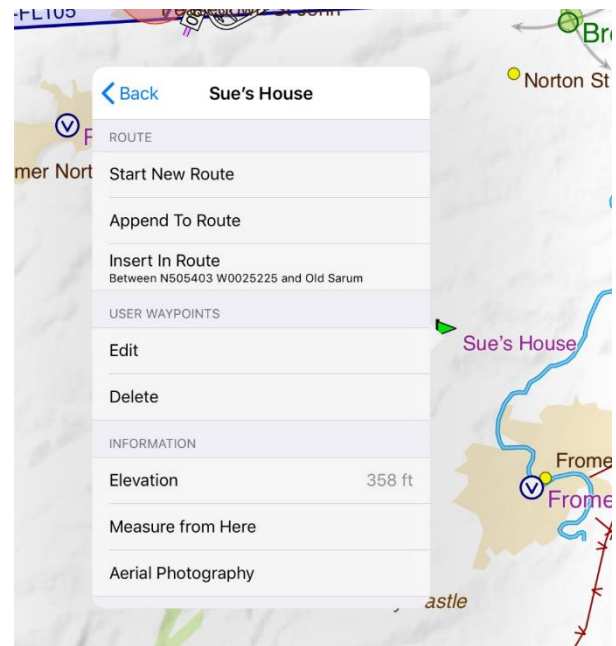
Another method, is to go to the User Waypoints library in Setup. Select a folder then tap 'New Waypoint' and choose 'Using Aerial Photography'. You'll be prompted to enter a nearby waypoint, so the satellite map can zoom to the right area.



In Aerial Photography mode, press and hold your finger on the map to create your user waypoint at the selected spot, then give it a name, symbol and folder. Once your waypoint is saved, it will be visible on the map. You can hold your finger on the new waypoint to edit or delete it, or if you want to adjust its position, just give it a tap and then drag it to the right spot.

### What's Here? Menu

You can also create a user waypoint by right-clicking on the main SkyDemon map (or pressing and holding the empty area on the touchscreen map where you would like your new waypoint to be) and choosing Create User Waypoint.



NOTE: The What's Here? menu also allows you to easily edit or delete your user waypoints from the map. Just press and hold your finger on the waypoint for your options.

### Managing Waypoints

Use the 'Sync with Cloud' button to easily share the user waypoints that you have created with your other devices. Clicking the 'Sync with Cloud' button will store any new waypoints and folders in your personal SkyDemon Cloud, as well as loading any that have been created on another device and synced. The 'Sync with Cloud' button will not sync any folders that are locked to the device.

To delete a waypoint from the PC, open the Waypoints library, select it and press Delete. Remember that if you plot a route via a user waypoint then delete the turning point at that waypoint, the user waypoint itself will not be deleted.

To delete user waypoints on the iPad and iPhone go to Setup > User Waypoints. Find the waypoint or folder you want to delete, then swipe your finger to the left across the box and a red Delete button will appear. For Android press and hold on the waypoint or folder you'd like to delete to reveal the Delete button.

Deleting a folder will also remove all of its contents.

### Custom Data

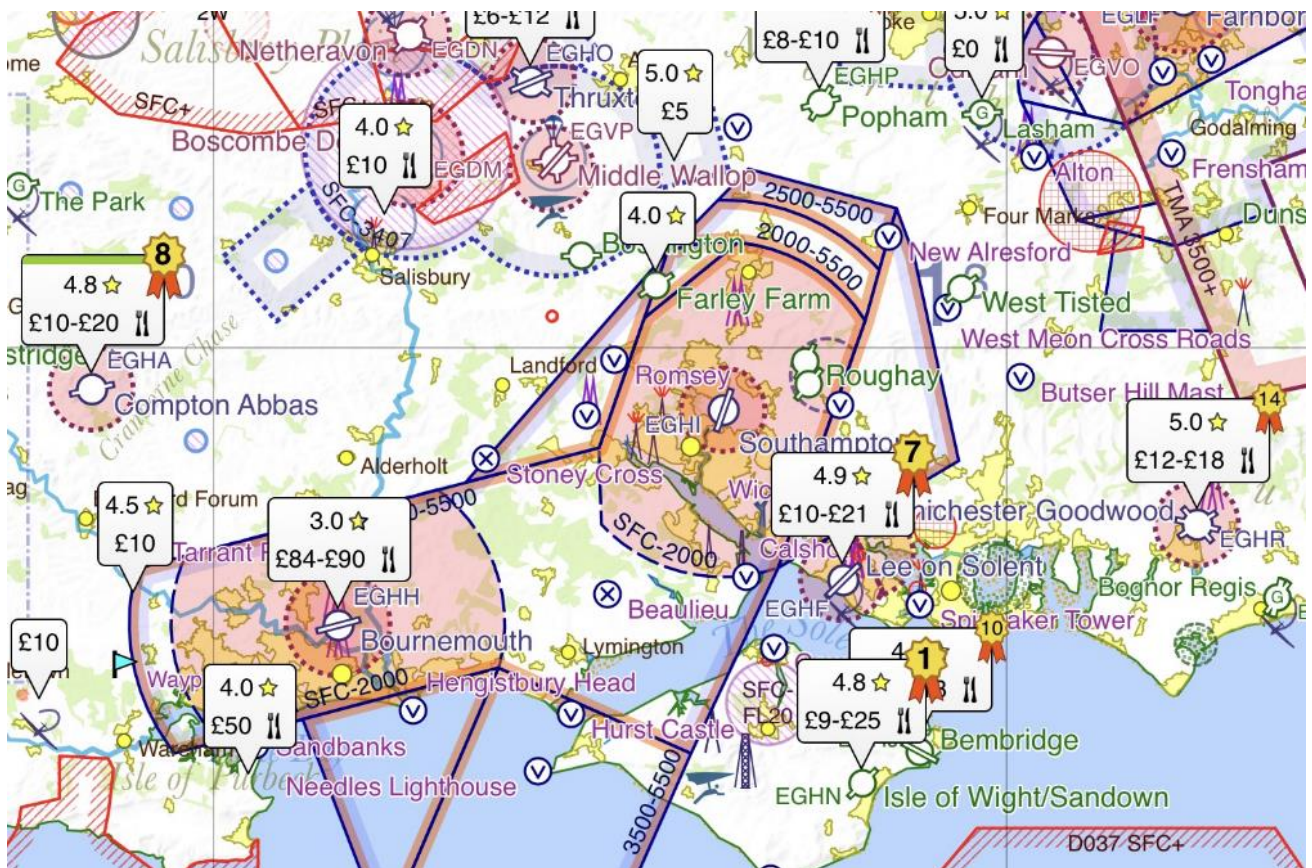
We include a utility with SkyDemon Plan that can be used to create your own air data for use with the product. This can be used to supplement data in existing charts. You may wish to use it to add a landing site that we do not include in the official charts, for example. To access the Data Creator, open the Setup menu and choose Custom Data.



The Data Creator is a graphical tool that makes it easy to create and edit the sometimes complex data that makes up a SkyDemon chart. The best way to learn to use it is to experiment with it; don't worry, you can't use it to accidentally change official chart data installed on your machine. The most important thing to remember that all fields marked in bold must be filled in. This tool is available for Windows PC users only, but Custom Data can be saved to the Cloud and loaded onto your other devices.

## Find a Destination - Fuel, Fees and Facilities

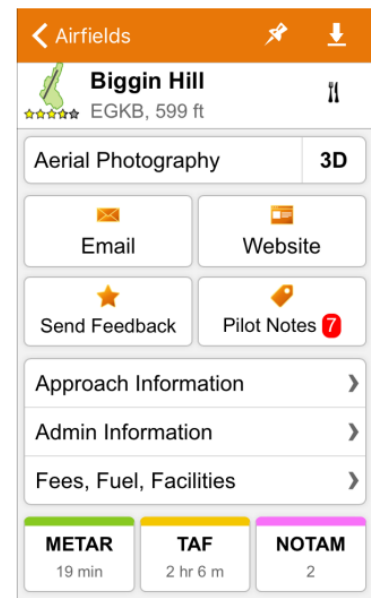
If you haven't yet decided where you would like to fly, SkyDemon can help you make that decision with the 'Find a Destination' feature. The tool makes it easy to locate airfields by fuel availability, runway type and other facilities. This feature is heavily dependent on user participation, and is a great way of sharing useful, real-time information with the rest of the SkyDemon community.



If you haven't yet planned a route, you'll see a button in the Virtual Radar at the bottom of the screen labelled 'Find a Destination'. Tapping this button will open the Airfields tab, where you'll find the option to choose which airfields to highlight, and selecting one of these options will reveal corresponding bubbles on the map. The 'Find a Destination' button is also located on the main page of the Airfields tab on your tablet or phone, or in the Mapping menu in SkyDemon Plan for PC.

Airfields can be highlighted on the map in the following categories:

- **Ratings, Landing Fees, Facilities** - shows airfields with their user-submitted star ratings, landing fees and food availability, as well as disabled access and permanent Customs & Immigration. There may be more than one landing fee depending on aircraft type, so a range is sometimes shown. When submitting a new landing fee, users are asked to enter their aircraft type, which should help others to gauge the appropriate landings fees for their own aircraft.
- **Fuel Availability** - displays recent fuel prices on the map. The green bubbles indicate the lowest fuel prices in the area you're viewing, and the orange bubbles are the highest prices. With this option selected, you can further toggle the various fuel types to see where this type of fuel is notified as available. If no one has submitted a recent price, the bubble just display the available fuel type.
- **Runway Availability** - highlights airfields on the map by length. You can specify the minimum required runway length, and toggle to see only hard runways.



Tap on a bubble on the map to open the Airfield Information tab where you can view recently submitted fees, fuel, and facilities as well as sending your own feedback. Occasionally the bubble on the map will include a numbered rosette, and this indicates that it's one of the most popular airfields in the country, based on the most unique visitors.

There is also a useful Pilot Notes button under Airfield Information, which brings up a list of comments left by SkyDemon members relating to the selected airfield. The red number indicates new/unread notes.

To submit your own pilot notes and other feedback when using the SkyDemon Plan PC software, just right-click on an airfield for your options.

When you're done, you can remove the bubbles by tapping elsewhere on the map.

When highlighting airfields by ratings, landing fees and facilities, you may see a bubble with a green edge from time to time. This is an indication that the information has been submitted by the airfield owner directly. Tap on the bubble for more information.

If you're an airfield owner, [contact us](#) to find out more about adopting your airfield in SkyDemon.

## Internet Usage

SkyDemon requires an internet connection for certain functions such as logging in, and downloading charts, plates, NOTAM and weather. If you want to get updates to NOTAM and weather in flight, go to Setup and Navigation Options, and make sure the option 'Use Internet in Flight' is switched on.

Alternatively, if you do not have a SIM card, or you do not intend to use your mobile data in flight, you can turn this option off; you can still get all of your online updates during the planning stages as long as you have wifi, but the app will be offline during your flight.

If you are experiencing an internet connectivity problem on your tablet or smartphone, the Setup button on the toolbar will be highlighted with a red background. You'll see more information about the problem when opening the Setup menu, and you can attempt a retry by tapping the spanner.



## 2. Planning a Route

### Creating a Route on the Map

Routes are normally created between waypoints, and SkyDemon includes most types of waypoints you're likely to want to use: towns, airfields, radio navigation aids, visual reporting points and airways reporting points. You can also add your own waypoints, which are referred to as user waypoints. All waypoints light up when the mouse is moved over them.

The most productive way to plan a route is to press the New button on the toolbar, or the Route button on iPad, iPhone and Android, which brings up the New Route window. If you're going for a local flight, simply type in your takeoff airfield (your home airfield will be suggested) and choose the area within which you'd like to fly, then hit the Create Route button. This will generate a circle on the map to indicate your preferred flying range, and nearby NOTAM and weather will also be downloaded, as well as any plates for the target airfield. Alternatively you can choose to create a route by entering a starting point and a destination airfield, as well as an alternate airfield, aircraft profile and intermediate waypoints if required.

If you prefer to use the map exclusively, you can click on one waypoint then click on another, then another, and your route can be created in this way.

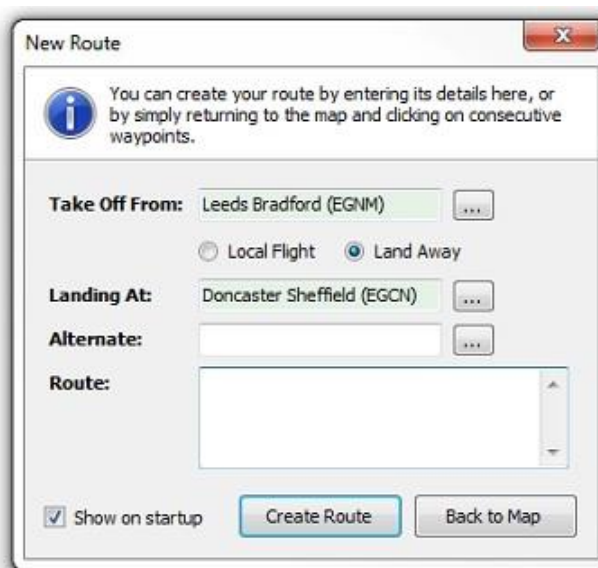
**TIP:** When typing in the New Route window you can enter the ICAO identifier of the airfield or you can start typing its name. You can even enter a full UK postcode or an OS grid reference on iPad, iPhone and Android. Either way, as you start typing, a list is displayed below the box and you can press the down arrow to highlight the one you mean. On your PC the box turns green when it understands which airfield you are referring to.

As an example, let's say you need to create a route from Barkston Heath to Coningsby via Cranwell. Press New (or Route then Create Route) then type EGYE in the first box, then EGXC in the second and press Create Route. Your route is created direct, and the map zooms to show all of it. Now click and drag on the purple route line, move it over Cranwell and release the mouse button. Your route now consists of two legs and you're done.



## Creating a Route with the Keyboard

It is possible to create a detailed route using only the keyboard, in the New Route window or Create Route on iPad, iPhone or Android. Press the New button (or Ctrl-N) on your PC to bring up the New Route window and type in the start and destination airfields as detailed in the previous section. You can also specify your alternate airfield here (or you can do so later). If you're on a phone or tablet remember to tap 'Done' on the keyboard when you're finished typing.



In the Route box you can type a list of waypoints. SkyDemon understands standard flightplan syntax for specifying a route, but since it's a VFR product it is quite forgiving when it comes to syntax. It's fine just to type a list of waypoints (including airfield ICAO identifiers). When finished just press enter and your route is created.

While typing your route a warning is displayed if SkyDemon cannot find a waypoint you have referred to. If multiple waypoints with the same identifier are found, the closest one to the last waypoint is assumed.

When specifying a route like this in SkyDemon the DCT part is optional; you can just type a list of waypoints separated by spaces. Any errors in the route are highlighted as you type. A waypoint can be entered as a VOR radial and distance (SAM17522). A change of speed and level can be appended to a waypoint after a slash (EGHA/N0100A025). You can also enter airway designators separated by reporting points when creating your new route, for example LUCCO L980 ORTAC, to make your new route track along those airways, intelligently following their course.

## Altering your Route

A route is usually comprised of many legs, each between two turning points. Both legs and turning points can be selected and manipulated by dragging either the magenta route line or the turning point with your finger, or the mouse, to the required point on the map to create new legs and waypoints



along your route. If you're dragging the leg or turning point close to a 'known waypoint' on the map, the cursor will "snap" to it.



This technique can be used to avoid danger areas or other pieces of airspace you do not want to fly through.

**TIP:** Touching on a leg will temporarily reveal its distance, time and magnetic heading.

### Removing Turning Points

You can simplify or change your route by removing turning points. To remove one, right-click on it and choose Remove Waypoint. On iPad, iPhone and Android, touch and hold the turning point and use the 'Remove Waypoint' button at the top of the "What's Here?" menu. You can also remove one by dragging it on top of a neighbouring turning point in your route.

### Specifying your Alternate Destination

You can specify the alternate airfield for your route at the time you create it with the New Route window, but if you forget or need to change it, simply right-click or press and hold another airfield and choose Set as Alternate. The airfield is now the alternate for your route.

### Reversing the Route

To quickly reverse the route you have planned click the Reverse button on the toolbar, press Ctrl-R, or tap the Route button and select Reverse. If you have specified an alternate destination you will need to redo this, as obviously it cannot be included in a route reversal. In this manner you can efficiently generate the return route home, after planning an outward route.





## Multiple Landings

If you are planning a longer journey with multiple stops it's possible to enter landing points at intermediate waypoints along your route. To do this you need to press and hold your finger (or right-click if you're on the PC) on the waypoint on the map where you plan to land or stop for fuel, select the airfield from the list and choose 'Land Here' from the subsequent Routing options. Your route will then be divided into multiple sectors conveniently grouped together on the map, but each with its own Pilot Log and Virtual Radar as a distinct flight. To view the flight details, Pilot Log or Virtual Radar for a specific sector just tap or click on the magenta line. The selected sector will be highlighted in blue, and each landing point is marked with a pink circle.



## Flight Details

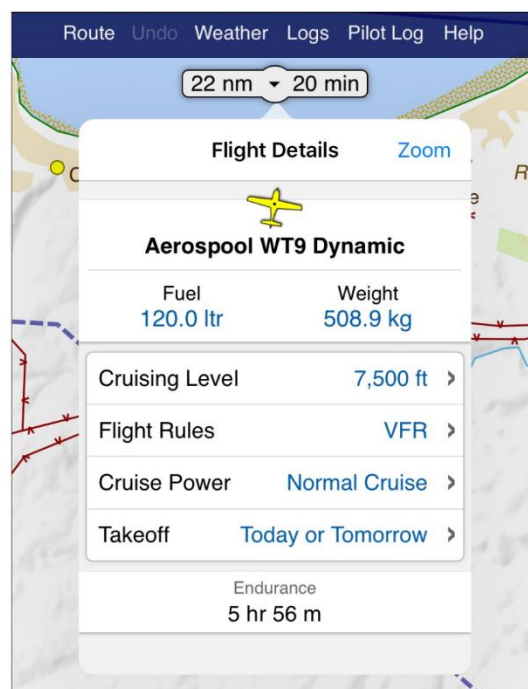
### Adjusting Altitude and Cruise Speed

The broad parameters for your route can be changed using the controls in Flight Details. The Flight Details settings are located in the Flight Details window to the right of the map on your PC. On your tablet or phone you'll find the option in the Route menu, or you can quickly access Flight Details by tapping the white distance/time bubble at the top of the map. The Flight Details settings allow you to pick the aircraft, level and speed for the route as a whole.

To change the level, open Flight Details and click on the current cruising level and type a new level. The altitude is displayed in feet although you can also type in a flight level starting with FL. Press enter to confirm your change.

It is also possible to set your own default level for each aircraft in your library, (it's set at 3000ft as standard) and this can be done in the Aircraft Editor. When you create a new route the default level will then be updated to reflect that of your chosen aircraft.

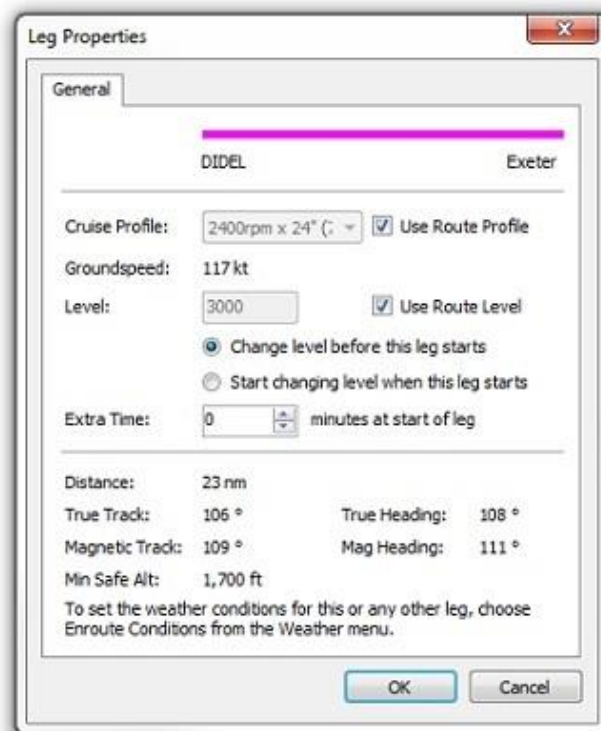
To change the cruise speed for your route click Cruise Power in Flight Details and select a power setting from the list.



You can add more cruise speed entries in the Power Settings section within the Aircraft Editor. To get to the Aircraft Editor open the Aircraft Library via the Aircraft button on your PC toolbar, or from the Setup menu. Once this setting has been saved you can select it from the drop-down menu in Flight Details. We will discuss more about editing your aircraft profile later in the documentation.

You can also set the level and speed for each leg individually. To bring up the properties for a specific leg, hold your finger, or right-click on it to get to the Leg Properties window. In this window you can see many attributes of the leg such as its distance, tracks and headings (true and magnetic). A checkbox labelled "use route level" can be unchecked, and if unchecked you can type a different level for the leg. When you press OK to confirm your changes you will see in the Virtual Radar that your aircraft is now having to perform a climb or descent to achieve your new level.

Changing the level of a leg on your iPad, iPhone or Android device is just as simple. By pressing and holding on the screen over individual legs a window will appear that allows you to view and edit the leg properties.



A more intuitive way of changing the level of a specific leg is to simply drag it up or down in the Virtual Radar. As you drag, the climbs and descents in your route are hidden, leaving each leg a straight line representing its specified level. When you release your finger to confirm your change, new climbs and descents are calculated and shown.

### Takeoff Time

In Flight Details you can also set the date and time of your flight. This is saved along with your route plan and is used in various places, such as producing an ICAO flightplan, filtering NOTAM and getting the forecast weather for the flight. If the date and time of a flight is not set, the assumption is made that you are going to undertake it today or tomorrow. To set a takeoff date/time, click or tap on 'Takeoff' to bring up your options. You can choose 'Today', 'Today or Tomorrow' or set a specific date and time. When you return to the Flight Details window you will see that the changes have been applied to your takeoff and landing times, and your NOTAM and weather briefings will be refined.

If you set a takeoff date for a Saturday or Sunday flight, any airspace that is not active at the weekends will be faded out in the map view during the planning stages.



## Fuel Plan and Cost

At the top of the Flight Details settings you'll find the 'Fuel' button, which outlines your fuel plan for the flight. You'll see the minimum fuel required to undertake your journey safely, which is calculated from the various parameters associated with the selected aircraft (more on customising your aircraft in a later section), and the individual calculations for taxi/takeoff (fixed), enroute (calculated), diversion (calculated), holding (fixed), landing (fixed) and contingency. These values are all updated in real time as you plan your route.

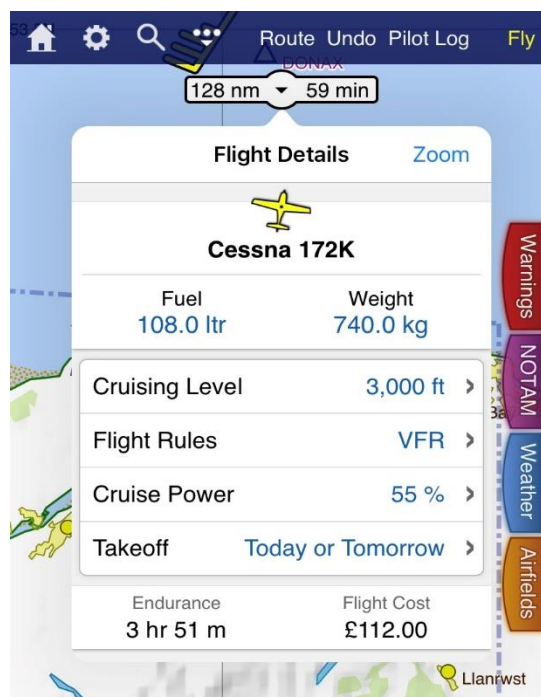
Next comes the planned fuel. On the PC version of the software there's a slider or for tablets and phones just tap and type into the box. You can set any value between the minimum required and the maximum that can be held by the aircraft. It is possible to set a default amount of fuel as well as your fuel tank capacity, which is done in the Aircraft Editor (more on this later).

The Flight Details tab also shows the absolute endurance resulting from the planned fuel, and the cost of the flight. To make this cost accurate, you'll need to specify the cost of fuel in the Planning Options window under the Setup menu.

## Flight Rules

If you have chosen to turn on the 'Show IFR Features' option in the Planning Options menu, the Flight Details dropdown will include the option to specify the Flight Rules for your planned route. This setting determines which NOTAM are selected for your briefing, as well as the map style. It is set to VFR by default. If you opt for IFR, you'll get IFR NOTAM in your brief, and the chart will switch automatically to Airways Mode.

NOTE: Although it is possible to specify IFR or Mixed Flight Rules, it is not possible to file an IFR or Mixed ICAO Flightplan in SkyDemon.



## Managing your Routes

To save a route that you have created click the Route button on the toolbar and choose Save As, then type in the name you would like to give your route and Click 'Save'. Your route is then saved locally on your PC, tablet or phone, and a copy of the route is automatically stored in your private SkyDemon Cloud, so it can be easily accessed on your other devices.

By default routes are stored locally on your PC in the SkyDemon folder within your personal Documents folder. When clicking Save As, you will see an option to save a route in another location or in a different format if you wish.

Routes can be saved in GPX and RTE formats, a couple of Garmin flightplan formats, and even in KML format for viewing the magenta line in Google Earth as a 3D fly-through.

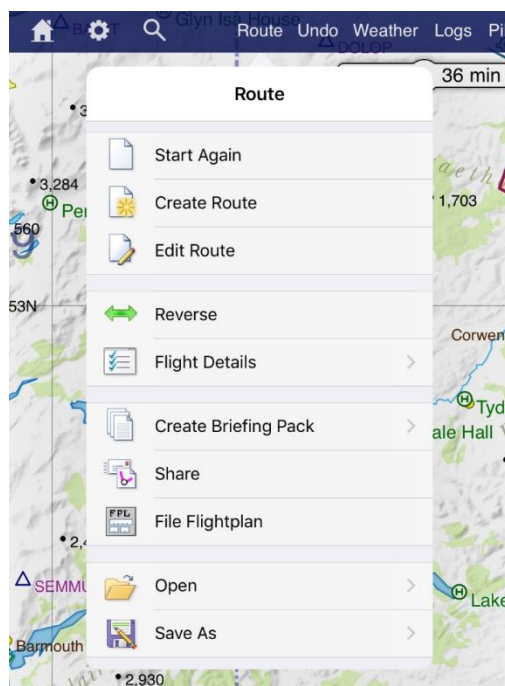
To open a previously saved route, go to the Route menu and click 'Open'. All of your local and Cloud-stored routes will be listed as long as an internet connection is available. If you're offline, only the locally stored routes will appear.

Routes can be sorted alphabetically, or by date, and there's also a search option to help when there are a large number of routes in the list.

If you do not want to automatically save your routes to the Cloud, the option can be disabled under Planning Options in the main Setup menu.

**TIP:** To delete a saved route on the iPad and iPhone open up your routes list. Swipe your finger to the left across the box containing the route you no longer need and a red Delete button will appear. Tap it to delete your route or swipe your finger again to hide the button. On Android you should press and hold your finger on the route to reveal the Delete button.

SkyDemon route files are small and can easily be shared with friends who are also using SkyDemon. You will see the option to 'Share' under the Route menu on your tablet or phone, although you will need to make sure that you have your mail account set up on that device in order to generate the email. Alternatively PC users can simply add their chosen route as an email attachment. The route files that you have saved on your PC can be found in the SkyDemon folder in Documents.



## 3. Configuring your Aircraft

### The Aircraft Library

SkyDemon maintains a library of different aircraft profiles on your computer, phone or tablet, so that if you have access to more than one aircraft (or you are just curious) you can plan flights using different aircraft to compare their performance.

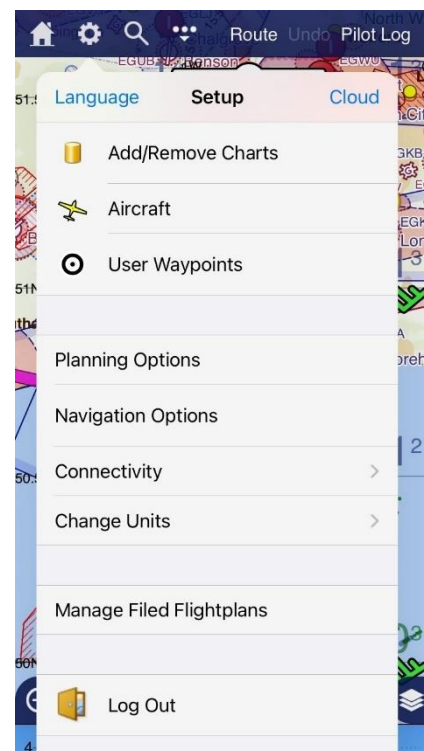
When you first launch SkyDemon, you can start using all of the main flight-planning features without first needing to define a more comprehensive aircraft profile. Under Flight Details the simple aircraft profile will be specified, and you will see the option to set a level and speed for your flight, allowing SkyDemon to make the relevant calculations for your route time.

When no full aircraft profile is set, the Weight and Balance feature is disabled, and no fuel calculations are performed, as they require a little further configuration on the part of the user. All of these elements are covered in more detail below.

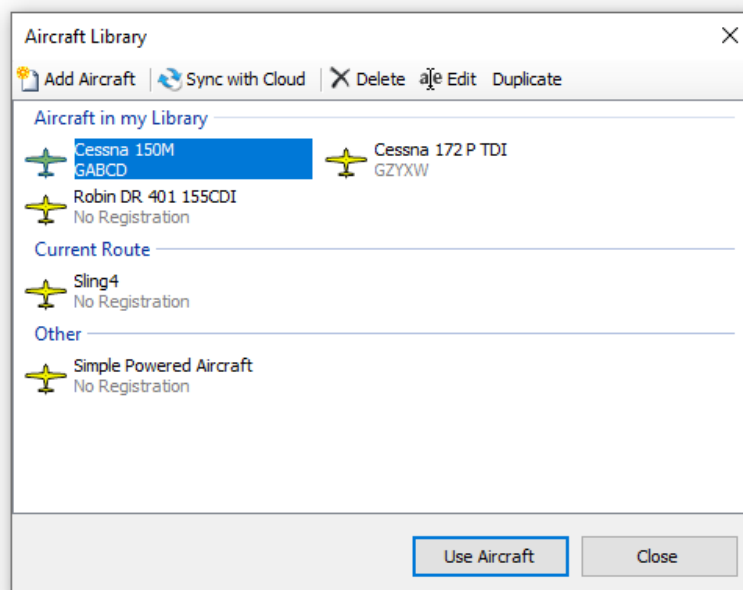
If you would like to return to this simple model at any time you can choose 'Simple Powered Aircraft' in Flight Details by tapping on the aircraft that is currently in use.

To access the Aircraft Library on your PC, you can either use the Aircraft button on the toolbar or in the Setup menu, or click on the aircraft that's currently in use in the Flight Details window. This will display a list of all aircraft profiles stored on your system with a green tick shown next to the aircraft currently in use. To switch to a different aircraft for the current route, just click on it then press Use Aircraft. The window disappears, and your flight details are recalculated using the new aircraft. You can use the Aircraft Library to edit individual aircraft profiles, and you will also see a button for 'Sync with Cloud' which enables you to easily share files between PC, iPad, iPhone and Android.

On your tablet/phone the Aircraft library can be found in the Setup button on the toolbar (this may be found under the button marked '...' or 'More'). You will be shown a list of all your saved aircraft profiles, with a tick next to the one that's in use. To add a new aircraft click Add Aircraft. If you would like to edit an aircraft profile just tap on it and choose Edit Aircraft. You can also select it for use from this menu, or create a duplicate of it.



The Add Aircraft button opens up a comprehensive list of aircraft profiles submitted to us by other SkyDemon users. Choose your aircraft type from the list, or the one that's the closest match, and it will be stored in your library ready for editing. You must take the time to check the selected profile to make sure it matches your POH, as well as setting aircraft-specific properties such as the aircraft registration, and weight & balance.



As well as accessing the Aircraft Library from the Setup menu, you can also select an aircraft in the Flight Details settings on your tablet or phone, by tapping on the aircraft that is currently in use.

Aircraft profiles are just files stored on your computer. To explore them, navigate to the SkyDemon folder within your personal Documents folder, then find the Aircraft folder within that. You can share these files with friends, or send your aircraft to [support@skydemon.aero](mailto:support@skydemon.aero) for inclusion in the public shared library (subject to checks). You can read more about sharing Aircraft profiles and other data later in the documentation.

## Basic Properties and Fuel

In the Aircraft Editor screen, the first box is the name of the aircraft, which is usually just the manufacturer and model. Below this you can select an aircraft symbol for Go flying mode, and enter the registration of the aircraft. At the bottom of the page there are controls for specifying the ICAO [aircraft type designator](#), equipment and colour/markings, which map directly to the ICAO flightplan output if you should choose to use it.

In this section of the Aircraft Editor you will also see the option to set a default level for your aircraft, which automatically sets the altitude for any route you plot when using this aircraft. The default is set to 3000ft, but if you normally fly at much lower or higher altitudes you can set your own default level, to avoid having to make the change each time you start a new route. When you switch the aircraft associated with a route, the route level is updated to match the default level of the new aircraft.

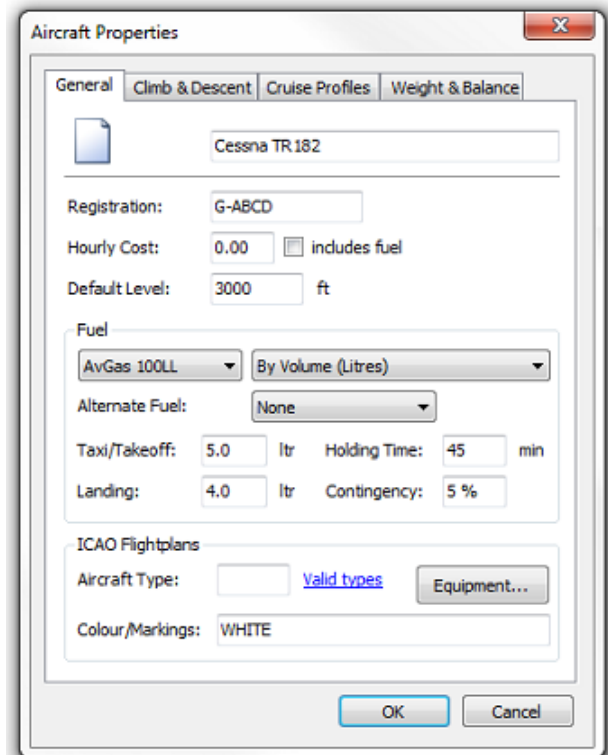
Next there is a section called 'Fuel' where you can enter basic fuel information for the aircraft, such as which types of fuel it uses and whether fuel is referred to by volume or by weight. If fuel is



specified by volume then the units are litres, US gallons or UK gallons. If fuel is specified by weight then the units are kilograms or pounds.

Taxi/Takeoff specifies how much fuel is required for the taxi and takeoff phase of the flight. Landing specifies how much fuel is likely to be required from arriving overhead at your destination to shutting down the engine. Enter the maximum conceivable values in these fields to be safe; your aircraft POH or balance sheet may suggest appropriate values.

Holding Time specifies the time in minutes that should be allowed for holding at the destination airfield. This sometimes varies between aircraft but 45 minutes is a common value. Alternatively you may prefer to set a Final Reserve for spare fuel, which is specified in minutes. When calculating the minimum required fuel for Final Reserve and Holding Time, SkyDemon uses the specified time value combined with the most fuel-efficient power setting (see later). Contingency is a percentage added to the enroute fuel calculations to add a safety margin and 5% is a common value.



[On your tablet or phone, the Fuel section also allows you to set up your fuel tanks, including the tank capacity, unusable fuel, and the lever arm for weight & balance calculations. You can alternatively set up fuel tanks in the Weight & Balance section of the Aircraft Editor.](#)

## Climb and Descent

SkyDemon models every stage of your flight including all climbs and descents needed to achieve your requested levels. This requires some knowledge by the software of the performance characteristics of your aircraft, and though the list of fields can be daunting it is reasonably easy to configure a very accurate model. Set the service ceiling according to the value given in your POH.

For the climb, you will need the rate of climb of your aircraft at sea level and at its service ceiling. The service ceiling of an aircraft is usually defined as the altitude at which climb performance decreases to 100 ft/min so this value is normally used. Indicated airspeed is the speed indicated during a climb. You will also need to enter the fuel burn at sea level and at the service ceiling. If you don't know the fuel burn in a climb at the service ceiling, just enter the same value as at sea level.

For the descent, you need to enter the descent rate in ft/min, the airspeed indicated and the fuel burn while descending.



## Cruising Speed and Gliding

When specifying the speed for your journey or for a leg, you do not explicitly choose a speed but rather a known power setting for the aircraft, which will produce a given indicated airspeed for which the fuel burn rate is known. These configurations are known as cruise profiles and you can set up as many for an aircraft as you like.

The power settings are displayed in a list in the Aircraft Editor window. To edit one, select it then change the values displayed in the boxes below the list. Each individual power setting may contain multiple entries for airspeed/fuel burn at different altitudes specified by the user, to make calculations more accurate.

To create a new power setting, or a new altitude entry within a power setting, PC users will select an existing one and click Copy, or on iPad, iPhone and Android tap the '+' button.

Level	Airspeed	Fuel Burn
1000	90 kt	94.6
2000	91 kt	96.0
3000	91 kt	97.0

**TIP:** To delete a power setting on your PC just click on it and press Del. To show the delete button on your iPad or iPhone swipe your finger to the left over the relevant box. For Android, press and hold your finger to reveal the Delete button. You cannot delete the last profile in the list.

The profile name is used later to select the setting from the Flight Details window, and is likely to be something like "2400 RPM". The indicated airspeed is the airspeed indicated by your aircraft while flying with this power configuration, and is converted to true airspeed automatically by the flight modelling engine, however you also have the option to enter True Airspeed directly, if known. Fuel burn is the amount of fuel burned per hour while flying with this power configuration at the specified altitudes. You should be able to refer to your POH for all the information required.

To select a power setting for your current aircraft simply click on the Cruising Speed link in Flight Details and choose from the dropdown menu. The one that's currently in use will have a grey tick next to it.

It is also possible to input your best Glide Indicated Airspeed and Glide Ratio when editing your Aircraft Profile. These values are taken into account along with altitude and wind speed/direction when using our 'Show Glide Range' feature to calculate your safe gliding radius.





[Finally, you will find the option to set a ‘Direct To’ minimum runway length, which applies a filter to the airfields that are shown in the Direct To list in navigation mode. On your tablet or phone, this is found towards the bottom of the aircraft editor window.](#)

## Weight and Balance

SkyDemon performs weight and balance calculations for your aircraft as you plan a route. There are three different weight and balance models to choose from in the Aircraft Editor, with varying levels of complexity. The ‘Simple’ weight and balance model, which is the default option, requires only your empty and maximum weights, and is designed for those who fly simpler aircraft and don’t need to worry about configuring an acceptable loading envelope. When using this model, SkyDemon will only produce a warning if the aircraft is overweight, but won’t calculate your centre of gravity.

With the ‘Standard’ weight and balance model selected it is possible to enter both the centre of gravity and empty weight of your aircraft in the Aircraft Properties window. The centre of gravity is usually either measured in inches or centimetres, but the units do not matter as long as you are consistent with the other inputs on the page. As well as entering the empty weight and CoG, the user will also need to configure an acceptable loading envelope, which will allow SkyDemon to produce a warning if your aircraft falls outside these limits.

If you’re creating a helicopter profile, you can select the ‘Helicopter’ weight and balance model. This is just like the ‘Standard’ profile, but includes the option to configure the longitudinal centre of gravity, [as well as specifying the minimum and maximum lateral CoG limits.](#)

### Loading Points

When SkyDemon performs weight and balance calculations for your aircraft it needs to know about each of the loading points applicable. A loading point is just a place in the aircraft where weight is applied, whether fuel, passengers, baggage or anything else. These are usually provided in the POH or a balance sheet accompanying the aircraft. When you create a new aircraft profile we populate it with a list of typical loading points that you can start with, but you can add or delete them as required. You can edit the name or lever arm of any of them by clicking the Edit button when using



SkyDemon Plan on the PC. iPad, iPhone and Android users can just tap the box they'd like to edit. The lever arm is the lateral or longitudinal distance from the datum used for all weight and balance calculations (the same datum as used in the empty centre of gravity) and is unitless, but ensure you use the same units that you used for the centre of gravity. If you have selected the 'Simple' weight and balance model, you only need to enter a name for your loading point, as well as a default weight if you wish.

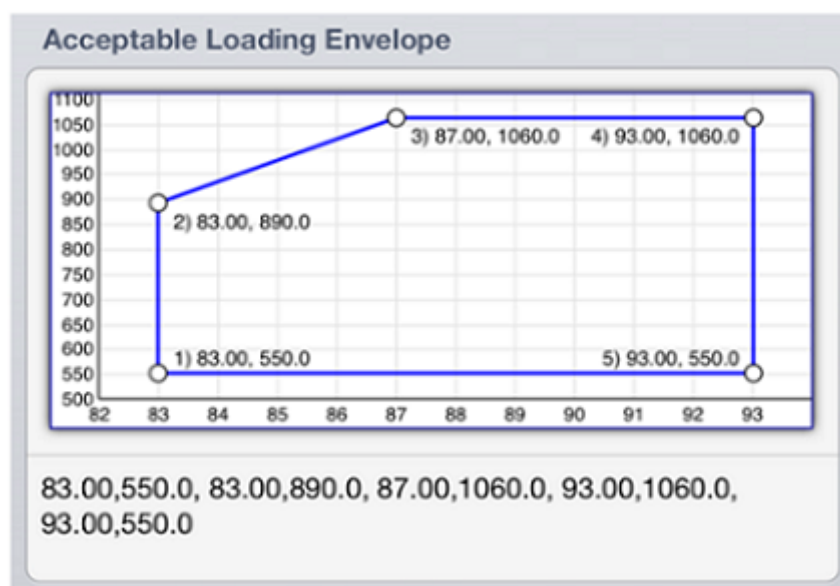
There will normally be a loading point called Fuel. As long as there is such a loading point, SkyDemon will automatically enter the fuel weight as you specify how much you're going to take. If your aircraft has multiple tanks and they cannot share a loading point you can add a new fuel tank by clicking the 'Add' button and selecting 'Fuel Tank' from the drop-down menu, or just by tapping the 'Add' button at the top of the Edit Fuel Tank window on your iPad, iPhone or Android device. It is possible to specify the maximum capacity of each of your fuel tanks, as well as setting a default fuel amount, and unusable fuel. If you have two separate Fuel Tank loading points, it's worth bearing in mind that SkyDemon does not know which tank the fuel will be taken from, and so it cannot perform weight and balance calculations in this instance. Instead it will simply display the start weight and centre of gravity (if you are using the standard/helicopter model) in the Weight & Balance window.

The actual weights for the loading points are entered later using the Weight & Balance window on the main map screen (or in Flight Details under the Route menu or distance/time bubble on iPhone, iPad and Android), however you can add default weights to each of the loading points, such as default fuel, or your own weight, so that you do not need to enter these values each time. Your specified default weights can be edited in the Weight & Balance section of the Aircraft Editor window by highlighting the loading point and clicking Edit, and will be applied the next time you create a new route.

### Acceptable Loading Envelope

If you have selected the 'Simple' weight and balance model for your aircraft you do not need to worry about configuring a loading envelope. The information in the sections below applies only to those using the 'Standard' or 'Helicopter' models.

In your POH there is usually a graph with a polygon representing the acceptable loading envelope of the aircraft. The graph is usually set up in such a way that distances from the datum



(lever arm) go horizontally along the x axis, and aircraft weights go vertically up the y axis. In some cases, the x axis will have moment units, rather than distance. When your actual centre of gravity and total weight of the aircraft is calculated, the value is plotted on the graph. If it falls within the polygon, the aircraft is safely configured.

You will need to create an acceptable loading envelope in SkyDemon, which requires typing out the x and y coordinates that make up the polygon one by one, starting at the bottom left corner and working around clockwise finishing with the bottom right corner in the format  $x_1, y_1, x_2, y_2, x_3, y_3,$  etc. So, to produce the diagram above [in SkyDemon Plan for PC](#) enter 83,550 to represent the first point, then another comma, then 83,890, and so on. You can use spaces to further separate values:

83,550, 83,890, 87,1060, 93,1060, 93,550

Depending on your regional settings, you may need to use a comma as a decimal separator, and a semicolon to separate the x and y values: 83,00;550,00 83,00;890,00 87,00;1060,00 etc.

If you're setting up the envelope in the SkyDemon app on your tablet or phone, you must enter each graph point on a new line, without any commas or decimal separators. Type the X value followed by a space, and then the Y value. For the above graph example, you would need to enter the following:

83 550

83 890

87 1060

93 1060

93 550

In some cases, the weight and balance graph in your POH may have inch-pounds or some other moment unit along the x axis, so you'll need to set the graph type to 'Moment/1000' in order to create a moment-mass graph with the correct shape.

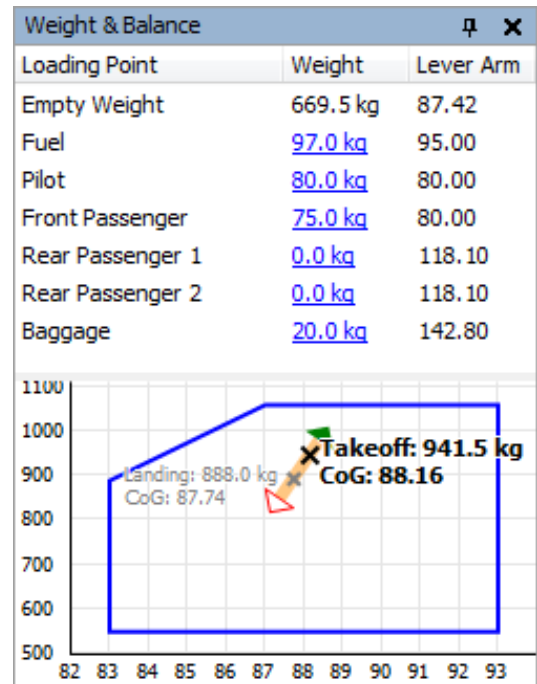


## Weight and Balance Calculations

When you have finished configuring the loading points and envelope in the Aircraft Editor (above) the Weight & Balance configuration can be found under the 'Weight' button in Flight Details. It consists of a list of aircraft loading points, and a graph of the loading envelope if you have chosen the 'Standard' or 'Helicopter' weight and balance model, with the results of current calculations plotted on it. The loading points are defined once in aircraft properties, and are simply filled in, in this window, when you plan a route.

Each loading point has a weight value. This is a field that you can click to adjust. For instance, you will see an entry for the Pilot; click where it says 0 kg and enter the actual weight of the pilot. Press enter to confirm and you will see the graph update.

It is possible to set a default weight for your each of your loading points, which means that you can set the pilot's (your) weight so it does not have to be entered each time. To do this open up the Aircraft Editor and select the Weight and Balance section, where you will see the option to edit each of your loading points.



On the graph (if you have got one set) you will see a thick orange line, with a solid green bar at one end denoting the full fuel weight and an empty red bar at the other denoting the empty fuel weight. On this line are plotted a black X which reflects your takeoff weight and a grey X which reflects your landing weight. It is of course important to ensure that both takeoff and landing weight are within limits on the graph. The graph will turn red if this is not so.

[If you have chosen the 'Helicopter' weight & balance model, the takeoff and landing calculations in Flight Details will also include lateral Centre of Gravity. These entries will turn red if you are not within the specified lateral limits.](#)



## 4. Route Analysis and Briefing

### Virtual Radar

As you plan a route you will see the powerful virtual radar window at the bottom of the screen updating itself with a side-on view of your route, including all features likely to be relevant or of interest to your flight. This view gives you an instant impression of how your route relates to terrain elevation, all types of airspace, obstructions and landmarks you will pass. It also shows how your climbs and descents will look, given the performance characteristics of the selected aircraft and the requested levels.

There are several places in SkyDemon where safety margins are used, such as the calculation of your minimum safe altitude (MSA) for each leg and how far vertically and abeam you wish to remain from fixed obstructions. These margins can be modified in Planning Options, accessible from the Setup menu. As you plot a route, SkyDemon examines the terrain elevations for a certain distance abeam of your route (Abeam Terrain Clearance) and ensures you are at least a certain distance (Vertical Terrain Clearance) above. This terrain profile is what is drawn in the virtual radar.



You can zoom in and out of the virtual radar window by using the mouse wheel (after clicking in the window) or by using the zoom in and out buttons on the left of the window. Like the main map, you can click on an empty area and drag left and right to scroll the window when there is more detail than can be shown in one screen. Also like the main map, you can hover the mouse cursor above any feature displayed to read more information about it.

You can manipulate the virtual radar on your tablet or phone in the same way as you would on the main map by using your finger to swipe left and right in order to see more of your route, or pinch the screen to zoom in and out. You can also press and hold your finger on any of the map features in the virtual radar window to bring up the "What's Here?" menu for more information, or double-tap to highlight the corresponding point on the main map.

**TIP:** Double-tap any spot on the Virtual Radar to view the corresponding point on the main map, and vice versa.



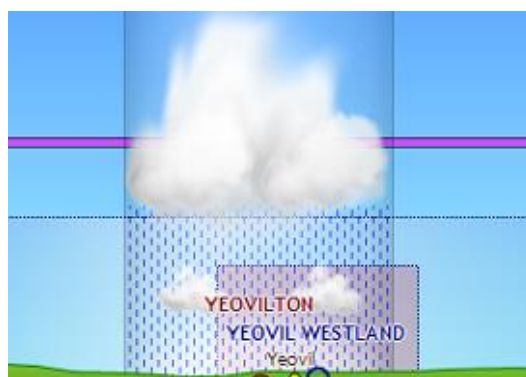
## Route Adjustment

The planned route is represented in the virtual radar by a thick magenta line, like it is on the main map, only it includes climbs and descents. The line is coloured red if the leg is planned below its minimum safe altitude (MSA) and therefore needs to be raised. Legs can be dragged up and down to change their planned level, as discussed previously. You can press and hold your finger on a leg to open its properties window, allowing inspection of its properties as well as adjustment of level and cruise profile for that portion of the flight.

**TIP:** To adjust the height of Virtual Radar in planning mode, just slide your finger up or down in the left-hand margin of the Virtual Radar window when a route is planned.

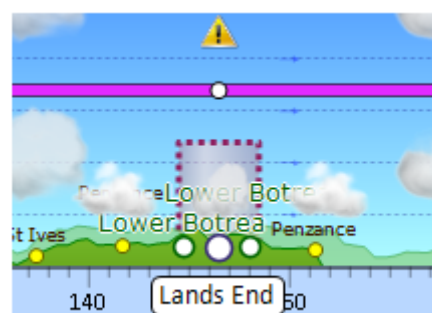
## TAF and METAR in Virtual Radar

Although weather briefing is covered later on, it is worth noting that TAF and METAR are automatically downloaded along your route and overlaid in the virtual radar window. They appear as a translucent column that can contain clouds and other features, but can also be clear, indicating good conditions. Use the TAF and METAR buttons in the Weather menu to control which, if any, are shown.



Not all data contained in a TAF or METAR is drawn in the virtual radar window. Included are cloud layers, rain, snow and visibility (including fog/mist). Having the cloud layers appear in the sky is a great way of instantly appreciating how they will relate to your route. Obviously, if your route appears to pass through cloud, it may not be possible to fly VFR.

You should always hover the mouse over weather information to bring up the full TAF or METAR, which will often include more detailed information than can be graphically depicted. iPad, iPhone and Android users can access the Weather tab to the right of the screen, which show either the raw or decoded view (selected in Tools), or alternatively just press and hold your finger on any coloured weather symbols on the screen to get more weather information.



A yellow triangle in the Virtual Radar indicates a warning to check the full weather bulletin for changes to the forecast conditions.



### Winds Aloft in Virtual Radar

Again, winds aloft are covered in detail later on, but you will see them represented in the virtual radar as arrows that go with your route (tailwind) or against your route (headwind) and whose thickness varies with the wind strength. This makes it easy to tell at a glance what sort of wind will affect your flight, and if there's anything to be gained by changing to a different level where the wind might be more favourable.

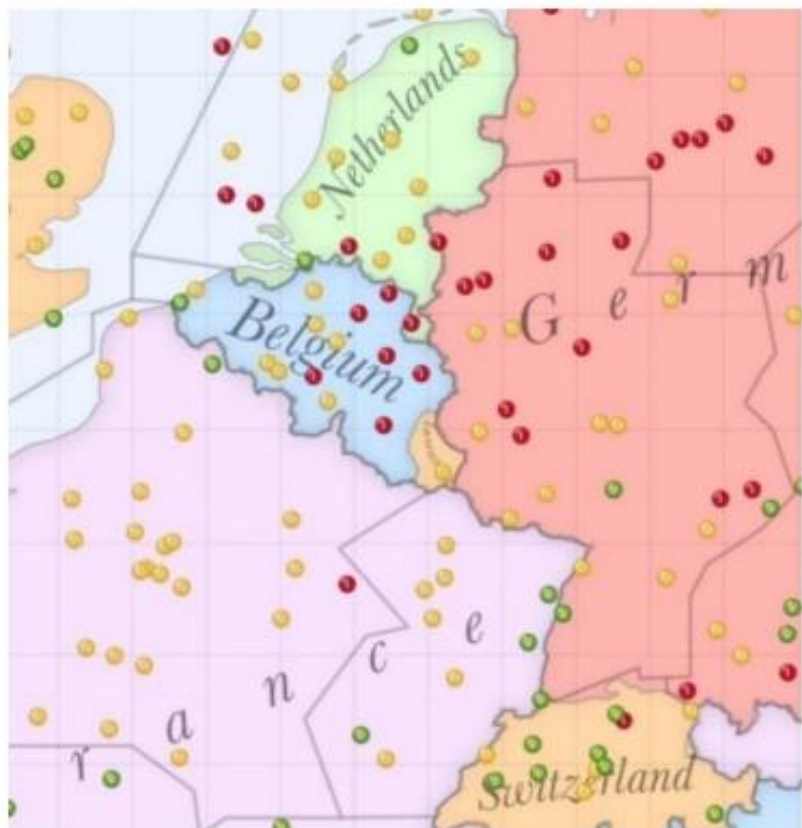
### Flyable Conditions in Virtual Radar

We will cover Flyable Conditions in a little more detail further in the user guide, but when the Flyable Conditions overlay is enabled, you will see the whole extent of the forecast lowest layer of cloud represented in virtual radar so you can easily visualise the cloud ceiling, as well as the lowest cloud tops. This is different to cloud tops, which would not necessary give an indication of whether there are any areas of clear sky underneath the topmost cloud. SkyDemon represents the lowest tops, to help you decide if you are likely to be able to fly on top of that layer.

## TAF and METAR Briefing

TAF and METAR are automatically retrieved for your route as you plot it, and are shown decoded in the Weather window to the right of the map. In addition, they are depicted both on the main map as you pan around, and in the virtual radar (as described above). Use the TAF/METAR button in the Weather menu, accessible from the toolbar, to turn these depictions on and off.

Weather bulletins (TAF and METAR) are represented on the main map as green, yellow and red dots symbolising good, marginal and bad conditions for VFR flight. The thresholds for determining what constitutes good or marginal weather are configured in the Weather section of the Planning Options window in Setup, since everyone has their own different limits. These colour-coded dots are a useful way of quickly determining



whether a route is flyable according to your own standards, and appear on the map at every zoom level.

The coloured dots are designed to depict conditions for VFR flight, so only consider an upper vertical limit of 5000 feet above aerodrome level. Thus a bulletin advising of an overcast at 6000 feet AAL will appear as clear sunshine.

The key to visualising weather information, besides that data which is depicted graphically in the maps, is the Weather window located to the right of the map.

Every METAR found for your route is displayed in the Weather window. Most information contained within is decoded and displayed in plain English. Where it is determined that an item of information is likely to be detrimental to VFR flight, it is written in red to signify this.

Every TAF found for your route is displayed in the Weather window. Like with METARs, most information within each TAF is decoded and displayed with similar warnings where necessary. The only difference is that for each TAF there is often further information associated with forecast changes, so underneath the main TAF you may see that the weather is forecast to become different or is forecast with other temporary phenomena.

You will find the option to switch between raw and decoded TAF and METAR in the Tools menu at the top of the Weather tab, and you can choose to sort weather bulletins alphabetically, or by distance along route.

In addition to TAF and METAR, the Weather window will also display SIGMET bulletins, where available. Just tap the 'View on Map' button for each SIGMET to see it graphically depicted on the map.

The screenshot shows the 'Weather' window for 'Londonderry Eglinton (EGAE)'. At the top, there are 'Weather Tools' and a 'Decode' button. The main content is divided into two sections: a METAR report and a TAF report. The METAR report is from 12:50 Z, 40 minutes ago, and includes: WIND 130° @ 9 kt, TEMP 10° / 5°, 71 %, PRESSURE 1002 hPa, VISIBILITY 9999 m, and CLOUD Few at 1,700 ft, Broken at 2,600 ft. The TAF report is from 10:57 Z, for 09 MAY 2019 12:00 Z - 21:00 Z, and includes: WIND 100° @ 8 kt, VISIBILITY 9999 m, CLOUD Few at 1,500 ft, Broken at 2,500 ft, Occasional 12:00 Z - 21:00 Z (40% chance), VISIBILITY 5000 m, CLOUD Broken at 1,200 ft, and Showers, Rain. At the bottom, there are icons for 'NOTAM', 'Weather', and 'W&B'.

## Weather Briefing

### Flyable Conditions

Flyable Conditions is a personalised forecast based on your own ceiling and visibility preferences and is designed to help you visualise the weather conditions to give you a quick idea of where the weather is

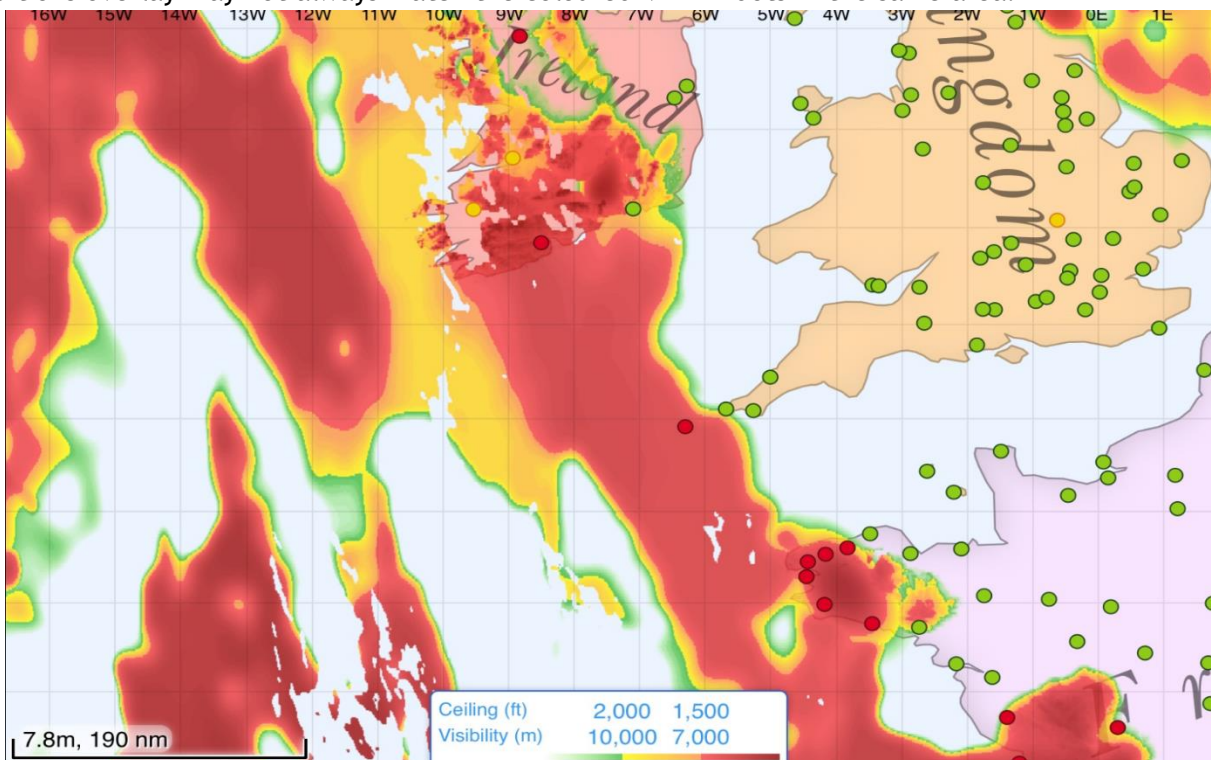
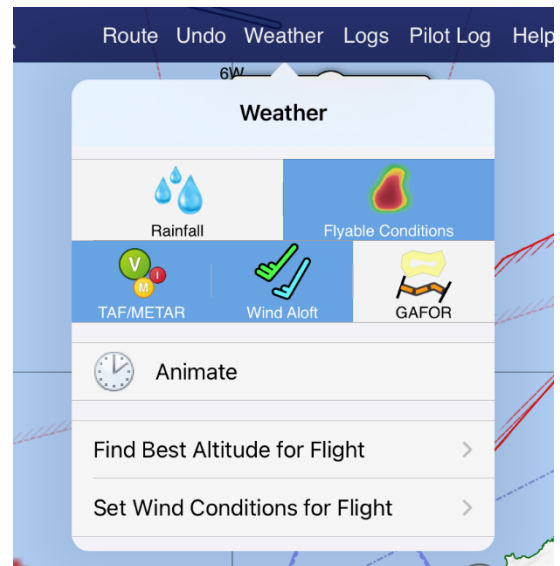




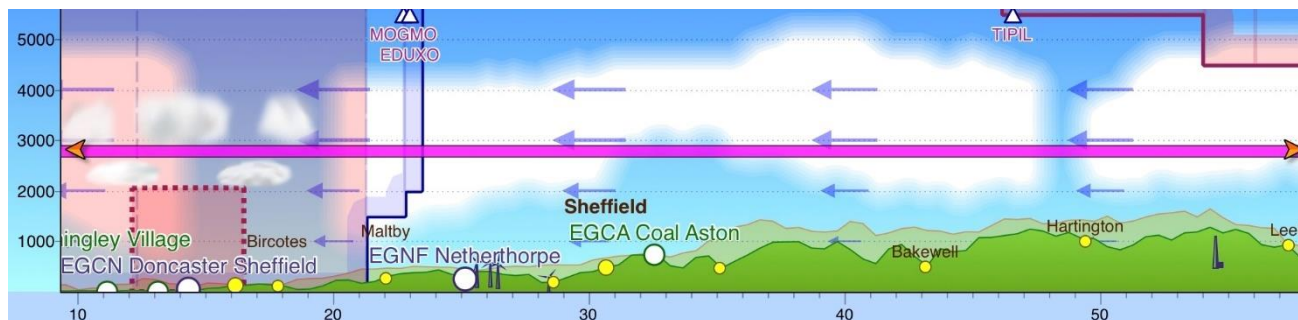
not good enough to go flying. It's a short-term forecast and you can look up to two hours ahead, as well as a few hours into the past. This weather overlay looks at the forecast cloudbase and visibility, and combines it with your preferences to create a useful coloured representation of where the weather is predicted to be good, marginal and most importantly, bad. The map will turn pink if there is no Flyable Conditions forecast data available for the time period you have selected.

When using the Flyable conditions overlay, it is safest to make your decision based on where conditions are not good enough to go flying. Clear or green areas are considered Visual (V) and in the example image, have a ceiling at least 2000ft (AGL) and visibility at least 10km. Yellow areas are considered Marginal (M) and have a ceiling at least 1500ft and visibility at least 7km. Anything worse than that is considered Instrument (I) and produces a red colour. This works in the same way as the coloured METAR dots that have been on the SkyDemon map for many years, and you'll notice that they broadly agree with each other where they overlap.

NOTE: METAR represent the airfield area only, which may be subject to a temporary period of localised weather that is different to the wider area. METAR will also be issued at different times to our flyable forecast, meaning one or the other will be more recent. For these reasons, the Flyable Conditions overlay may not always match the coloured METAR dots in the same area.



In addition to the coloured overlay on the main map, the Virtual Radar will also show a visual representation of the forecast cloud thickness with ceiling and lowest tops, illustrated as a cloud layer, and visibility, illustrated as fog on the ground along your planned route. Observations from METAR are still drawn in the foreground. Holding your finger on the map or Virtual Radar will bring up the “What’s Here?” menu where you can see the forecast ceiling and lowest tops at the selected spot, with the time the forecast was generated.



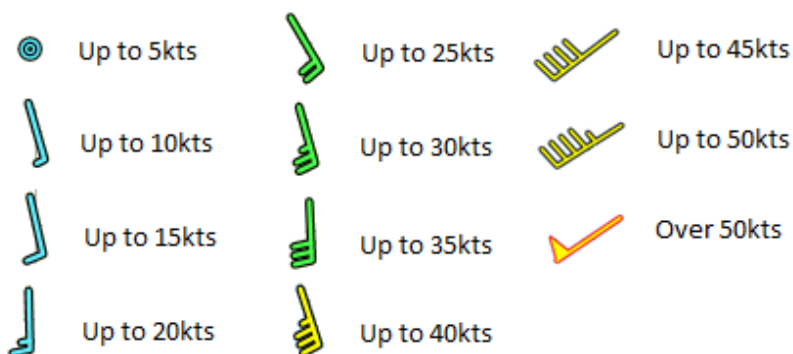
To adjust your ceiling and visibility preferences, go to Planning Options in the Setup menu, and tap Weather Minima. You will find options to set your own personal thresholds for visual and marginal conditions. When Flyable Conditions is turned on, you’ll find an information bubble at bottom of map which you can tap to reveal a simple colour-coded key, as a reminder of the preferences you have set, and you can even press and hold on the key to change the settings.

Flyable Conditions is intended for use only in the pre-flight planning stages, to help you see the areas to avoid. It is a forecast, and as such the extent to which its predictions align with actual conditions will vary. Therefore it is not suitable for tactical use while airborne, and cannot be turned on as a weather overlay in Go Flying mode.

**TIP:** To adjust the height of Virtual Radar in planning mode, just slide your finger up or down in the left-hand margin of the Virtual Radar window when a route is planned.

### Winds Aloft

SkyDemon includes wind aloft forecast data which is automatically downloaded for the area of your route, and this extends to 25,000 feet and 24 hours ahead. As you plotted a route you may have



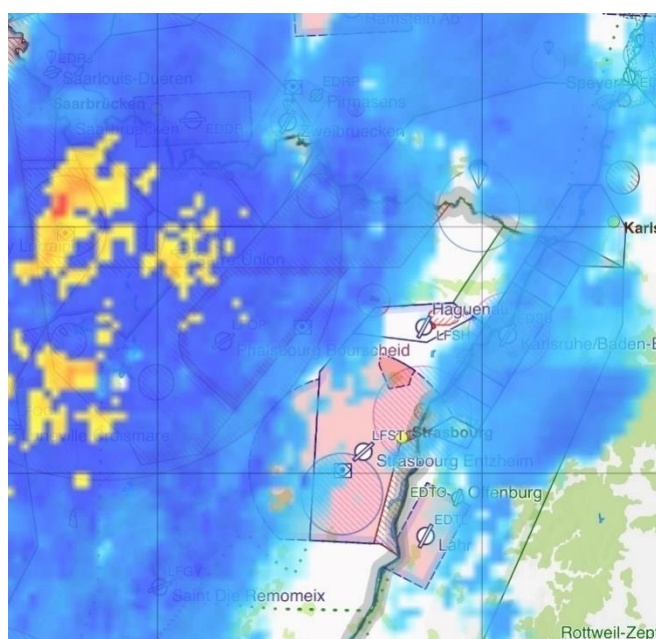
noticed coloured wind feathers appearing on the main map at regular intervals and tailwind/headwind indicators in the background of the virtual radar window. If you don't see these, ensure that the Wind button on the weather toolbar is ticked, or for tablet/smartphone users tap the Weather menu and toggle 'Show Forecast Wind Aloft' on. Each notch on the wind feather indicates a speed up to 10kts, and a half-notch is up to 5kts. The colours indicate the intensity of the wind, ranging from blue (light winds) through to green (more significant) and yellow (strong). You can hover your mouse, or hold your finger on the wind feathers on the map for the full details.

The date and time and the level represented by the wind feathers defaults to the date, time and level of your flight, as set in Flight Details.

### Rainfall Overlay

In addition to wind feathers, SkyDemon includes a Rainfall overlay for the main map. This works across the whole of Europe, and is an aggregate of radar data and satellite data (where radar is not available). Rainfall is an optional overlay that can be easily switched on or off in the Weather menu, accessible from the toolbar.

The Animate button in the Weather menu allows you visualise how the rain has moved and changed in the last three hours, as well as showing the forecast for an hour into the future. If no rainfall data is available when the 'Show Rainfall' option is switched on, the main map will go pink.



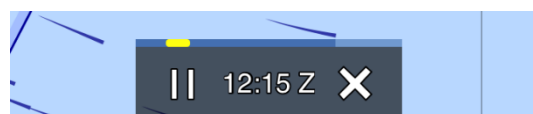
In navigation mode all weather overlays are switched off by default, but they can be turned on if desired by tapping the main navigation menu and choosing Weather > Turn Weather Overlays On. A message will appear explaining how some weather data may be delayed and should not be used tactically.

### Animate

To explore the changes in weather over time, click the 'Animate' button in the Weather menu at the top of the map. SkyDemon will begin to animate the weather from the last few hours, as well as an hour into the future, on a loop. Wind particles will appear on the map for the route altitude you have set, and you will see that they change speed, size and direction to indicate stronger or lighter wind forecasts at the time indicated on the Animate toolbar.

While animation is active, you are free to explore the

map, and a toolbar will be visible at the bottom of the map, allowing you to pause and stop the

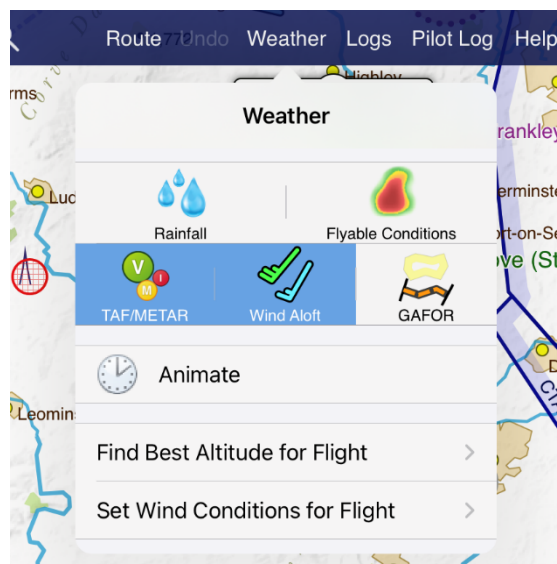


animation. You can even drag from side to side on the toolbar to inspect the weather at a specific time, or swipe up or down to see winds at a different altitude.

If no Rainfall or Flyable Conditions data is available for the time period selected, the map will turn pink.

### Wind Analysis

It is also possible to analyse how the wind will affect your flying time and fuel consumption at different levels. In SkyDemon for iPad, iPhone and Android open the Weather Menu and choose 'Find Best Altitude for Flight'. A list will appear showing the estimated time and fuel usage for your planned flight at different altitudes, with a green highlight to show the shortest time, and lowest fuel consumption with your planned route model. Tap on an item in the list to set your planned altitude at the selected level. Just remember that this feature will not be active if you only have the 'simple' aircraft profile selected.



### Manual Wind Entry

If you would prefer to manually enter the enroute conditions for your flight you will find the option to do so in the Weather Menu at the top of map.

You can set enroute wind conditions for the entire route, or for individual legs. Just click on the leg you wish to adjust and type the wind direction and velocity, eg. 270/16, then click 'Done' or 'Enter' on the keyboard. The wind will be applied to that leg, or your entire route if specified, and you will see the resulting calculations in the Pilot Log. To revert back to automatic wind conditions just clear the field for All Legs and type 'Auto'.

### GAFOR Forecasts

SkyDemon incorporates GAFOR route forecasts, making it easy to tell the forecast status for a route at a glance. The forecasts are derived from visibility and cloudbase minima along the route, from the "reference level", which is the highest terrain along the route. The minima for determining when a route is Closed, Marginal or Difficult based on cloudbase and visibility may vary from country to country. The GAFOR route states and colours are:



- |   |   |
|---|---|
| <span style="border: 1px solid black; background-color: yellow; padding: 2px;">D</span> Difficult | <span style="border: 1px solid black; background-color: cyan; padding: 2px;">O</span> Open  |
| <span style="border: 1px solid black; background-color: orange; padding: 2px;">M</span> Marginal  | <span style="border: 1px solid black; background-color: red; padding: 2px;">X</span> Closed |



The same colour states apply to the German GAFOR areas, which are also available when planning in these areas. As well as seeing the coloured route lines or area outlines, you'll see three blocks indicating the forecast in two-hour slots.

To see the route number, reference level and current route status, just press and hold your finger on the route in question to bring up the "What's Here?" menu with more information, or just hover your mouse over the route or GAFOR area if you're on the PC.

GAFOR forecasts can be switched on or off in the Weather menu.

## NOTAM Briefing

NOTAM are automatically downloaded from Eurocontrol for most flight information regions in Europe as you pan the map around.

NOTAM are depicted where possible on the main map usually as circles with a hatched magenta filling. The exceptions are very large NOTAM which are not drawn by default, obstacles which are depicted as

- |   |   |   |  |
|---|---|---|--|
| <span style="background-color: orange; width: 15px; height: 15px; display: inline-block;"></span> Airspace Activation and Exercises | <span style="background-color: gray; width: 15px; height: 15px; display: inline-block;"></span> Tethered Balloons/Kites | <span style="background-color: blue; width: 15px; height: 15px; display: inline-block;"></span> Unmanned Aircraft         |  |
| <span style="background-color: green; width: 15px; height: 15px; display: inline-block;"></span> Deactivation of Airspace           | <span style="background-color: purple; width: 15px; height: 15px; display: inline-block;"></span> Obstructions          | <span style="background-color: darkgray; width: 15px; height: 15px; display: inline-block;"></span> Gathering of Aircraft | <span style="background-color: magenta; width: 15px; height: 15px; display: inline-block;"></span> Everything Else |

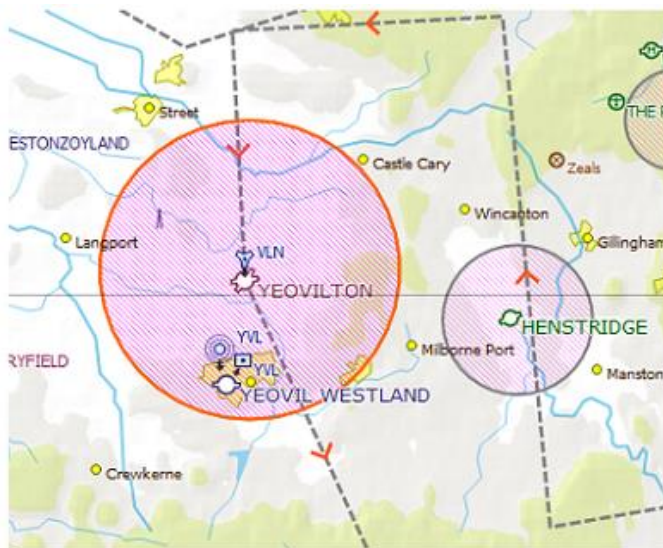
purple obstacle symbols, and formation transit NOTAM which are depicted as a line connecting points. The outline of a NOTAM is colour-coded to give you a quick idea of what they concern.

As always, the mouse can be hovered over the NOTAM on the map (or press and hold your finger to bring up the "What's Here?" menu) to read the full text, the period of applicability and vertical limits. Additionally you will see some NOTAM in the virtual radar window if your route passes them.

The depictions of NOTAM circles of influence on the SkyDemon main map are precise, but in some cases we do not draw them (because they are too big or complicated) or we interpret coordinates within, so that they are depicted as lines (for formation transits) or polygons. The definitive list of NOTAM that apply to your route and that you need to read is displayed as a narrow route briefing in the NOTAM window. You should always read this briefing. To make it easier, SkyDemon includes hyperlinks for certain useful items within the NOTAM text, including lat/long coordinates, web addresses and telephone numbers, airspace identifiers and even links to AIP SUPs and AIC documents. It's also possible to copy the text from NOTAMs to the clipboard.

When a route is emailed from your iPad, iPhone or Android device using the 'Send by Email' option in the Route menu, a full NOTAM brief is also included in this email. This is attached in HTML format and can be saved or printed for posterity.

If you have a linear route planned you'll see a narrow route brief, where only NOTAM near your route are shown, or if you've created a local flight, you'll get an area brief, where you can see NOTAM within a specified radius of a waypoint. In most cases a narrow route brief is required and the proximity values are configurable, although they are set to 5nm horizontally and 1000ft vertically by default.



There is also a filter applied only to mapping: by default, all NOTAM with a radius greater than 15 nm are not drawn on the maps, with the exception of those activating a TRA. The reason for this is that there are often extremely large NOTAM designed to cover the entire FIR or significant parts of it, and if these were plotted on the map it would become a large purple blob and therefore unusable. Consequently they are omitted from the maps but are still displayed in full detail in the NOTAM window. If you wish, you can change this radius threshold on your PC in the NOTAM tools under 'Filtering'.

### Hiding NOTAM

You may find that some of the NOTAM in your brief are not quite as relevant as others, and so you may wish to hide them so they are no longer included in your main brief. A hidden NOTAM will also be removed from the main map. To hide a NOTAM just open the NOTAM window and click the X button next to the unwanted NOTAM. Once a NOTAM is hidden it can easily be retrieved by tapping the 'View Hidden' option in the NOTAM window, and to return it to your main brief tap its << button. To unhide all hidden NOTAM in one go just open the NOTAM tools window and choose 'Unhide All Hidden NOTAMs'.



Not all NOTAM can be hidden from your brief, as some are considered important to the safety of your planned flight.

## Planning Warnings and Prompts

If any part of your planned route or aircraft configuration is considered unsafe or worthy of attention, a warning will appear in the Warnings tab, or in Flight Details. In SkyDemon Plan for PC, all your warnings are listed in the Flight Details window. You'll also see some helpful prompts that appear when certain conditions are detected and are designed as reminders rather than warnings. Warnings are red, or yellow, depending on severity, and prompts are blue in colour. Tap on the binoculars button next to the warning to see the corresponding airspace on the map and in Virtual Radar.

### Warnings

- **Penetration of Class A Airspace**

If any part of your route passes through Class A airspace this will generate a warning, since VFR flight is not normally allowed in such airspace. Clicking on the binoculars will take you to the piece of airspace concerned.

- **Penetration of Dangerous Airspace**

If any part of your route passes through a danger, restricted or prohibited area, this will generate a warning for each occurrence. Clicking on the binoculars will take you to the piece of airspace concerned.

- **Fuel Problems**

If you have not planned to carry enough fuel, or your journey requires more fuel than the aircraft can actually carry, this warning is shown in Flight Details.

- **Penetration of NOTAMed Airspace**

If your route passes through a temporary restricted area established by a NOTAM, this will generate a warning. Clicking on the binoculars will take you to the NOTAM concerned.

- **Airfield Proximity Warning**

The screenshot shows a mobile application interface. At the top is a red header with the word "Warnings" in white. Below this is a list of four warning items, each with a text description and a binoculars icon on the right. The first two items have a blue background, the third has a red background, and the fourth has a yellow background. Below the warnings is a section titled "Penetrated Airspace" with a grey header. This section contains a list of five items, each with a colored icon, a text description, and a binoculars icon on the right. The items are: Lille TMA (green outline), Danger Area EGD138D (red outline), Southend CTA (blue arrow), Southend CTR (purple arrow), and Earls Colne ATZ (red dotted circle).

Warnings		
	Your journey crosses an international boundary so a flightplan will probably need to be filed.	
	A GAR will need to be filed for this flight, at least 4 hours in advance.	
	Your journey passes through the effective radius of at least one Restricted Area (Temporary). Check the NOTAM briefing for more information.	
	Your journey passes very close to <a href="#">Earls Colne</a> , <a href="#">Blooms Farm</a> .	
Penetrated Airspace		
	<b>Lille TMA</b> 1500-FL65; Class E	
	<b>Danger Area EGD138D</b> SFC-13000	
	<b>Southend CTA</b> 4 parts	
	<b>Southend CTR</b> 2 parts	
	<b>Earls Colne ATZ</b> SFC-2227	



If your planned route passes very close (within 1nm laterally and 1500ft vertically) to an airfield you don't intend to land at, a yellow warning will be triggered in the Warnings tab. Tap on the binoculars to see where the airfield is on the map.

- **Minimum Safe Altitude**

If one or more legs in your planned route is below minimum safe altitude a warning will be generated with a button to raise the level.

- **Overloaded Aircraft**

If your aircraft is overloaded or outside of its acceptable centre of gravity envelope, this will generate a warning . The graph within the Weight and Balance window will also be highlighted in red.

## Prompts

- **Atmospheric Data Unavailable**

If some of the forecast conditions for your route are not available (usually winds aloft) a prompt is displayed at the top of the Weather tab to ensure you are aware that the conditions have not been factored into the flight model.

- **Flightplan Filing Necessary**

If your route passes an international boundary it is likely that a flightplan will need to be filed, so a prompt is displayed. Clicking on the prompt brings up the File Flightplan window so that you can file a plan.

- **GAR Submission Necessary**

This warning lets you know if a GAR (General Aviation Report) will need to be submitted to UK Police and/or Border Force, and how far in advance.





## 5. Airfield Information

The Airfields tab is located to the right of the screen on your tablet or phone below the NOTAM, Weather and Warnings tabs. When you plot your route, all airfields forming part of that route are listed in the Airfields tab, and tapping on each one in the list will show you all the corresponding information available for that airfield, including approach and admin information such as frequencies, VRPs, contact details, sunrise/sunset times, runway dimensions and fuel availability.

If you're overflying more than one country, you'll also see flag buttons leading to useful information such as AIPs, online resources and popular airfield rankings for those countries.

The Airfield Information screen gives you an option to view aerial photography at the chosen airfield, to help familiarise yourself with a new destination, and if you have Google Earth installed you can even launch a 3D view.

**TIP:** Tap the airfield name header at the top of the Airfield Information tab to highlight the corresponding airfield on the map itself.

You'll also find the latest NOTAM, TAF and METAR bulletins when tapping on each airfield in the main Airfields tab, as well as a list of all available plates including AIP aerodrome charts, visual approach charts, textual documents and plates for purchased products. There's also a SkyDemon Plate for each airfield, where all the information is gathered in one place for easy viewing.

It is possible to view airfield information for airfields that do not make up part of your route. Press and hold, or right-click, on the airfield of your choice on the map to bring up the "What's Here?" menu, then choose 'Information'. Alternatively you can use the 'Find' button at the top of the Airfields tab itself to search for the airfield you'd like to view. Either of these methods will open the Airfields tab and display the corresponding briefing information and plates list for that airfield. If you want to include that airfield with your planned route, just press the Pin symbol at the top of the tab and choose 'Pin to Route', and it will be stored alongside the other airfields in your list, and will be remembered when your route is saved. You can also nominate a list of Favourite airfields, which will be conveniently accessible from the main Airfields tab, and this is done by tapping the Pin symbol and choosing 'Pin to Favourites'.



**TIP:** The white Information bubble gives you quick and easy access to the full Airfield Information screen for your start and destination airfields. You can move the bubble to view the map detail underneath, or dismiss it by flicking it away with your finger or mouse.



### **Fees, Fuel, Facilities**

In addition to admin and approach information for an airfield, the Airfields tab also provides a wealth of user-submitted feedback such as fuel prices, landing fees and available facilities. Under the 'Fees, Fuel, Facilities' button you'll find a list of recently submitted fuel prices and recent landing fees including aircraft type for reference. To submit your own prices, tap the 'Send Feedback' button in the Airfield Information tab, or if you want to post notes about the airfield for other users to see, use the Pilot Notes button.

[Airfield owners](#) can post temporary notices and warnings about their airfield too, which can be viewed in the Airfield Information tab.

### **Airfield Plates**

SkyDemon gives you access to European AIP plates, and some other purchased flight guides, which often include more detailed aerodrome charts, visual approach charts and other textual documents. These plates are accessible via the Airfields tab, and are listed under the heading for each individual airfield. To view a plate in the list just tap or double-click on it, and it will be downloaded onto your device and will be available to view offline. The plate will appear as a full-screen PDF. The SkyDemon Plate doesn't require downloading, and is available at any time.

**TIP:** When you have finished viewing the plate on your iPad or iPhone and would like to return to the main Airfield window just tap the screen, then select the 'Done' button in the top left-hand corner, or tap the Back button if you're using an Android device.

In order to delete all the plates that you've previously downloaded from your device, tap the Tools button at the top of the Airfields tab and choose Clear Document Cache.

A large proportion of the plates available through SkyDemon are included in the price of the subscription, however there are some plates that require a separate purchase before they become accessible. Tapping on one of these plates will take you to the appropriate page of our [website](#), where you can read more about the product and add it to your subscription.



## Georeferenced Plates

Some plates will be shown in the plates list with a blue map-marker button next to them. Tapping this button will overlay the plate onto the map itself rather than just bringing up the associated PDF.

These plates are referred to as Georeferenced plates, and are particularly useful in Go Flying mode, as the user can overlay the plate directly



onto the map for improved situational awareness, showing their position in relation to the runways, circuit patterns and other visual reference points for that airfield.

The first time a georeferenced plate is loaded manually, the map will zoom to the plate over the selected airfield. In Go Flying mode the plate will automatically load onto the map when you get close enough, as long as the plate has already been downloaded onto the device. If there are several plates available for the airfield, it's left up to the user to manually select the plate they wish to view.

**TIP:** If you do not want your downloaded plates to automatically overlay on the map, you can turn off georeferenced plates in the Navigation Options menu.

To remove a georeferenced plate from the map just tap the red X button in the top left-hand corner, or open the Plates window and click the blue map-marker button next to the corresponding plate.

## AIPs and Flight Guides

SkyDemon gives easy access to full European AIPs and more.

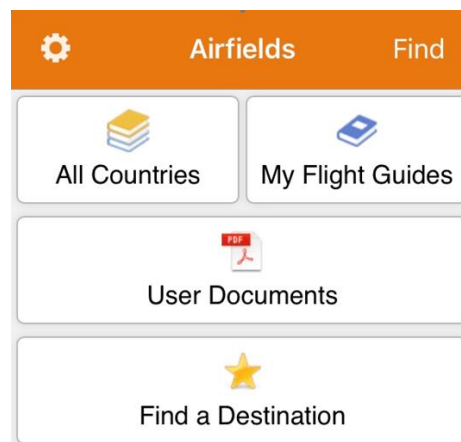
Just open the Airfields tab and tap All Countries, and for each country chart that you currently have installed you will see the corresponding country flag. Tap to find links to the AIP

including the General, Enroute and Aerodrome sections as well as the aerodrome-specific charts and textual information,

Circulars and Supplements. You'll also find some links to useful online resources, where available, as well as some lists with popular airfield rankings, for inspiration. If you can't see the

country you're looking for in the list, it may mean that you don't currently have that particular chart

loaded. Just open the Setup menu (the cog icon on the toolbar) and choose Charts, or click the Charts button on the PC toolbar.



In addition to the AIPs, the Airfields tab also gives you access to your purchased Flight Guides, where individual airfield plates and non-airfield content are listed for the Flight Guides you have subscribed to via our [online store](#). There's a search bar for quickly finding a particular airfield, or you can tap on the alphabetical index to take you to the letter you're looking for.

In SkyDemon Plan for PC, you can also open the Document Browser on the toolbar for access to the AIPs and Flight Guides.



## Downloading Plates

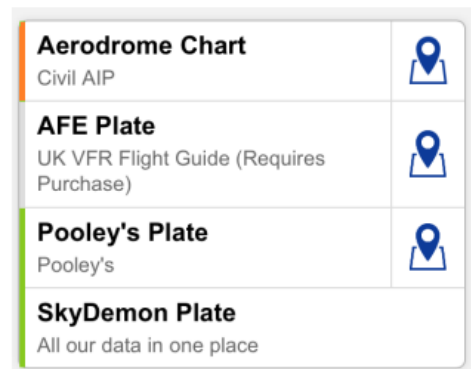
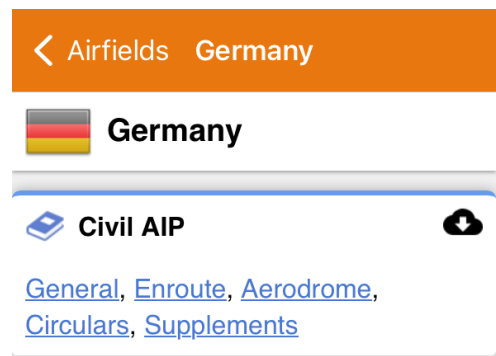
When a route is planned, you'll see a list of all airfields forming part of the route in the Airfields tab, as well as any pinned and 'Favourite' airfields. The plates for these airfields can be downloaded individually (just tap on a plate to download and view it), or they can be downloaded in bulk. To manually download all plates for the current route, just select an airfield in the list, then tap the 'Download' arrow button at the top of the tab. Alternatively, you can choose to download these plates automatically, and this option can be enabled in the Planning Options menu under Setup. As long as you have an internet connection, plates in this list will be downloaded and updated automatically in the background.

All of the AIP plates and purchased flight guides can be downloaded in bulk so that they are stored on the device and are accessible offline. To download an AIP just open the Airfields tab and tap All Countries. Tap on a country flag to see the related content. You'll see a download button in the AIP section of this tab. As there are usually a large number of plates to download it may take a few minutes, but once the download is complete you will have access to the relevant plates even in offline mode.

In SkyDemon Plan for Windows PC, the green download button is located at the top of the main Airfields tab.

From time to time new plates are published, and are updated on the system to replace older, out-of-date documents. If you have previously downloaded plates that have since been updated they will turn from green (meaning they are downloaded and available offline) to orange, which indicates that the older plate is still accessible, but there is a newer version to be downloaded. You just need to tap on the orange plate, and as long as you have an internet connection, the latest document will be retrieved.

If you're worried about storage space, the 'Clear Cache' option in the 'Tools' menu at the top of the main Airfields tab allows you to delete all the plates you have previously downloaded onto your tablet or phone. You can also remove individual plates from your cache by swiping your finger to the left across the one you wish to remove from the Plates list. A red 'Delete' button will appear, which you can tap to remove the plate, or swipe again to hide the button. Android users must press and hold on a plate to bring up the Delete button to remove an individual plate from the cache.



It is also possible to print individual plates directly from the PDF using the Print button at the top of the window.

### Instrument Plates

In addition to the plates and documents most commonly required for VFR use, SkyDemon also provides easy access to AIP Instrument Plates. In order to gain access to these documents, you must first ensure that 'Show IFR Features' is enabled in the Planning Options menu, under Setup.

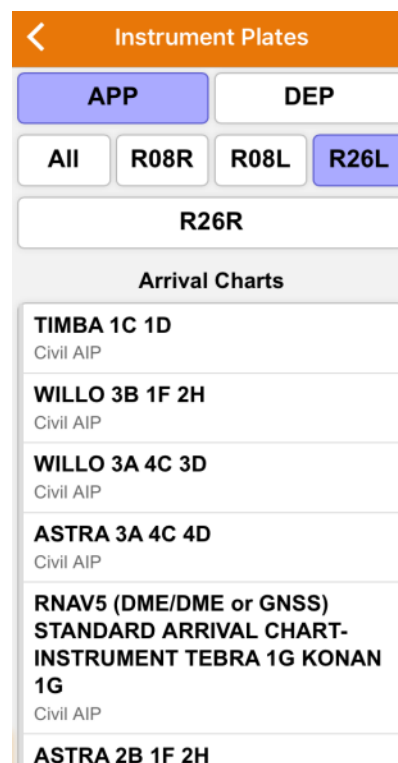
Open the Airfield Information screen via the Airfields tab or "What's Here?" menu and tap Instrument Plates. You will see a list of all available SIDs, STARs and Instrument Approach Charts, and any other accompanying IFR documents for the selected airfield. These plates are sorted by category, and can be filtered by flight phase and runway for easy access.

In Go Flying mode, when tapping Instruments Plates to access the list, SkyDemon will prompt you to select the appropriate runway first before presenting a list of relevant plates. Plates for other runways will be filtered out, to ease workflow and de-clutter the list. The filtering of plates by Flight Phase defaults to 'Departure' when you're on the ground at your takeoff airfield in Go Flying mode. When you're airborne, the default filter will switch to 'Approach'.

Some of the instrument plates in the list may be georeferenced, which means they can be overlaid directly on the map.

Georeferenced plates can be identified by a blue marker button beside the plate in the list. Simply tap on the button to bring up the entire document (including the vertical profile and text) on the main map, and when you're within range, you'll see your aircraft symbol on the plate. To remove a georeferenced plate from the map, tap the red X in the top corner.

Instrument Approach plates can also be easily accessed when approaching your planned destination in Go Flying mode by tapping on the 'Make Approach' button in Airfield Brief, in the bottom right-hand corner of the screen.



### Adding User-PDFs

The Airfields tab lists all of your purchased Flight Guides and any available European AIP plates for easy downloading and browsing, but in the iOS and Android apps it also includes a 'User Documents' section allowing you to import your own PDFs into the app. PDFs can also be shared with SkyDemon directly from a web page or email on an iPad. Just tap on the PDF for your sharing options, which will include 'Open in SkyDemon', and this will save the PDF in SkyDemon's User Documents list.



To import your own PDFs into SkyDemon on an Android device just connect the Android to your computer via USB, then using Windows Explorer navigate to the SkyDemon folder in the Android device files (Android > Data > aero.skydemon.skydemonandroid > Files). You simply need to drag and drop, or copy and paste your PDFs straight into this SkyDemon folder, or create some sub-folders if you like, and the next time the app is started the PDFs will be available to view in the User Documents window.

Tip: If you want to delete a PDF that you have saved on iPad or iPhone just swipe to the left across the file listed under User Documents to bring up the red Delete button.

To add one of your own PDFs to the list for a specific airfield, just make sure that the PDF's filename begins with the airfield ICAO code or local identifier followed by an underscore, for example EGBK\_filename.pdf, and the document will then be available alongside the other official plates when you open the Airfields tab and tap on the airfield in question.

PC users will need to save a PDF with this kind of filename in their SkyDemon folder in Documents in order to see it in the Airfield Information tab.

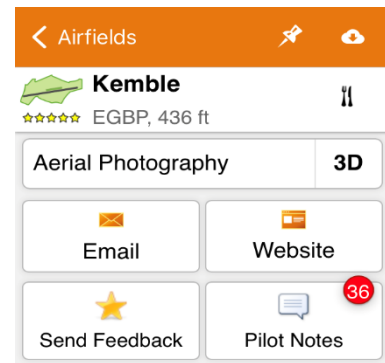
### Aerial Photography

At the top of the airfield information screen in the Airfields tab you'll find the Aerial Photography button. This takes you to a full-screen satellite view, with detailed runways and ground features, as well as traffic guidance such as circuit depictions and noise sensitive areas for some airfields. You can select your preferred mapping style (satellite, roads or hybrid), and you can also zoom in to specific features like runway thresholds, VRPs and circuits. The Aerial Photography mode is a great way to familiarise yourself with an airfield's runways and layout before you take off. Just press and hold your finger on the Airfield symbol to bring up the "What's Here?" menu with options for zooming to the different airfield features.



PC users have an Aerial Photography button, which launches Google Maps in their web browser.

To see a 3D satellite image of the chosen airfield in Google Earth, tap the '3D' button beside Aerial Photography in the Airfield Information tab, then choose Google Earth from the available options. You can pan, drag, zoom and rotate the map with your fingers to explore the airfield from a 3D perspective. The Google Earth app must be installed to use this feature.



## 6. The Pilot Log

### Producing a PLOG

The Pilot Log, or PLOG, is designed to give you a quick list of your waypoints and route legs, with every piece of information available to help you fly the route safely. Its output includes the headings to fly, the effective wind for each leg (as obtained from forecasts) and resulting groundspeeds and timings. In fact if you have ever produced a paper PLOG of your own, it's likely that the SkyDemon PLOG will cover the same things (and more), only without you needing to calculate everything manually.

Pilot Log												
Edinburgh - Colonsay	Startup	Brakes Off		Fuel Required							35.0 ltr	
Aircraft: GXXXX (C120)	Takeoff	Landing		Planned Fuel							75.0 ltr	
	Brakes On	Shutdown		Endurance							3 hr 43 m	
Elevation 136 ft (5 hPa) SR 03:35 Z, MCT 02:35 Z												
	MSA	Level	IAS	TrkT	Wind	HdgM	GS	Dist	Time	FuelR	ETA	ATA
EGPH Edinburgh UW Edinburgh	2000	2500	91	238	276/07	244	65	5.1	5	69.6		
UW Edinburgh Bathgate (EGPH)	2300	2500	91	268	289/08	273	65	4.6	4	68.3		
Bathgate (EGPH) Thornhill	2800	3600	91	309	279/10	308	73	24	19	62.5		
Thornhill Tarbet	4000	5800	91	281	269/14	282	86	18	13	58.8		
Tarbet EGEY Colonsay	4200	5800	91	260	276/14	265	88	52	35	48.1		
Elevation 44 ft (2 hPa) SS 21:11 Z, ECT 22:11 Z												
<b>103 1:16 (ltr)</b>												
<b>EGPH Edinburgh</b>						<b>Glasgow CTA</b>						
Edinburgh Approach				121.200		Glasgow Approach				119.100		
Edinburgh Tower				118.700		<b>Listening Squawk</b>						
Edinburgh Radar				121.200		Glasgow (2620)				119.100		
ATIS				131.350		<b>Flight Information Service</b>						
Edinburgh Ground				121.750		Scottish Information				124.500		
<b>Flight Information Service</b>						Scottish Information				127.275		
Scottish Information				119.875		<b>EGEY Colonsay</b>						
<b>LARS</b>						Colonsay Radio				123.800		
Leuchars LARS				126.500		<b>EGBK Northampton/Sywell</b>						
<b>Listening Squawk</b>						Sywell Information				122.705		
Edinburgh (0440)				121.200		<b>EGTB Wycombe Air Park</b>						
<b>Latch Farm</b>						Wycombe Tower				126.550		
Edinburgh Approach				121.200								
IVG(06)/ITH(24) (Edinburgh)				108.900		UW (Edinburgh)				368.0		
EDN (Edinburgh)				341.0								



An example PLOG is shown above. Colour and typeface variations are designed to highlight types of waypoint and important information. Note that the minimum safe altitude is always shown for a leg alongside the planned level.

The IAS/TAS column in the PLOG is simply the cruising speed you have picked for that leg. The resulting average speed for each leg, with all detailed IAS to TAS correction, and climb and descent calculations taken into consideration, is in the groundspeed column.

Below the list of waypoints and legs are columns containing the enroute ATS services that SkyDemon has determined you might need to use, with their callsigns and frequencies, in roughly the order you'll need them. Below to this is a column of enroute radio navigation aids which you might find helpful enroute, with their frequencies and identifiers (including morse code).

This list of frequencies will also be available if you have a local flight planned.

To make adjustments to your planned route from within the PLOG on your phone or tablet just tap on one of the waypoints in the first column. A menu will appear giving you options to remove the waypoint, or insert a new waypoint before it. After making this change the Pilot Log will be updated, as will the route line on the map itself.

		Cullompton VRP				HdgM	GS
Elevation 202 ft (7 f	SR 07:59 Z, MCT 0						
EGHG Yeovil/Wes						264	73
Watchford		Remove from Route					
Watchford Farm						258	93
Cullompton (EGTE)		Insert Waypoint Before				248	111
Crediton (EGTE)		Airfield Exeter (EGTE)				291	112
Copplestone		2000	8700	107	277	100/05	278
FONZU							
FONZU							

### Renaming Unknown Waypoints

If you have created a route that goes via an unnamed turning point on the map, the waypoint will be listed in your Pilot Log with its lat/long coordinates. To help identify it more easily, you might want to give that turning point a friendlier name, so just hold on the spot on the map and choose 'Rename Turning Point' in the "What's Here?" menu. Type in the preferred name and tap Save, and that name will appear in the PLOG instead.

### Customising the PLOG

There are many customisations that can be applied to a PLOG; to access these, simply press Settings or Columns at the top of the Pilot Log.

#### Columns:

- **Show RNav Vectors:** adds the closest RNav information to each waypoint in your route for easy entry into an RNav system before flight
- **Show Position:** populates a column containing lat/long coordinates for each waypoint.



- **Show Planned Cruise Speed:** generates a column containing your planned cruise speed. The column will show IAS or TAS, depending on the power/speed settings you have selected for the route in Flight Details.
- **Show True or Magnetic Track:** displays columns showing the True and/or Magnetic track.
- **Show Wind:** displays output for average wind calculations along each leg of your route. This can be switched off if you would prefer to perform these calculations manually on the day of your flight.
- **Show Cumulative Distance:** adds the cumulative distance in brackets alongside the distance for each individual leg.
- **Show Cumulative Time:** adds the cumulative time in brackets alongside the timings for each leg.
- **Show ETA and ATA:** These columns can be turned off if they are not required. If you switch them on you'll see empty columns that can be filled in manually after printing. When using SkyDemon Plan for PC, you'll see an extra tick box to populate ETA. This automatically calculates your ETA to each waypoint based on the takeoff date and time you have set in the Flight Details window.
- **Show Fuel Remaining:** You can choose to show the estimated fuel remaining at the end of each leg, to facilitate a quick cross-reference with an on-board system indicating fuel remaining

#### Settings:

- **Show Frequencies Section:** The frequencies list can be switched off, to save space in the printed output if you want to print only the waypoints section.
- **Populate ETA/ATA based on takeoff time:** Populates the ETA/ATA column if you have set a takeoff time in Flight Details.
- **Show Wind Calculation Output:** Uses the forecast winds aloft data to calculate headings and timings for each leg. If this option is unchecked, the Wind, HdgM and Time columns will remain empty for your own manual input after printing.
- **Font Size:** (PC Only) Allows you to increase or decrease the size of the text in the printed output.
- **Use Rich Colours:** (PC Only) Turns off any areas that use saturated colours to save ink when printing.

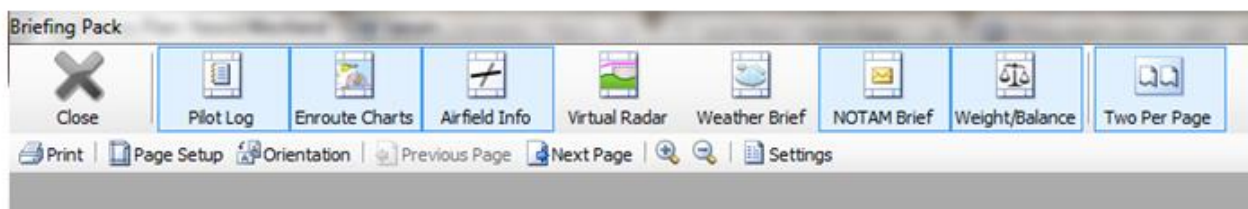
It is possible to save your PLOG on the PC in HTML format to view online, or in CSV format if you would like to make any additions or edit the information contained in the PLOG using Excel. This can be done using the Save HTML and Save CSV buttons on the Pilot Log toolbar.



The Pilot Log is included in the email generated on iPad, Android and iPhone when using the 'Share' option in the Route menu. You'll find two copies of the PLOG; one in CSV format, and the other in HTML. The 'Briefing Pack' button (accessible from the Route menu on iOS and Android) will also give you the option to include the Pilot Log in your briefing pack PDF, which can be shared or printed

## 7. Printing

The Briefing Pack is designed to facilitate getting as much of SkyDemon's comprehensive briefing data onto the printed page as possible, so that when you fly you can take as much of it with you for reference as you like. To open the Briefing Pack, press the Briefing Pack button on the toolbar in SkyDemon Plan for PC. You'll see a list of buttons at the top for the different types of print output, all of which are explained below. Items highlighted in blue will be included in your printed briefing pack.



In SkyDemon for iPad and iPhone and Android you'll see the 'Create Briefing Pack' button in the Route menu. This will allow you to create a simple PDF containing your Pilot Log, Enroute Charts, Virtual Radar, Airfield Information, weather, NOTAM and Weight & Balance output, which can be shared by email for printing from another computer or sent directly to a wireless printer if available. Just tap 'Create Briefing Pack' and select which items you want to print. You can even configure your page size and print settings in this window. When you have created your briefing pack PDF simply tap on the screen to bring up the iOS 'share' icon in the top right-hand corner.

SkyDemon for Android has a 'Send by Email' button in the Route menu. This will generate an email with several attachments such as your route (in .flightplan, GPX and FPL formats), your Pilot Log in HTML and CSV format, your full NOTAM, TAF and METAR briefings and your Weight and Balance calculations. This means that you can easily send a single email to yourself if you're unable to print directly from your tablet or phone. The same option is available on iOS by tapping the 'Share' button in the Route menu.



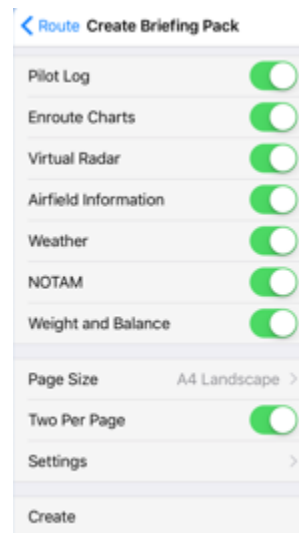
## Controlling Output

When using SkyDemon Plan on the PC use the Page Setup button on the Briefing Pack toolbar to specify the paper size that is loaded into your printer, and to customise the margins where required. This will update the preview displayed. Use the Orientation button to flip between portrait and landscape; the type of output you specify will automatically choose the orientation it thinks is most appropriate when you select it.

Use the Two Per Page button to fit two half-sized sheets onto one full sheet. Most printers are standard A4 so you can press this to print two A5-sized sheets onto one piece of A4 paper. This is very handy for certain types of output like plates, weather brief and NOTAM brief.

Use the Next Page and Last Page buttons to scroll through the output pages in the preview.

The iPad print options include portrait or landscape mode, as well as A4 size, or A5 size in A4 for half-page printing, and the 'Create Briefing Pack' Settings include options for adjusting paper margins and map scales.



## What Can I Print?

- **Enroute Charts**

Clicking the Enroute Charts button in the Briefing Pack produces print output of the SkyDemon charts all along your route, so that you can refer to them in flight. The charts will appear just as they do in the main map, albeit at a different zoom level.

If your route is long enough to require at least four pages of output, an additional index page is generated after the route pages. This index page shows your entire route, with sections highlighted to show the scope of each printed page.

To change the approximate scale of the enroute charts output, click the Settings button in the Briefing Pack and switch to the Enroute Charts tab. You can set the map scale anywhere between 1:100,000 (very large scale) and 1:1,500,000 (very small scale). Experiment with this to determine the map scale you are most comfortable with. You can also set the threshold at which an index page is generated.



Note: You can print the main map as it appears onscreen at any time by right-clicking on it and choosing Print Current Chart. This will not include any route plan or overlaid track log. The scale will be adjusted if necessary to fit everything onscreen on to the printed page. PC Only.

- **Airfield Information**

Clicking the Airfield Information button produces printed SkyDemon plates for your takeoff and landing aerodromes, and your alternate if selected. These are handy to have when it's time to make an approach as they contain frequencies, runway information and location information.

- **Airfield Plates**

It is possible to print Airfield Plates and other documents from within the Airfields tab. Just double-click or tap on a plate to open it up. It will be displayed in PDF format and can be printed directly.

A downloaded plate will be highlighted in green, indicating that it is accessible offline. These plates can be printed direct from an iPad or iPhone to an AirPrint printer using the print button in the top right-hand corner of the plate. You will also see the option to email a plate in this menu.

- **Virtual Radar**

Selecting the Virtual Radar in the Briefing Pack will produce a side-on view of your entire route which includes terrain, airspace, airfields, obstructions and other features of interest.

The scale of the Virtual Radar printout is set in the Briefing Pack Settings.

You can print the Virtual Radar from your tablet or phone as part of the Briefing Pack in the Route menu.

- **Weather and NOTAM Brief**

The Weather Brief print output simply shows all TAF and METAR obtained along your route. The NOTAM Brief print output shows exactly the same data as the narrow route brief shown in the NOTAM Briefing window (including any NOTAM you have hidden). You can include these options in the Briefing Pack, accessible from the Briefing Pack button on the toolbar in SkyDemon Plan, or from the Route menu on your tablet or phone.

- **Weight and Balance**

It is possible to print Weight and Balance calculations, showing a list of loading points, weights and lever arms at the top of the page, with a graph of the acceptable loading envelope underneath. This option can be included in the Briefing Pack, which you can access from the



Route menu on iOS and Android, and from the Briefing Pack button on the toolbar in SkyDemon for PC.

- **Logs**

In addition to SkyDemon's Briefing Pack for printing your enroute charts, Pilot Log and other useful briefings for your up-coming flight, it is also possible to print out a Debriefing Pack for post-flight analysis. You'll find the 'Create Debriefing Pack' button in the Logs menu after selecting the log you want to view. The Debriefing Pack includes a map and Virtual Radar, as well as some log statistics, PLOG timings, and any notes that you entered in the Log's Notes section.

## 8. Sharing Data between your Devices

The following pages contain various methods of sharing files in SkyDemon between your iPad, iPhone, Android and PC.

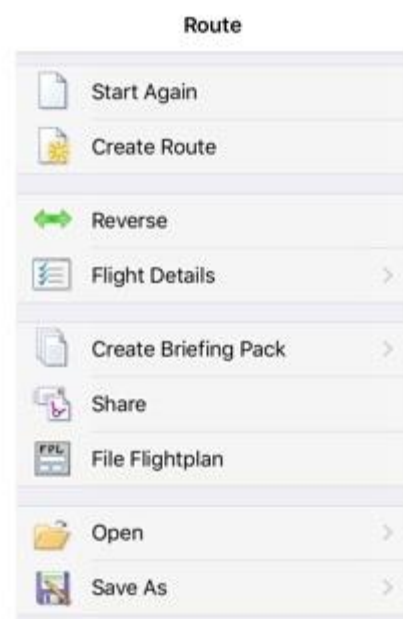
Cloud storage is mentioned in some of the sections below, and this refers to your own private SkyDemon Cloud, so you don't need to be signed up for any other third-party Cloud storage services. The Cloud is probably the simplest way to sync and share your routes, logs, waypoints, aircraft profiles and settings.

### Transferring Routes

#### Transferring Routes using Cloud Storage

In the Route menu you will see buttons labelled 'Save As' and 'Open'. These enable you to easily save a route on one device and open it up instantaneously on another without the need to use email for file sharing. When saving a route a copy is automatically stored in your personal Cloud, as long as you have an internet connection. Similarly, when you tap 'Open', all of your local and Cloud-saved routes will be listed.

If you don't want your routes to be saved in your Cloud, you can disable the feature in the Planning Options menu.



### **Transferring Routes by Email - PC**

On your PC you can email a route by composing a normal email then attaching one of your saved SkyDemon routes, which you can find in the Routes folder, within the SkyDemon folder in your personal Documents folder on your computer.

To open a SkyDemon route that has been emailed to you, just save the attached route file (in either .gpx format, or our own native .flightplan format) in your Routes folder in My Documents > SkyDemon, then launch the SkyDemon software and click Route > Open to find and load your saved route.

### **Transferring Routes by Email - iOS/Android**

To send a route that you have created on your tablet or phone, just open the Route menu and tap Share > Send by Email. This will give you the option to generate an email using the Mail app on your iPad iPhone, or any chosen email app on your Android tablet, and it will contain several attachments including your route in four formats (our native .flightplan format, as well as GPX, KML and FPL format for use with other programs), your Pilot Log in HTML and CSV format, as well as your full NOTAM, TAF and METAR briefing and your Weight and Balance calculations to serve as evidence that a full briefing has been undertaken.

To send a route file from the Mac app, click Route > Export > Send by Email.

To open a route from an email on your tablet/phone just go to the email in your Mail app and tap on the .flightplan attachment; you should then be given the option to launch SkyDemon with this route open. You are then free to save the route into your device's route library in the normal way or just continue using it.

You must set up the Mail app on your Apple device before you can use this tool.

### **Share by AirDrop or to other apps**

In the Route menu in SkyDemon on your iOS device you will find a Share button, which allows you to share your route by email (above) or by AirDrop with other compatible iOS devices. If you have got AirDrop switched on in your iOS Control Centre you will see a list of all nearby iOS devices who also have AirDrop activated, and your route can be instantly sent to them by tapping the intended recipient in the list.

The Share button in SkyDemon also gives Garmin Pilot app users the option to easily share the route they have created. The 'Send to Garmin Pilot' option is also visible in the Route menu on Android if that particular app is installed.

Alternatively, you can save your route to Files on your iPad/iPhone, or even a connected SD card dongle, and this will include routes in .gpx, .fpl and .kml format for manually exporting to other devices or apps.



## Transferring Routes from PC to Android

Connect your Android phone or tablet to your PC via USB and navigate directly to the SkyDemon folder on the connected device (Android > data > aero.skydemon.skydemonandroid > files). In the SkyDemon folder you will see a Routes folder, which contains all of the routes currently saved on the device. Route files can be dragged from your PC into this folder on the device, and they will be available immediately. Saved routes can also be copied from your Android device onto your PC, and should be saved in the Routes folder found in the SkyDemon folder in Documents.

## Exporting Routes to Other GPS Devices

SkyDemon can automatically export your route from your PC to a number of different GPS devices that you can use in flight to take you through the exact route you have planned. To configure your device, select Navigation Options from the Setup menu, then click 'Legacy Device Connectivity Options'. You can choose between a SkyDemon Mobile device, a Garmin device or a SkyMap device.

- **Garmin Devices**

We provide support for exporting routes to most Garmin handheld aviation GPS devices. First ensure the device is plugged in and has been recognised by Windows. Then in SkyDemon click on the Go Flying button on the toolbar and choose Send Route to Connected Device. Your route will be automatically named and exported, and will be available for selection from the route library on the device.

- **SkyMap Devices**

These popular devices such as the Ilc are supported for direct route export within SkyDemon Plan. Ensure your device is connected to the COM port specified in the Legacy Device Connectivity Options window under Setup > Navigation Options, then go to Go Flying and click Send Route to Connected Device. You will need to specify on the device which slot to export the route into.

- **Exporting to Other Software**

We support saving routes in GPX format, which is an industry standard format for representing routes, and RTE format, which is used by many handheld devices. Export to GFP format for the Garmin GTN series is also supported, as well as Garmin's FPL format. For viewing routes and 3D fly-throughs in Google Earth, the route can be saved in KML format.

To save in any of these formats in SkyDemon Plan for PC, choose Route -> Save As. Click the blue link at the bottom of the window labelled 'Save in a different location...' and then pick the right file type from the dropdown menu at the bottom of the Save As window. On your iPad/iPhone choose the Share button in the Route menu for your options.

Mac users can save in .GPX, .FPL, .GFP and .KML by clicking Route > Export.

You can also open routes in GPX format, though be aware that this does not support advanced SkyDemon features such as fuel planning and aircraft modelling, so any such information you may configure might be lost.



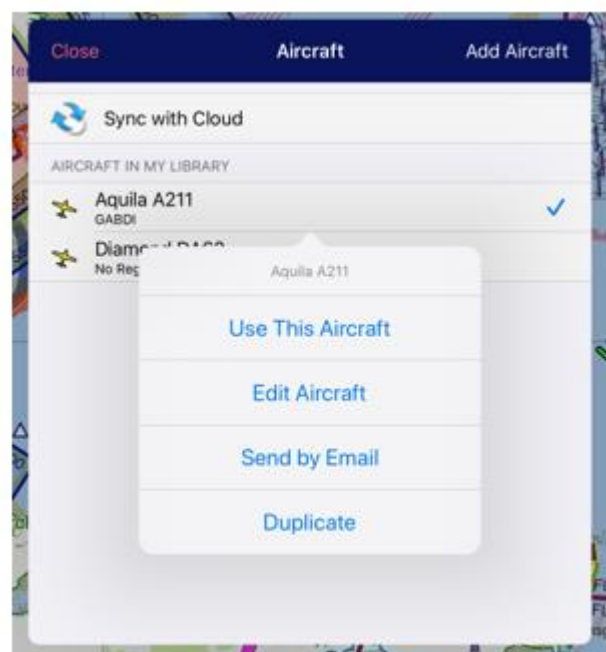


- **Dynon SkyView**  
[See page 98](#)
- **Avidyne IFD**  
[See page 99](#)
- **Syncing with the SkyDemon Mobile MD** [See Appendix](#)

## Sharing Aircraft Profiles

The easiest way to transfer an aircraft profile to a different device is to use the ‘Sync with Cloud’ button at the top of the Aircraft library. Pressing Sync will store your saved aircraft profiles into your SkyDemon Cloud, as well as loading any that have been synced from other devices.

Alternatively, to transfer an aircraft profile from your PC to an Android device, you need to connect the two via USB and navigate to the SkyDemon folder on the Android device. In the SkyDemon folder you’ll see an Aircraft folder, and you can drag and drop aircraft files directly into this folder for use on your Android device. You’ll need to exit and restart the SkyDemon app before the aircraft profile is available. Your aircraft profiles on your PC are located in the Aircraft folder, within the SkyDemon folder, found in My Documents.



If you would like to share your aircraft profile with a friend, just tap on the aircraft in your library and choose ‘Send by Email’. If a friend has sent an aircraft profile to you by email, it’s just as easy to import it into SkyDemon. Just tap on the aircraft attachment in your email, and choose ‘Copy to SkyDemon’.

The selected aircraft profile is also included when sending a route file by email or AirDrop.

## Sharing User Waypoints

### Transferring Waypoints using Cloud Storage

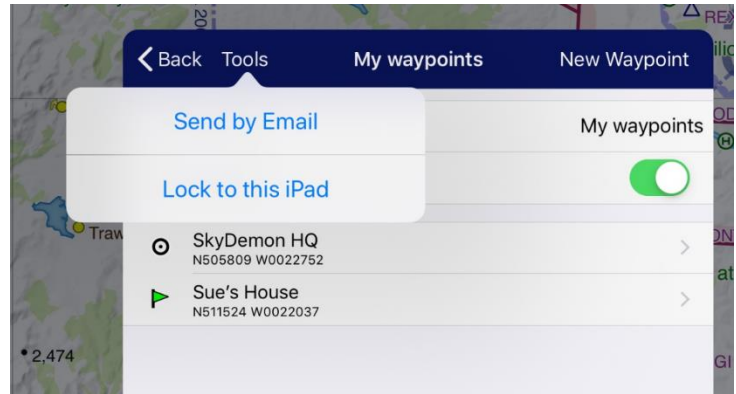
To transfer your user-defined waypoints from one device to another quickly and easily, use the ‘Sync with Cloud’ button in the Waypoints library. All recent changes to your folders will be synced with



your Cloud. Any new waypoints and folders will be synced, and any recently deleted files will be removed.

### Importing/Exporting User Waypoints

To share a folder of user waypoints with a friend from your tablet or phone, open the Tools button at the top of the selected folder in the User Waypoints library and



choose Send by Email. You will need to ensure that the Mail app is set up on your device to use this feature.

PC users need to select the waypoints they want to share and click the 'Export' button at the top of the window. A .gpx file will be generated containing the selected waypoints.

Waypoints can also be imported into SkyDemon in .gpx format. The most common way to do this is by email, but import from other software works too.

To import a .gpx file of waypoints to your PC, just save the file on your computer and use the 'Import' button on the toolbar in the Waypoints library to locate and select your file. The waypoints will then be imported into the selected folder.

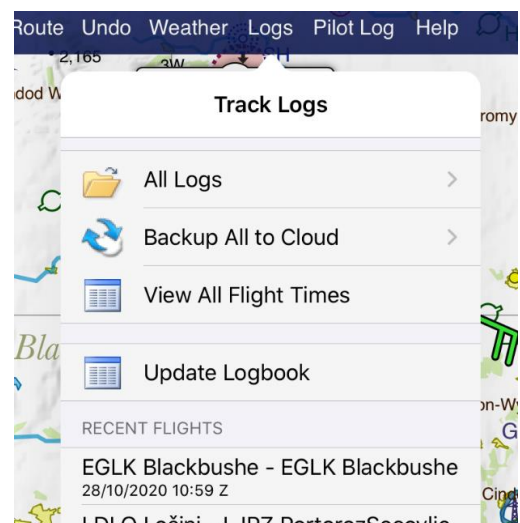
Waypoints can be loaded into SkyDemon for iOS and Android via email. Just tap on the .gpx attachment in the email to load the waypoint contents into your library.

## Transferring Logs

### Transferring Logs using the Cloud

The simplest way to share logs between your iPad, iPhone, Android device and PC is by backing up all your log files to the Cloud. On the PC this option is found in the Analysis menu. For tablet and phone users, open the Logs menu and tap 'Backup All to Cloud'. When a log is opened from the Cloud on your iPad, iPhone or Android device, a copy is automatically saved in your Logs library.

You can choose to sort your logs in the Cloud alphabetically, or by date, for ease of reference.



## Sending Logs via Email

Logs can also be shared via email. iPad, iPhone and Android users will see the option to send a log via email when viewing individual logs in the Logs library, and tapping the Send by Email button will generate an email in your mail app containing the log in our native .flightlog format, as well as in .gpx format, and .kml format for viewing in Google Earth. If you're emailing yourself a log to be opened in SkyDemon Plan on your PC, the log (in .flightlog format) should be saved in the Logs folder found in your SkyDemon folder in My Documents. Once it's saved to the correct folder, you can access the logs library in SkyDemon by clicking the Logs button on the toolbar. When opening a log from an email attachment on iOS or Android, the file is automatically saved to your logs library.

It is also possible to open GPX log files in SkyDemon Plan on your PC. To do this click the Analysis button on the toolbar, and click 'Open Flight Log' then click the link to open from a different location or with a different file type. Navigate to the folder in which you have saved your GPX file and select it, and the breadcrumbs will appear on the SkyDemon map.

## Transferring Logs between PC and Android

Logs can also be transferred easily from PC to Android and vice versa. You'll find the Logs folder in the SkyDemon folder on your Android device (Android > data > aero.skydemon.skydemonandroid > files > Logs) when the two are connected via USB. Logs that are copied into this folder are immediately available to view on your Android phone or tablet.

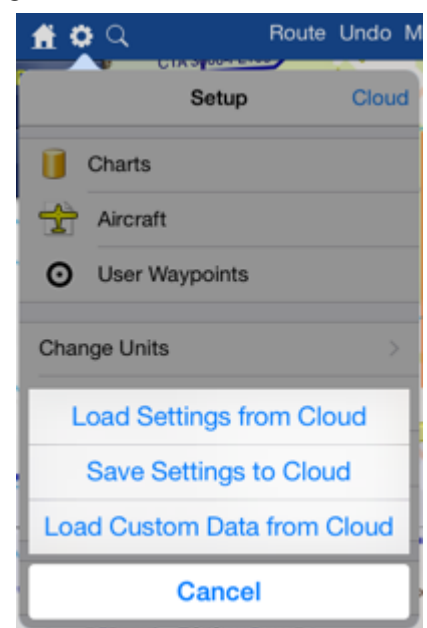
## Saving Your Settings

At the top of the Setup menu you will see a Cloud button. Tapping this button gives you the option to save all your Settings to the Cloud, or load any previously saved settings from the Cloud. This means that you can set up your preferences for Minimum Safe Altitudes, weather conditions, planning and navigation warnings etc., on one device, then save them to the Cloud to be opened on another.

If you have saved your settings to the Cloud they are automatically loaded when you log into SkyDemon on a new device.

## Sharing Custom Data

The simplest way to send your Custom Data to an iPad, iPhone or Android device is to use the Cloud. In SkyDemon Plan for PC open



the Setup menu and click Custom Data, then Save to Cloud. Then on your phone or tablet just open the Setup menu and tap the Cloud button, then choose 'Load Custom Data from Cloud'.

To transfer custom data to your Android device, just connect the USB cable and open the device files, where you will see a SkyDemon folder. This folder contains a Custom Data folder, and this is where you can drag or copy custom data files from the SkyDemon folder on your computer.

## 9. Ready to Fly

### Filing a VFR Flightplan

SkyDemon can file a VFR flightplan electronically once you have planned it, with only a couple of clicks of the mouse. This service is charged for separately; you can purchase a block of credits in our [online store](#), and a credit is used each time you file a plan.

Before you start, it is recommended to set up your aircraft profile via the Setup menu, to ensure that flightplan-specific items are filled in. This includes the aircraft identification, ICAO type designator, coms/nav equipment and aircraft colours/marking, which are all required in a VFR flightplan.

Tip: If you're not sure of the correct type designator for your aircraft you can check DOC 8643 on the [ICAO website](#).

Once your route is planned, you'll find the 'File Flightplan' button in the Route menu on your tablet or phone, as well as in the Warnings tab if your route crosses an FIR boundary. PC users will find the 'Create ICAO Flightplan' button in the Go Flying menu.

SkyDemon is able to complete most of the form for you, so you'll be presented with a simple window prompting you to enter pilot details, departure time and survival equipment.

If there are any errors in the form, you'll see an explanatory message at the top of the window on your tablet or phone to help resolve them.



Once the form is complete, and you have enough flightplan credits, just tap 'Continue' to file your flightplan to all relevant ATC units.

Once a flightplan has been filed it can be subsequently delayed, cancelled or closed in the Flightplan Management tool which is accessible from the Setup menu in SkyDemon.

## Filing a GAR

Sometimes it will be necessary to file a General Aviation Report (GAR) for your planned flight, as well as a VFR

You need to submit a UK GAR to Border Force for this flight, at least 2 hours in advance.



Flightplan. Typically UK inbound and outbound flights will require a GAR to be sent, although the specifications for when a GAR should be submitted and how far in advance are a little more complex. If a GAR should be submitted for your planned flight you'll see a blue notification of this in the Flight Details window to the right of the map on the PC, or in the red Warnings tab on your tablet or phone. It will indicate if a GAR is required, and how much time in advance it should be submitted. Just click on this notification and SkyDemon will take you to the UK government's website in your device's web browser, where you can sign up and log into their sGAR service for filing free online GARs. This is a third-party service.



## 10. In-Flight Navigation

When you have completed your flight-planning preparations and you're ready to fly you just need to switch SkyDemon into navigation mode. To do this press the Go Flying, or Fly button in the top right-hand corner of the screen on your iPad, iPhone or Android device. As long as your phone or tablet has GPS capabilities, SkyDemon will show your position on the map marked with a yellow aircraft symbol, and you'll see instruments around the edges of the map to help you navigate.

The navigation features in SkyDemon are all designed to keep you safe and well-informed during your flight. You'll spend less time worrying about your navigation and more time looking out of the window enjoying the experience.

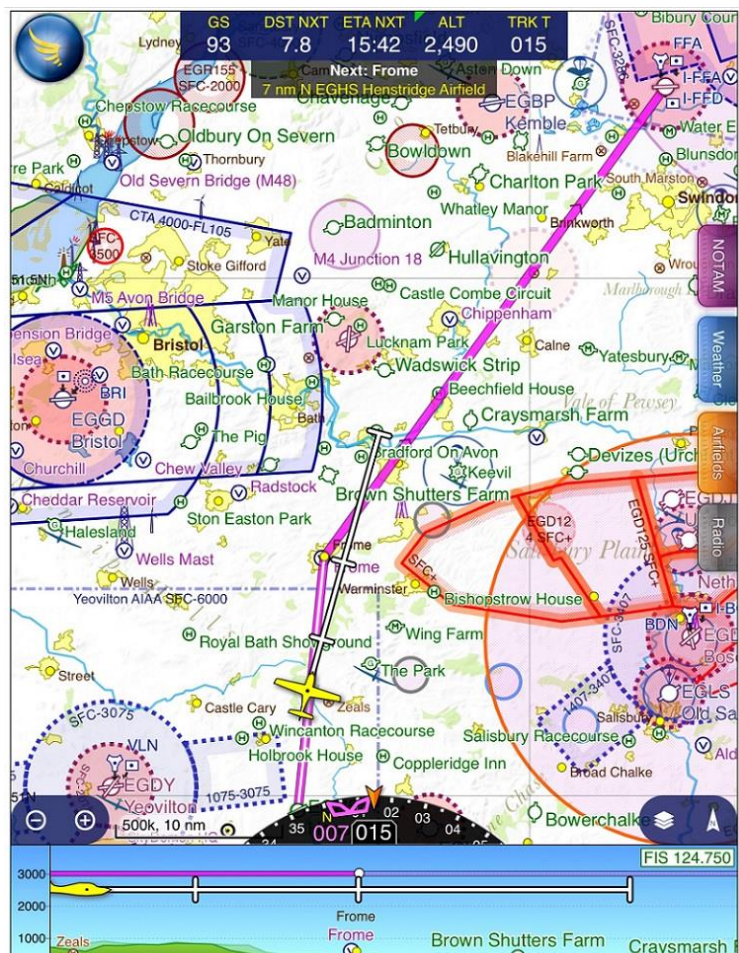
The following sections will go into more detail on how to get the most out of the instruments and features available in Go Flying mode.

### Simulation

If you don't have any GPS hardware but just want to play with the GPS navigation features, you can turn on the simulator. If you're using SkyDemon Plan for PC, open

the Go Flying menu on the toolbar and select Start Simulator, and the software will change to navigation mode just as if it were receiving GPS data. You will see buttons to enter navigation mode at the top of the iPad, iPhone and Android apps, labelled Simulate and Go Flying. The aircraft can be controlled with the keyboard: left arrow turns left, right arrow turns right, up arrow increases speed, down arrow decreases speed, plus increases altitude, minus decreases altitude. You can also press Q to advance the aircraft by one mile, if you're impatient. You can also move the aircraft around using your mouse, or your finger on your tablet or phone. All the warnings and navigation aids will be active as if you were in flight, but a flight log will not be produced.

The simulator is a great way to try the SkyDemon navigation facilities before your flight.



## Manual Logging

When you take off, SkyDemon will automatically begin to log your flight, and will continue to log until you land, or press the Stop Navigating button in the main menu.

If you would prefer to start your log sooner, you'll see options to Log Engine On, and Log Off Blocks in the Virtual Radar at the bottom of the screen when you're on the ground. If you choose to start your log from Engine On, SkyDemon will automatically record Off Blocks time when the aircraft starts moving.

It is also possible to manually log your takeoff and subsequent landing, which may be helpful for pilots whose aircraft characteristics mean that SkyDemon cannot always log the takeoff and landing time automatically. Open the main navigation menu in the top left corner of the screen and tap the Logging button for your options.

After you have landed, the logging options will reappear at the bottom of the screen and will now offer buttons to Log On Blocks and Log Engine Off. SkyDemon will automatically log On Blocks from the time you last moved before tapping Engine Off.

These events will be recorded in your log and listed in the Log statistics and Debriefing Pack so you have more precise timings if required.

**TIP:** After your flight, don't forget to press the 'Back to Planning Mode' button.

You can write a free-form note at any stage in your flight, which will be included in the Debriefing Pack for the log after your trip. To do this, open the main navigation menu and tap Logging.



## The Moving Map

The SkyDemon chart follows the position of the aircraft, aligning itself so that most of the map covers the path ahead of you. The yellow aircraft symbol shows your current position on the map, with a trajectory line indicating 2, 5 and 10 minutes or miles ahead. You can choose whether to show distance or time ahead for yourself in the Setup menu under Navigation options.



When you drag the map around to explore it, it will revert to following the aircraft when you have left it alone for about 15 seconds. You can also zoom back to your current position by tapping on the yellow arrow.

### Auto Zooming

As you leave your takeoff airfield, and when you approach your destination, SkyDemon will automatically zoom in and out to ensure that you and the airfield are onscreen at the same time, giving you as much map detail as possible. When you're on the ground, the map will be zoomed in to 1:10k scale so you can clearly see taxiways and runways, then at the moment of takeoff you'll be zoomed to 1:50k scale so that circuits and noise abatement areas are visible. When you leave the airfield completely you'll be zoomed to 1:500k scale, or whatever you have set as your preferred scale for the cruise.

When you get close to your destination, the map will gradually zoom from your preferred cruise scale right down to 1:50k scale so you can see circuits and other features in the airfield vicinity. You and your destination airfield will be kept onscreen as the map zooms, no matter which chart orientation you have chosen, and if you change your mind and leave the airfield area, you'll be zoomed back out again.

Auto Zoom can be turned off at any time: just tap the North indicator button in the bottom right-hand corner of the map and you'll see the option to toggle Auto Zoom on/off. You will also find that Auto Zooming is suspended during the takeoff and approach phases if you choose to manually change the zoom level by pinching or using the zoom buttons. Auto Zooming will then resume for your next takeoff or landing, or you can manually resume Auto Zoom in the chart orientation menu by tapping the north indicator button in the bottom-right of the map.





## Chart Orientation

The orientation of the chart can be changed so that north is always up (the default), track is always up (so the map rotates as you turn) or your course is always up (so the map rotates for each leg of your journey). To change the chart orientation, just tap on the blue North Indicator button on the toolbar in the bottom right-hand corner of the map.



## Position Reporting

SkyDemon can give you a plain-English position report at any time. This information is always displayed at the top of the map on iPad and Android and gives quick access to the Live Pilot Log when tapped. The nearest significant waypoint to your current position is found and an 8-point compass bearing from it is taken and shown onscreen. This is very useful when asked to provide such information by ATC as you would otherwise not have it to hand. iPhone users just need to tap their yellow aircraft symbol to show the position report.



The position report will show nearby waypoints such as airfields when switched to VFR mode, while in Airways mode the position report will indicate the nearest significant airways reporting point or navigation aid. When you're on the ground the position report will reflect this, and give useful runway information.

**TIP:** Tap on any point on the map to bring up the “What’s Here?” menu. Your distance, time and bearing to/from that point will be displayed in bold at the top of the window.

### Track Waypoint

If you would like the position report to show a real-time update of your position in relation to a particular waypoint you can use the 'Track Waypoint' button, which is found in the "What's Here?" menu. Just press and hold your finger on the waypoint you wish to track, then in the waypoint routing menu tap 'Track Waypoint'. The position report at the top of the map will then show your relative distance and bearing to the selected waypoint as you follow your route. To stop tracking, just tap the position report.

You can also track any waypoint by bringing up the “What’s Here?” menu and tapping on the bold, blue distance/bearing readout at the top of the menu.



## Track Radial

The Track Radial function gives the option to track or intercept a given radial from a waypoint using the HSI. To use this function it must first be switched on in the Setup > Navigation Options menu under the 'Advanced Tools' section at the bottom of the window. When the function is enabled, it is activated via the "What's Here?" menu in flight. Press and hold your finger on the waypoint you want to specify a bearing from, and in the waypoint routing options choose 'Track Radial'. Type in the radial and a small magenta line will appear on the map through the selected waypoint. You'll see the distance and bearings to/from the waypoint in the position report at the top of the map (or just the bearing 'from' if it's a VOR) and in addition to this the HSI enters a 'track' mode where you can see the cross-track error relative to the radial you have selected. Each dot on the HSI equals one nautical mile, and the magenta bug points to the radial you have entered.



Just like the 'Track Waypoint' feature, to stop tracking a radial just tap the position report at the top of the map.

## Live Pilot Log

The Live Pilot Log in Go Flying mode is adapted to focus on displaying all the useful information that you might need at each stage of your flight. It contains boxes showing the log start time, takeoff time, landing time and log stop time, as well as the flight time and distance. In the waypoints section, much like the planning Pilot Log, you'll see columns for minimum safe altitudes, groundspeed and headings, but the Live PLOG also includes columns for your ETA and ATA, which are updated to show your ETA to waypoints you have yet to reach, and the ATA at those you have already passed. In addition to this, a green bar is drawn to indicate your progress along each leg of your route.

The communication frequencies change so they reflect services you can use from your current position (or in the next 10 minutes) and services from nearby airfields. The navigation frequencies are also updated dynamically so they reflect nearby beacons, based on your current position. You'll also see frequencies relevant to your planned route.

The Live Pilot Log is located in the main navigation menu in Go Flying mode, by tapping the blue SkyDemon icon in the top left-hand corner of the screen.

Tip: You can gain quick access to the Live PLOG by tapping the position report at the top of the screen at any time.



## Adjusting your route in the Live Pilot Log

As well as providing useful information and frequencies, the Live Pilot Log also allows you to make adjustments to your planned route. To do this you just need to tap on a waypoint in the first column of the PLOG, and you'll be presented with options for removing the waypoint from your route, or inserting another intermediate waypoint before the selected one. There's also an option to route directly to the chosen waypoint in the list.

## Radio

In Go Flying mode SkyDemon provides instant access to frequencies and listening squawks at your current location, and coming up next. To access this list, just open the grey Radio tab located to the right of the map. The Radio tab updates as you fly, and will provide useful frequencies even if no route is planned. The list is clearly sorted into 'Frequencies Now' for your current position, and 'Frequencies Next' which looks at your trajectory ahead. Below these sections you'll see nearby airfields within 25nm offering an ATIS, as well as frequencies for your planned destination (and alternate) airfield. You can tap on an entry in the list to show its boundary or area of coverage on the map highlighted in yellow.

At the top of the Radio tab you'll also see a pressure setting (QNH) taken from the nearest airfield with a recent METAR bulletin.

Radio	
<b>Pressure Setting</b>	
EGPH Edinburgh	1007 hPa
<b>Frequencies Now</b>	
Edinburgh Approach Edinburgh CTR	121.205
Edinburgh Radar Frequency Monitoring Code	121.205 0440
Edinburgh Approach Edinburgh ATZ	121.205
Scottish Information Flight Information Service	119.875
Leuchars Zone LARS	126.500
<b>Frequencies Next</b>	
Perth Radio Perth ATZ, 27 nm, 10 min	121.080
<b>Perth/Score (29 nm)</b>	
Perth Radio	121.080

## Direct To

SkyDemon includes a Direct To functionality to help you quickly draw a route from your current position straight to an airfield of your choice.

To activate Direct To, open the Flight menu (the blue SkyDemon orb) and select Direct To. A list of nearby airfields is shown whose longest runway is at least the length you have configured in your selected Aircraft Profile. The information includes the airfield name, runway length, surface type and a rough bearing to the airfield from your current position.

Cancel	Direct To	Find
	<b>Compton Abbas</b> EGHA 803m 51 nm	
	<b>Blackbushe</b> EGLK 1,335m 3.2 nm	
	<b>Odiham</b> EGVO 1,839m 3.3 nm	
	<b>Farnborough</b> EGLF 2,440m 4.5 nm	
	<b>Lasham</b> EGHL 1,734m 7.6 nm	
	<b>Brimpton</b> EGLP 620m 12 nm	
	<b>Hill Top Farm</b> 310m 13 nm	
	<b>Fairoaks</b> EGTF 810m 13 nm	
	<b>Popham</b> 900m	



Your home airfield, if you have one set, is at the top of the list. Airfields highlighted in green are within your gliding range.

If you would like to fly direct to, or shortcut via an airfield or waypoint that's not included in the list you can use the 'Find' button at the top of the map to perform a search. You can search by name, ICAO identifier, OS grid reference, or even a postcode and SkyDemon will produce a list of relevant results. Just tap on the desired waypoint and choose 'Route Direct'.



**TIP:** You can quickly trigger the Direct To list by pressing and holding on the main SkyDemon icon in the top left-hand corner of the map. It's a good idea to become familiar with doing this in case you ever need to do so in an urgent situation.

The 'Find' window also includes a list of waypoints further along your planned route. Selecting one will have the effect of routing direct to that waypoint, but does not affect the remaining route extending beyond that point. In this case the function serves as a shortcut.

The other way to route direct to a waypoint that is not part of your route is to press and hold that point on the map, tap the Routing button for the airfield and choose 'Route Direct'. This will plot a course from your current position direct to your chosen waypoint.

## Adjusting your Route In Flight

When you're in flight you'll find that it's no longer possible to adjust your route by simply dragging your magenta line to create a new waypoint. Some touchscreen devices can be fairly sensitive and can be easily knocked when you're flying, and so to avoid making accidental adjustments to your route, the function is disabled. If you need to make an adjustment to your route you simply need to tap on the leg you want to adjust, and this will temporarily reveal the leg's distance, time and magnetic heading. When this information is revealed the leg is temporarily unlocked, which means it can be rubber-banded, just like in planning mode.



Alternatively you can press and hold on the map to bring up the "What's Here?" menu, where you'll find options to 'Insert in Route', 'Append to Route' and 'Route Direct' under the selected waypoint options.



You may have plotted your route in order to skirt around a piece of airspace for which you may or may not have permission to transit, and so it may be necessary (or preferable) to adjust your route in flight after obtaining clearance to enter that airspace. In this instance you can use the Take Shortcut button to create a shortcut to a waypoint further along your route, provided that this next waypoint is a known waypoint within the SkyDemon database. Tap the Find button next to the position report box at the top of the map to find a list of waypoints further along your route. Tap on the one you want to shortcut to and choose 'Take Shortcut'. Alternatively, just press and hold on the waypoint you want to shortcut to in your planned route, then select the waypoint in the "What's Here?" menu to find your routing options.

## Instruments

The navigation Instruments are displayed around the edges of the main map in Go Flying mode. You may wish to hide certain instruments, or change their size depending on the amount of screen space your device has available. These settings are located under Navigation Options in the Setup menu.

Some instruments can be toggled, just by tapping on them. For example, to switch between showing the distance to the next waypoint (DST NXT) and the distance to the end of the route (DST END) just tap once on the Distance instrument. The same applies to the time instrument (tap to toggle between ETA NXT, ETE NXT, ETA END and ETE END), the altitude instrument (which can be toggled to show height) and the Wind instrument.

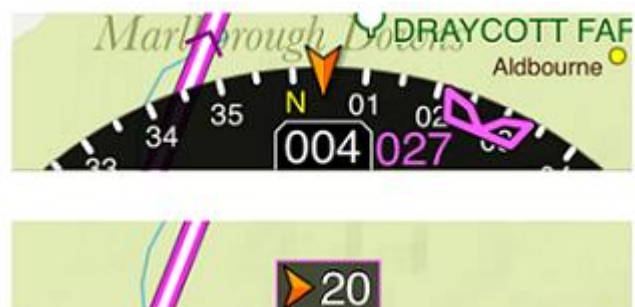
If you have planned a local route, the Distance and Time instruments will show the distance and time to get back to your base airfield.

### Direction Indicator / Course Correction Indicator

The Direction Indicator is a compass rose displayed at the bottom of the main map, which rotates such that your current track over the ground is displayed at the top as an orange arrow.

When flying a course, a magenta bug appears on the outside of the dial representing the track you should be flying to get to your next waypoint. Aligning the bug with the orange marker at the top of the dial will ensure that you reach your next waypoint.

The values shown on the direction indicator refer to your current track (the number in the middle), as well as the bearing for your next planned waypoint to the left of right, depending on which way you need to turn. They are shown in degrees true by default but can be switched to degrees magnetic from the instrument settings.



**TIP:** When flying, the magnetic heading of your next leg is automatically displayed on the magenta route line as you approach your turning point.

You can choose to hide the direction indicator by simply tapping on it, if you find that you would rather see more of the map. When you tap on the direction indicator it is replaced by a small instrument called the course correction indicator. When you are navigating towards a waypoint, the course correction indicator shows when you need to make a course adjustment, such as to turn left by 20 degrees. You can see both instruments in the image above.

It is also possible to pull out the direction indicator to reveal the full Horizontal Situation Indicator, allowing for a better understanding of your position. This instrument is overlaid on the map and can be moved around or enlarged as desired.

The Direction Indicator is switched off by default on the iPhone app, but can be turned back on if desired by tapping the main menu and choosing Setup then Instruments.

### Groundspeed

Groundspeed (GS) is shown in a simple square instrument in Go Flying mode. The exact speed of the aircraft over the ground is displayed, with knots being the default unit.

**TIP:** To change the units used throughout your device for distances, speeds and more, this is done in Planning mode under Setup > Change Units. To switch back to Planning mode tap the main flight menu and choose 'Stop Navigating'.

### Wind

The Wind instrument uses downloaded forecasts to show the average wind at your current position and altitude. It displays the wind speed and direction with the standard wind feather icon by default, but can be



tapped to show arrows indicating headwind/tailwind and crosswind. Just remember, SkyDemon has no way of detecting what the wind is really doing, so this instrument is based on forecasts that were downloaded the last time you had an internet connection. If there are no valid wind forecasts for the time that you're flying, the instrument will display a red cross.

### Altimeter

Altitude above local mean sea level is shown in a simple square instrument with the ALT header on your phone or tablet. The altitude is derived from GPS, which means it will not normally be as

accurate as a properly-set pressure altimeter. Units are always feet. A small coloured flag in the top left corner of the instrument indicates the accuracy of the altitude readout with a 95% certainty:



**Blue**  
Accuracy within 50 feet



**Orange**  
Accuracy within 250 feet



**Green**  
Accuracy within 100 feet



**Red**  
More than 250 feet of inaccuracy



**Yellow**  
Accuracy within 150 feet

The simple square altitude reading can additionally be switched to display height rather than altitude. This is done by simply tapping on the Altitude instrument. When in height mode it shows your height above the highest terrain within half a nautical mile. This means that if you switch to height mode while standing on the ground you will normally see a negative reading. The height mode is designed to facilitate navigation underneath airspace whose lower boundary is defined by a height above ground level.

### Horizontal Situation Indicator / Pseudo ILS

The HSI can be viewed by dragging the DI out onto the main map with your finger. It combines a direction indicator (with bug) on the outside of the dial with a display of the aircraft's position relative to the leg you are currently navigating in the interior. A dotted scale (each dot represents 1 mile) makes it easy to determine at a glance how far away from your planned course you are.



When you are on final approach to a runway and the SkyDemon charts contain sufficient data, the HSI will switch into ILS mode. A corresponding change will be observed in other instruments: the distance instrument will read the distance to the threshold, the time instrument will read the time enroute to the threshold (ETE THR), and the position instrument will read something like "Apch: EGDY R27". When in ILS mode the HSI functions in a similar way to an ILS, although all information is based solely on GPS readings as opposed to any ground-based instrument. This brings benefits such as being able to practice instrument approaches to strips that do not actually have a localiser or glideslope but you should always bear in mind that being based on GPS, the data cannot be relied upon as your sole means of guidance.



The ILS can also provide vertical guidance along a user-defined glideslope. This facility is disabled by default and needs to be manually switched on from the Navigation Options window under Setup, and an additional disclaimer agreed to. Any vertical guidance offered by the SkyDemon ILS should always be compared to your cockpit instruments. Regardless, the vertical guidance will cancel when you descend through 500ft above aerodrome level.

When in ILS mode, each lateral dot is half a degree, so the entire visible scale spans about six degrees. On the vertical scale each dot is 0.1 degrees, with the field of view approximately 1.4 degrees in total.

### Virtual Radar

This powerful instrument placed underneath the chart shows a projection of your current course and all the objects of relevance in your path. This data is a snapshot taken every five to ten seconds, laid out with your current position on the left and the extremity of your path ahead on the right.

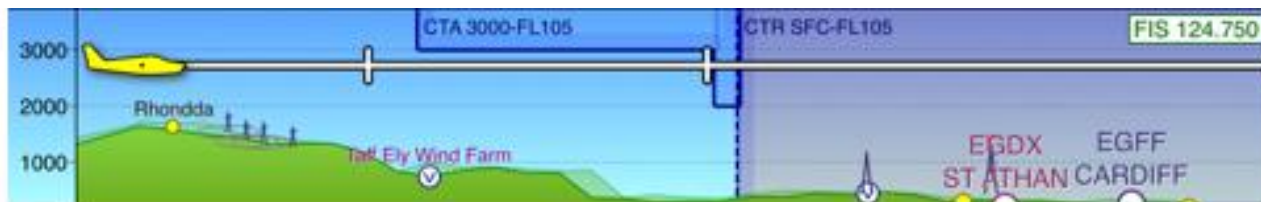
The aircraft symbol represents your current position. A line denoting vertical trajectory projects from the aircraft, with the same dots representing 2, 5 and 10 minutes ahead (or miles, if you have specified this in the Navigation Options menu in Setup). This gives an idea of current vertical speed and where your ascent or descent will leave you after a period of time.

Tip: Slide your finger up or down the left-hand margin of the Virtual Radar to adjust the height of the window.





Terrain is laid out in front of you, making it very easy to detect any unintended proximity to it. Airfields, towns, reporting points and obstructions that you will pass close to are also displayed, as well as FIS frequencies and sector boundaries that are coming up.



This instrument has a “What’s Here?” menu that can be used to inspect certain features on it, just like the main map. Hold your finger on any part of it to see the list of objects that you can inspect. Another feature of the “What’s Here?” menu is that it will tell you the distance and time to reach the point at your fingertip. So, if ATC ask you for your estimated time to a reporting point, you have only to hold your finger down on the reporting point in virtual radar and you’ll be able to give an exact answer.

Tip: Swipe your finger from right to left across the Virtual Radar window to quickly shortcut to the Scratchpad.



# Warnings and Navigation Aids

SkyDemon looks after you during flight by constantly monitoring your position and trajectory ahead, looking for potential hazards. Anything that could cause a problem to the flight is displayed as a warning, with a prominent notification onscreen and an audible and verbal alert. This is powered by our virtual radar technology and warnings can be configured in the Setup menu under Navigation Options on the iPad, iPhone and Android app. You can even play a test warning sound from this menu to check the volume settings ahead of time.

**TIP:** There are no volume control settings within the iOS and Android apps themselves so if you want to reduce audible alerts use the volume control on the side of the tablet or phone. Alternatively you can disable sound and/or speech warnings in the Navigation Options menu.

You have the option to switch between VFR mode and Airways mode, and the warnings that appear are subsequently tailored to the mode you have selected. This means that in Airways mode airspace warnings that would usually apply for VFR operations will be suppressed, as they are no longer relevant. You will still see any warnings regarding terrain or obstacles, where applicable.

## Runway Alerts

When taxiing on the ground, SkyDemon will produce a verbal alert when you are about to enter a runway. This is intended to help prevent runway incursions, and to provide reassurance that you are lining up on the correct runway.

## Airspace Warnings

Airspace warnings are shown when your trajectory, both horizontal and vertical, would take you into a piece of airspace. An onscreen warning is accompanied by an audible alert, the form of which depends on the type of airspace, and a thick border is drawn on the map accompanied by large coloured arrows so you can clearly see which piece of airspace is associated with the warning. The following table lists the types of airspace for which warnings are shown:

Airspace Type	Warnings Shown	Warning Colour
Prohibited Areas Restricted Areas Danger Areas	Yes	Red
Controlled Airspace (A)	Yes	Red
Controlled Airspace (B, C, D)	Yes	Yellow
Intensive Gliding/Sporting Areas	Yes	Grey
Controlled Airspace (E, F)	Optional	Yellow
MATZ / ATZ	Optional	Blue



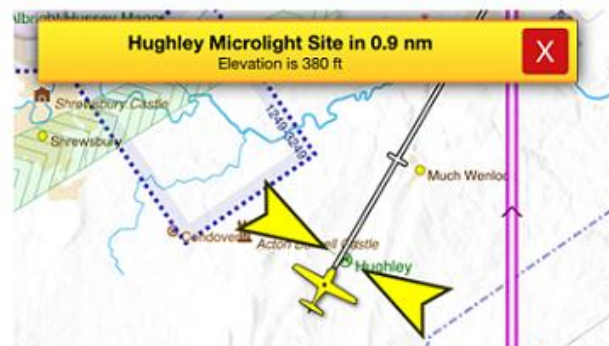
TMZ / RMZ	Optional	Blue
-----------	----------	------

When a warning is shown, it will stay onscreen until either it is dismissed or it is no longer applicable. The warning contains the name of the airspace, its distance ahead (or above or below) and, where available, a radio station to contact to obtain clearance or information. You can request further information about the airspace by touching the question mark, or dismiss it by touching the cross. Once dismissed, no further warnings about that piece of airspace will be displayed for five minutes.

Airspace warnings can optionally be suppressed while you are adhering to the route you have planned. To enable this, check the "Supress warnings when flying planned course" box in the Navigation Options > Warnings window, accessible from the Setup menu.

### Airfield Proximity Warnings

An in-flight warning will be triggered if you are flying very close to an airfield you have not planned to land at. The warning will appear when you're flying within 1nm laterally, and within 1500ft vertically of an airfield, glider site or microlight site, even if you have adjusted your Mapping settings to hide that type of site.

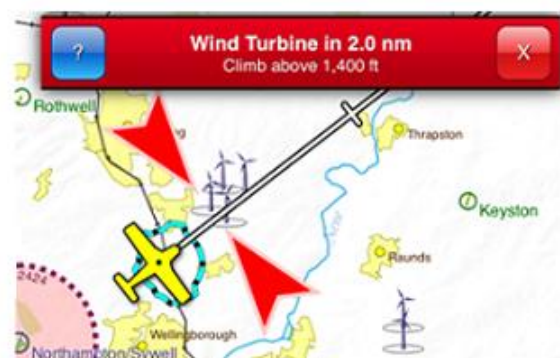


NOTE: If no route is planned on the map (therefore SkyDemon doesn't know where you plan to land or fly), no airfield proximity warnings will be triggered.

### Obstruction Warnings

Obstruction warnings are displayed when your trajectory, both horizontal and vertical, would take you within predefined limits of a fixed ground-based obstacle such as an antenna. An onscreen warning is accompanied by an audible alert. In the figure on the right, the aircraft is clearly at risk from the wind turbine ahead of it.

When a warning is shown, it will stay onscreen until either it is dismissed or it is no longer applicable. The warning contains the type of obstruction, its distance ahead and advisory action to climb clear of it. Further information can be displayed by touching the question mark, and the warning can be dismissed by



touching the cross. Once dismissed, no further warnings about the obstruction will be displayed for five minutes.

### Airspace Notifications

Not to be confused with warnings, a notification is displayed whenever you enter or exit a piece of airspace. This is handy when ATC have asked you to advise them when you have entered or exited a zone.

Similar alerts will also appear when entering the coverage area of a new Flight Information Service.



### Extended Runway Centrelines

As you approach an airfield that is part of your planned route, all its extended runway centrelines are drawn on the main map so that you can align yourself early if you wish to. When you are lined up along an extended centreline and flying towards the runway threshold, you will see the instruments change to reflect that you are on approach.

The centreline that most closely aligns with your position is highlighted and this will update automatically as you fly around the airfield.

You can manually select the runway you wish to use by simply tapping the runway identifier on the map. The one that is selected will be highlighted green, and you'll be presented with a menu enabling you to choose the circuit direction and join



type, which will subsequently be drawn on the map for orientation. To remove the circuit and join depictions just tap on the green runway identifier again and choose 'Cancel Current Approach'.

In order to use the extended runway centrelines and other approach tools, you'll need to make sure that you have enabled them in the Navigation Options menu under Setup. You'll also see the option in this menu to configure the relative distance at which the approach tools, including the Airfield Brief, will appear.

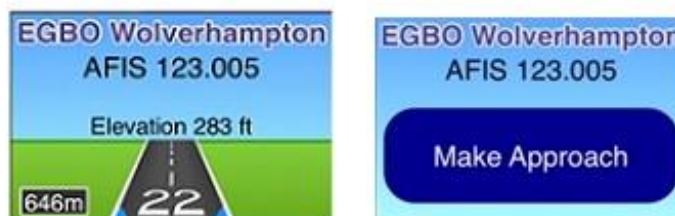


## Airfield Brief

When you're on approach, or on the ground, the Airfield Brief tool will appear in the bottom right-hand corner of the screen alongside the Virtual Radar. This tool is designed to give pertinent airfield and runway information to help on approach, such as giving quick access to nearby VRPs and Airfield Information, or runways that you can select for approach.

When you're on the ground, the Airfield Brief lets you quickly access the Airfield Information, and in many cases, you can also use the Airfield

Brief to locate and highlight specific taxiways and holds at the airfield, where available.



Just tap on the Airfield Brief to make, or cancel, an approach.

When making an approach, SkyDemon lists all available runways, with their length and surface. After choosing the appropriate runway, the next step is to select the circuit and join type. Left-hand or right-hand circuits are pre-selected in this menu, where possible.

In many cases, SkyDemon knows the precise circuit patterns, which will be drawn on the map after making your selection. Traffic guidance to all other runways is then hidden to reduce clutter. If no circuit data is available at an airfield, SkyDemon offers guidance for orientation purposes only.

If your destination airfield has AIP Instrument Approach plates available, they will be listed in the Airfield Brief under the category 'Make Instrument Approach', as long as you have enabled IFR features in the Planning Options menu. This allows quick access to any georeferenced plates that can be overlaid on the map.

## Glide Range

When flying over water or mountainous terrain, or even just for your own peace of mind, you can switch on the option to Show Glide Range. On your iPad, iPhone and Android device this can be found in the Setup menu under Navigation Options, and when it is turned on you will see that a turquoise ring appears on the map around your aircraft symbol depicting the maximum radius where it is safe for you to glide if you were to encounter an engine problem, for example.





The glide range takes altitude, forecast wind speed and direction, as well as your glide ratio into account when depicting the glide safety radius around your aircraft, so a strong headwind would minimise your glide radius ahead, and a tailwind would have the opposite effect. The Glide Range tool can be set to show your glide range to the ground, or to a height up to 2000ft. When set to glide to the surface, you'll see a black and turquoise dotted circle around your aircraft. If you have chosen to see the glide range to 1000ft or 2000ft AGL, the circle will be plain turquoise.

By default, the Glide Range is set to appear only when you're flying over water, however you can adjust the setting in Navigation Options to 'Always', if you prefer.

When flying over water, the ring will always revert to showing your glide range to the surface.

## Colour High Terrain

The Colour High Terrain feature enables dynamic colouring of terrain based on your current altitude. Terrain higher than 500ft below your current level is highlighted red on the map to indicate that it is a potential hazard. This feature is particularly useful when flying in mountainous areas to help visualise mountain passes and valleys more clearly.

To use this feature you'll need to open the Mapping menu and toggle on Colour High Terrain. There's a useful tooltip to help explain the terrain colouring on the map based on your current altitude.



**TIP:** To quickly access the Mapping menu on iOS and Android just tap the blue Map Layers icon on the toolbar in the bottom right-hand corner of the map.



## Other Tools

### In-Flight Timers

SkyDemon allows you to define timers on your tablet or smartphone to remind you to perform certain tasks periodically. These can be very useful for repetitive tasks like remembering to change fuel tanks. To access the In-Flight Timers screen, choose Setup from the main menu in Go Flying mode, or from the toolbar in Planning mode, then tap Navigation Options and choose In-Flight Timers.

To create a new timer press the + button. A timer has a piece of text or a name which is displayed when the timed interval is reached. This might be something like "Perform FREDA Check".



The interval sets how many minutes elapse between the timers being triggered. Timers are only triggered when in flight, so the first time the timer is triggered will be the interval number of minutes after takeoff.

A timer can be set to appear for a few seconds, in the same way as a position report, or to remain onscreen until manually dismissed, in the same way as an airspace warning. Choose 'transitive' if you only want your timer to be displayed on the screen for a few seconds, or 'persistent' if you'd like it to be shown until it's manually dismissed.

**TIP:** To delete a timer on the iPad/iPhone, open the Setup menu and tap Navigation Options then open the In-Flight Timers window. Swipe your finger across the box containing the saved timer you wish to remove and the red 'Delete' button will appear. Android users should press and hold their finger on the timer they would like to delete from the list.

### Scratchpad

This is a simple canvas which you can write or draw on with your finger to jot down quick notes. The contents of the canvas are retained until you manually clear it.

In the iOS and Android apps the scratchpad can be accessed easily from the main menu when you're in Go Flying mode and contains multiple pages that can be scrolled through using the 'Next Page' buttons.

Users with a compatible iPad (iOS 13+) can also make use of a variety of drawing tools in the scratchpad, and Apple Pencil is also supported.

**Tip:** To quickly access the scratchpad swipe your finger from right to left across the Virtual Radar at the bottom of the screen.

The contents of your scratchpad can also be accessed in Planning mode, via the Logs menu.



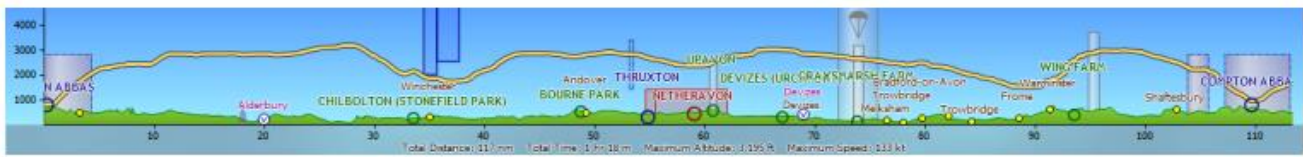
## Drop a Waypoint

During your flight, you may wish to mark your current position on the map by dropping a user waypoint. Open the main navigation menu by tapping the blue SkyDemon icon in the top left corner, and choose 'Create User Waypoint Here'. A waypoint will be instantaneously dropped at your current position with a default name (Waypoint1, Waypoint 2 and so on), so you don't need to worry about typing as you fly. When your journey is complete, you'll find all of your in-flight user waypoints in your Waypoints library, in a local folder entitled 'Dropped in Flight'. These waypoints can be edited and moved to syncable folders as desired.





## Flight Log Analysis



Maintaining a collection of logs of all the flights you have undertaken is a great way to remember them. SkyDemon automatically logs your flight at takeoff in Go Flying mode, and after you land the log is saved in your Logs library for post-flight analysis. The log includes information about your takeoff and landing, as well as the distance flown, max/average speed and altitude.

Your flight logs can be accessed via the Logs button on the toolbar, as well as via the Analysis menu in SkyDemon for PC. Select a log from the library to view further statistics. You can add notes to your logs in this menu, as well as editing the aircraft registration associated with the log in case you had the wrong aircraft profile selected. Logs can also be shared via email from your tablet or phone, as well as the option to share your logs on social media, letting you easily share a map of your flight with your friends.

**TIP:** To delete an unwanted flightlog on your iPad or iPhone just tap the Logs button, choose All My Logs, then swipe your finger to the left across the log you want to delete. A red 'Delete' button will appear which can be tapped to remove the log. To reveal the Delete button on an Android device open the Logs menu, tap All My Logs and press and hold your finger on the log you would like to delete.

When a flight log is opened by pressing 'Explore on Map', it is displayed in the main map as a coloured line showing the flown track on top of the planned route, and also in vertical profile at the bottom of the screen. This provides a definitive record of how the flight interacted with terrain, obstructions, airspace and other features. You can analyse the log statistics by dragging the aircraft symbol in the Virtual Radar along the track with your finger or mouse, and you'll see your elapsed time as well as the speed and altitude at that point along the flight.



Occasionally you will find that your device lost its GPS fix during your flight. If this happens, the log will contain red dots to indicate a lack of GPS data.



To close the flight log and remove it from the main chart, click the close icon to the bottom left of the virtual radar window.

To open a flight log from the Cloud on your PC, just click Analysis and Open Flight Log from Cloud. You'll also find the option to back up all your logs to the Cloud in the Analysis menu.

To open a flight log from a GPX file on your PC, open the Analysis menu and choose Import Flight from File. You will then be prompted to locate and select the required file.

From time to time a banner will appear at the top of the Logs menu to prompt you to leave some feedback for an airfield that you have recently visited. Tapping on the button in this prompt will open the Send Feedback window, where you will be invited to post recent fuel prices, landing fees and other feedback to help other users.

### Merging Logs

Sometimes you may find that your device loses its GPS fix, and this can result in broken logs. To stitch these logs back together to form one continuous log for analysis, just open the first part of the recorded journey from the Logs menu and tap the 'Merge' option at the bottom of the window. This will bring up your list of logs, and you simply need to select the second part of the broken journey to attach to the first, and so on. A new log will then be formed and saved in your library alongside the original 'broken' logs.



## View All Flight Times

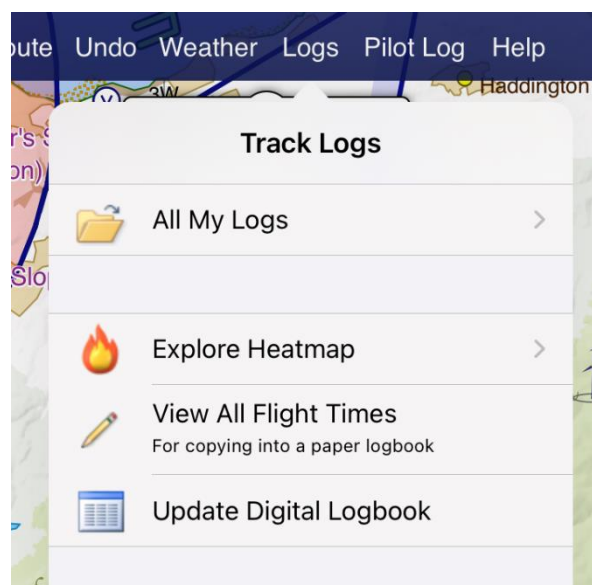
To view a handy table summarising the details of all the logs in your personal Cloud just tap Logs > View All Flight Times. This summary can include columns for takeoff and landing times, logged times, engine and blocks times (where available) and the flight distance. On the PC you'll find this summary in the Analysis menu. If you don't see a particular log in the summary, it may be that you have not yet saved it to the Cloud. Be sure to tap 'Backup All to Cloud' in the Logs menu first, or under 'Analysis' if you're on a PC.

When creating a log summary you can choose a date range to see all logs in your Cloud between those dates, as well as viewing logs by aircraft registration.

After generating your log summary, you might wish to keep a copy of it for your records. Tap the blue hyperlink to email a copy of the summary to yourself in CSV format. This will automatically send an email with the .csv file to the email address that your SkyDemon subscription is registered to.

Alternatively, the log summary can be printed directly.

If you do not want to use your personal SkyDemon Cloud for the log summary, you can disable this option in the Planning Options menu under Setup. If you decide to turn off Cloud usage for the View All Flight Times tool, you'll get a simple summary of logs stored on the device from the past 365 days.



## Viewing Logs in Google Earth

As well as viewing your logs on the SkyDemon map, you also have the option to open them in Google Earth. To do this, open the Logs library from the Logs button on the toolbar, select the specific track log you want to view and choose 'View in Google Earth'. As long as you have Google Earth installed, the app will be launched and your log will be depicted with statistics for your takeoff and landing alongside a virtual 3D representation of your flight. When using the 'Send by Email' facility on iPad or Android, the email will include an attachment in .kml format for viewing in Google Earth too. When viewing log details, Windows PC users will see the additional option to view a virtual 3D fly-through of a log in Google Earth.

## The Debriefing Pack

In the Log Options you'll find a 'Create Debriefing Pack' button, which generates a document containing a map and Virtual Radar showing your selected log, as well as some useful statistics relating to that flight. There's a post-flight Pilot Log including the actual times of arrival at the



waypoints in your planned route, as well as a list of significant events during your flight. If you have added any notes to the log, they will also be included.

It is possible to adjust the settings for your Debriefing Pack, including the paper size, orientation and margins.

## Logbook

SkyDemon’s Logbook is designed to be a Part-FCL-compliant way of recording your flying time and capacity, and is suitable for most GA flying, from students to instructors. It is located in the Logs library on your tablet or phone, and in the Analysis menu in SkyDemon Plan for PC. Just click ‘Update Digital Logbook’.

The Logbook Settings page gives you the option to choose which columns are visible for the types of flying you do, and you can even add up to three custom columns for logging additional sorts of times, such as aerobatics. This page also allows you to add initial times brought forward from previous logbooks.

New logbook entries can be automatically populated from the SkyDemon flight logs that you have backed up to the Cloud, to make it easy to fill in. Alternatively, you can add a manual entry for logs that are not in your Cloud. All fields can be edited by hand.

**TIP:** Before updating your Logbook, don’t forget to back your SkyDemon flight logs up to the Cloud. You’ll find the ‘Backup All to Cloud’ button in the Logs menu.

The Reports button lets you easily report on your general currency on classes of aircraft, and there is a Search facility to find logbook entries between a specific date period. You can also send yourself a copy of your digital logbook in CSV format.

Departure		Arrival		Aircraft		PIC	Flight	Landings	Pilot Function Time	
Date/Time	Place	Time	Place	Reg	Type	Name	Time	Day	PIC	Dual
From Previous Logbook					Microlight		23h 0m	14	5h 0m	18h 0m
From Previous Logbook					SEP		186h 30m	302	146h 30m	40h 0m
							35m	1	35m	
							26m	1	26m	
							42m	1	42m	
							42m	1	42m	
<b>Totals</b>					<b>Microlight</b>		<b>23h 0m</b>	<b>14</b>	<b>5h 0m</b>	<b>18h 0m</b>
<b>Totals</b>					<b>SEP</b>		<b>188h 55m</b>	<b>306</b>	<b>148h 55m</b>	<b>40h 0m</b>



## Explore Heatmap

The logs library offers a heatmap tool that allows you to create eye-catching personal heatmaps from logs you have stored in your SkyDemon Cloud. The heatmap allows you to visualise all of your flights with SkyDemon over a specified period, displayed in a dedicated chart style. Just open the Logs menu and tap Explore Heatmap. You'll see the option to create a new personal heatmap with all logs in your Cloud (you must have at least 50, otherwise there won't be enough logs to have an effect), or choose to show logs from the past year. There's also a custom option to choose a specific date range.

After a few moments your heatmap will be downloaded, and you can pan around to explore the hot spots. The image on screen can even be shared with friends or on social media, and the generated output will have a little information bar at the bottom with the number of flights and total distance flown for the chosen period.

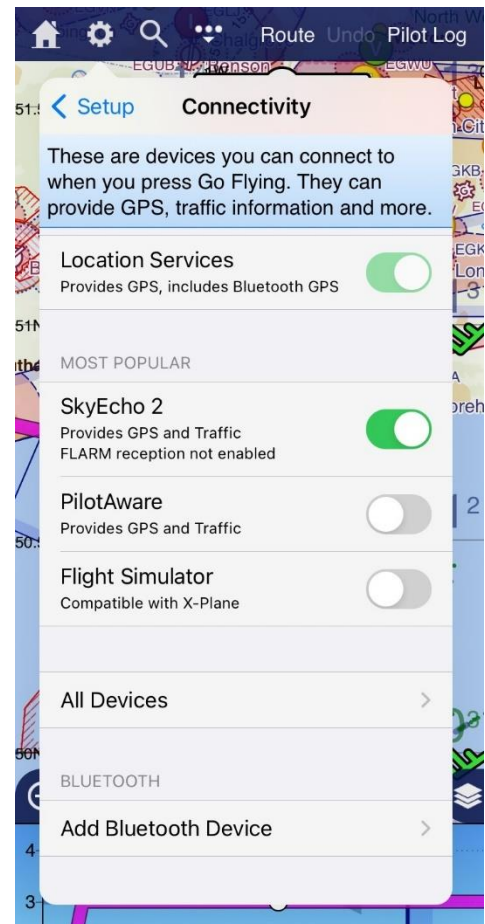


## Other Traffic

As well as providing warnings and notifications about every element of your flight to keep you safe and aware, SkyDemon can also integrate with devices using the FLARM protocol such as PowerFLARM and PilotAware, and traffic receivers using the GDL90 protocol such as the SkyEcho, and iLevel, to graphically depict other traffic on the map itself. These devices typically use a wifi-based connection to link to your tablet or phone; some have their own built-in wifi while others, such as PowerFLARM, require a separate Air Connect wifi dongle in order to connect to the tablet/phone you're using with SkyDemon. [Bluetooth](#) connectivity is also possible in some cases.

For more detailed information on the types of devices that are compatible, and what they do, click [here](#).

To get set up you'll first need to connect to the traffic device's wifi in the main Settings app on your tablet or phone. Next launch the SkyDemon app and go to Setup, then tap Connectivity. You'll see a list of the most popular traffic/GPS sources on the main screen, with more options under 'All Devices' including FLARM and GDL90. You simply need to toggle on the one(s) you use. SkyDemon will use the connected device as a GPS source when you switch to Go Flying mode, in order to show your own position during your flight, as well as displaying other traffic on the map. The first time you connect (if using a device running iOS 14 or newer), you will be prompted to allow SkyDemon to communicate with devices on the local network. You must tap 'Allow'.



**NOTE:** If you are using a simple Bluetooth GPS receiver to get GPS, you do not need to select any of the options under Connectivity. Just pair your hardware in the main Settings app and press Go Flying when you're ready.

Occasionally you may find that your SkyEcho 2, FLARM or PilotAware device has lost its connection to your tablet/phone, resulting in a loss of GPS data in SkyDemon. When this happens, a banner will appear indicating that the device is offline. You can tap the question mark button in this banner to temporarily revert to using your device's Location Services (assuming your device has its own built-in

GPS chip), so you can keep navigating and logging your flight. When SkyDemon detects that your traffic receiver is working again, it will automatically switch back.

Traffic is displayed on the map in the form of little white aircraft symbols. These symbols will turn green when they become close enough to be of interest, then yellow when they are more of a concern. If you are in imminent danger they will turn red and will be accompanied by an audible and visual warning.



Next to each aircraft symbol you will see a number, a plus (+) or minus (-) symbol and an arrow pointing up or down. This number represents the aircraft's relative altitude, with a + to indicate that it is above you or a - if it's below, and an up or a down arrow to show if it is climbing or descending. If it's level you won't see an arrow.

If you would like to see the callsign displayed next to other aircraft symbols on the map, this can be enabled in the Navigation Options menu, under Setup. Not all traffic devices support the delivery of callsign information.

**TIP:** Enter your ownship Hex Code in the Aircraft Editor to ensure you don't get traffic warnings about your own aircraft.

To reduce clutter, traffic higher than 5000ft above your current position is hidden by default. You can adjust this vertical filter in the Navigation Options menu if you wish.

Some products support receiving basic aircraft data over traditional Mode S/C transponder returns. These do not include any position information, and therefore SkyDemon cannot display them on your map or in the traffic instrument; we also cannot use the information for collision avoidance. SkyDemon will instead show a ring around your own aircraft symbol, which will increase or decrease in size to give an indication of proximity and altitude. If you want to see this indication of traffic without bearing information you will find the option to switch on 'Bearingless Targets' in the Setup menu under Navigation Options. This option is switched off by default. Not all traffic receivers will deliver data about bearingless targets.

**TIP:** For more information about an aircraft just press and hold your finger on the symbol to bring up the "What's Here?" menu.

## SkyEcho 2

The SkyEcho 2 has the ability to broadcast your position with ADS-B, as well as receiving ADS-B as standard, and FLARM targets as an optional extra. SkyDemon can decode FLARM signals under licence from FLARM, so an additional [annual subscription](#) is required to unlock this feature. When FLARM Decoding is enabled, a confirmation message will be displayed in the Connectivity menu.

If you are already using your transponder to broadcast your position using ADS-B, you will probably need to disable ADS-B transmission from the SkyEcho 2. You can configure this SkyEcho 2 setting from within the SkyDemon app directly. Once you're connected to the SkyEcho 2 in Go Flying mode, just open the main SkyDemon menu (the blue SkyDemon icon) and tap SkyEcho Configuration.

If you are using the SkyEcho 2 to transmit ADS-B, you have the ability to configure the aircraft callsign, Hex Code and aircraft type in the SkyEcho Configuration page, as well as selecting the receiver mode (UAT or FLARM). A warning is shown if it looks like your device is configured for a different aircraft profile to the one you have selected, with a simple button to set the planned aircraft.

Don't forget to tap the Save button after making adjustments to the SkyEcho Configuration screen to save your changes.

### Verbal Traffic Information

SkyDemon will emit a verbal warning for traffic that is going to come very close to you, or that is of general interest and within visible range that might get too close if they change course. The warning is read aloud using similar phraseology that air traffic controllers offering a radar service would use, to help ensure you are aware of your surroundings without the necessity to look at your screen.

Verbal traffic information is provided in English, and users can choose the kind of voice they wish to hear under Navigation Options in the Setup menu. If no English language voice option is installed on the tablet or phone, no verbal warnings will be given in SkyDemon.

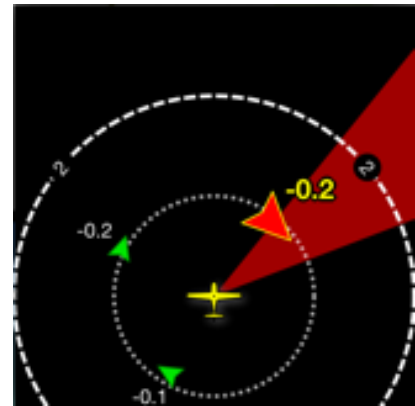
TIP: iOS users can add different English voices in the main Settings app under General -> Accessibility -> Speech -> Voices -> English.





## Traffic Radar

If you're using a traffic receiver to display other traffic in SkyDemon, you'll see a Traffic Radar in the bottom right-hand corner of the screen on your tablet or large smartphone, in addition to the standard aircraft symbols on the main map. This clear, uncluttered instrument allows you to quickly see other traffic in your vicinity at a glance, helping you to look out of the window and stay aware. Unlike the main map, the other aircraft in this instrument are depicted as a simple triangle with their relative altitude, and the radar has been purposefully designed to omit extra details like trajectories and callsigns to keep it clear. If a threat is detected, you'll get the standard textual warnings on the screen with a verbal alert, and the radar instrument will intuitively highlight the aircraft in bright red in a clock-face layout, so you can see exactly where you need to be looking outside to observe the indicated threat.



If you have a smartphone running SkyDemon, the Traffic Radar might not be displayed automatically in the corner of the screen (this depends on the screen size), but instead it can be viewed as a full-screen display, which you might like to use as a complement to the normal map view on your main tablet. To bring up the full-screen Traffic instrument on your phone just open the main navigation menu by tapping the blue SkyDemon icon in the top left-hand corner of the screen, then choose 'Traffic'.

[To change the size of the Traffic Radar, just press and hold your finger on it, or tap on it and choose 'Toggle Radar Size'.](#)

In some cases, you may wish to silence all verbal warnings for nearby aircraft for the duration of the flight, or just silence specific aircraft (for example those that are part of your formation flight). Tapping on the Traffic Radar will lead you to these options.



## Connecting to RS232 Devices via Bluetooth

SkyDemon supports wireless connections to devices that would traditionally have had a direct wired RS232 connection. It does this by using a Bluetooth Low Energy (BLE) device as an intermediary. This type of Bluetooth uses very little power and does not rely on a pairing process with your device, so is very easy to set up in SkyDemon. For the hardware and wiring setup, see the section for [avionics engineers](#) below.

### Initial Setup

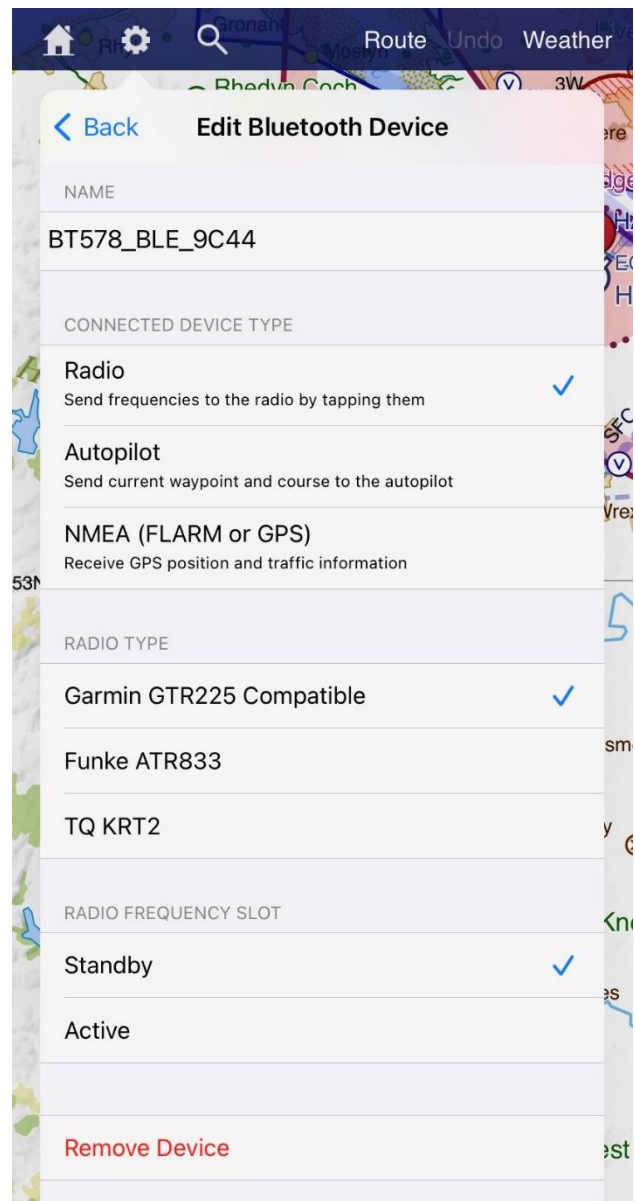
When in range of your Bluetooth device, and with the device powered on, open the Setup menu in SkyDemon and select Connectivity. Then under the Bluetooth heading, choose Add Bluetooth Device. SkyDemon will scan for devices and your device should appear within a second or two. If it does not, check that it is powered on, and that it is a Bluetooth LE device (Bluetooth 4 onwards). You don't need to pair it with your tablet or phone first. When the Bluetooth device has appeared, select it.

You then need to tell SkyDemon what sort of avionics are connected to your device. Choose Radio, Autopilot, or NMEA (GPS/traffic receiver). Additionally, you can change the name of the device; we would suggest naming it according to the avionics connected to it, so it's easily recognisable. Press Save and the device will be remembered, and will be available when you go flying, as long as it's within range.

If you have connected to a radio, then when you are in Go Flying mode, you can tap on most frequencies where they are displayed in SkyDemon and they will be beamed straight your radio, so you don't have to tune it manually.

If you have connected to an autopilot, your course status will be sent to the device constantly as you fly.

If you have connected to a GPS/traffic receiver, it will be presented as an option when you press Go Flying.



## Notes for Avionics Engineers

It is likely that custom cabling will be required to connect the Bluetooth device to the avionics. Many Bluetooth devices will have a standard 9-pin male D-Sub connector, with pin 2 for RX (received data), pin 3 for TX (transmitted data) and pin 5 for GND. If the Bluetooth device you have sourced does not have such a connector, it will still have pins for RX, TX and GND, as all RS232 devices do.

Normally, you would connect the GND pin on the Bluetooth device to the GND pin on your avionics RS232 interface, the TX pin on the Bluetooth device to the RX pin on the avionics, and the RX pin on the Bluetooth device to the TX pin on the avionics. For radio and autopilot connections, SkyDemon only uses GND and TX. For GPS/traffic receiver connections, SkyDemon only uses GND and RX.

## Dynon SkyView

SkyDemon supports wireless connection to Dynon SkyView devices. If you have a SkyView in your aircraft you'll be able to connect SkyDemon to it, and use the SkyView system as your GPS source. To enable this functionality you'll need Dynon's Wifi dongle and the latest version of the SkyDemon software.

Connect your tablet or phone to the Dynon's wifi in the device settings, then in SkyDemon open the Setup menu and tap Connectivity, then choose Dynon SkyView from the list of external GPS/traffic sources. Next tap the Go Flying button in the top right-hand corner of the screen, and choose Use Dynon SkyView. SkyDemon will then switch to navigation mode, and will be able to show your position on the map using the Dynon SkyView as its GPS source.

You can also quickly and wirelessly send your planned route to the Dynon SkyView once you're connected in Go Flying mode. Just open the main navigation menu and tap Route and you'll see the option to send the route to your SkyView.

## Avidyne

Connection and route transfer to Avidyne IFD systems is supported in SkyDemon. First, make sure that your tablet or phone is connected to the Avidyne's wifi network in the main Settings app. Then, open the SkyDemon app and go to the Connectivity menu under Setup. In this menu you'll find an option for Avidyne IFD, which must be toggled on. Next, tap the Go Flying button, and tap 'Use Avidyne IFD'; SkyDemon will switch into Go Flying mode, and you'll see a message on screen saying 'Waiting for Device'. On your Avidyne IFD, go to the Aux menu and choose 'Devices'. You'll see your tablet or phone listed, and you'll need to adjust its setting from 'Blocked' to 'Always' (or 'Once' if preferred). Once this setting has been entered, you'll see your position on the SkyDemon map using the GPS data from the connected Avidyne system.



You can also quickly and wirelessly send your planned route to the Avidyne IFD once you're connected in Go Flying mode. Just open the main navigation menu and tap Route and you'll see the option to send the route to your Avidyne system.

## X-Plane

You can now integrate SkyDemon on iPad, iPhone, Android and PC with X-Plane, the leading flight simulation program. X-Plane can be configured to send a simulated GPS signal to SkyDemon, causing SkyDemon to behave as though you were actually flying at the location depicted in X-Plane.

To connect SkyDemon to X-Plane, do the following:

1. Connect your phone/tablet to the same wireless network as your computer that runs X-Plane.
2. Launch X-Plane on your computer, and launch SkyDemon on your chosen device.
3. In X-Plane, open the Settings menu and click Net Connections.
4. Select the iPhone/iPad tab in the Net Connections dialog box.
5. Check the box near the bottom of the screen labelled send GPS data to ForeFlight Mobile or WingX Pro7 on ALL devices on the local network. At this point, yellow text should appear in the top of the Net Connections window saying Sending to a device running ForeFlight Mobile or WingX Pro7 at IP address 192.168.1.3 0.1 seconds ago, and the send was successful.
6. In SkyDemon select Setup then Connectivity and finally X-Plane.
7. If your devices are configured per the above steps, you should now enter navigation mode in SkyDemon and you will see a pop-up indication saying 'Waiting for Location Data'.
8. Close Net Connections in X-Plane. At this point, X-Plane and SkyDemon should be communicating and the SkyDemon aircraft should be positioned on the chart coincident with the position depicted in X-Plane.



## 12. Appendix

### Minimum System Requirements

- **Apple iPhone, iPad and iPad mini**

SkyDemon requires iOS 11 as the minimum operating system version. You will also need GPS for in-flight navigation. Wifi-only iPads do not have a GPS chip, so you will either need to opt for a wifi + cellular iPad, or a wifi-only model with an external GPS receiver.

- **Android**

Your chosen device must be running Android version 5 (known as Lollipop), and it must have at least 768MB RAM, and built-in GPS. Tablets offering only wifi-based location will not be suitable for in-flight navigation.

- **Windows PC**

To run SkyDemon Plan, you'll need a PC running Windows 7 or newer.

- **Apple Mac**

SkyDemon is compatible with newer Macs that have an ARM-based Apple Silicon M1 or M2 chip. These models were introduced in November 2020. Macs with an Intel-based processor will not be compatible.

NOTE: All modern tablets and phones will have more than enough storage space for SkyDemon.

### Updating the Software

From time to time we will release a software update, containing new features, improvements and bug fixes to make your SkyDemon experience even better. The way the software is updated depends on the device you are using. You can set your tablet/phone to update your installed apps automatically, or if you prefer you can perform the updates manually:

- **Upgrading the app on iPad, iPhone and Mac**

The app is updated in the same way as any other app you have got installed on your iOS device. Just open the App Store app on your iPad/iPhone home screen then go to the Updates



section of the App Store, where any updates for your installed apps are listed. Just tap the Update button next to the SkyDemon app and the iPad will do the rest.

- **Upgrading the app on your Android device**

To get the latest version of the SkyDemon app on your Android device you'll need to open up the Play Store app on your phone or tablet. In the Play Store you'll find a section in the main menu where all of your installed apps are listed (My Apps), and from here you will be able to see if there are any app updates available. Just tap the Update button next to SkyDemon, and your device will do the rest.

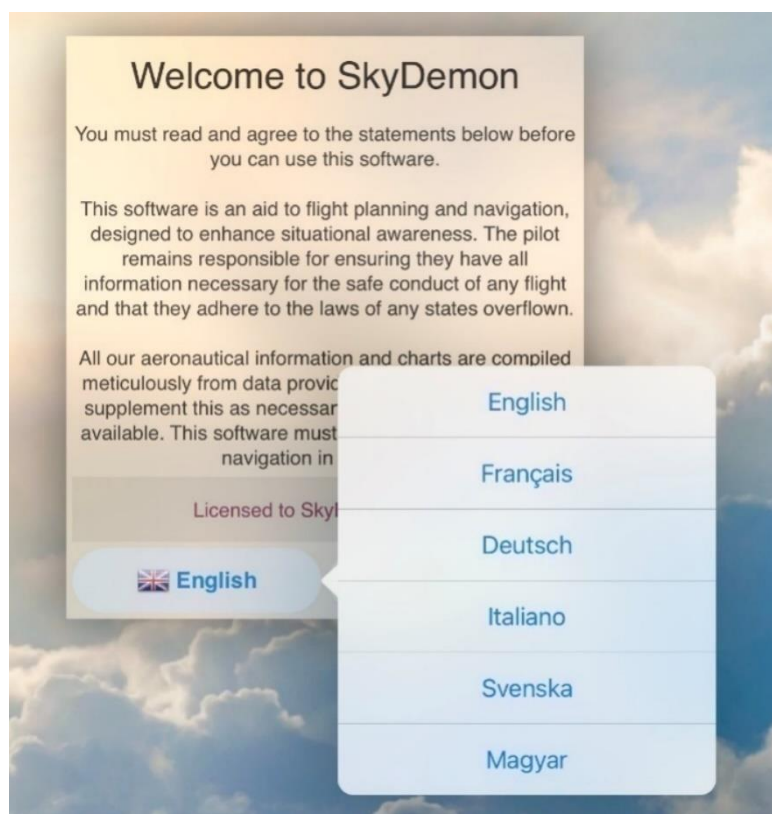
If, for some reason you cannot use the Play Store on your device, or if you need to access a previous version of the SkyDemon app, you'll find download links directly from the [Android product page](#) of our website.

- **Upgrading the Windows PC Software**

If a newer version of the Windows PC software is available you'll get an on-screen prompt to update. You will be asked if you wish to proceed with the download, and you simply need to follow the installer process along. After just a few of clicks, the new version of SkyDemon will be installed on your PC, and will be ready to use.

## Changing the language

The SkyDemon apps for iOS and Android offer a handful of language translation options (English, French, German, Italian, Swedish, Hungarian), which are accessible from the 'Welcome to SkyDemon' screen. Just open the Setup menu and tap Language to return to the Welcome screen where you can select your preferred language via the left-hand button.



## Getting the most out of your iPad and iPhone

There are a few iOS tips and tricks that may help you to get the most out of your device when using SkyDemon.

- **Deleting:** To delete a route, waypoint, log or aircraft profile from SkyDemon you need to open the menu containing the file (tap Setup and user Waypoints, for example) then swipe to the left across the file you want to delete. This will bring up a red Delete button.
- **Screen Shot:** To take a shot of whatever is on your screen at any time just press the iPad's Power button and Home button simultaneously. If your iPad doesn't have a main Home button, you'll need to swipe diagonally upwards from the bottom left-hand corner of the screen. The screenshot will be saved in your iPad's Photos app.
- **Night Mode:** Go to the Settings app on your iPad and tap General and Accessibility. In this menu you'll see the option to Invert Colours, which you may find useful for night flying as the overall colour scheme on the device becomes inverted.
- **Volume:** There are buttons on the side of the iPad/iPhone for volume control. This is useful for muting, or increasing the volume for audible warnings and alerts in Go Flying mode.
- **Location Services:** If your iPad has an in-built GPS chip, you'll need to make sure that SkyDemon has permission to access the GPS data when you switch into Go Flying mode. To do this, open the Settings app and tap Privacy then Location Services. In the Location Services list, make sure the SkyDemon app is toggled on.

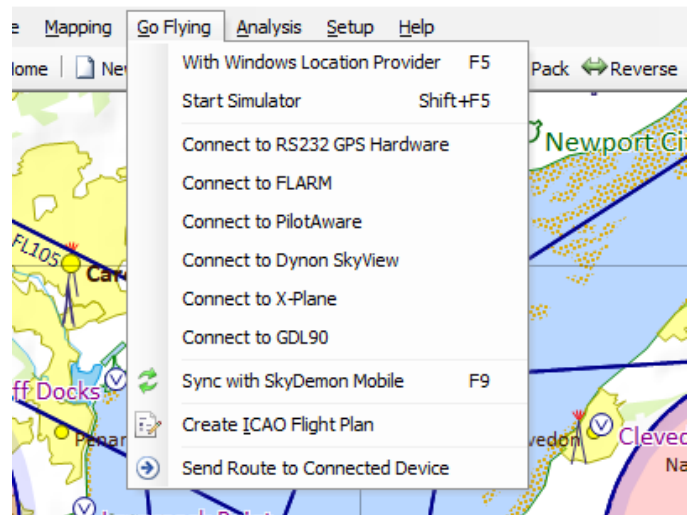
**Note:** The wifi-only iPad has no internal GPS chip, so if you want in-built GPS you'll need the iPad with wifi + cellular (3G/4G).



## SkyDemon Mobile Devices

This section does not refer to iOS or Android.

It is possible to run SkyDemon Mobile on a Windows CE device in order to make use of the basic Windows in-flight navigation tools. To export to a SkyDemon Mobile device, such as the SkyDemon Mobile MD or a Windows CE device running the SkyDemon software, first ensure the device is plugged in and connected in Mass Storage Mode.



### Mass Storage Mode

Your device is initially configured to use ActiveSync Mode, however this is no longer fully supported in Windows 10, so you'll need to switch to Mass Storage mode in order to sync your device. To change the USB connection mode on the device, tap on the SkyDemon logo to open the main menu, go down to System and choose Exit to return to the device operating system. Press Settings, then USB, then select which connection mode you wish to use. Press the disk icon to save, and your device will restart.

When your device is connected to a computer in Mass Storage mode the screen will turn black with an animation of a red disk drive talking to a computer, and this is an indication that it is ready.

### Syncing with SkyDemon Mobile

In SkyDemon Plan for PC open the Go Flying menu from the toolbar and choose Sync with SkyDemon Mobile. The following actions are performed during a sync:

- Your route library is copied from your PC to the device
- The latest NOTAM, TAF and METAR are copied from your PC to the device
- Your user waypoint library is copied from your PC to the device
- The postcode database is copied from your PC to the device
- The latest charts are copied from your PC to the device
- Flight logs are copied from the device to your PC

When the sync is complete (it only takes a few seconds) your device will beep and let you know that new data has been found. Unplug the device and press the Fly button to return to navigation mode when you're ready.





## GPS Navigation on PCs and Laptops


















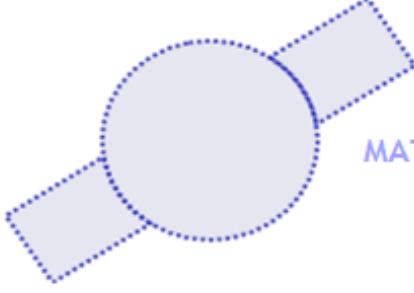









SkyDemon Plan for Windows PC includes some of the GPS navigation facilities of its sister product, SkyDemon Mobile, which is designed for use on handheld devices and on iPad, iPhone and Android. We include some in-flight navigation functionality in SkyDemon Plan so customers with netbooks or tablet PCs can use SkyDemon during their flight without needing to purchase an additional device.

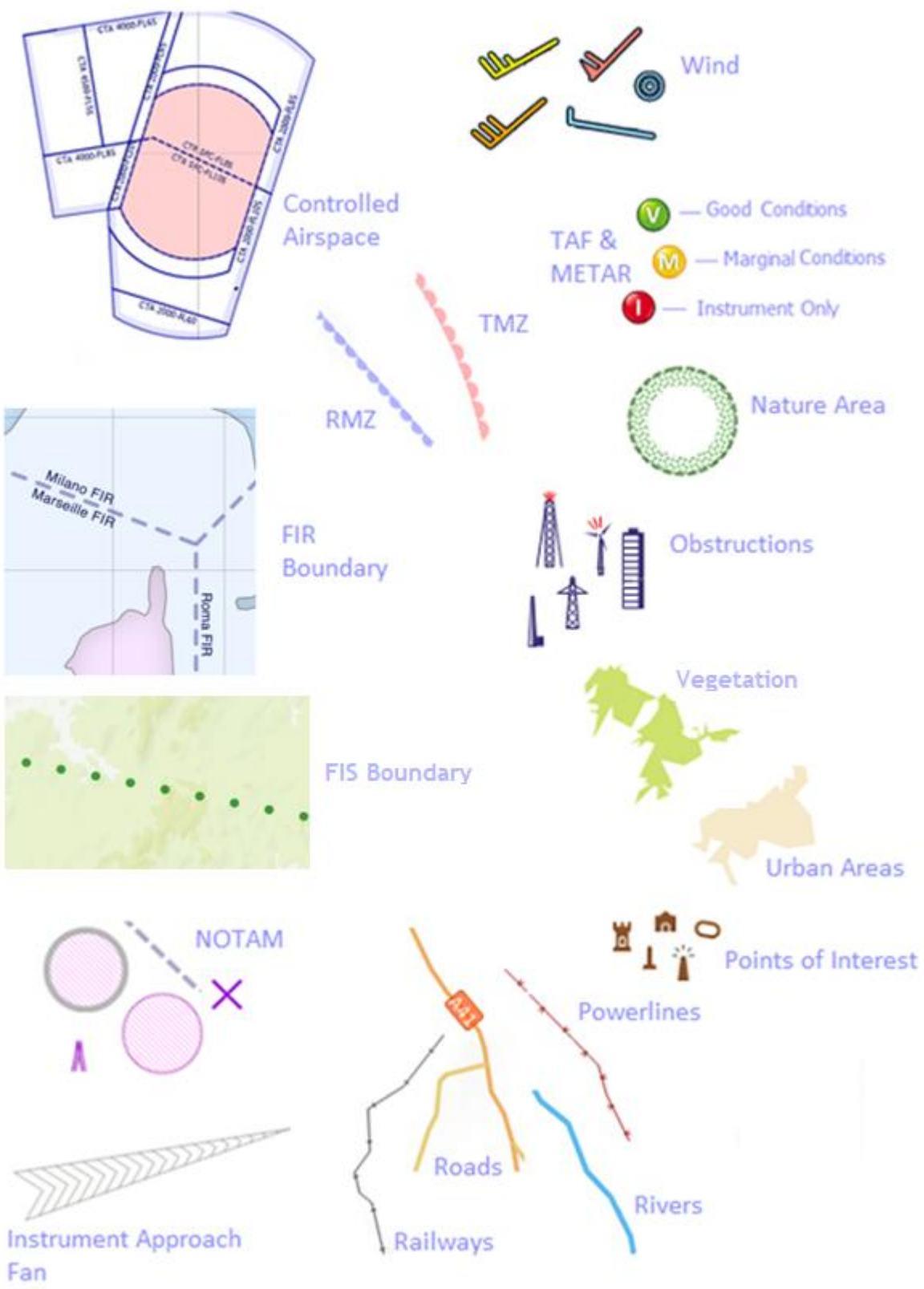
To use the GPS navigation functions your device will need some kind of GPS capability. In many cases, the built-in Windows Location Provider services can be used. Just click Go Flying and select this option to switch into navigation mode. You will see the display change and all being well, once a GPS fix has been obtained, you will see the aircraft symbol on the map and your PC has been transformed into a powerful in-flight navigation tool.

Some Windows machines will not have internal GPS, but it's possible to use an external GPS receiver connected via a COM port. To set this up open the GPS Navigation Options window from the Setup menu. You will see two options for configuring the hardware: the port and baud rate. Your device manual or software should tell you the values to use here. Then click the 'Connect to RS232 GPS hardware' option in the Go Flying menu to switch SkyDemon into navigation mode.



## Map Key

	Town		Glider Winch-Launching
	Private Airfield		Parachute Dropzone
	Civil Airfield		Hang-Gliding
	Military Airfield		Aerobatics
	Microlight Site		Prohibited/Restricted Area
	Heliport		Danger Area
	Glider Site		Other Local Airspace
	Disused Airfield		ATZ
	NDB/Locator		MATZ
	DME		
	VOR		
	TACAN		
	VOR/DME		
	Visual Reporting Point		
	Mandatory VRP		
	Airways Reporting Point		
	Seaplane Base		
	Fuel Prices		



# Circuit Key

