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.

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Version History

1. Getting Started

Installation

We allow anybody to start a free 30-day trial of the software, and it couldn't be easier to register. 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 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. If you already have the software installed on your PC but you need to upgrade to the most recent version, we provide detailed instructions on how to do so in the Get Started section of our website.

To install SkyDemon on your iPad or iPhone just download the app directly from the App Store or from the Google Play Store if you have an Android phone or tablet. The app is free and once installed you simply need to log in with your SkyDemon account details.

Read more about Updating the Software.

SkyDemon Web is also available online to PC and Mac users, and can be accessed via the Get Started section of our website. Just enter your SkyDemon username and password to log in and get started.

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.

The NOTAM and Flight Details windows are displayed on the right, plus buttons to switch to the Weight and Balance, Airfield Plates and Weather windows. On your tablet or phone you'll find the Weight and Balance options within the Flight Details window.

> 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
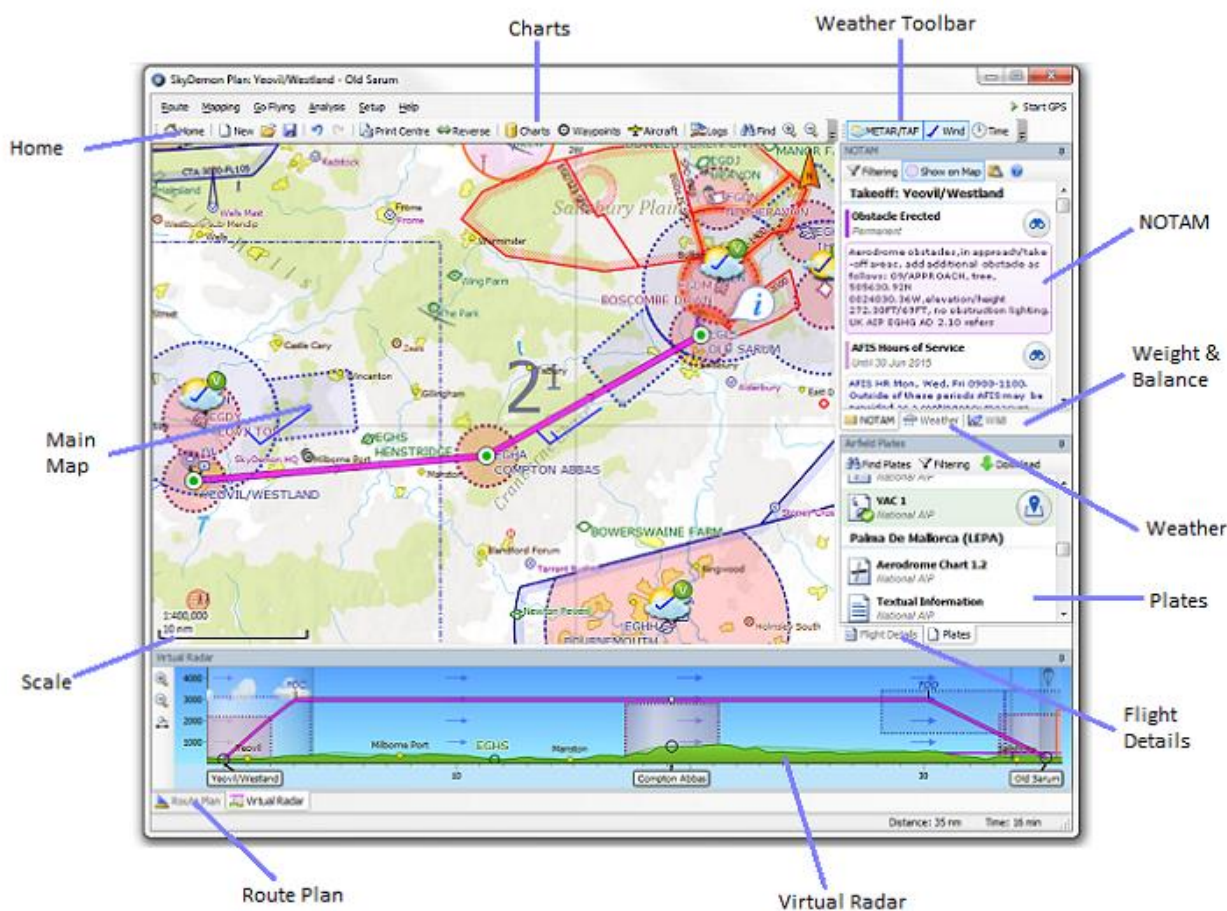
allow you to change mapping layers, route options, weather features and more. The lower toolbars contain buttons that help you access many of the most common functions in SkyDemon.

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.
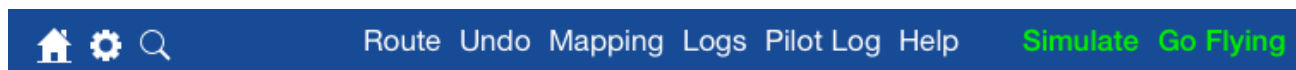
Using the Chart Manager

The first time you run SkyDemon, you will need to install at least one chart. The software will prompt you to do this by displaying the Charts window, which can be accessed at any time, provided you have an internet connection, by pressing the Charts button on the PC toolbar or by clicking Setup and selecting Charts from the menu. The Charts window lets you choose which charts you want to view and automates the process of downloading, installing and updating them as required. Just
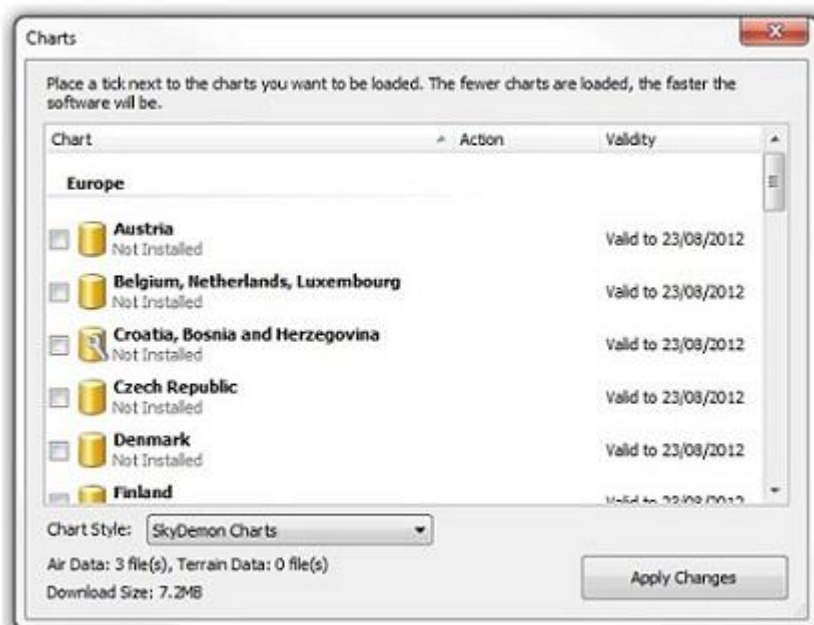
put a tick (or toggle 'On' for iPad, iPhone and Android users) next to the charts you want to use and press Apply Changes or Continue. You can observe progress as the charts are downloaded and installed. When finished, the window disappears leaving you with the map.

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 and Map Layers. SkyDemon supports two native chart styles as well as a high contrast version, UK VFR style, French VFR style, German VFR style, Italian VFR style and American Sectional 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. You can explore the whole world this way, though obviously areas without charts installed will look rather sparse.

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 mapping 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: If you cannot see a waypoint or map feature that you expect to, try zooming in a little.

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 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.

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

- **Airfield Information**: this window includes lots of useful information about the airfield, including frequencies, telephone numbers, satellite imagery and more.
- **Share Fuel Price:** allows you to share an up-to-date fuel price for the airfield. Please read the Terms and Conditions in this window before using the fuel price tool.
- **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.
- **Map Ruler:** this allows you to measure the distance between any two points on the map. After pressing 'Extend Ruler from Here' tap on another point on the map to extend the ruler. (This option is not available on the PC).
- **Airfield Plates:** this button allows you to search for any plates that might be available for the selected waypoint. Any available plates are then listed in the Plates window.
- **Get Weather:** this option looks for TAF and METAR bulletins for the selected airfield, and adds them to the Weather window. This is useful for subscribing to weather at stations that do not form part of your route.
- **Satellite Map:** opens Satellite view at the selected spot.
- **Enroute Charts:** (PC only) produces print output for the section of chart that is displayed.

TIP: To return to the main SkyDemon map after viewing Google Maps on your iPad use all 4 fingers to swipe across the screen from left to right. This is a handy iPad trick to flip back to the previous page you were viewing.

Pressing and holding your finger on any other 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. 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 at that point.
- **Leg Properties:** when you press and hold or double-tap 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.
- **Wind:** gives the wind speed and direction at that point, based on the planned level of your route, which is set in the Flight Details window.
- **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.

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.

Map Layers

Most mapped features can be turned on and off or adjusted using the Mapping/Map Layers 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 and going to Map Layers, you can choose to hide features such as roads and railways, geographical names, and various types of airspace and waypoints.

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

TIP: Touchscreen devices can be sensitive, and from time to time you may find that you have rotated the map so that it is no longer showing north up. To correct this press and hold the orange North indicator button, rather than tapping it once for Mapping.

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 ATS Routes mode to keep the map uncluttered. You will also find that airspace warnings are supressed by default when planning routes using ATS Routes 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 Map Layers menu (see below).

Satellite Map – switches to a satellite view of the area of the map you are currently looking at, with options for easily creating and editing user waypoints for precision placement.

Font Size – This allows you to adjust the size of the text on the map.

Weekend View - Hides any airspace not active at weekends. Don't forget that a NOTAM might activate a piece of airspace not normally active at weekends.

Weather or Fuel Annotations – Turns on/off the symbols for TAF and METAR, or fuel prices, on the map for each airfield. If you choose to show weather annotations, you will see colour-coded dots on the map: green meaning good conditions for VFR, yellow for marginal conditions, and red for Instrument only. Alternatively you can choose to show airfield fuel prices on the map. The fuel price will be green if it has been updated in the past 7 days and orange if the price was updated more than 30 days ago.

Map Layers – Includes the option to turn on/off surface features including terrain, geographical names, urban areas, roads, railways, road names, rivers, and maximum grid elevations. In this window you can also select your preferences for showing or hiding different types of airspace, airfields and waypoints.

Within the Map Layers menu there is also an option for dynamic airspace removal. This allows you to turn off airspace above and below a certain level in planning and navigation mode. Don't worry about missing any important airspace if you set it too low; when you've plotted your route all airspace at the levels you have set is shown regardless of the clipping level.

Locating Features

Instead of dragging the map around to try and find a feature, you can use the Find tool. There are two ways of using it. First, you can 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 or even a postcode. The Postcode database is covered in more depth further on in the documentation. You'll find that it's also possible to search for airways and airspace by typing the corresponding designator into the Find tool on iPad, iPhone and Android.

TIP: The waypoints database is comprehensive, so to speed up your search use capital letters where applicable, such as when typing an ICAO identifier or postcode.

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.

To bring up the Map Ruler on the iPad/iPhone you just need to press and hold a finger on each of your chosen points on the map at the same time. For Android users, press and hold your finger on the first point on the map to bring up the "What's Here?" menu, then from the waypoint options choose 'Extend Ruler from Here" and just tap your finger on the second spot on the map. If you want to bring up the Map Ruler in SkyDemon Plan for PC, hold the Ctrl button on your keyboard and click on the first spot, then click on the second waypoint on the map to extend the ruler.

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

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 toolbar 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, where you will see the option to do so within the General section of the window.

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.
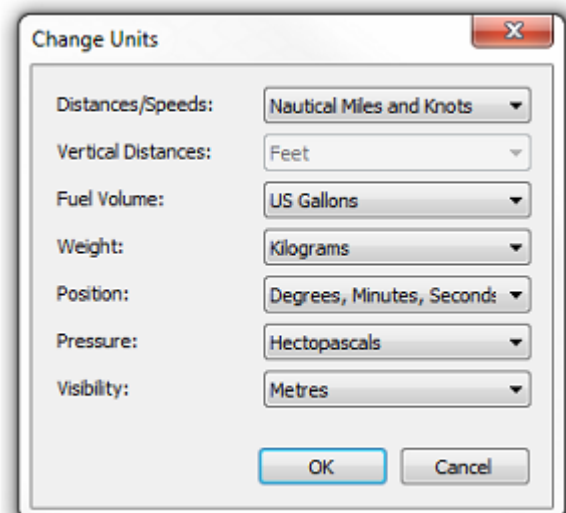
Distances and speeds are tied together for obvious reasons. The options are nautical miles and knots, statute miles and miles per hour, and kilometres and kilometres per hour. Vertical distances cannot currently be changed; feet is the only option. Fuel volume options (for showing fuel price in the Planning Options menu) are litres, US gallons and imperial gallons. Weight options are kilograms and pounds. Display of position can be changed between degrees minutes and seconds format or degrees with decimal minutes. It is also possible to choose between Hectopascals (Hpa) and inches when looking at pressure in weather bulletins, and visibility can be shown in either metres or statute miles.

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.

High-Resolution Terrain Data

In the Setup menu on your tablet or phone you'll find the option to download high resolution terrain data covering 100m in every direction from the area of the map that you are currently looking at.

This high-res terrain is not downloaded by default because it takes up a little more space on your device. If you would like to improve the terrain detail on your chart you just need to click 'Download High-Res Terrain' in the Setup menu. The message that appears will let you know approximately how much space will be taken up on your device, and if you're happy to continue with the download just tap 'Yes'. To download high-resolution terrain in SkyDemon Plan for PC just right-click on the map, and the option will be available in this menu.

User Waypoints

You can create an unlimited number of your own waypoints to use for flight planning. Click on the Waypoints button on your PC toolbar or click Setup then User Waypoints to open the Waypoints window on your iPad, iPhone or Android device. This brings up a window listing all the user waypoints you have created. They are grouped into categories, to make life easier for those who like to create a lot of waypoints. To create one, press the Add (+) button. You can also create a user waypoint by right-clicking on the 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.
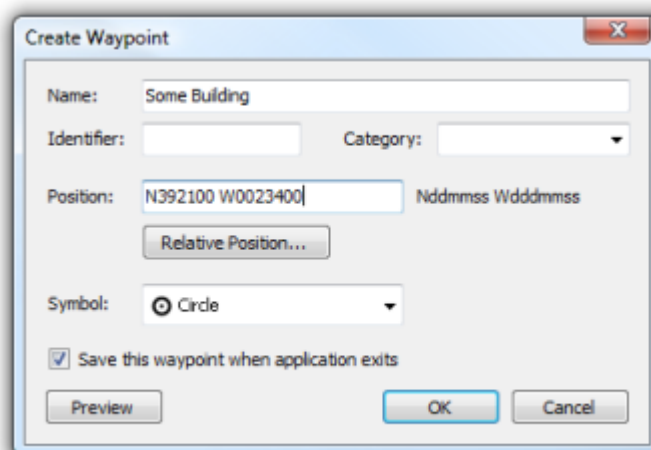
The user waypoint creation window allows a number of waypoint characteristics to be entered. First is the name, which appears beside the waypoint on the map. You can also specify an identifier, which can simplify searching for a waypoint and which is output on the PLOG if you route via the waypoint. The category box allows you to specify any category name you like or choose an existing one, and you can also choose the symbol used to represent the waypoint on the map.

The position can be entered using standard latitude and longitude notation (Nddmmss Wdddmmss), or it will have been pre-populated if you launched the window by clicking on the map. On your tablet or phone SkyDemon presents a handy scroll wheel to ensure that you're entering the coordinates in the correct format, but you can type the coordinates manually if you prefer, just by tapping in a blank area to the left or right of the wheel.

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 Create (+) then select 'Relative to Existing Waypoint' or 'Relative Position'. Enter the name of the existing 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 an identifier, category and symbol if you wish.

NOTE: When you're creating waypoints on your phone or tablet, don't forget to tap 'Done' on the keyboard to save your changes before proceeding.

Once your waypoint has been created it can be used for route planning just like any other. To delete one from the PC, open the Waypoints window, 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

TIP: To delete user waypoints on the iPad and iPhone open the Setup menu and tap Waypoints, then swipe your finger to the left across the box and a red Delete button will appear. Swipe again and the button will disappear. For Android press and hold on the waypoint you'd like to delete in the Waypoints list to reveal the Delete button.

If you want to hide your user waypoints, so they don't show on the map, but you don't want to fully delete them, you will find the option to switch them off in the Mapping/Map Layers menu.

Satellite View

SkyDemon's Satellite View provides an alternative means of easily creating, editing and deleting user waypoints. To access Satellite View just press and hold your finger on the map to bring up the "What's Here?" menu, then tap on the waypoint in the list, and in the next window you'll see the Satellite Map option. This feature allows easy visual identification and location of ground features, and facilitates quick entry and editing of user waypoints; to create one just press and hold your finger at the appropriate spot on the map and the Create User Waypoint window will appear with the position already populated. Just enter a name and tap Save, and a green pin will appear on the map. Tap the pin to edit or delete the waypoint, or press and drag it to move it to a different spot. When you return to the SkyDemon map, you'll see your newly created waypoint.

The Satellite Map feature also includes options to view the standard road-style map, or a standard/satellite hybrid. Just tap the Map Layers icon on the toolbar at the top of the window. You can even search SkyDemon's database for waypoints, airfields and towns using the Find button on the toolbar.

Postcode Database

We provide a file containing the UK postcode database which can be added to your SkyDemon installation enabling you to search for a specific postcode in the Find window. To install the UK Postcode database you'll need to click the 'Find' button on the toolbar, or click Ctrl + F, then type in a complete postcode. If the database isn't already downloaded, you'll be prompted to install it.

After installation, the postcode search result will bring up a list of nearby

waypoints to choose from, or you can simply select the postcode at the top of the list to pan to that exact point on the map, marked with a yellow cross.
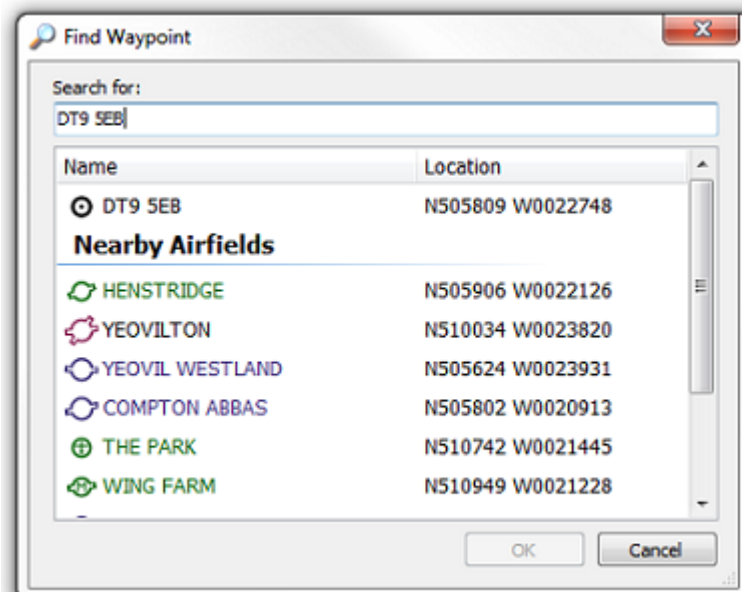
Note: You'll need to enter a full UK postcode into the Find Waypoint window, and using capital letters will help speed up the search too.

The postcode database can be used to create user-defined waypoints at precise locations by right-clicking that particular spot on the map and selecting 'Create Waypoint' from the menu. You might like to add your own house to the map, or any nearby landmarks. Alternatively you can use the marker to simply route via points of interest on the map.

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 PC users only.

2. Planning a Route

Your route is displayed in SkyDemon as a thick magenta line, with little white circles at turning points. The circles have a green dot inside if the turning point coincides with a known waypoint, or they are empty if it's just an unnamed point in space. When moving the map around, the route line will fade out slightly, so you can still see the map detail underneath.

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.
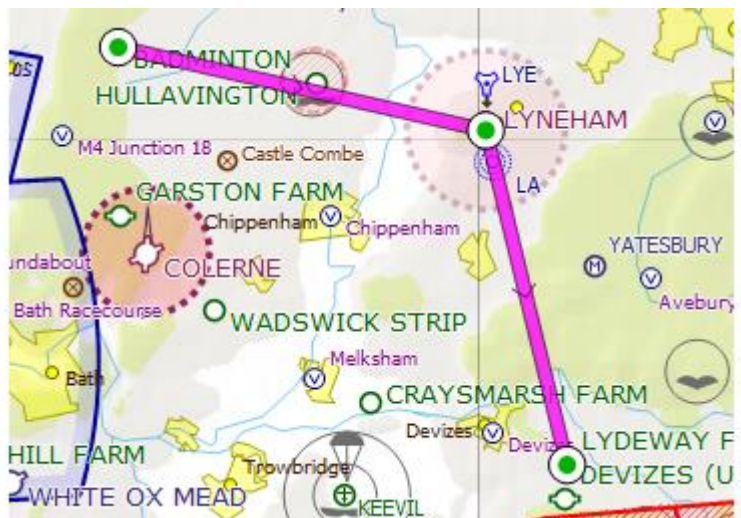
The most productive way to plan a route is to press the New button on the toolbar, or the Route button on iPad, iPhone and Android, which brings up the New Route window. If you're going for a local flight, simply type in your takeoff airfield (your home airfield will be suggested) and choose the area 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 Conningsby 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. To clear your route and start again, press the New button on the toolbar or Start Again in the Route menu.

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, and the turning point circle will gain a green dot.

This technique can be used to avoid danger areas or other pieces of airspace you do not want to fly through, just like in the example above.

> 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. For example, to remove the secondary turning points created in the route above, drag them one at a time on top of the middle turning point at the top, and they will disappear.

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, and choose 'Land Here'. 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 yellow dot.

Adjusting Altitude and Cruise Speed

The broad parameters for your route can be changed using the controls in the Flight Details window, which is to the right of the map. It allows 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 level (which is blue and underlined on the PC) 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 Pwr/Speed in Flight Details and select a power setting from the list. If you currently only have one power setting you can add another to your aircraft profile by selecting 'Different Power/Speed' from the drop-down menu.

Alternatively this can be done in the Cruising Speed section within the Aircraft Editor, where you will see the option to add another power/speed setting. 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 the Flight Details window. 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, double-click on it to show 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 Enroute Features window 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 and 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.

Other Route Conditions

Takeoff Time

In the Flight Details window on the right 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 about to undertake it. To set it, click on the "Not Set" hyperlink and type a new date and time into the boxes. Press enter to confirm, and you'll notice that your landing time is now also shown.

On iPad, iPhone and Android open the Flight Details tab and tap on Takeoff Unspecified Time, which will allow you to scroll through the date and time wheel to adjust your takeoff 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.

Fuel Plan and Cost

Towards the bottom of the Flight Details window is the fuel plan. First 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). This can be expanded to show the individual calculations: 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 a slider will appear when Fuel is clicked, 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).

Next is the absolute endurance resulting from the planned fuel, then finally 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.

Managing your Routes

To save a route click the Route button on your toolbar and choose Save As, then type in the name you would like to give your saved route. You will need to click 'Done' on the keyboard if you're on Android, iPad or iPhone, or 'Save' on the PC. SkyDemon creates a SkyDemon folder within your personal Documents folder on your PC, and the Routes folder within that is where all your saved journeys are stored by default, though you can save them elsewhere if you choose. To load a previously-saved route, press Open and select it. You can also launch SkyDemon with any route loaded by double-clicking the route file in Windows Explorer.
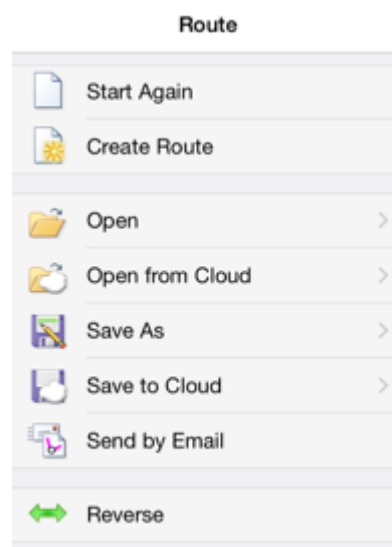
It is also very simple to save your route to our Cloud storage facility, allowing you to easily open and share saved routes between your different devices running SkyDemon. You will see the option to 'Save to Cloud' from the Route button on the toolbar. Give your route a name and click OK, or tap Done on the keyboard. Your saved route will be immediately accessible from your SkyDemon account on PC, iPad, iPhone and Android. To open a route from the Cloud Storage facility click Route, then choose Open from Cloud. You can also choose to sort your routes in the Cloud alphabetically or by date from this window if you wish

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 'Send by Email' 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. 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 also use the Aircraft Library to edit individual aircraft profiles, and you will also see buttons for 'Save to Cloud' and 'Load from Cloud' which enable you to share files between PC, iPad, iPhone and Android just as you did with your routes.

On your iPad, iPhone and Android device the Aircraft Library can be found by tapping the Setup button on the toolbar (this may be found under the button marked '...' or 'More') and selecting Aircraft. You will be shown a list of all your saved aircraft profiles, with a tick next to the one that's in use. To create a new aircraft click Create (+). If you would like to edit an aircraft profile just tap on it and

choose Edit Aircraft. You can also save the aircraft profile to Cloud Storage, or simply select it for use from this menu.

The 'Find Online' button in the Aircraft Tools menu gives you access to aircraft profiles submitted to us by other SkyDemon users. These can be saved and edited to include your own aircraft's specific details. The Tools menu also gives you the option to open one of your own previously saved aircraft profiles from the Cloud.

As well as accessing the Aircraft Library from the Setup menu, you can also select an aircraft in the Flight Details tab, 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 go to our online forum to look for aircraft profiles posted by other SkyDemon customers. If you find one, simply save it to the Aircraft folder in the SkyDemon folder on your PC, restart SkyDemon, and you should see the new aircraft in your list. You can read more about sharing Aircraft profiles and other data later in the documentation.

There are many variables that make up a full aircraft profile, and these are discussed in the remainder of this section.
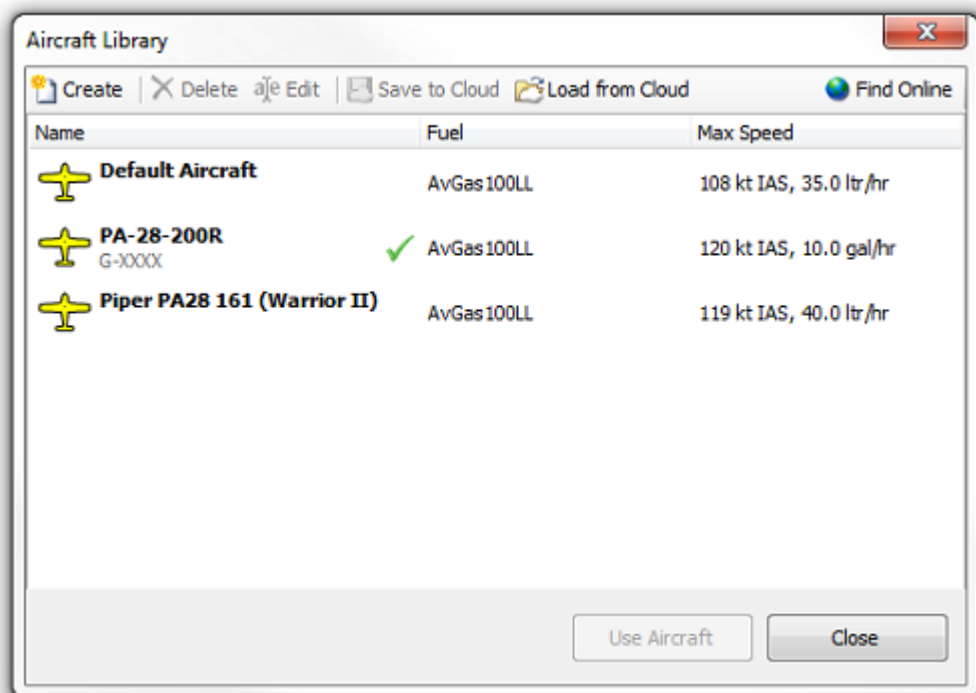
Simple Aircraft

When you first launch SkyDemon you are provided with a simple aircraft model that allows you to start using all of SkyDemon's main flight-planning features without first needing to define a more comprehensive aircraft profile.

The Simple Aircraft is set by default when you first get started. In the Flight Details window you will see the option to set a speed for your planned route as well as an altitude, allowing SkyDemon to make the relevant calculations for your route time. When using the Simple Aircraft model, 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 the Simple Aircraft model at any time you can select it in the Flight Details window by tapping on the aircraft that is currently in use.

Basic Properties and Fuel

The first box is the name of the aircraft, which is usually just the manufacturer and model. Below this you can enter the registration of the aircraft. At the bottom of the page there are controls for setting the aircraft type, 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 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.

This page also contains 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. When calculating the minimum required fuel, SkyDemon uses this 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.

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 for your aircraft are displayed in a list. To edit one, select it then change the values displayed in the boxes below the list. To create a new one, PC users will select an existing one and click Copy, or on iPad, iPhone and Android tap the '+' button. To delete one, select it and press Del. To show the delete button on your iPad and iPhone just decide which power setting you would

like to remove and 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.

You should be able to refer to your POH for all the information required on this page.

To select a power setting for your current aircraft simply click on the Power/Speed link in the Flight Details window and choose from the dropdown menu. You can also add a new setting from this drop-down menu by selecting Different Power/Speed. 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 GlideSafe feature to calculate your safe gliding radius.

Weight and Balance

It is possible to enter both the lateral and longitudinal 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.

Loading Points
SkyDemon performs weight and balance calculations for your aircraft as you plan a route, and to do this 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. 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 as you used above.

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
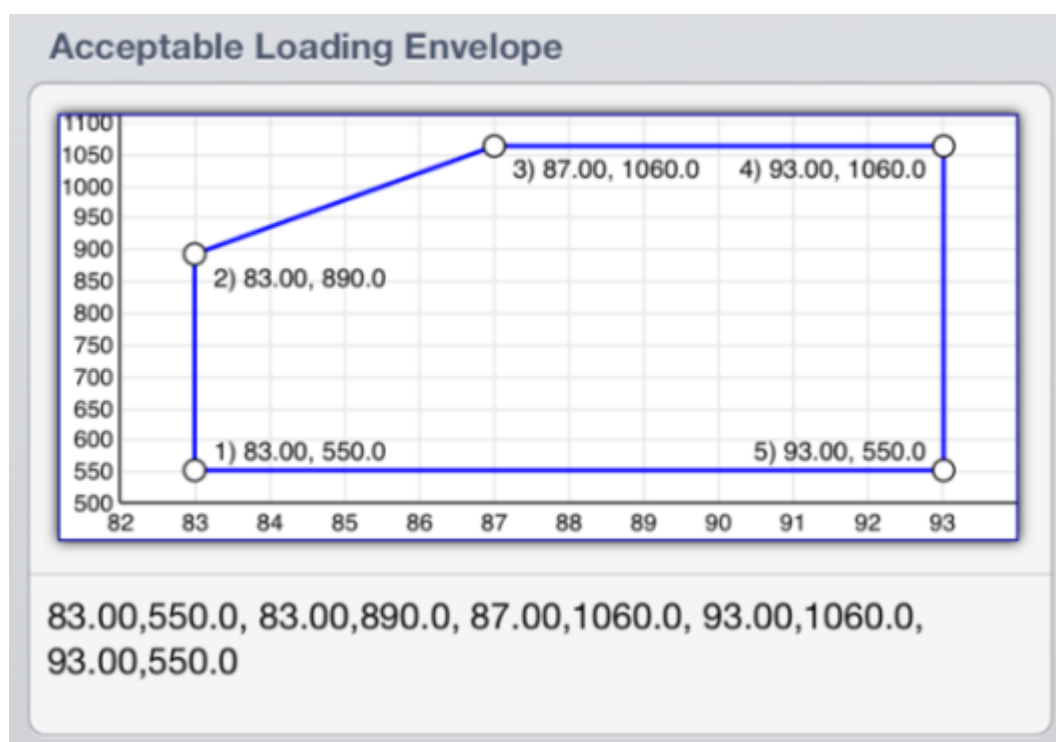
has multiple tanks and they cannot share a loading point you can add a new fuel tank by clicking the 'Add' button and selecting 'Fuel Tank' from the drop-down menu, or just by tapping the 'Add Fuel' button on your iPad, iPhone or Android device. It is possible to specify the maximum capacity of each of your fuel tanks, as well as setting a default fuel amount. 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 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 (in the Flight Details tab 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
In the 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. 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.

Describing the envelope to SkyDemon 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

Acceptable Loading Envelope

3) 87.00, 1060.0   4) 93.00, 1060.0

2) 83.00, 890.0

1) 83.00, 550.0   5) 93.00, 550.0

83.00,550.0, 83.00,890.0, 87.00,1060.0, 93.00,1060.0, 93.00,550.0

bottom right corner in the format x $_1$,y $_1$, x $_2$,y $_2$, x $_3$,y $_3$, etc. So, to produce the diagram on the right 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

In some cases, the weight and balance graph in your POH may have inch-pounds or some other moment unit (eg. kilogram-metres). In this case, to determine the value for the x axis that will make sense within SkyDemon you must convert moment to distance using the formula: Distance = Moment / Weight. Therefore, look at the x and y values of each point, and calculate x divided by y to determine what the new x value will be for each point in turn.

Weight and Balance Calculations

When you have finished configuring the loading points and envelope in the Aircraft Editor (above) the Weight & Balance window on your PC can be found next to the NOTAM window, and on iPad, iPhone and Android, can be found within the Flight Details tab. It consists of a list of aircraft loading points in the upper half, and a graph of the loading envelope below, 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. The value for fuel is automatically filled in as a result of the fuel calculations done in the Flight Details window, but it can be increased as desired.

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. All the values apart from Fuel need to be entered manually. The Fuel value can also be adjusted manually if you wish, but it will be overwritten when the fuel plan is next updated.
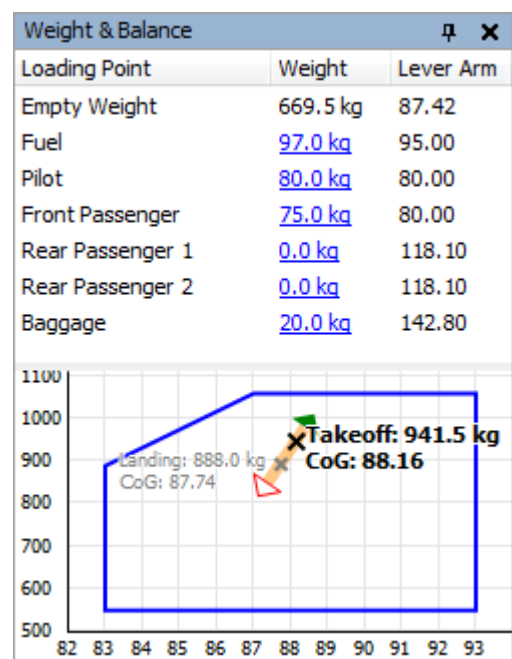
It is possible to set a default weight for your each of your loading points, which means that you can set the pilot's (your) weight so it does not have to be entered each time. To do this open up the Aircraft Editor and select the Weight and Balance section, where you will see the option to edit each of your loading points.

On the graph 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 gray 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.

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.
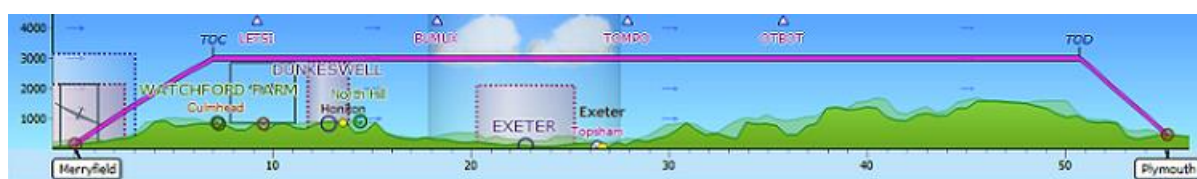
You can zoom in and out of the virtual radar window by using the mouse wheel (after clicking in the window) or by using the zoom in and out buttons on the left of the window. Like the main map, you can click on an empty area and drag left and right to scroll the window when there is more detail than 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: iPad, iPhone and Android users can double tap any spot on the Virtual Radar to view the corresponding point on the main map where a yellow marker will appear. The same method can be used on the PC, although remember not to double-click directly on the magenta route line as this will bring up the Leg properties window. Instead double-click slightly above or below the line, or on any other spot in the window.

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 given a red border 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 double-click (or press and hold) 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.

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 toolbar (in the Weather tab on iPad, Android and iPhone under the Tools menu) to control which, if any, are shown.
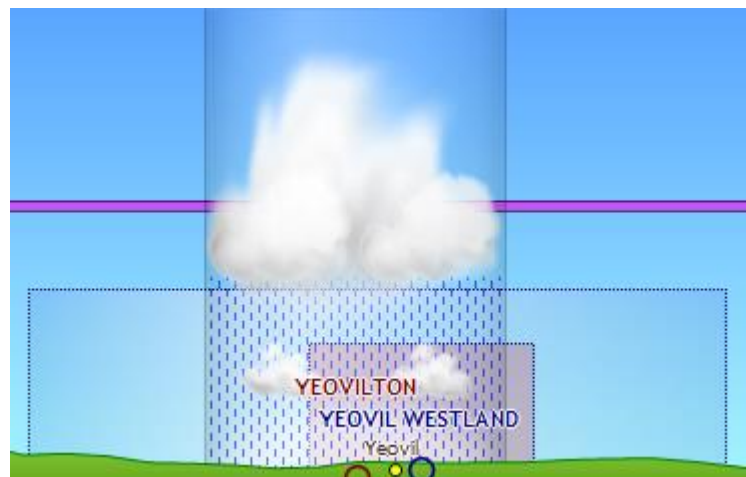
Not all data contained in a TAF or METAR is drawn in the virtual radar window. Included are cloud layers, rain, snow and visibility (including fog/mist). Having the cloud layers appear in the sky is a great way of instantly appreciating how they will relate to your route. Obviously, if your route appears 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.

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 and in the virtual radar (as described above). Use the TAF/METAR buttons on the weather toolbar (which is found in Mapping under Annotations on your phone and tablet) to turn these depictions on and off.

To see weather for an airfield that does not form part of your route just press and hold your finger on that airfield, or right-click if you're on the PC, then choose Get Weather from the menu options that appear. Alternatively, open up the Weather tab and tap the Tools button, where you will see the option to choose 'Get Weather for Airfield', then type the airfield name or identifier. Any available

weather will be displayed alongside your route's TAF and METAR briefings in the Weather window.

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 tab 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, so if you have a long route loaded you can zoom out to see the weather conditions along your entire route.

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.

As well as downloading TAF and METAR for airfields forming your route, SkyDemon also gives the option to download weather for an entire country. Open your Weather tab and select 'Get Weather for Chart' from the Tools menu. Once all the weather bulletins have been downloaded SkyDemon will zoom right out to give you full view of the entire country covered in colour-coded dots so you can see at a glance which areas are good for VFR and which to avoid.

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 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 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.

Weather Briefing

SkyDemon also includes weather 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 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 checked (see the Tools menu in the Weather tab to the right of the screen on your tablet or phone).

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 the Flight Details window. To explore how the wind will change over time,

click the 'Time' button in the Weather toolbar on your PC. A slider will appear with notches showing time ahead. To explore the changes in wind on your iPad, iPhone or Android device, open the Weather tab and choose Tools, where you will see the weather slider. Scroll sideways
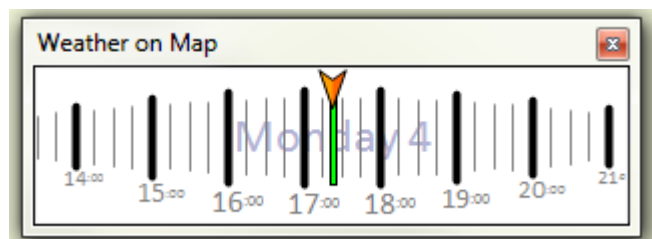
to explore how the weather on the map changes over time. The wind feathers will change direction and they will indicate stronger or lighter winds to correspond with the forecast at the time selected on the weather slider. This applies to the wind representations on the main map; the virtual radar window always shows the wind at all available altitudes.

To return to the current time and weather conditions, tap the green arrow, and when you have finished using the weather slider you can close the window by pressing the red 'Close' button, or by pressing the back button on your iPhone or Android device.

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 tab and tap Tools, then choose Wind Analysis. 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. Just remember that this feature will not be active if you're using the Simple Aircraft profile.

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 under Tools. 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 Route Forecasts

SkyDemon now incorporates the Alpine GAFOR route forecasts, making it easy to tell the forecast status for a route at a glance. The GAFOR route states are Closed (red), Marginal (yellow), Difficult (green) and Open (blue), and the forecasts are based on a combination of visibility and cloudbase along the route, from the route's "reference level", which is the highest terrain along the route.

GAFOR route forecasts will appear when a route is first planned, and SkyDemon clearly shows the colour-coded routes on the map alongside the forecast states for the hours ahead, in 2-hour blocks.
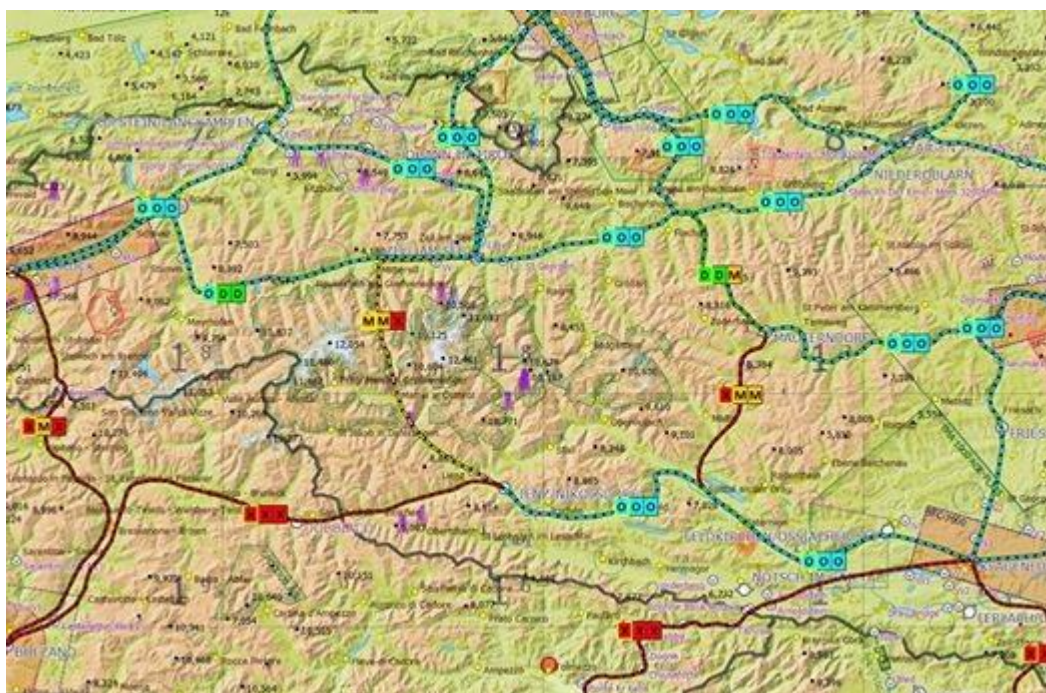
You can easily scroll ahead to see how the conditions will change over time by using the Time tool in the Weather menu. This is located in the Weather tab under Tools on your iOS/Android device, or by pressing the Time button on the Weather toolbar when using SkyDemon Plan for PC.

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 if you're on the PC.
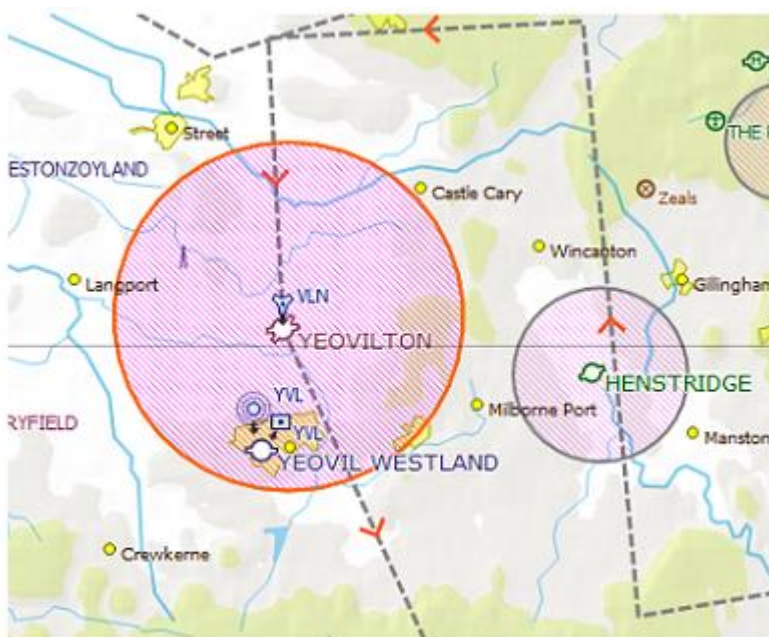
NOTAM Briefing

NOTAM are automatically downloaded from Eurocontrol for most flight information regions in Europe as you plot your route. The areas for which we can automatically present NOTAM like this will expand over time.

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 with as 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:

🟧 Activation of Airspace	⬛ Gathering of Aircraft	⬜ Tethered Balloons/Kites
🟩 Deactivation of Airspace	🟦 Obstructions	🟪 Everything Else

 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 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). 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.

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.

NOTAM Filtering

NOTAM pass through several filters before they are displayed, because there are usually far more notices available than actually apply. To adjust your filtering options, press the Filter button in the NOTAM window on your PC or tap the Tools button at the top of the NOTAM tab on your phone or tablet. The first filter is the period of validity, which by default covers a couple of days from when you opened SkyDemon, or the period of your flight, if you have specified a date and time for it. The next filter is the type of traffic concerned; this is normally just left as VFR.

You can also choose to switch between a narrow route brief, where only NOTAM near to your route are shown, or 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 in the NOTAM tools under 'Advanced'.

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 on your iPad, iPhone or Android just open the NOTAM window and swipe the unwanted NOTAM to the right. PC users just need to right-click and choose 'Hide NOTAM'. Once a NOTAM is hidden it can easily be retrieved by tapping the 'More' option in the NOTAM window, and to return it to your main brief just swipe it back to the left. To unhide all hidden NOTAM in one go just open the NOTAM tools window and choose 'Unhide All Hidden NOTAMs'.
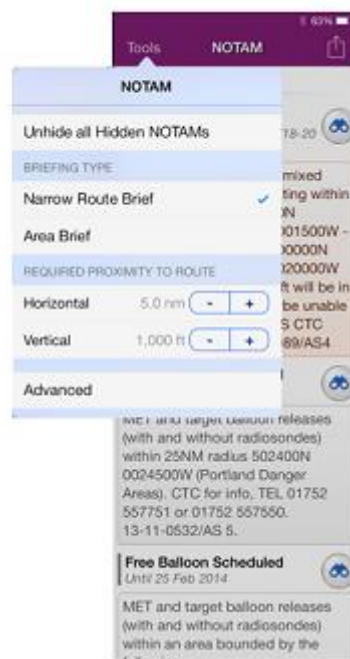
Not all NOTAM can be hidden from your brief, as some are considered important to the safety of your planned flight.

Importing NOTAM

To display NOTAM for a FIR for which we do not automatically obtain data, you will need to obtain them from an online briefing service. You then copy this data to your clipboard, and press the Paste button in the NOTAM window in SkyDemon to import them. When you press Paste a window is displayed showing what NOTAMs have been found in the clipboard. They are also drawn on the map so you can ascertain you are about to import the correct data. In this window there is a link which takes you to a list of online services where NOTAM data can be obtained. Note: this feature is only available on the PC version of SkyDemon.

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 Flight Details window telling you about it. Additionally, there are 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.

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.

- **Minimum Safe Altitude**

  If any leg of your journey is planned at a level below the MSA for that leg, this will generate a warning. Click on the spanner button to increase the planned level of the leg so that it is safe.

- **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.

- **Charts out of Date**

  This warning will appear upon starting the software and indicates that at least one of your charts is out of date. Our charts are professionally maintained and updated every 28 days, so this warning will appear about as often. Simply click on it to show the Charts window, then press Apply Changes (or Continue on your iPad/iPhone/Android) to have SkyDemon automatically update all your charts.

- **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 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, and how far in advance.

5. Airfield Information

Airfield Plates

The Plates window is located to the right of the screen on iPad, iPhone and Android between the Weather and Flight Details tabs. On the PC it's next to Flight Details.

When you plot your route, VFR and IFR aerodrome charts, textual information and visual approach charts are gathered by SkyDemon, which can then be downloaded, viewed and printed if required.

To view a plate from an airfield along your plotted route open up the Plates window and select the one you'd like to look at. It will be displayed in a separate PDF viewer. Once it's loaded, the plate will be highlighted green in the Plates window, which means it has been stored locally and is accessible in offline mode. This is especially useful to tablet and phone users who may want to view an approach chart or other textual information in-flight.

When you have finished viewing the plate on your iPad or iPhone and would like to return to the main map just tap the screen, then select the 'Done' button which will appear in the top left-hand corner of the page, or tap the Back button if you're using an Android device.

TIP: If you do not have internet access, such as when you are airborne, it will not be possible to view plates that have not yet been downloaded, so plan ahead by downloading any extra airfield plates close to your route.

It is also possible to view plates for airfields that do not make up part of your route. Right-click, or press and hold on the airfield of your choice on the map (such as a potential diversion) and select 'Find Plates'. If plates are available for this airfield they will appear in the Plates window and can be opened with a double-click or a tap. Alternatively you can use the 'Find Plates' button at the top of the Plates window itself to search for the airfield you'd like to view. Again, if the plates for your chosen airfield are available they will be visible in the Plates window once you've clicked OK.

In order to more specifically define the type of plates you wish to view click on the 'Tools' button in the Plates window and select 'Filtering'. If you are interested in seeing IFR charts, for example, (which are switched off by default) you just need to toggle them on in the Filtering menu.

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 add the product to your subscription. You can read more about these products in our Online

[Store](#). All of these plates can be downloaded in bulk, once they have been purchased, by clicking the 'Tools' button in the Plates window and selecting 'Download Product'. As there are usually a large number of plates to download this may take a little while, but once the download is complete you will have access to any additional plates you have purchased at any time, even in offline mode.

There's also a 'Download AIP' option, which means that you can choose to download all the European National AIP plates for your selected countries. These plates are included in the subscription price and are freely available to any user, although you can only access the Download AIP button if you have a SkyDemon subscription. 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 on the toolbar and choose Charts, or click the Charts button on the PC toolbar.

In addition to downloading all of your purchased plates you have the option to download all plates in the Plates tab list. Once a route is plotted and all the plates are gathered for airfields along your route, as well as any additional airfields you select using the Find Plates feature, just tap the Tools menu at the top of the Plates window and select 'Download All in List'. This will download all of the plates currently showing in the Plates list, which means you don't have to load them manually, one-by-one.

From time to time new plates are published, and are updated on our system to replace older, out-of-date documents. If you have previously downloaded plates that have since been updated on our system 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.
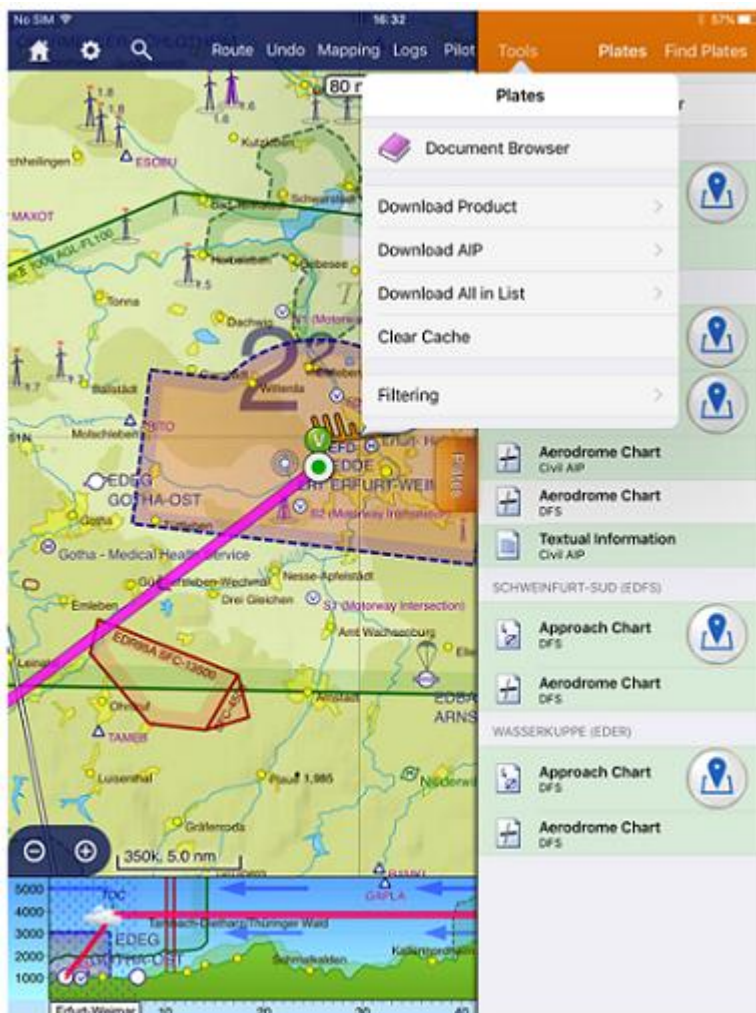
If you're worried about storage space, the 'Clear Cache' option in the 'Tools' menu of the Plates window allows you to delete all the plates you have previously downloaded onto your tablet or phone. To clear the Plates cache on your PC open the Plates window and click Download, then choose Clear Cache from the drop-down menu. 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's not possible to delete individual plates on the PC.

It is also possible to print individual plates directly from the PDF on the PC, iPad and iPhone, using the Print button at the top of the window.

Georeferenced Plates

Some plates will be shown in the Plates window 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.

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.

Airfield Information

SkyDemon also provides dynamic airfield plates to indicate general runway layout and orientation, as well as any additional information about the runway and airfield that may be useful such as opening hours, landing fees, sunrise and sunset times including MCT and ECT indicating the start and end of
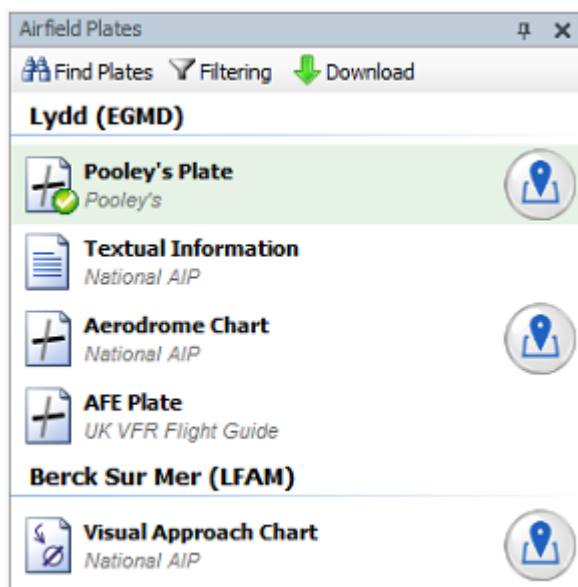
civil twilight. If you're using SkyDemon Plan on the PC this information is accessed by right clicking on your chosen airfield and choosing 'Information'.

On the iPad, iPhone and Android just press and hold your finger on your chosen airfield and select 'Information' from the menu. This page is designed to give easy access to all the information you might need relating to your chosen airfield, including a NOTAM and weather brief, a map of the general runway and circuit layout, admin information such as contact details, fuel availability and pricing, sunrise/sunset times, access to the airfield's own website and a button to view satellite imagery of the airfield in SkyDemon's Satellite View. The Satellite View provides the option to see an aerial shot of the airfield, or perspective views of each of the runways. If you have downloaded any plates for the airfield they can also be accessed through this main airfield information page.

When you have planned a route, you will see an 'Information' icon on the map next to your start and destination airfields. Tap on this icon for quick and easy access to the Airfield Information screen. You can also move the icon to view the map detail underneath, or dismiss it by flicking it away with your finger or mouse.

Document Browser

SkyDemon includes a handy tool for browsing through all available plates and documents on your phone, tablet and PC. Just open the Plates tab and tap the Tools button to see this option, or if you have a route already loaded you will find the Document Browser at the top of the list. If you're using SkyDemon Plan for PC the Document Browser button is located on the main toolbar. For each chart you currently have installed you will see the corresponding AIP, which has many documents including the General, Enroute and Aerodrome sections as well as the aerodrome-specific charts and textual information. On the iPad, the document index is shown in the left-hand column, which also includes a search bar for quick reference, and the right-hand pane is dedicated to the display of your selected plates. These can be scrolled left and right like the pages of a book, and where a plate has more than one page you can also scroll up and down. For Android, PC and iPhone you will see a simple index to scroll through and select plates to view as desired.

In addition to the AIP, you also have access to your purchased products, which incorporate individual airfield plates and non-airfield content. Once again, 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.

Just like the Plates window, all downloaded plates will be highlighted in green in the index, and this means that they can be accessed even in offline mode. To download a plate, just tap or double-click to select it.

User PDFs in the Document Browser

The Document Browser holds all of your purchased plates and any available National 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. In order to view to these PDFs you'll first need to use iTunes to drag and drop them into the SkyDemon folder on your iPad or iPhone. The step-by-step guide to iTunes File Sharing will explain how to complete this process. The PDFs should be dropped straight into the SkyDemon folder, and should not go in any sub-folders.

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. You simply need to drag and drop, or copy and paste your PDFs straight into this SkyDemon folder, and the next time the app is started the PDFs will be available to view in the Document Browser.

PDFs can also be opened 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 Document Browser.

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

Fuel Prices

SkyDemon gives users the option to share up-to-date airfield fuel prices, which are displayed on the map next to each airfield. This feature is heavily dependent on user participation, so subscribers are encouraged to record and submit fuel prices through SkyDemon each time they fill up at an airfield. This is a great way of sharing useful, real-time fuel information with the rest of the SkyDemon community.

Open the Mapping menu to select fuel price annotations and you will see speech bubbles dotted around the map containing all the most recently submitted fuel prices. If the price was submitted in the past 7 days the bubble will be green, rather than white, to indicate that it's really recent. Fuel price bubbles in orange were submitted more than 30 days ago.

To submit a fuel price for an airfield, or to view more information, just tap directly on the price

bubble on the map, or, if you have fuel price annotations switched
off, just press and hold your finger, or right-click on the airfield to
bring up the "What's Here?" menu options.

The fuel shown is relative to the fuel type that your selected aircraft
takes, and if your aircraft takes more than one fuel type, such as
AvGas 100LL and UL91, then the cheapest is shown, with little blue
notches on the fuel price bubble to indicate that the price is for your

alternate fuel type. You will find the option to add an alternate fuel type to your aircraft profile in
the Aircraft Editor window, accessible from the Setup menu, or by clicking the Aircraft button on the
toolbar in SkyDemon Plan for PC.

Fuel prices relate to the fuel measurement you have previously set up, so if you'd like to see the fuel
price per gallon, rather than per litre, just open the Setup menu and click Change Units for your
options.

It couldn't be easier to submit a new fuel price; just tap the price bubble on the map, enter the price
per unit, check the selected fuel type and currency, and press Submit. If there's no fuel price for a
particular airfield, you could be the first to submit one. Just press and hold your finger, or right-click
on the airfield on the map, and click 'Share Fuel Price'. All fuel prices must include VAT, or relevant

local sales taxes, and are the prices that any member of the public would pay if they flew to the airfield.

In addition to the fuel price annotations on the map, you can also see fuel information for each individual airfield in the main Airfield Information screen. This is accessible by pressing your finger on an airfield icon and selecting 'Information'. The fuel prices are displayed in the Admin information section.

SkyDemon is able to make calculations for the cost of your flight, based on the fuel prices you have set in the Planning Options menu under Setup. As fuel prices often vary slightly, you will still need to manually enter fuel prices in this window for accurate flight cost calculations. The Fuel Price sharing facility is a great way of helping to get up-to-date, accurate fuel prices for airfields to enter into this field.

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.

An example PLOG is shown below. 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.

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).

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.
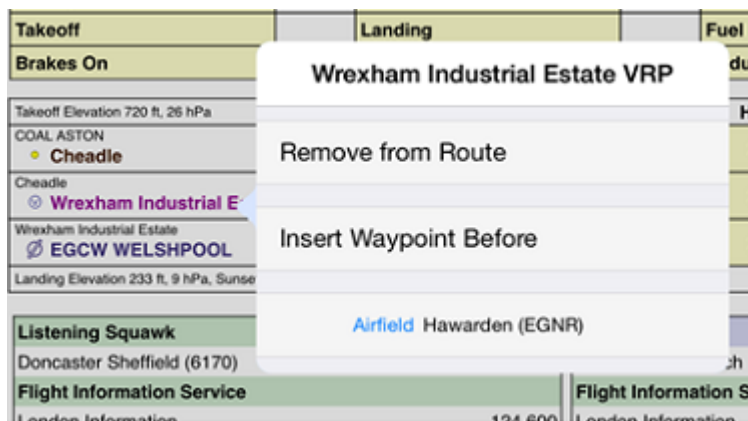
Customising the PLOG

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 when using the iPad, iPhone or Android apps. On the PC in the Print Centre press the Settings button and refer to the Pilot Log section.

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.
- **Eliminate Redundant Radio Services:** Analyses your path through the coverage of enroute radio services (such as LARS in the UK) and eliminate those that fall entirely under the coverage of another service, to save space in the printed output.

It is also 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 Print Centre toolbar.

The Pilot Log is included in the email generated on iPad, Android and iPhone when using the 'Send by Email' option in the Route menu. You'll find two copies of the PLOG; one in CSV format, and the other in HTML.

7. Printing

The Print Centre 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 Print Centre, press the Print button on the toolbar in SkyDemon Plan for PC. You'll see a list of buttons at the top to switch between the different types of print output, all of which are explained below.

The SkyDemon iPad and iPhone apps do not have a separate Print Centre button, but there are options to print NOTAM, TAF and METAR briefings, as well as Weight and Balance calculations, airfield plates

and the Pilot Log. Just look for the print button (a square icon with an arrow) at the top of each individual window for your printing options.

> NOTE: If you do not have an AirPrint printer configured with your iPad/iPhone it is still possible to share routes using the Cloud Storage facility, so that the files can be opened in SkyDemon Plan on a PC with a connected printer.

When using the 'Send by Email' function in the Route menu on SkyDemon for iPad, iPhone or Android the subsequent email not only contains attachments for your route (in .flightplan, GPX and FPL formats) but also 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 from your iPad or Android device containing all of the information you might need to print for posterity, or as evidence that you have undertaken a full briefing.

Controlling Output

When using SkyDemon Plan on the PC use the Page Setup button on the Print Centre 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.
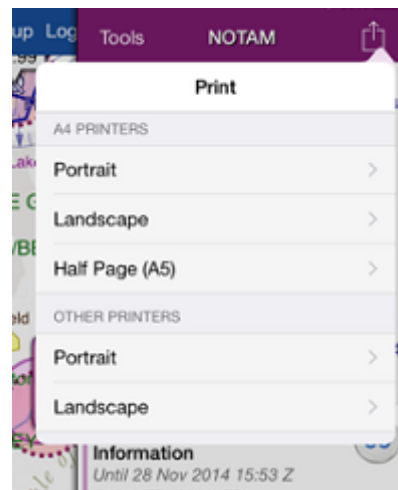
What Can I Print?
- **Enroute Charts**

  Clicking the Enroute Charts button in SkyDemon Plan's Print Centre 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. These charts

should be everything you need to fly and navigate a route, though we always suggest you also take the official printed chart as these contain more information, should you choose to divert.

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 and switch to the Enroute Charts page. 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. The scale will be adjusted if necessary to fit everything onscreen on to the printed page. PC Only.

It is not possible to print enroute charts directly from the Android, iPad or iPhone apps.

- **Airfield Information**
  Clicking the Approach Info 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.

It is not possible to print airfield information directly from the iPad, iPhone or Android apps.

- **Airfield Plates**
  PC, iPhone and iPad users can also print Airfield Plates and other documents in the Plates window. To download the plates you would like to view, open the Airfield Plates window and double click on the relevant plates or textual information for your chosen airfields. You will see that these are 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**
  Clicking on the Virtual Radar button within the Print Centre on the PC produces the print output for the enroute features window. This window contains a side-on view of your entire route which includes terrain, airspace, airfields, obstructions and other features of interest.

The scale of the enroute features printout is set in the same way as that of the enroute charts: click on Settings, switch to the Enroute Charts page and use the slider to set the scale.

It is not possible to print the Virtual Radar direct from the Android, iPad or iPhone apps.

- **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). Look for the print button at the top of the individual Weather and NOTAM tabs on the iPad and iPhone.

- **Weight and Balance**
  It is possible to print Weight and Balance calculations from the PC, iPhone and iPad, 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.

  In SkyDemon Plan on the PC the Weight and Balance print output can be found in the Print Centre. iPad and iPhone users should open up the Flight Details window and tap the Weight and Balance option to specify fuel amounts, set up their loading point weights and select printing options.

8. Sharing Data between your Devices

This page contains 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 the 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 backup and share your routes, logs, waypoints and aircraft profiles, but we'll cover some other methods below too.

iTunes File Sharing

File sharing is a feature in iTunes which makes it easy to manipulate the documents on your iOS device. Follow the steps below to get started.

1. Connect your iOS device (iPad or iPhone) to your PC with the USB cable provided.
2. Open iTunes on the PC then select your iPad or iPhone from the list of devices on the left.

3. Select 'Apps' from the categories at the top of the screen, then scroll down to the bottom of the page. You will see a list of apps on the left which support file sharing.

4. Select SkyDemon from the list of apps and you'll see all your current saved documents in the pane on the right.

5. Drag the files you would like to transfer from your desktop into the documents folder in iTunes. Keep on reading for more information on the types of files that can be shared this way.

Transferring files between PC and Android

It is not possible to use iTunes to share files with SkyDemon for Android, however you will find that you're able to connect your Android tablet or phone to your PC via USB and navigate directly to the SkyDemon folder on the device. This gives you the opportunity to easily copy and paste, or drag and drop routes, logs, aircraft files, and custom data to the corresponding folders within the SkyDemon folder on your Android device.

Transferring Routes

Transferring Routes with iTunes File Sharing
In the list of files within iTunes you will see some ending in .flightplan, those are your saved routes. You can drag these from the list and onto your desktop to take routes off the iPad or iPhone, and you can drag routes into the list from your desktop to put routes you've saved on your Mac/PC onto the iOS device. Next time you open the Route menu and select Open, you'll see the new routes you put there.

Transferring Routes by Email
You can easily share routes that you have created on the tablet or phone with your friends by email; you have probably seen the option in the Route menu. You can also use this function to email routes to yourself, then open them from your email client on your PC.

This feature works in reverse, too. On your PC you can email a route to yourself 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 My Documents folder. Send the email, then in the Mail app on your iPad/iPhone or Android device you should see the email come through. In the list that opens when you touch the attachment you'll be given the option to open the route in SkyDemon. You are then free to save the route into your device's route library in the normal way or just continue using it.

The 'Send by Email' function in the Route menu on iPad, iPhone and Android generates an email containing your route in three formats: our native .flightplan format, as well as GPX and FPL format for use with other programs. The email also contains 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.

Transferring Routes using Cloud Storage

In the Route menu you will see buttons labelled 'Save to Cloud' and 'Open from Cloud'. These enable you to easily save a route on one device and open it up instantaneously on another without the need to use iTunes or email for file sharing.

Simply plot a route, then tap 'Save to Cloud' and give your route a name in the New File field, or overwrite an existing file if you wish, then hit 'Done' on the keyboard. Your route will be automatically saved to our Cloud Storage facility. Next log in to SkyDemon on your PC, or another phone or tablet and click on Route, then 'Open from Cloud', and you will see the route that you've just saved is now available to load. Once the route has been loaded you have the option to save the route directly to your iPhone, PC, Android or iPad if you wish by using the normal 'Save' button in the Route menu.

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. 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 Device Connectivity Options from the Setup menu. You can choose between a SkyDemon Mobile device, a Garmin device or a SkyMap device. Depending upon which device you choose, there are some connectivity options that can be specified.

- **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.

If the export is not successful, your device may be connected on a nonstandard port. You can change the port used by SkyDemon to communicate with your device in the Device Connectivity Options window within Setup. Choose 'I have a Garmin handheld device' and look at the Device options in the window below. By default it is set to "Auto" which connects by USB to Garmin devices.

- **SkyMap Devices**

  These popular devices such as the IIIc are supported for direct route export within SkyDemon Plan. Ensure your device is connected to the COM port specified in the Device Connectivity Options window in Setup, 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. To save in any of these formats choose Route -> Save As and then pick the format from the dropdown menu at the bottom of the Save window.

  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 85.

- **Syncing with the SkyDemon Mobile MD**

  See Appendix.

Note: Import/Export via USB is only supported in SkyDemon Plan for PC.

Sharing Aircraft Profiles

Your aircraft profiles on your PC are located in the Aircraft folder, within the SkyDemon folder, found in My Documents. To get an aircraft profile onto your iPad or iPhone from the PC using iTunes File Sharing, you can drag file across to the SkyDemon documents folder in iTunes (see above) and it will be available on your iPad or iPhone after restarting the SkyDemon software (see appendix).

You can also use SkyDemon Cloud Storage to save and transfer your aircraft profiles between the different compatible devices. Open up your Aircraft library using the Aircraft button on your PC toolbar and you will see the buttons for 'Save to Cloud' and 'Load from Cloud'. The Aircraft Library can be found on your iPad, iPhone and Android device by tapping Setup and Aircraft. To save an aircraft to the Cloud just select it from the list and choose 'Save to Cloud', or to load one, open the Tools menu in the Aircraft Library and choose 'Open from Cloud'.

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.

Sharing User Waypoints

Transferring Waypoints using Cloud Storage
To transfer your user-defined waypoints from one device to another quickly and easily you can use the 'Save to Cloud' and 'Load from Cloud' options in the Waypoints window (open the Setup menu and select Waypoints, then tap Tools in this window on iPad, iPhone and Android). All waypoints will be replaced by the ones loaded from the Cloud to avoid duplication.

Transferring Waypoints via iTunes
You can obtain a file containing user waypoints either from us (we make BGA turnpoints available), from the internet, or by exporting selected waypoints from SkyDemon Plan on your PC that you have created yourself. User waypoint files are in GPX format, and the filename needs to end in .waypoints.gpx. SkyDemon for iPad/iPhone looks for these files on startup and loads them into memory.

For example, to load the British Gliding Association turnpoints into SkyDemon for iPad and iPhone using iTunes, first download them from the Get Started page on our website (go to Windows PC Download Information) and extract the file onto your desktop. The filename already ends in .waypoints.gpx so you shouldn't need to rename it. Then copy the file into the SkyDemon documents folder using the iTunes File Sharing method and they will then be available on your iPad or iPhone after restarting the SkyDemon software (see appendix). The BGA Turnpoints file is loaded to SkyDemon on your PC using the Import option in the Waypoints menu. The entire BGA turnpoints list can then be saved to the Cloud and loaded onto your other devices.

To share individual waypoints open up the Waypoints window on your PC, highlight your waypoint and click Export. You will be prompted to name the waypoint, but be sure that the file name ends in .waypoints.gpx so that it is recognised when imported to your iPad/iPhone. This file can then be dragged to the iOS device's file sharing folder in iTunes and will be available upon restarting the app.

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 the Cloud button, where you will see the option to backup all your logs to the Cloud as well as opening any logs that have already been saved to the 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.

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 'Import Log from File'. Navigate to the folder in which you have saved your GPX file and select it, and the breadcrumbs will appear on the SkyDemon map.

Note: It is not possible to open log files from an email sent to an iPad, iPhone or Android device.

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 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.

Importing Logs from other GPS Devices

If you are using SkyDemon Mobile, your flight logs are automatically copied into your library when you sync with the device. If you are using a Garmin or SkyMap device you will need to open the Analysis menu in SkyDemon Plan for PC and choose Retrieve Log from Connected Device to see a list of available logs on your device. You can choose to save a copy of the log in your library when you select one.

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'.

Unlike routes and waypoints, it is not possible to use iTunes to transfer your Custom Data folder to SkyDemon on the iPad or iPhone, however there are other similar applications that do make this possible, such as i-Funbox. It's important to bear in mind that we cannot offer support on using such third-party applications.

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.

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. The 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.
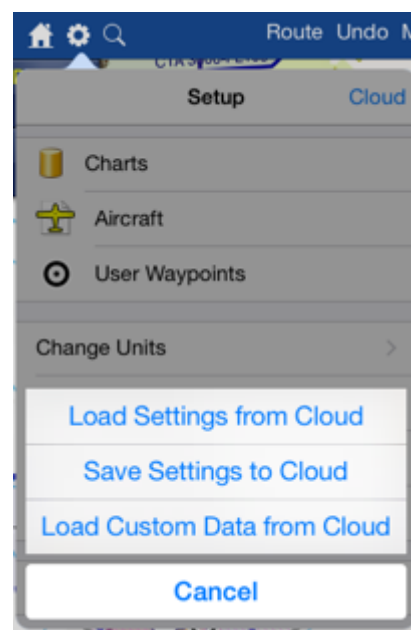
9. Ready to Fly

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 purchase a block of credits by logging into the [customer area](#) of our website, and a credit is used each time you file a plan.

To open the flightplan form, press the File Flightplan button at the top of the Flight Details window to the right of the map. Your available credits will be indicated at the top of the form on iPad, iPhone and Android, or towards the bottom of the window on the PC version, so if you're not sure how many flightplan credits you have, just open the form to check.

NOTE: Flightplan Credits expire after 12 months from the date of issue.

The flightplan form will appear familiar to anyone who has filed a flightplan before, except that most, if not all details will have been automatically filled in by SkyDemon. This will be the case as long as you have planned a route, and your aircraft has been configured with all flightplan-relevant fields filled in.

At the bottom left of the window there is a status indicator that updates as the form is filled in, telling you when the form is complete and valid. Next to this is a label indicating how many flightplan credits you have in your account; if you have no credits, you cannot file a plan. On the iPad, iPhone and Android flightplan forms you will see the 'Continue' button at the top-right of the window.

The Submit Plan button is only enabled when the flightplan form is complete and valid, and when pressed your flightplan is immediately sent to all ATC units concerned.

Once a flightplan has been filed it can be subsequently delayed, cancelled or closed by logging into the [customer area](#) of website, on the flightplan management page. This is a standard web page which

can be used on any device with internet-browsing capability, which means you can even access it from your mobile phone if necessary.

Addressing
Click on the Addressing button to show the addressing window, which contains all the addressees automatically decided upon for the route you have entered, and gives you the opportunity to add extra addressees if you require.

Form Fields
Detailed discussion about the format of a VFR flightplan is beyond the scope of this documentation. SkyDemon is designed so that when you open the flightplan window, the majority of the fields are automatically filled in for you.

The cruising level for your flight will be set to VFR by default, which means an explicit level is not stated. If you wish SkyDemon to output the specific level(s) you have planned, go to the Planning Options window, accessible under the Setup menu, and change the option there. You will also see the option to save the Pilot name and contact number which will then be auto-filled into your subsequent flightplans. Other details such as your aircraft type, registration and equipment can be specified in the Aircraft Properties window.

Filing a GAR

Sometimes it will be necessary to file a General Aviation Report (GAR) for your planned flight, as well as a VFR Flightplan. Typically flights into the UK 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. SkyDemon has collaborated with OnlineGAR.com to make the

process of filing a GAR as simple as possible, so 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. 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 open a window in OnlineGAR.com where the GAR form will be presented.
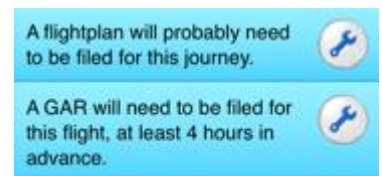
As a SkyDemon subscriber the GAR service is free to use, and the system is secure, which means your personal details are safe.

More information about the OnlineGAR.com service can be found by logging into the customer area of our website and clicking on the GAR Management link.

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 choosing to purchase the navigation upgrade.
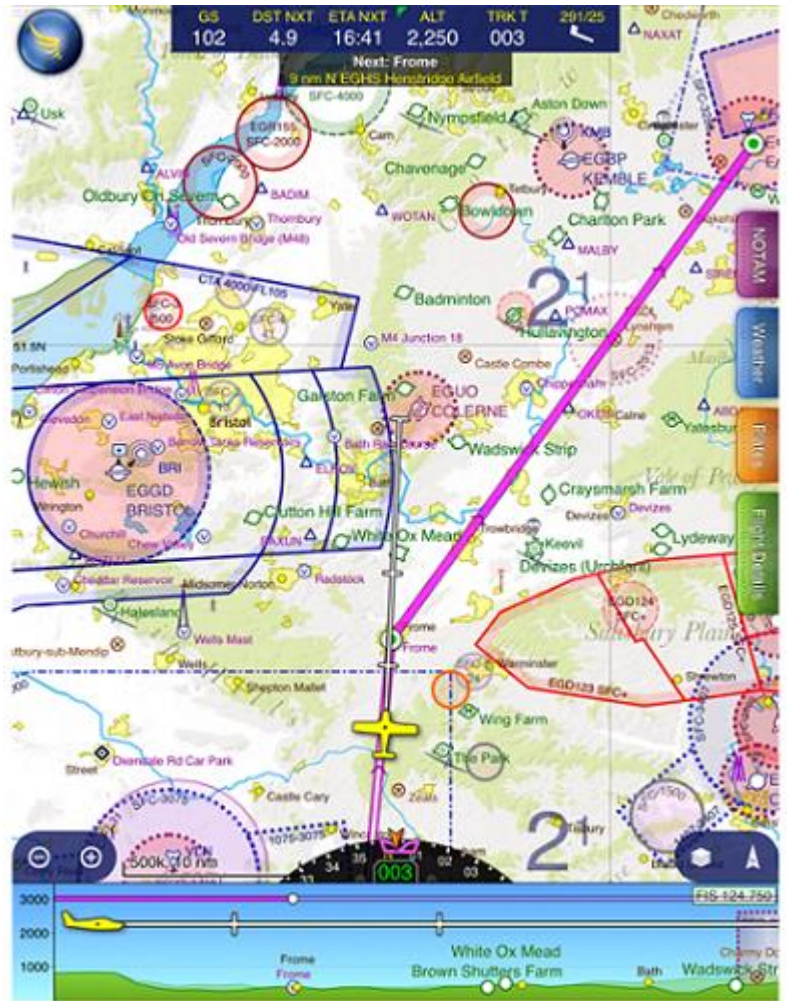
The Moving Map

The SkyDemon chart follows the position of the aircraft, aligning itself so that
most of the map covers the path ahead of you. When you drag the map
around to explore it, it will revert to following the aircraft when you have left
it alone for about 10 seconds. To stop the chart from following the aircraft
position just toggle 'Follow Position' off in the Setup menu, which is located in the main navigation
menu in the top left-hand corner of the screen.

> TIP: You will notice that once you have moved the map around so that the aircraft itself is no longer
> visible, there is a yellow arrow pointing to it showing its distance away from the edge of the map. You
> can touch this arrow to force the map to immediately zoom back to your current position.

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, or
alternatively open the main menu and tap Setup then Orientation.

Position Reporting

SkyDemon can give you a plain-English position report at any time, and 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.

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 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.

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.

Dynamic Airfield Plates

SkyDemon charts have a wealth of information not normally displayed on the map while flying, including detailed plates for many airfields. To access this information press the Airfield Information bubble at your start or destination airfields, or press the [Airfield Brief](#) when it appears in the Virtual Radar on approach, or alternatively press and hold on the map to reveal the "What's Here?" menu, then tap 'Information'. The plate contains much of the information you need to make a visual approach to any field.

The airfield information window shows a detailed map of the runway layout, depicting location, orientation, surface and dimensions (where available), as well as textual information such as local weather and NOTAM, frequencies and other admin info. Overlaid on the map is an aircraft symbol or an arrow pointing towards the aircraft location. This map, which also includes radio navigation aids that are situated at the airfield, can be dragged around and zoomed just like the main map.

Direct To

SkyDemon includes a Direct To functionality to help you quickly replace your route with one from your current position straight to an airfield of your choice. Before using this, you should first configure the feature in the Navigation Options section of the Setup menu by indicating the minimum length of runway that is acceptable to you in a diversion.

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. The information includes the airfield name, longest runway length, surface type and a rough bearing to the airfield from your current position. The colour of the airfield indicates ownership (red for military, blue for civilian and green for private).

If you would like to fly direct to an airfield or waypoint that's not included in the list you can use the 'Find Waypoint' button in the main navigation menu to specify a different point. You can type the name of the airfield or waypoint, the ICAO identifier, the OS grid reference, or even a postcode and SkyDemon will produce a list showing that point and any nearby airfields and waypoints.

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.

Selecting an airfield from the Direct To list that already makes up part of your route has 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. iPad, iPhone and Android users can quickly locate and shortcut to one of the waypoints along their route by tapping Direct To, then using the Turning Points list.

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, then select the airfield from the menu and choose 'Route Direct'. This will remove your previous route from the map and plot a course 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 routing options in the waypoint information menu. These routing options include 'Start New Route', 'Insert in Route' and 'Route Direct'.
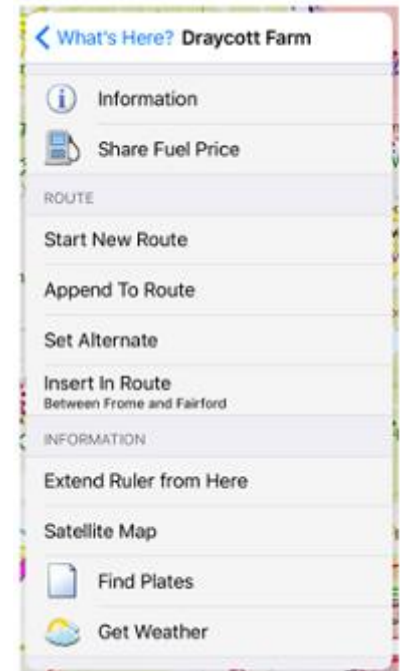
You may have plotted your route in order to skirt around a piece of airspace for which you may or may not have permission to transit, and so it may be necessary (or preferable) to adjust your route in flight after obtaining clearance to enter that airspace. In this instance you can use the Direct To feature (above) to create a shortcut to a waypoint further along your route, provided that this next

waypoint is a known waypoint within the SkyDemon database. Known waypoints contain a green dot, whereas unknown points along your route have a white dot (see image).

Instruments

The navigation Instruments are displayed around the edges of the main map and you can adjust the settings for the instruments by choosing Instruments from the Setup menu. It's also possible to change the size of the instruments from the Setup menu, to make them bigger for easier reading, or smaller to make more space on the map, and you can also choose which instruments to display and which you may wish to hide, depending on available screen space.

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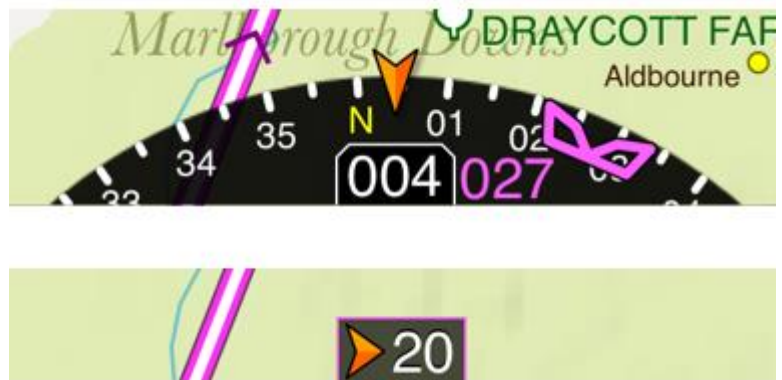
The values shown on the direction indicator refer to your current track (the number in the middle), as well as the bearing for your next planned waypoint to the left of right, depending on which way you need to turn. They are shown in degrees true by default but can be switched to degrees magnetic from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

You can also 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.
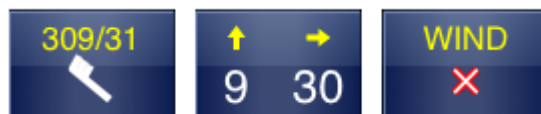
Groundspeed

Groundspeed (GS) is shown in a simple square instrument in the chart view or in a dynamic tickertape-style instrument in the instruments view on the Mobile MD unit. 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 heading 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 to the threshold, 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.

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.
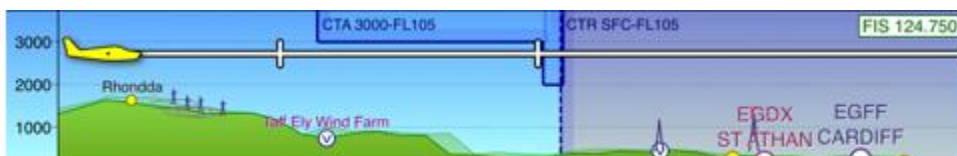
This instrument has a "What's Here?" menu that can be used to inspect certain features on it, just like the main map. Hold your finger on any part of it to see the list of objects that you can inspect. Another feature of the "What's Here?" menu is that it will tell you the distance and time to reach 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 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.

TIP: There are no volume control settings within the iOS and Android apps themselves so if you want to minimise or mute audible alerts use the volume control on the side of the tablet or phone.

You have the option to switch between VFR mode and ATS Routes mode, and the warnings that appear are subsequently tailored to the mode you have selected. This means that in ATS Routes 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.

Airspace and NOTAM 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 so you can clearly see which piece of airspace is associated with the warning. In the image below, the Cardiff CTA has been detected and a yellow warning displayed, complete with a thick yellow border around the airspace itself. 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	Gray
NOTAM	Yes	Purple
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 window, accessible from the Setup menu.

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 building 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.
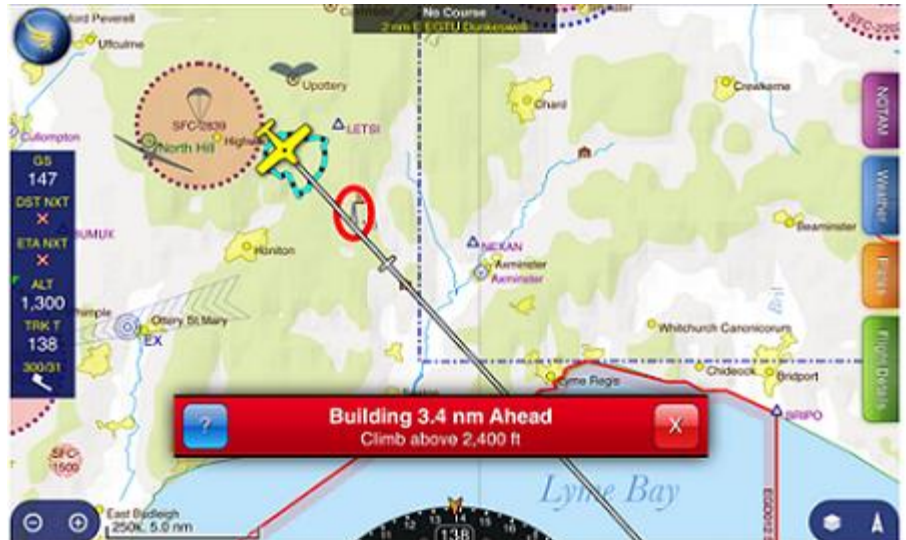
Further information can be displayed by touching the question mark, and the warning can be dismissed by touching the cross. Once dismissed, no further warnings about the obstruction will be displayed for five minutes.

Off-Course Warnings

If you should drift off your planned route by more than 3 nautical miles, a warning is displayed until it is either dismissed or your course is adjusted such that you are again converging on your next waypoint.

Off-Course warnings can be dismissed and, like the other types of warning, will not appear for five minutes after dismissal. You can specify the distance from your planned route at which an off-course warning will appear in the Setup menu under Navigation Options.
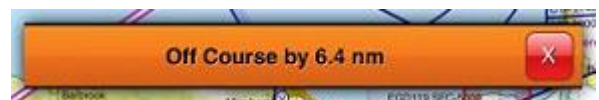
Airspace Notifications

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. When the aircraft is inside a piece of airspace, both laterally and vertically, a thick black and white highlight is drawn Fon top of the airspace border until you are no longer inside the airspace.
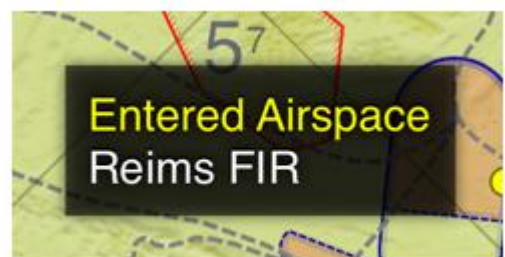
Similar alerts will also appear when entering the coverage area of a new Flight Information Service.

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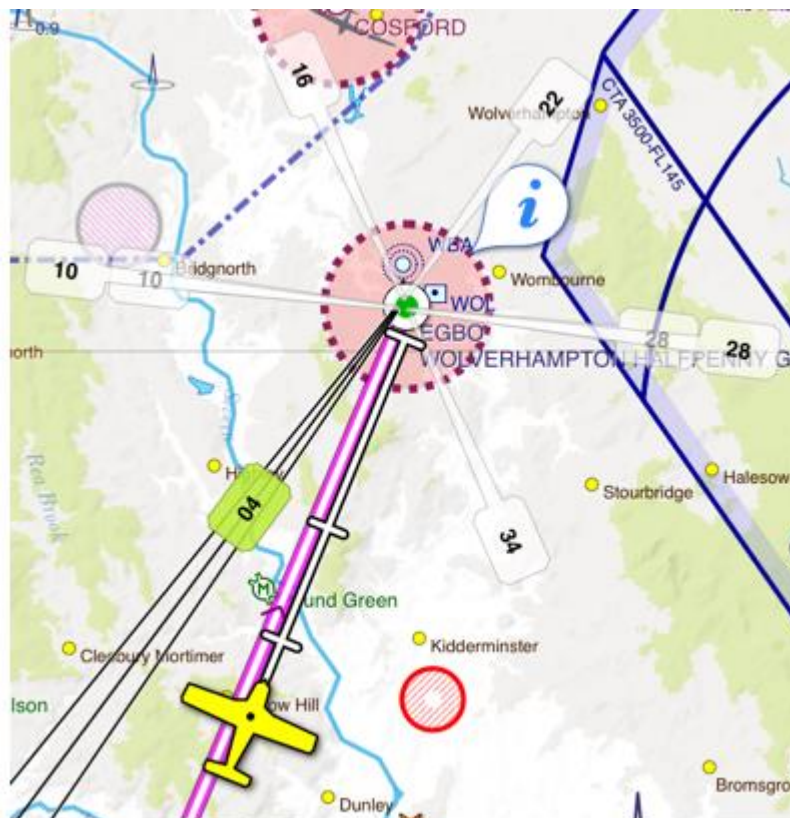
The centreline that most closely aligns with your position is highlighted and this will update automatically as you fly around the airfield.

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'.
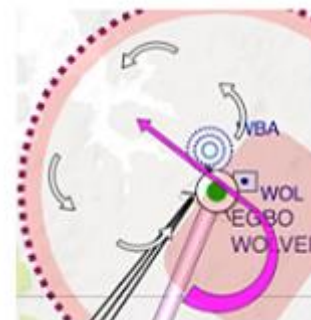
In order to use the extended runway centrelines and other approach tools, you'll need to make sure that you have enabled them in the Navigation Options menu under Setup. You'll also see the option in this menu to configure the relative distance at which the approach tools, including the Airfield Brief, 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. If there are any current NOTAMs for your chosen runway you'll see a warning symbol in the Airfield Brief. Just tap on it for the full NOTAM details to see how the runway is affected.

When you're on the ground, the Airfield Brief not only lets you quickly access the Airfield Information, but also lets you share fuel prices for that airfield. If SkyDemon has the information you can also use the Airfield Brief to find specific taxiways and holds at the airfield.

Just tap on the Airfield Brief for your options.

GlideSafe Technology

When flying over water or mountainous terrain, or even just for your own peace of mind, you can switch on SkyDemon's GlideSafe feature. 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 and land if you were to encounter an engine problem, for example.

GlideSafe takes altitude, 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.

TerrainSafe

TerrainSafe 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. The TerrainSafe feature is particularly useful when flying in mountainous areas.

To switch on TerrainSafe you'll first need to be in Go Flying mode, and you just need to open the Mapping menu where you'll see the option to toggle 'TerrainSafe' on/off.

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. Alternatively open the main navigation menu by tapping the blue SkyDemon icon in the top left-hand corner of the screen and choose Setup then Mapping.
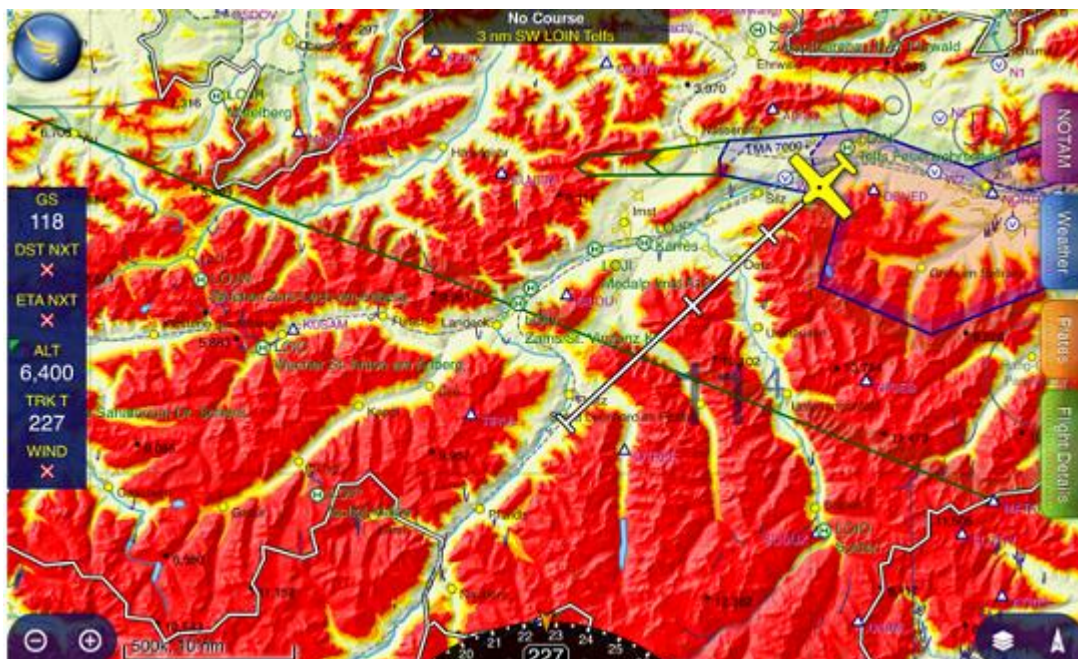
Other Tools

Timers

SkyDemon allows you to define timers on your tablet or smartphone to remind you to perform certain tasks periodically. These can be very

Perform FREDA Check
Occurs every 1 minutes

useful for repetitive tasks like remembering to change fuel tanks. To access the Timers screen, tap the main menu in the top left-hand corner of the screen and choose Setup then Navigation Options.

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 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 the app is closed and restarted or 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.

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

Flight Log Analysis

Maintaining a collection of logs of all the flights you have undertaken is a great way to remember them. SkyDemon Plan makes it easy to download logs from your GPS device or import them from file into a library, and explore them on the map.

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 details such as the flight time, maximum speed and distance of your flight. You can add notes to your logs in this menu, and they can also be shared via email from your tablet or phone.

TIP: To delete an unwanted flightlog on your iPad or iPhone just tap the Logs button, 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 and press and hold your finger on the log you would like to delete.

When a flight log is opened, it can be displayed in the main map as a coloured line showing the route flown, and also in its own dedicated window at the bottom of the screen, similar to the Enroute Features window, showing a vertical profile. Just select the log and press 'Display Flight in Map and Virtual Radar'. This provides a definitive record of how the flight interacted with terrain, obstructions, airspace and other features. When you move the mouse cursor around in this window, if you're viewing the log on your PC, the status bar shows you the parameters at that point in the flight: altitude, speed and elapsed time (where available). On your tablet or phone you can analyse the log statistics in a similar way, by dragging the aircraft symbol in the Virtual Radar along the track with your finger.

TIP: 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.

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.

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.

11. Appendix

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.

- **Upgrading the app on iPad and iPhone**
  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 at the bottom 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 be notified of this when you next open the Charts list. 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.

  If you are running SkyDemon version 3.2 or previous on your PC you'll need to fully uninstall the software from your Control Panel before downloading the latest version. You'll find detailed instructions for doing this in the Get Started section of our website under Windows PC Download Information.

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. The screenshot will be saved in your iPad's Photos app.
- **Brightness Control:** To manually adjust the screen brightness on your iOS device you can bring up the Control Panel, which is done by swiping upwards from the very bottom edge of the screen.
- **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).

Restarting SkyDemon for iPad and iPhone

Some types of data are only read when SkyDemon for iPad/iPhone is first started. Did you know that when you press the home button to return to the iPad/iPhone home screen the app isn't actually closed? This is just how Apple devices work, and is usually quite beneficial but can be confusing.

To actually close an app, quickly double-tap the iPad/iPhone home button to bring up the Task Manager. You will see all the apps that are currently running in the background, and you can scroll between them by swiping left or right. To close one, just swipe your finger up towards the top of the screen, as if you're flicking the app away from you. It will disappear, and next time you open the app it will be started fresh, and any new data will be loaded.

SkyDemon Mobile Devices

This section does not refer to iOS or Android.

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 via ActiveSync / Windows Mobile Device Centre. Alternatively, if your device does not support ActiveSync connection, just insert the SD card on which SkyDemon Mobile is installed into your PC. Then in SkyDemon Plan, simply click the Sync button in the Go Flying menu. The following actions are performed during a sync:
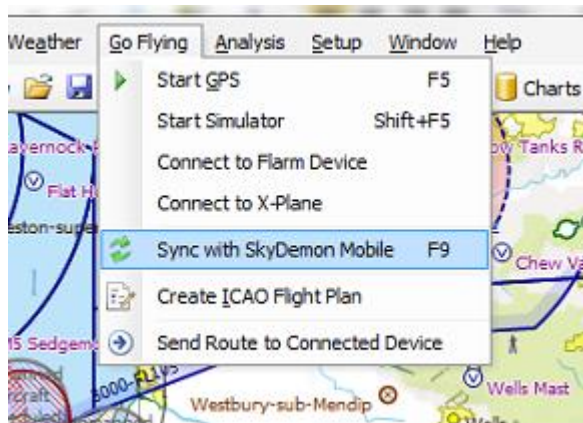
- Your route library is copied from your PC to the device

- 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.

Syncing with your Computer

How your device connects with your computer depends on what sort of computer you have. If you have a PC, you will normally use MS ActiveSync mode to establish connectivity. If you have a Mac, you will normally use Mass Storage mode. The default for new SkyDemon Mobile devices is ActiveSync. Either way, start by connecting the device to your PC physically by using the supplied USB cable.

MS ActiveSync Mode (default)

ActiveSync is the Windows technology for connecting to Windows CE devices. Your SkyDemon Mobile device is such a device, and a few moments after you plug it in to your computer it should be recognised by Windows and you'll be told that a new device has been connected.

If Windows does not recognise and connect to your device, you may need to download and install Microsoft ActiveSync. On Windows Vista/7, ActiveSync is referred to as Windows Mobile Device Centre.

Mass Storage Mode

Your device is initially configured to use ActiveSync Mode. To change the USB connection mode, tap on the SkyDemon logo to open the main menu in SkyDemon, 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. Click the Sync button in the Go Flying menu in SkyDemon Plan to proceed, and then when you're done, simply unplug the cable and press the Fly button to restart the SkyDemon software.

Updating the software on your SkyDemon Mobile device

From time to time you may need to update the software that's installed on your device. This happens when you have upgraded the SkyDemon Plan software on your PC. When you click Sync a message will pop up telling you that the software on your device needs to be upgraded but this cannot be done while SkyDemon is running on the device. You simply need to tap on the SkyDemon icon in the top left-hand corner of the screen on your Mobile MD, then choose System, and Exit. Once you've exited the software you can continue to sync with your PC as normal.

You will need to turn the unit off and on again to complete the update process.

Install SkyDemon on a third-party Windows CE device

Once SkyDemon has been installed on your PC you will have the tools available to install the software on a third-party Windows CE GPS device. To do this, go into the Setup menu and click Device Connectivity Options. Click the blue hyperlink labelled 'Install SkyDemon Mobile on a new Windows CE Device' and select your connected mobile device, or the SD card drive letter, from the list. When you click on an item in the list to select it you can specify the install location in the box below. Normally it is fine to leave this as the default, which SkyDemon will suggest.   Press OK to begin the installation, which could take a few minutes, and once the process is complete SkyDemon Mobile will be started on the device and an entry will have been created on the device start menu (not all devices support these features).

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

devices. We include the functionality in SkyDemon Plan so customers with netbooks or tablet PCs can use the same tools without needing to purchase an additional device.

To use the GPS navigation functions your device will need some kind of GPS capability. 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 Start GPS button in the Go Flying menu to switch SkyDemon 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.

Note: SkyDemon is not compatible with tablets running Windows RT, and so you may find that it is not possible to use a Windows-based tablet for in-flight navigation. The GPS configuration described above may not be possible for Windows devices with in-built GPS.

X-Plane and SkyDemon

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 Options 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.

PowerFLARM

As well as providing warnings and
notifications about every element of
your flight to keep you safe and
aware, SkyDemon for iPad, iPhone,
Android and PC can also integrate
with PowerFLARM to graphically
depict other traffic on the map
itself.

Traffic is displayed on the map in the form of little white aircraft symbols, and these symbols will
remain white unless you are in imminent danger, in which case they will turn red and 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.

SkyDemon is also able to show bearingless
targets, so when no data for relative bearing
is found for a nearby aircraft SkyDemon will
instead show a green ring around your own
aircraft symbol, which will increase or
decrease in size to give an indication of
proximity and altitude. If you don't want to be
notified of traffic without bearing information
you will find the option to switch off
'Bearingless Targets' in the Setup menu under
Navigation Options.
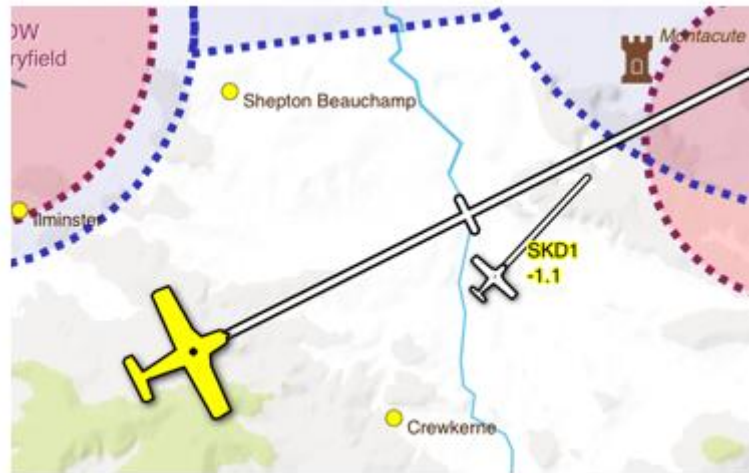
TIP: For more information about an aircraft just press and hold your finger on the symbol to bring up
the "What's Here?" menu.

SkyDemon is unable to detect traffic with just your laptop, iPad, iPhone or Android device alone, and
so you will need additional hardware in order to make use of this feature. Any FLARM-compatible
device will be adequate, but PowerFLARM will pick up ADS/B traffic as well as FLARM traffic.

In addition to your PowerFLARM unit (either the portable or the core device will be fine) you will need
an Air Connect, without which you will not be able to connect the iPad/iPhone/Android/PC and

PowerFLARM. The Air Connect dongle plugs into the FLARM unit and creates a wifi bubble for your SkyDemon device to connect to.

You will find the options for connecting to the Air Connect device in the Setup menu under Connectivity Options > FLARM, and once a connection has been established just tap the Go Flying button in the top right-hand corner of the toolbar and choose 'Use FLARM'. A GPS fix will be obtained through your FLARM unit rather than your tablet/phone's GPS chipset or external Bluetooth GPS receiver, and SkyDemon's GPS navigation features will continue to function as normal, but with the addition of traffic data.

SkyDemon and Dynon SkyView

SkyDemon now 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.
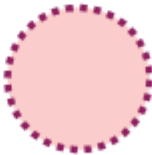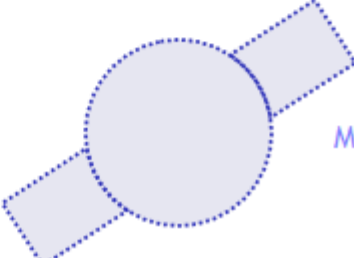
Connect your tablet or phone to the Dynon's wifi in the device settings, then in SkyDemon open the Setup menu and tap Connectivity Options then choose Dynon SkyView from the list of external GPS/traffic sources. Next tap the Go Flying button in the top right-hand corner of the screen, and choose Use 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.

Map Key

○ Town

Private Airfield

Civil Airfield

Military Airfield

Ⓜ Microlight Site

Ⓗ Heliport

⊕ Glider Launching Site

⊗ Disused Airfield

NDB/ Locator

▫ DME

◇ VOR

▽ TACAN

VOR/DME

Ⓥ Visual Reporting Point

Ⓥ Mandatory VRP

△ Airways Reporting Point

Seaplane Base

£1.92 Fuel Prices

Glider Launching

Parachute Dropzone

Hang-Gliding

Ⓜ Model Aircraft

EGR105 SFC-2000 Prohibited/Restricted Area

Danger Area

Other Airspace

ATZ

MATZ

NOTAM

Controlled
Airspace

Wind

Nature Area

TAF & METAR
symbols

V — Good Conditions

M — Marginal Conditions

I — Instrument Only

FIR Boundary

Turbines, Antennae,
Chimneys, Towers or
other Obstructions

Trees

Urban Area

Airfield
Information

TMZ   RMZ

Rivers, Roads,
Railways

Points of Interest

Instrument
Approach
Fan