

Pilot2ATC® User Guide

Part 2: Features, Functions + Operation



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Overview

Pilot2ATC® is a companion Windows® application for use with any flight simulator (SIM) compatible with [FSUIPC](#) (Microsoft® Flight Simulator X, Prepar3D®) or [XPUIPC](#) (X-Plane). It provides 2-way voice radio communication between you and simulated ATC Controllers, making your flight simulator experience much more engaging and providing an opportunity to learn ATC radio procedures without having to “go live” on-line.

P2A also provides numerous other capabilities intended to make your flight more enjoyable and realistic:

- VFR and IFR Flight Planning – including Airways, SIDs, STARs and Approaches;
- Moving Maps (Worldwide Satellite, Street, Hi and Low IFR Charts, Topographical maps and US VFR Sectionals);
- Airport Diagrams and Approach Plates (US Only);
- PDF File viewer view any Diagram or Approach Plate you can download to your PC, enabling global coverage for charts and approach plates, etc.;
- Built-in browser capability for worldwide airport and approach plates;
- Airport Information;
- “Glass” Radio stack with Frequency Finder;
- Real Time Weather;
- Selectable Radio Chatter;
- Automatic Pilot (works with most aircraft);
- Flight Performance Information (Speed, Distance, Time, etc.); and,
- And much more... .

The user interface for the Multi-function Display (MFD) is inspired by the Garmin® G3X Touch™ and, if needed, can be opened and closed by the user to conserve screen real-estate. The MFD function is independent of the ATC Controller functions and makes the experience much more realistic than in previous versions of the program.

This User Guide will attempt to cover all the features of Pilot2ATC® v.2.0+ so you’ll have a good reference manual when learning the program. For the most part, the program is intuitive enough you should not need to refer to this manual very much after a little time using the product.

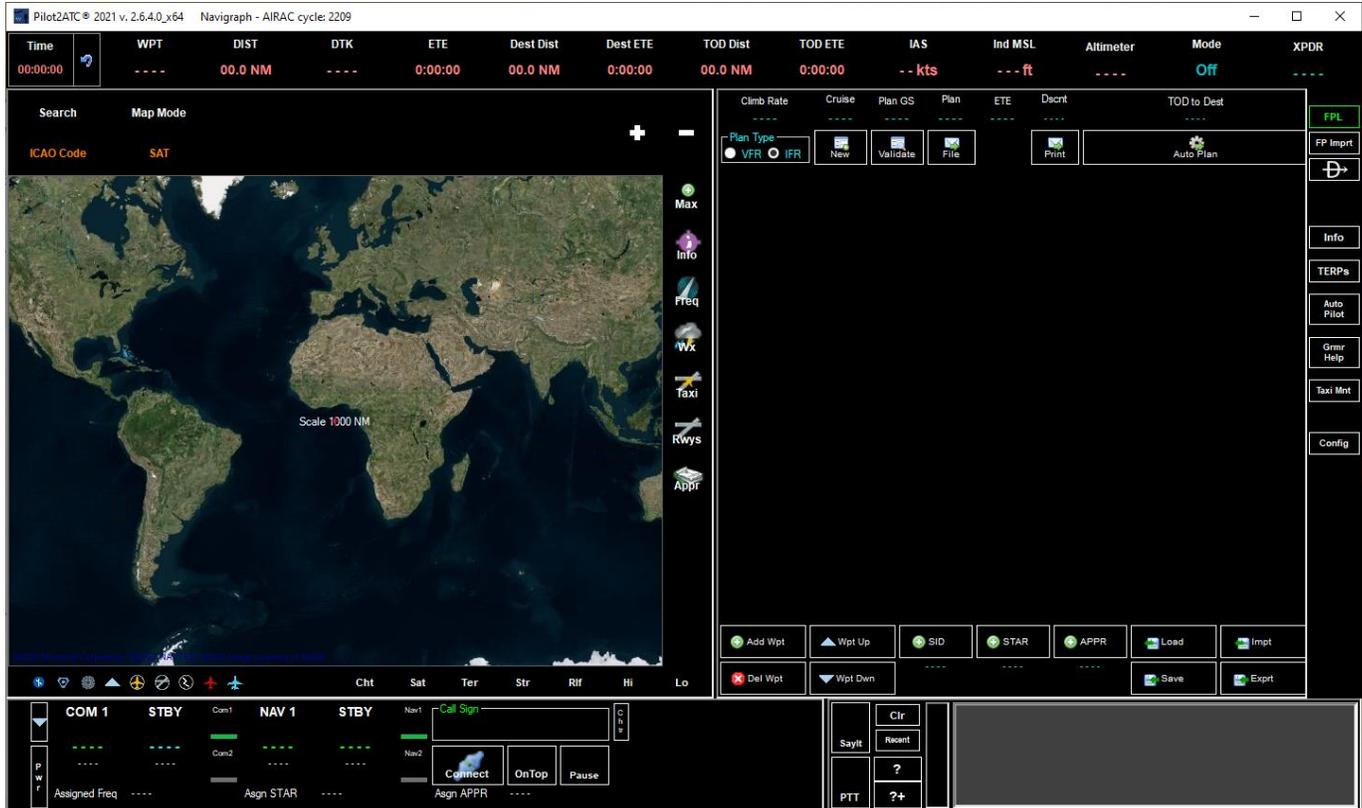
NOTE: *Throughout this document, the term P2A will be used as an abbreviation for Pilot2ATC®.*

There have been many users involved in testing Pilot2ATC and making suggestions for new features. I would like to thank all of them for their valuable contributions.

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Screen Overview

Multi-Function Display (MFD) Screen



When P2A first opens, the main MFD screen pictured above will be displayed. This is the main window for interacting with the program. The user interface for this was inspired by the Garmin® G3X™ Touch glass panel, though it doesn't attempt to accurately simulate that device.

The MFD screen provides all the map and flight planning features, situational awareness aids and much more. If screen real estate is limited, it can be opened to set up your flight plan and then closed and recalled later, as needed, or it can be minimized to show only the bottom section containing the speech interaction and radio control functions.

The sections that follow go into great detail on how to interact with the main screen and other supporting screens. For explanation purposes, we'll divide the MFD screen into three [3] sections:

- The **top section** provides location information and some control functions such as altimeter and Transponder settings.
- The large **middle section** provides all the map and flight planning functions as well as most of the situational awareness capabilities.
- The **bottom section** provides control of the Com and Nav Radios and the ATC Interaction. Now let's go a little deeper into each section.

Top Section

Starting in the upper left corner, here are the highlights:

1. **Timer** – click the timer window to start and stop the elapsed time. click the Redo key beside it to reset the timer to zero.

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2. **WPT** – Displays the next waypoint identifier in the flight plan. **(Read Only)**
3. **DIST** – Displays the distance to the next waypoint. **(Read Only)**
4. **DTK** – Displays the desired track to the next waypoint. **(Read Only)**
5. **ETE** – Displays the estimated time enroute (ETE) to the next waypoint. **(Read Only)**
6. **Dest Dist** – Displays total distance to the destination airport of the loaded flight plan. **(Read Only)**
7. **Dest ETE** – Displays ETE to the destination airport. **(Read Only)**
8. **TOD Dist** – Displays distance to Top of Descent (TOD) point.
9. **TOD ETE** – Displays time to TOD point.
10. **TAS** – True Airspeed **(Read Only)**. clicking on this area, when connected to the SIM, will change the displayed airspeed from TAS to GS (Ground Speed) to IAS (Indicated Airspeed) and back to TAS (True Airspeed).
NOTE: *This feature only works when connected to the SIM.*
11. **Altitude** – Altitude is displayed in one of three [3] modes – Indicated MSL, Actual MSL and AGL.
 - a. Indicated MSL is the height above mean sea level adjusted for the current barometric clickure setting.
 - b. Actual MSL is the height above Mean Sea Level
 - c. AGL is the height above ground, sometimes referred to as Radio Altitude.
NOTE: *Like the airspeed feature, this change of display only works when connected to the SIM.*
12. **Altimeter** – Altimeter setting. Click this display to bring up a dialog to enter a new setting.
13. **Mode** – Transponder Mode. lick this display to change the transponder mode: OFF – Standby – Active – Test.
NOTE: *This may not work with all aircraft.*
14. **XPDR** – Transponder Code. Click this area to open the transponder control panel.
TIP: *If you type numbers on the keyboard and click, the new code will be entered and the panel will close.*

Center Section

15. **Map Panel** – A sizable panel on the left side of the center section of the MFD window displaying the moving map and other important information. This will be covered in another section of this manual.
16. **Display Panel** – A panel to the right of the Map panel displaying the flight plan and providing the functions needed to build and modify the flight plan. It also displays:
 - a. **Direct To** pane enabling you modify your Flight Plan in flight to go Direct To a NavFix or Airport.
 - b. **Info** Information pane displaying information about a selected airport.
 - c. **TERPs** (Terminal Procedures) pane showing approach plates and other terminal charts.
 - d. **Config** Configuration pane enabling you set numerous options controlling P2A's operation.
17. **Display Buttons** – To the right of the Display Panel are several buttons used to select what's displayed in the Display Panel or in separate windows. These will be covered separately.

Bottom Section

18. **Com Radio** – Provides a way to control the Com Radio. These functions will be covered in a separate section.
19. **Nav Radio** – Provides control for the Nav Radios.
20. **Call Sign, Chatter, Connect, Pause and On Top** – The Call Sign box displays your call sign to be used with ATC. The Chtr button turns ATC Chatter on/off and displays Green if it is on. The *Connect* button connects P2A to your simulator. The *Pause* button stops event processing while still connected, and the On Top button will keep the MFD on top of all other windows on your desktop.
21. **ATC Interaction Area** – This area will be covered in detail later. It provides all the functions related to speech recognition and voice interactions with ATC. The *Say/It* functions allow you to do much of your communications using the computer's voice rather than having to speak yourself. This is especially useful if you're having trouble being understood by the voice recognition system.

Much of the rest of this User Guide will go over the use of the MFD's features in detail.

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DEVELOPER NOTE: In version 2.0, P2A separates the Controller interaction and related functions from the MFD functions like flight planning, moving map, etc. This provides a more realistic experience. Those of you familiar with version 1 will recall that if you changed your flight plan or requested an approach from ATC, the new course would show up on the map automatically in many cases. In version 2.0, like in real life, you must enter any new flight plan information into the MFD.

Another point to bring out here is that the controls in P2A, like the Com Radio controls, are there as a convenience. The controls in the aircraft still work and if you change the frequency in the aircraft, it will change in P2A. Likewise, changing frequencies in P2A will cause the aircraft frequency to change. Due to some differences in SIMs, some radio and auto Pilot functions may not be controllable from P2A, but that'll not affect what the aircraft can do. A good example of this is in X-Plane you can't change between Com1 and Com2 in P2A. However, when you make that change in the aircraft, it's reflected in P2A and works fine.

The MFD window is the main window for doing everything in P2A. The program separates the Controller interaction and related functions from the MFD functions, like flight planning, moving map, etc.

If ATC gives you a modified clearance, you'll need to make any changes to your flight plan or selected approach in the MFD yourself.

Now let's dive into the details of the MFD!

Display Panels

The center section of the MFD contains two [2] display panels displaying maps, Flight Plan, Charts, Radio Panel, etc. The **left panel** is dedicated to displaying maps; the **right panel** displays all other types of information. The panels and other areas of the MFD are synchronized in terms of displaying the same Flight information (Location, Radio Frequency, etc.) and Flight Plan Information.

EXAMPLE: If you make a change to the Flight Plan in the Right Panel, the map is updated with the new flight plan in the Left Panel.



The vertical bar between the panels is adjustable to allow you to get a wider screen on either side.

Map Panel

The map panel provides a great deal of situational awareness to enhance your flight sim experience. Five [5] different map modes are currently available:

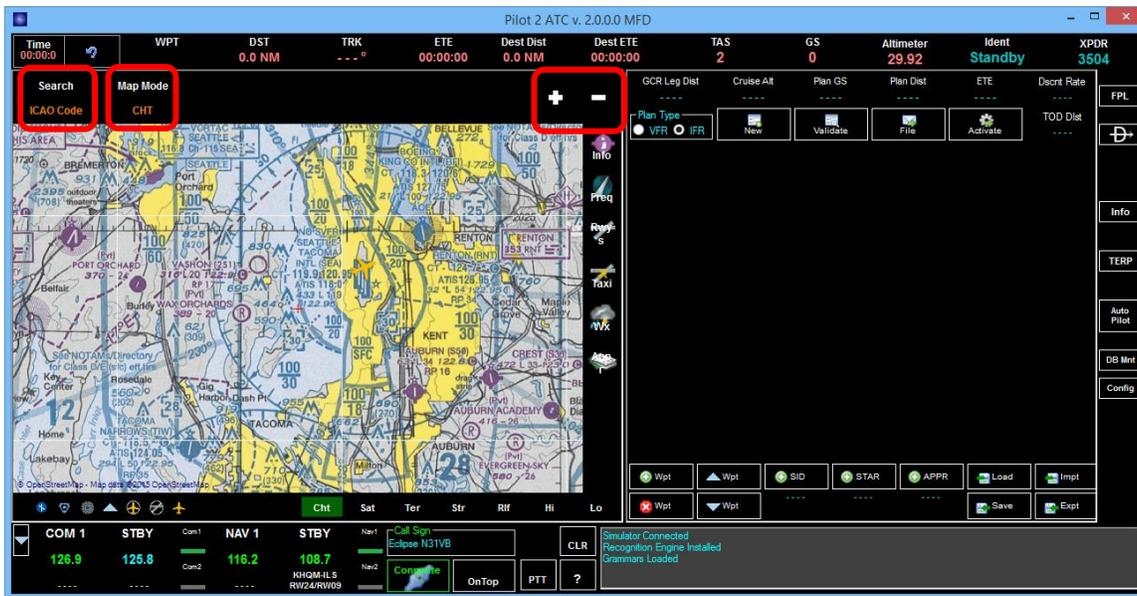
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1. **Sectional Chart (Cht)** – VFR sectional charts for the US, while somewhat outdated, are useful for VFR Flight planning and flights. Unfortunately, these aren't currently available for other parts of the Globe.
2. **Satellite (Sat)** – Gives you a sense of flying over the terrain and is great when looking for VFR landmarks.

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3. **Terrain (Ter)** – Provides a “3D” view of the terrain, complete with contour lines and elevations.
4. **Street (Str)** – While not an aeronautical map, the Open Street Map provides a great deal of detail that’s useful in VFR navigation. It also has a surprising amount of detail (when zoomed in) about airport layouts.
5. **Relief (Rlf)** – Provides a different “3D” view, *without* contour lines and more road details, etc.
6. **High Airways (Hi)** – Provides IFR High Altitude route charts.
7. **Low Airways (Lo)** – Provides IFR Low Altitude route charts.

The map mode can be changed by clicking on the Map Mode above the map or by selecting the desired mode below the map on the right side.



When in Sectional Chart mode (as above), if you zoom in too far, the map will switch to Street mode. Zooming back out will bring you back to the Sectional chart.

When in Satellite Map Mode, clicking on the Sat button changes between Bing Satellite Map and Google Satellite Map.

Zooming can be done using the + and – buttons (red box) or by using the mouse scroll wheel while the mouse is over the map. By default, the point where the mouse is positioned will be snapped to the center of the map panel when zooming with the mouse wheel.

When using the Hi and Lo IFR Charts, as you zoom out, the level of detail is reduced significantly – and even eliminated at the longest range zoom. As you zoom in, the reverse is true – you’ll get more and more detail. So, for example, to get the names of the airways, intersections or VORs, you’ll need to zoom in pretty close.

The map can be scrolled by clicking it with the left mouse button and, while holding the left mouse button down, dragging the map around on the screen.

Clicking on the *Search* button (red box) opens a keypad allowing you to enter the ICAO code for any airport in the world. When you click enter, the map is centered over the entered airport and zooms in to show runways, buildings, etc.

Map Ruler: If you want to get the distance between two [2] points on the map:

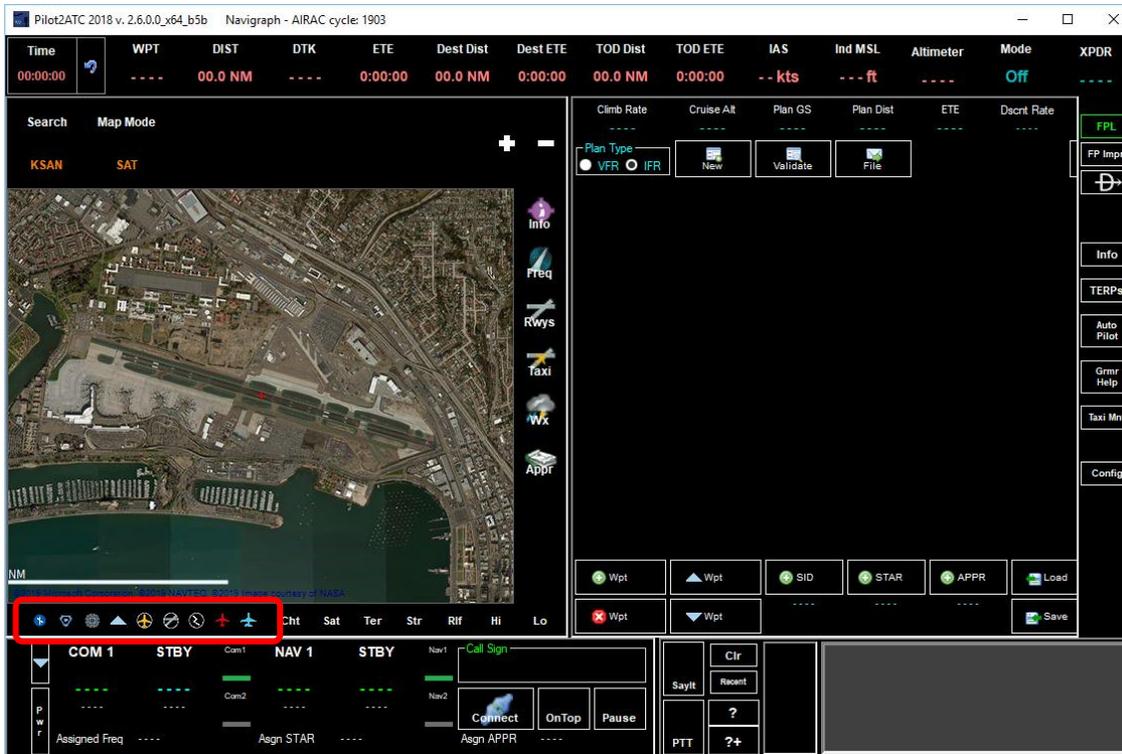
- hold down the Ctl key and click the right mouse button over the first point;
- move the mouse to the second point and release the right mouse button.

A dialog box will pop up showing the distance between the points in nautical miles (NMs).

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Map Display Buttons

Beneath the map (red box below) are a series of buttons controlling many of the Map's display functions.



From left to right, the buttons are:

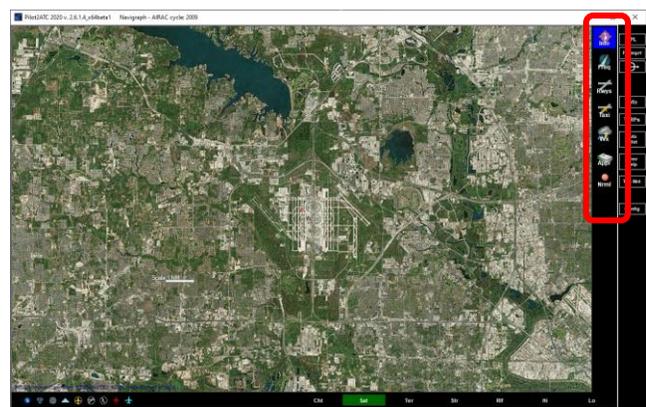
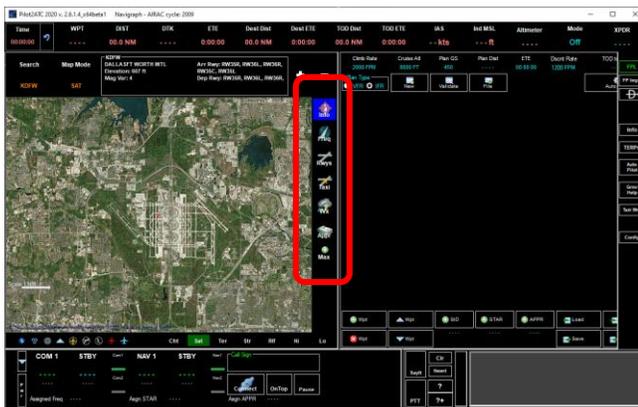
- Airports** – Displays airports. Successive clicks display different types of airports. (Due to the large number of airports in the Database, the first use of this feature may take several seconds before the airports appear.)
 - First click displays airports with ILS instrument approaches.
 - Second click adds airports with long, hard surface runways but no ILS approaches.
 - Third click adds airports with shorter hard surface runways.
 - Fourth click shows all airports, including grass and gravel strips. (Selected Above)
 - Fifth click hides all airports.

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- VORs** – First click shows all VORs without the Compass Rose. Second click adds the Compass Rose. Third click hides all VORs (Showing above with Compass Roses).
- NDBs** – First click shows all NDBs. Second click hides them all.
- Intersections** – First click shows all named intersections. Second click hides them all.
- Center on Aircraft** – Centers the map on the aircraft and moves the map with the aircraft remaining centered on the panel. clicking again allows the aircraft to move across the map.
- Center on Airport** – If an airport is selected, centers the map on the airport and zooms to a level that shows the runways and other features clearly.
- Center on Route** – If a route is entered in the Flight Plan, both the Departure and Destination airports will be visible on the map, with the connecting route centered on the map.
- AI Traffic Airborne (Red)** – Shows or hides airborne traffic.
- AI Traffic Ground (Blue)** – Shows or hides ground traffic.

Map Function Buttons

To the right of the map are six [6] function buttons. Each button controls what's displayed in the Map Information Panel above the map or directly on the map.



From top to Bottom:

- Max/Nrml** - This button maximized the map, hiding the bottom and top areas of the program. You can hide the Flt Plan by pressing the FPL button to the right of the Flight Plan and have an almost full screen map. When maximized, the name changes to Nrml and pressing the button again, returns the view to the normal view.
- Info** – Displays information about the item (Airport, VOR, NDB, etc.) selected in the map in the Information panel above the map.
- Freq** – Displays a list of nearby Com frequencies in a pane on the right side of the map.
- Rwys** – Displays the runways on the map.
- Taxi** – Displays the active taxi route on the map.
- WX** – Displays the weather of the selected airport in the Map Information panel.
- Appr** – Displays the active ATC vectored approach, which may be different from the one in your flight plan. When flying the approach, click the APPR button after you get the first vectored heading and you'll see the exact route to which you're being vectored.

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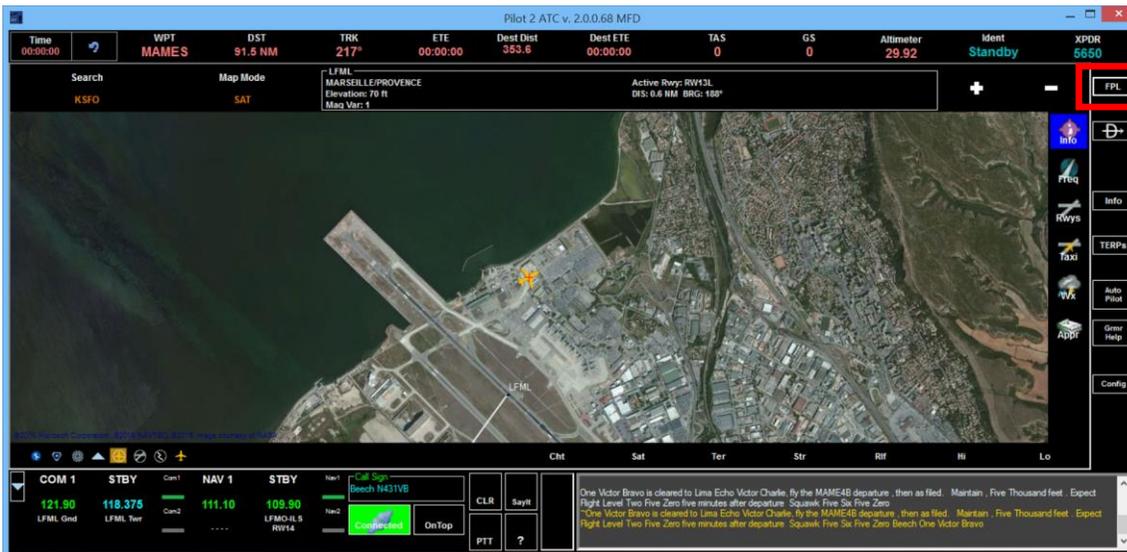
Flight Plan (FPL) Panel

The FPL button hides and displays the Flight Plan Panel. This is the default view for the MFD.



To see more of the map, either:

- resize the panels using the splitter bar in the middle;
- click the FPL button to totally hide the right-hand panel.



Let's take a look at how to create a flight plan.

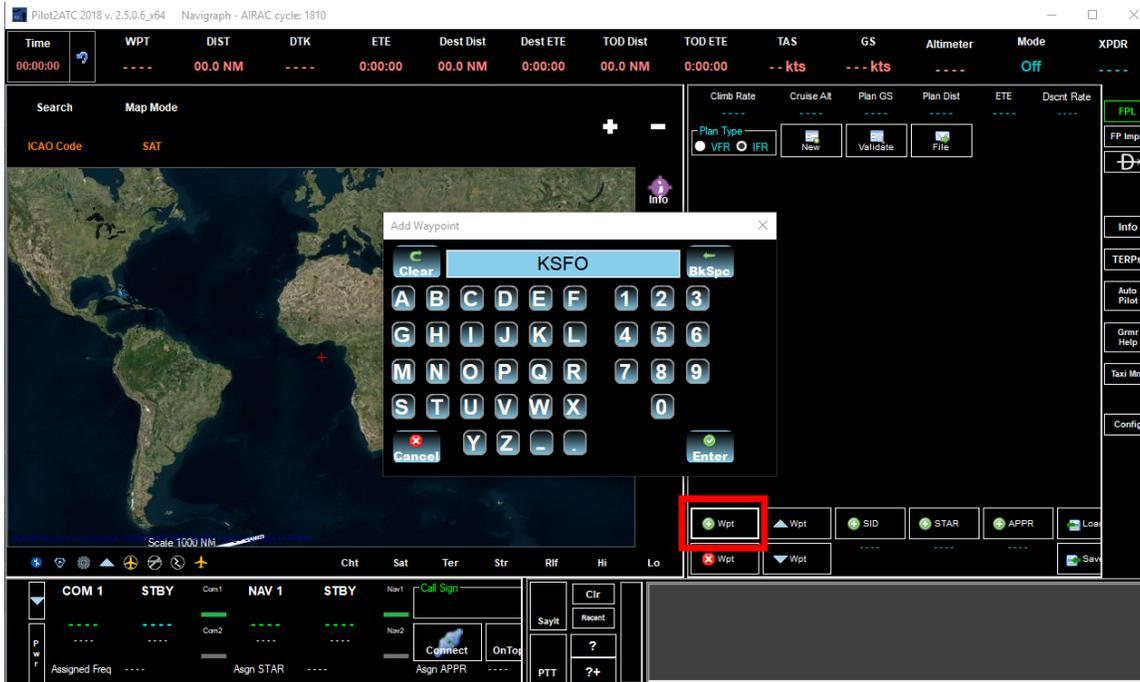
Entering a Simple Flight Plan

NOTE: The User Interface (UI) shown in the screenshots may be slightly different than the UI you see on your screen, but that should not affect understanding.

The first task in creating a flight plan is to enter the desired waypoints. Add waypoints by:

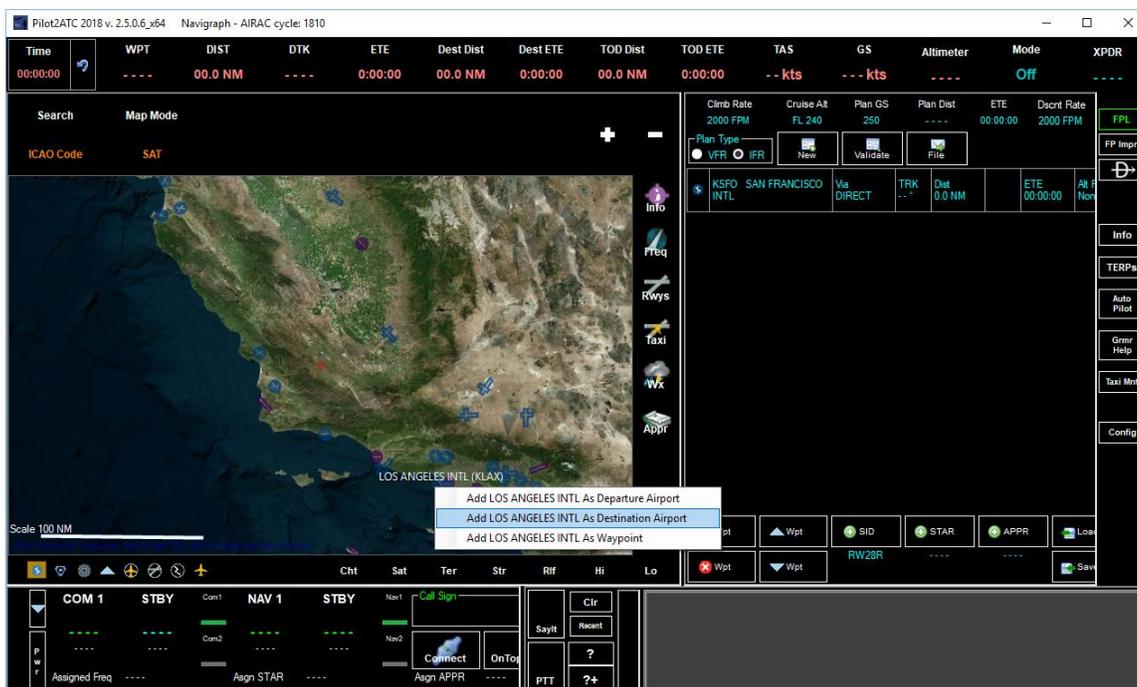
- clicking on the + Waypoint button in the flight plan; and,
- using the keypad, enter the ICAO code of the airport or navaid, as illustrated below, in the “Add Waypoint” box that opens.

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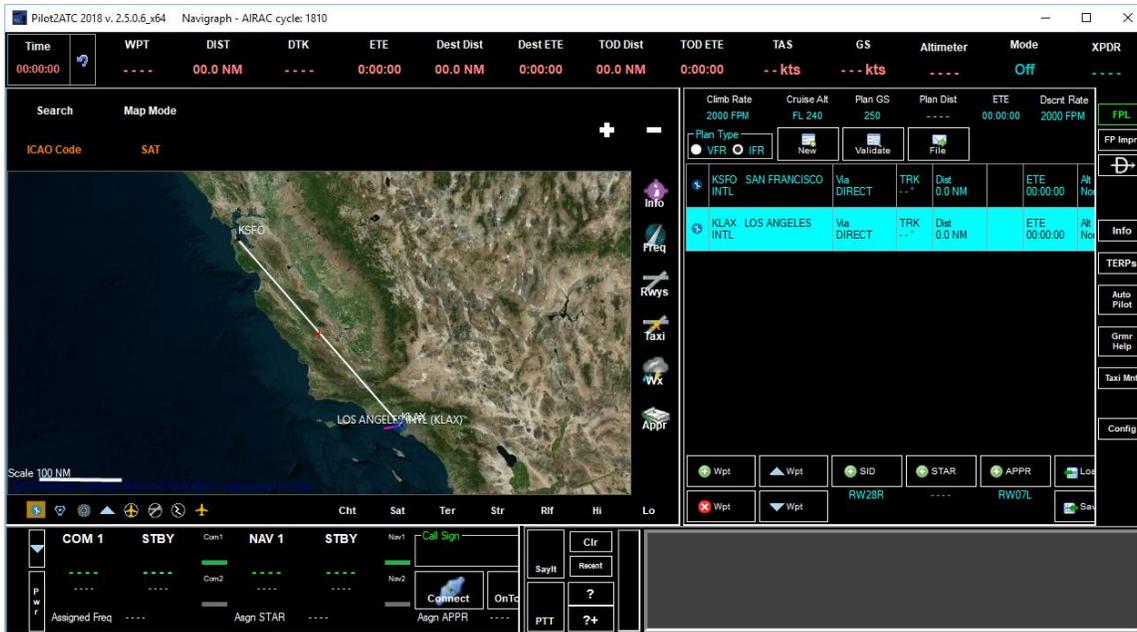
ALTERNATIVE METHOD TO ENTER A WAYPOINT: *To add a waypoint:*

- *right-click an airport, nav-aid or even an empty spot on the map (for a user defined waypoint); and,*
- *select the type of waypoint to add. This can be the Departure Airport, Destination Airport or an Intermediate Waypoint. Below, Los Angeles (KLAX) has been selected as our Destination Airport.*



Once we click the destination airport, it's added to the flight plan – and the route is displayed on the map.

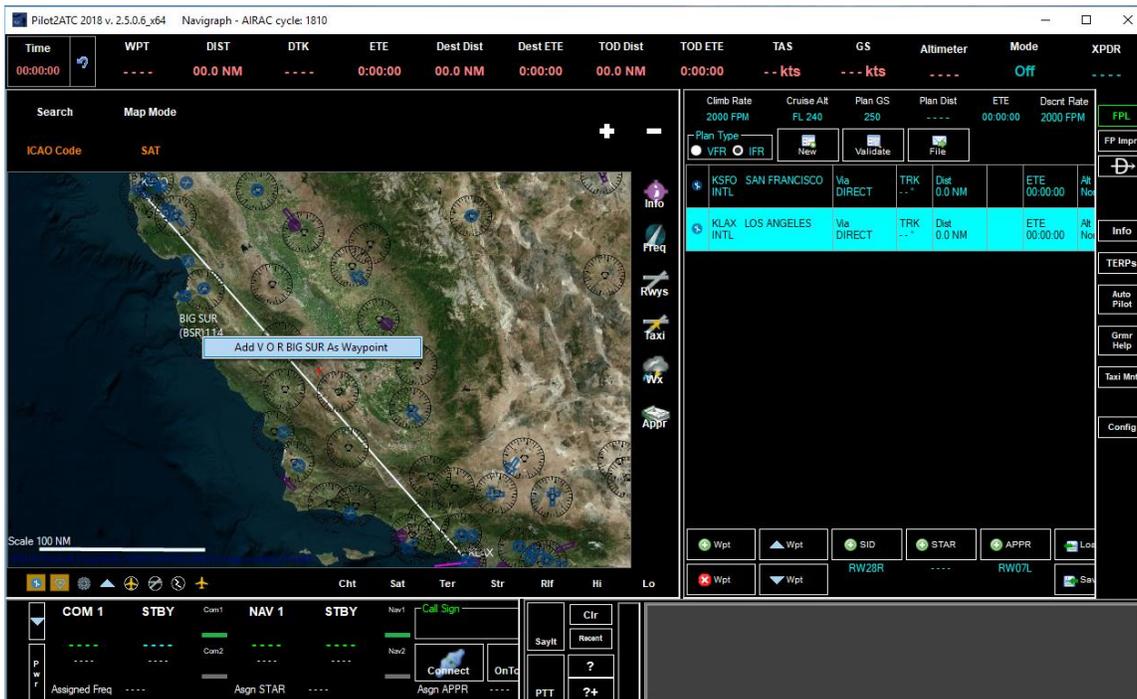
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To make the trip a little more interesting, add a VOR as an intermediate waypoint. To do that:

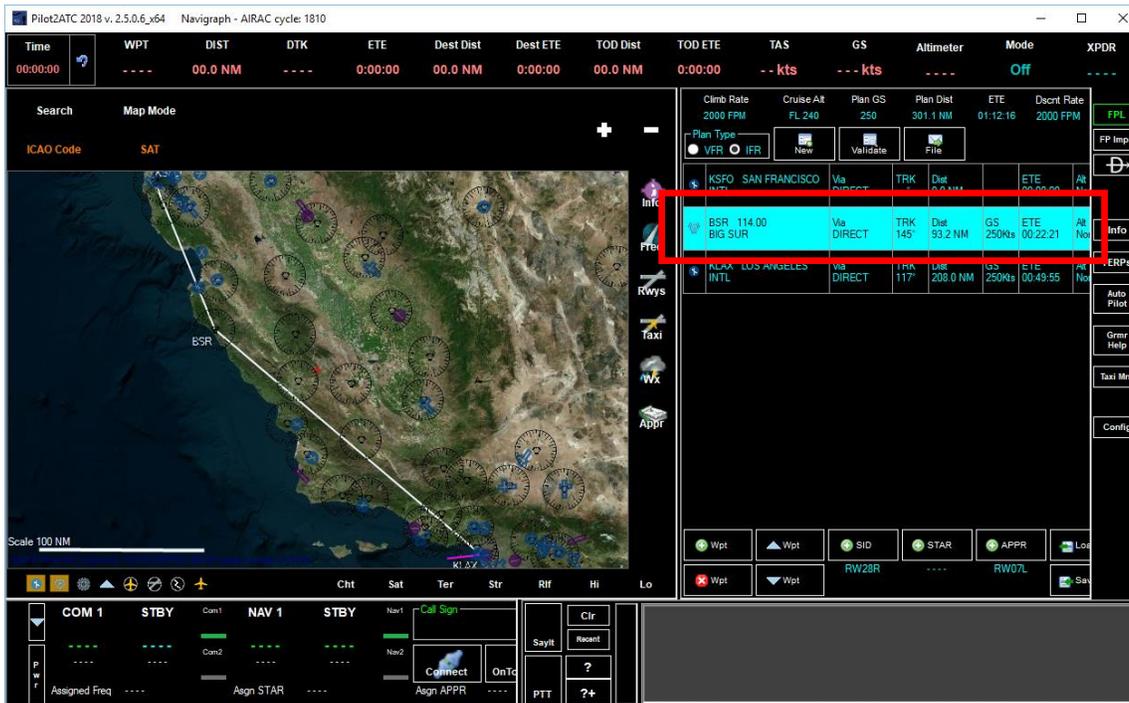
- click the VOR display button in the map two [2] times to show all VORs with their compass roses; and,
- select the desired VOR in the same way we did so with the Destination airport.

NOTE: *If the VORs don't display, zoom in until they do.*

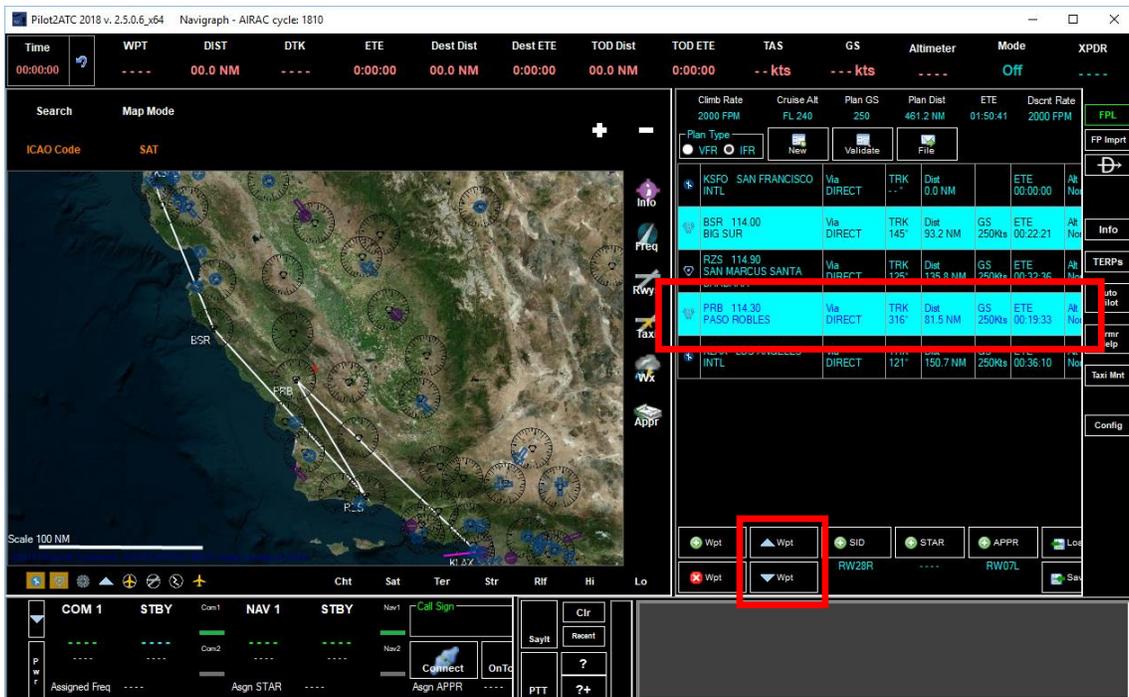


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After adding the VOR, the screen should look like the one below. Notice how it added the waypoint right after the Departure airport (red box).

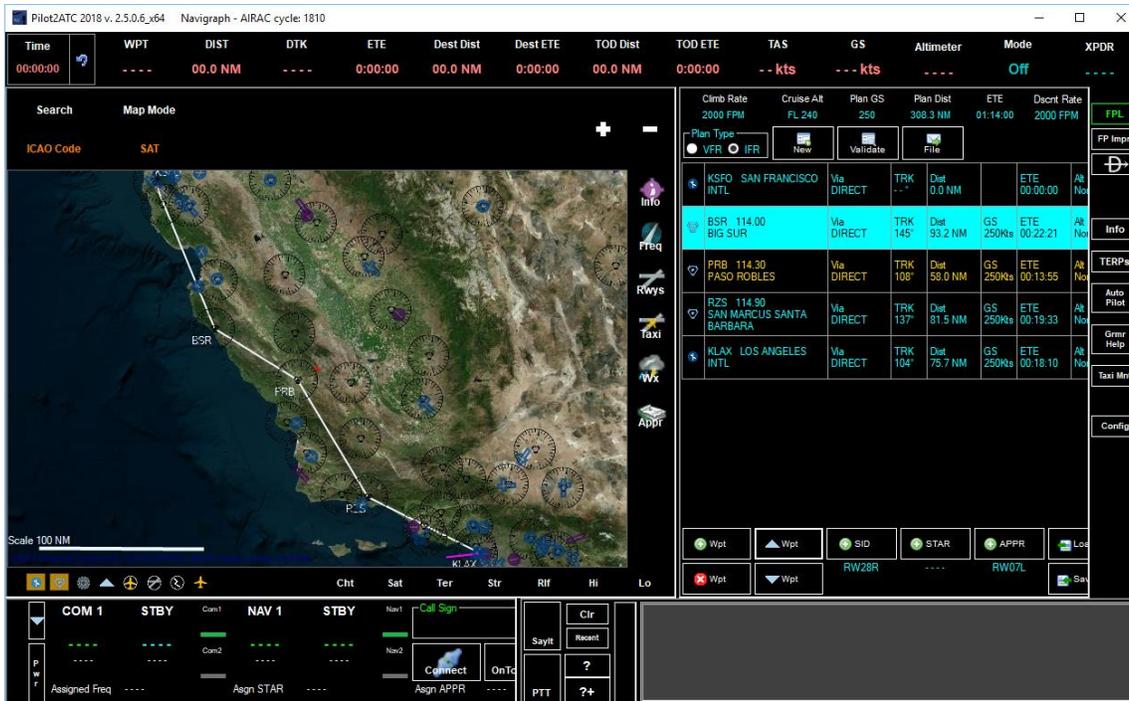


Additional Nav-Aids (VORs or NDBs) will be added in sequence between the Departure and Destination airports. To change their order in the Flight Plan, select the NavAid you want to move and use the Wpt Up and Down arrow keys (red box) to place it in the right order.



In this case, we select PRB in the flight plan and click the *Up Wpt* button. The flight plan now looks like the screen below.

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Entering Lat/Lon Waypoints for Trans-Oceanic Flights

P2A supports the entry of the standard Trans-Oceanic Latitude/Longitude (Lat/Lon) waypoints. These are in the AIRAC database and can be entered by entering their Identifier – like 5240N, which translates to a Lat/Lon of 52N/40W. This is convenient when entering a flight plan having these standard names included. You can also enter a waypoint in the form of 52N040W and P2A will find the standard fix and use that as the waypoint. If there's no standard fix with that Lat/Lon, P2A will create a User-Defined Fix with a name and identifier equal to 52N040W.

Entering Altitude and Groundspeed

Once you've entered your waypoints, enter the Climb Rate, Cruise Altitude and Planned Groundspeed. Click on the Climb Rate, Cruise Alt and Plan GS displays (red box in the image at the top of the next page) in the top of the Flight Plan pane and you can enter these values in the resulting numeric pad or using your keyboard.

- **Climb Rate** – It's measured in feet per minute (FPM) and is determined by your aircraft's performance. Typical GA aircraft climb from 500 to 1,500 FPM; jets typically climb at 2,000+ FPM. This value is used only to calculate planned altitudes during the climb, so if it's off, it won't be critical to the flight, though your estimated altitudes will be off.
- **Cruise Altitude** – It can be entered as a flight level (FL) or altitude in feet. 100 is interpreted as FL 100 – or 10,000 feet. If the number entered is *less than* 501, it's assumed to be a flight level.
- **Planned Groundspeed** – It's used to calculate the Top of Descent (TOD) – the estimated True Airspeed adjusted for Wind. Once in flight, the program will recalculate the TOD based on actual Groundspeed, but you'll get a more accurate initial plan if you're close on this estimate.

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Pilot2ATC 2018 v. 2.5.0.6_x64 Navigraph - AIRAC cycle: 1810

Time	WPT	DIST	DTK	ETE	Dest Dist	Dest ETE	TOD Dist	TOD ETE	TAS	GS	Altimeter	Mode	XPDR
00:00:00	----	00.0 NM	----	0:00:00	00.0 NM	0:00:00	00.0 NM	0:00:00	-- kts	-- kts	----	Off	----

Climb Rate	Cruise Alt	Plan GS	Plan Dist	ETE	Descent Rate
2000 FPM	FL 240	250	308.3 NM	01:14:00	2000 FPM

Waypoint	Altitude	Mode	TRK	Dist	GS	ETE	Alt
KFSO SAN FRANCISCO NTL	Via DIRECT	TRK	--	0.0 NM	---	00:00:00	No
BSR 114.00 BIG SUR	Via DIRECT	TRK	145°	93.2 NM	250kts	00:22:21	No
PRB 114.30 PASO ROBLES	Via DIRECT	TRK	108°	58.0 NM	250kts	00:13:55	No
RZS 114.90 SAN MARCUS SANTA BARBARA	Via DIRECT	TRK	137°	81.5 NM	250kts	00:19:33	No
KLAX LOS ANGELES NTL	Via DIRECT	TRK	104°	75.7 NM	250kts	00:18:10	No

In this case, we entered STAR 240 (for Flight Level 240). P2A added the altitude to the flight plan and used a default Groundspeed of 250 knots to calculate the TOD (Top of Descent). Changing our GS to 450 will cause P2A to [1], recalculate TOD, and [2], calculate the ETE of each leg and of the entire route.

Pilot2ATC 2018 v. 2.5.0.6_x64 Navigraph - AIRAC cycle: 1810

Time	WPT	DIST	DTK	ETE	Dest Dist	Dest ETE	TOD Dist	TOD ETE	TAS	GS	Altimeter	Mode	XPDR
00:00:00	----	00.0 NM	----	0:00:00	00.0 NM	0:00:00	00.0 NM	0:00:00	-- kts	-- kts	----	Off	----

Climb Rate	Cruise Alt	Plan GS	Plan Dist	ETE	Descent Rate
2000 FPM	FL 240	450	308.3 NM	00:41:00	2000 FPM

Waypoint	Altitude	Mode	TRK	Dist	GS	ETE	Alt
KFSO SAN FRANCISCO NTL	Via DIRECT	TRK	--	0.0 NM	---	00:00:00	No
BSR 114.00 BIG SUR	Via DIRECT	TRK	145°	93.2 NM	450kts	00:12:25	No
PRB 114.30 PASO ROBLES	Via DIRECT	TRK	108°	58.0 NM	450kts	00:07:43	No
TOD PT TOD	Via DIRECT	TRK	137°	67.6 NM	450kts	00:09:01	No
RZS 114.90 SAN MARCUS SANTA BARBARA	Via DIRECT	TRK	137°	81.5 NM	450kts	00:01:50	No
KLAX LOS ANGELES NTL	Via DIRECT	TRK	104°	75.7 NM	450kts	00:10:05	No

If you don't get a TOD calculated, it's likely because the combination of your Cruise Speed, Descent Rate and Altitude would require *more* than the total distance of the route to descend. Changing the descent rate – by clicking the Dscnt Rate display and entering a faster descent (larger number) or decreasing the cruise speed – will provide a TOD shorter than the route and allow it to be displayed as above.

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DEVELOPER COMMENT: *The TOD doesn't always move when you change GS or Altitude. While at first glance this seems illogical, it makes sense once you figure it out. If the STAR has a speed restriction of say 250, it uses those speeds to calculate TOD. If you then increase cruise speed to 900, the Descent is still all or mostly done at 250, so the change if any is minimal. Altitude changes have a little better chance of making a difference, depending on how much of the descent is in the STAR. The biggest changes are seen when changing Descent Rate since it impacts the entire descent, regardless of whether or not it's speed restricted or not.*

If you'd like to start down before reaching the TOD on your flight, verbally request an enroute descent with a call like "<CallSign> request enroute descent". The Controller will clear you to descend at Pilot's discretion to the TOD calculated altitude. Be advised, this altitude may be below the minimum altitude along the route, so it's up to Pilot Discretion not to run into any mountains.

Entering Custom Ground Speed for Waypoints

In some situations, it might be appropriate to enter a groundspeed other than the planned route groundspeed or 250 knots. For example, if you're flying a Heavy aircraft, your minimum maneuvering speed might be 275 knots. To enter a custom waypoint ground speed, double-click the GS cell of the waypoint you wish to change and enter the new speed. Doing so will likely improve the accuracy of your TOD calculations.

If the waypoint is part of a SID, that new GS will be entered in the waypoint you double-clicked and all waypoints prior to it. If it's part of a STAR or Approach, it'll be rolled forward to the destination. Also, if the target altitude is below 10,000 feet, 250 is the maximum GS you can enter, unless your call sign is a "Heavy" call sign, in which case, the maximum is 280.

Validating and Filing the Flight Plan

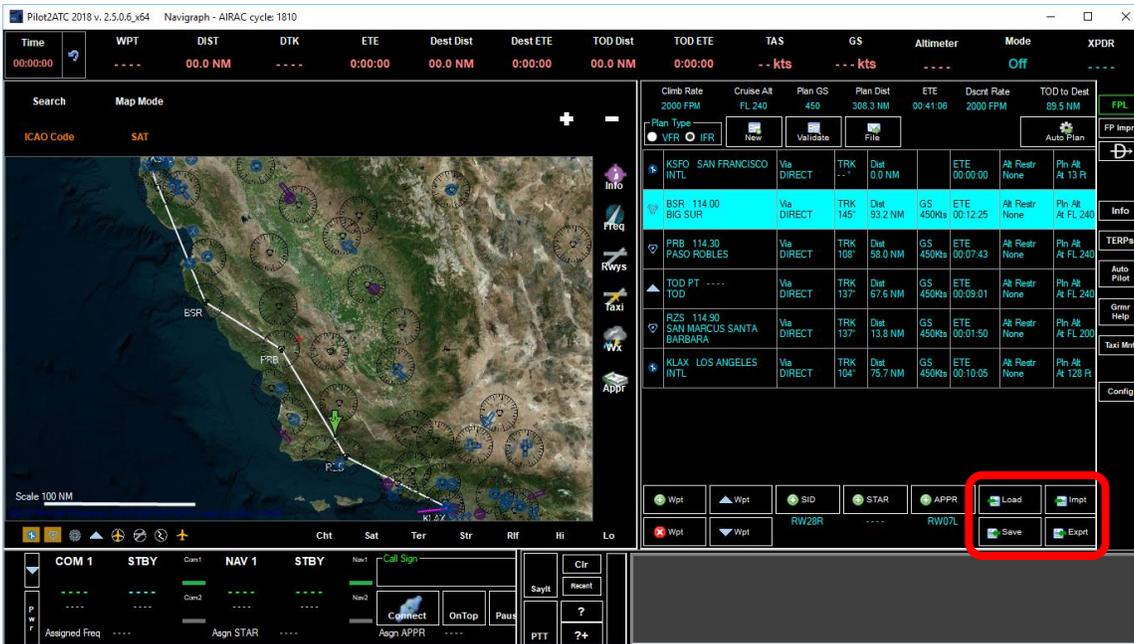
Notice the *Validate* button is White, indicating the Flight Plan isn't yet validated. When done entering the flight plan, click the *Validate* button. If we've configured P2A to Calculate Safe Enroute Altitudes, it will check the flight path for minimum safe altitudes on each leg of the route and enter that or the flight plan segment altitude, whichever is higher, for each leg of the flight, other than the last leg, where it uses the elevation of the destination airport. Because it does this by "flying" the route, it may take some time to complete. In our example here, minimum altitudes were not a problem and we were given our requested FL180 cruise altitude. If you know your altitudes are safe, unchecking the Calculate Safe Enroute Altitudes can speed up the validation process.

The default flight plan type is IFR. If you want to file a VFR flight plan, simply select the *VFR* button in the Plan Type box.

Click the *Save* button below the Flight Plan and save it for future use. We can also Export it (*Expt* button) into either an .fms file format (X-Plane) or a .pln format (FSX or P3D). Name it appropriately and P2A will save it in a format consistent with the file name extension (.fms or .pln).

Finally, we're ready to file the Flight Plan. Click the *File* button and you're ready to call for clearance. The *File* button will turn green to indicate a successful filing. If flying IFR, an Approach at the destination airport will be added or you'll be required to add it manually. The Filing process re-validates the plan and does calculations to determine active runways and recommend a SID, STAR and Approach. It can take up to a minute or so for this process to run on longer flight plans.

Pilot2ATC® User Guide



A Flight Plan with SIDs, STARs and Approaches

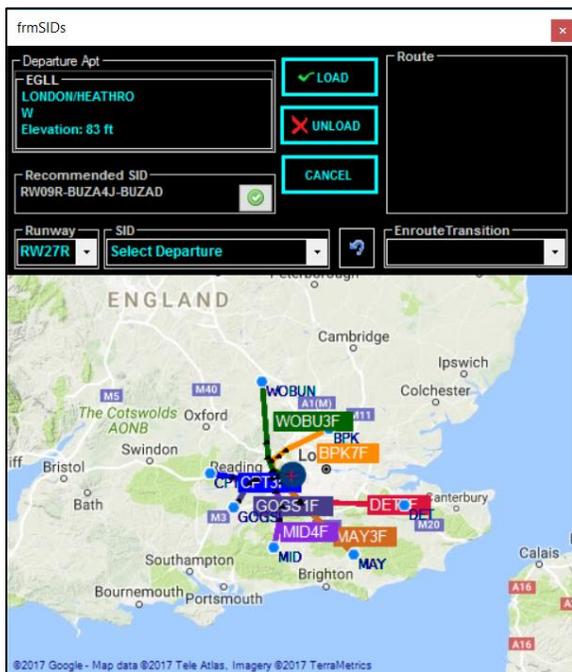
Now that we've covered the basics, let's try a flight plan containing SIDs (Standard Instrument Departures) and STARs (Standard Terminal Arrival Routes). Click the *New* key in the Flight Plan pane to clear the previous flight plan. We'll try a flight from Heathrow (EGLL) to Edinburgh (EGPH).



Adding the SID

Once you've the Departure and Destination airports in the flight plan, you can add intervening waypoints as before. In this case, however, we want to use a Standard Instrument Departure (SID) out of Heathrow. Most major airports have dozens of SIDs and STARs and selecting the correct one to get you to your route the most direct way can be a major pain. P2A takes most of that pain out of the process.

Pilot2ATC® User Guide



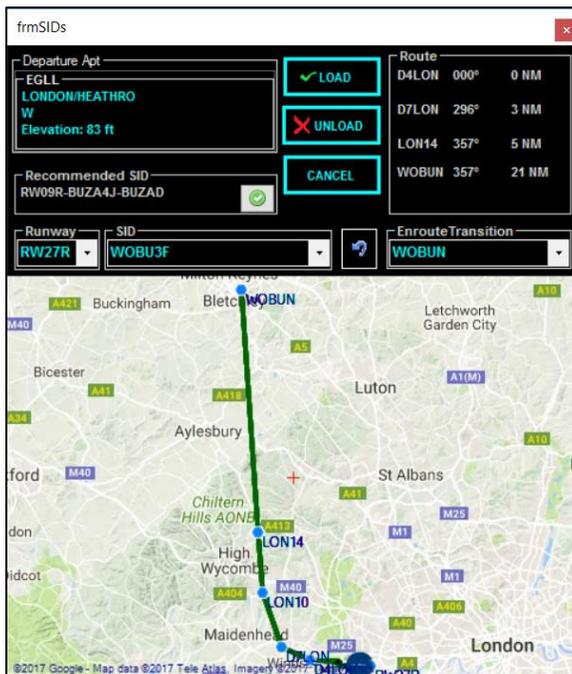
Click the SID button at the bottom of the FPL panel and the SID pane will appear over the Flight Plan.

At the top of this pane, the basic airport information is displayed. The active runway is displayed here if you're connected to the SIM while planning. Below that information are three [3] drop-downs.

First, enter the Runway you're expecting for departure. That'll limit the number of SIDs available to you and display them in the SID Dropdown and on the map. Notice the Active Runway (RW27R) is displayed in the Information Panel. We'll use it for our flight plan.

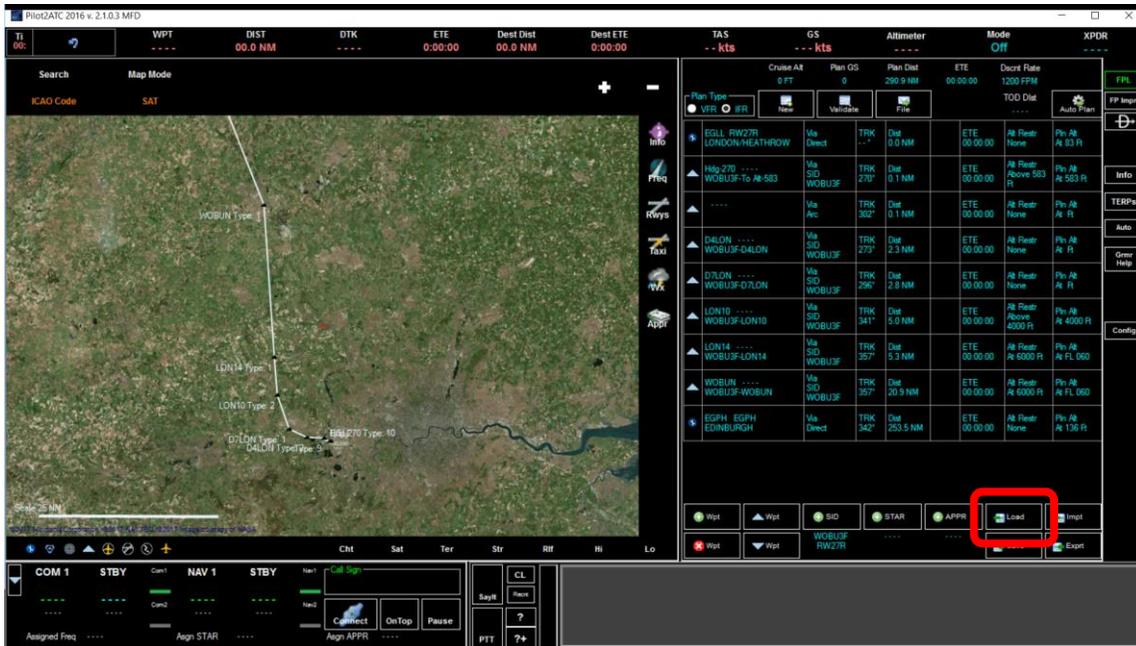
After selecting RW27R, all the enroute transitions for SIDs available from RW27R will be displayed on the map and listed in the Enroute drop-down. Each SID Name is displayed in a rectangle and colored the same as the corresponding SID routes.

Since we know we're going north to Edinburgh, it looks like the WOBU3F (Dark Green) SID will work. Clicking the Green rectangle with the SID name it removes all the other SIDs and shows us just the WOBU3F departure.



In this case, there's only one [1] transition, WOBUN, so our selection is done. In other cases, there might be multiple transitions from which to choose on a SID. In that case, we would just select the desired transition from the Enroute Transition dropdown or just click on that waypoint on the map. In fact, we could've just clicked on WOBUN on the first panel with all the SIDs and had the same result.

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To add the SID to our flight plan, we simply click the *Load* button (red box) and the SID window will close. The flight plan is updated with the SID route, including any altitude restrictions imposed on the departure.

After zooming in on the map, our screen looks something like the one above. We've added the SID. Notice the SID name and Runway are displayed below the SID button.

You'll notice the SID has altitude restrictions to be above 4,000 feet at LON10 and at 6,000 feet at LON14 and WOBUN. Once past WOBUN, we can expect to be cleared to FL240. We can fly that altitude until our TOD, at which point, we'll get clearance to begin our descent.

If we want to spend more of our flight at FL240 to take advantage of lower fuel burn rates or more favorable winds, we can simply increase the Descent rate, as before, and the TOD will be recalculated.

Flying the SID

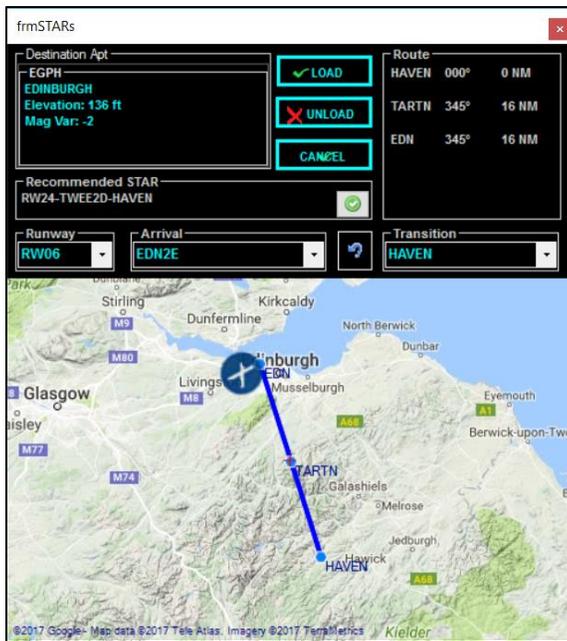
There has been some confusion about how to handle the climb out, so here are some basic pointers.

- **No SID** – If no SID is specified, expect ATC to give you altitude instructions up to Cruise altitude. A Step-Climb if cruise altitude is high enough.
- **SID with no Altitude Restrictions** – Similar to no SID. Expect ATC to give you a step-climb. And expect your clearance to include "... Fly the xxxx departure..."
- **SID With Altitude Restrictions** – Expect your clearance to give a "... Climb via the xxx departure with the yyyy transtion...". Also, it will include an initial altitude higher than normal "Maintain zzzz feet..." This altitude is the ultimate clearance altitude for the entire SID. You're expected to adhere to all altitude restrictions in the SID on you way up to zzzz feet. So, for example, you might be cleared to "Climb via the xxx departure with the yyyy transition. Maintain 12,000 feet. Expect higher altitudes 12 minutes after departure...". If the SID has an "At" or "Below" 7,000 ft altitude restriction at the 4th waypoint, you must stay at or below 7000 until past that waypoint. Then initiate the climb to 13,000. You'll normally get a step climb to cruise altitude as you reach 13,000. **You must start the climb to 13,000 on your own.**

Adding a STAR

Next, let's add a STAR (Standard Terminal Arrival Route) for Edinburgh. Since the active runway may change while enroute, we can't be sure we're selecting the STAR we'll actually fly. Entering our STAR now is for planning purposes. We can change it if we get cleared for a different arrival while enroute.

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We can get the currently active runway at Edinburgh by clicking on EGPB on the map and looking in the information box above the map or use the RW displayed in the Airport information box of the STAR panel. It gives RW06 as the active, so we'll use that in our planning. Just click the STAR button in the Flight plan pane to open the STAR panel.

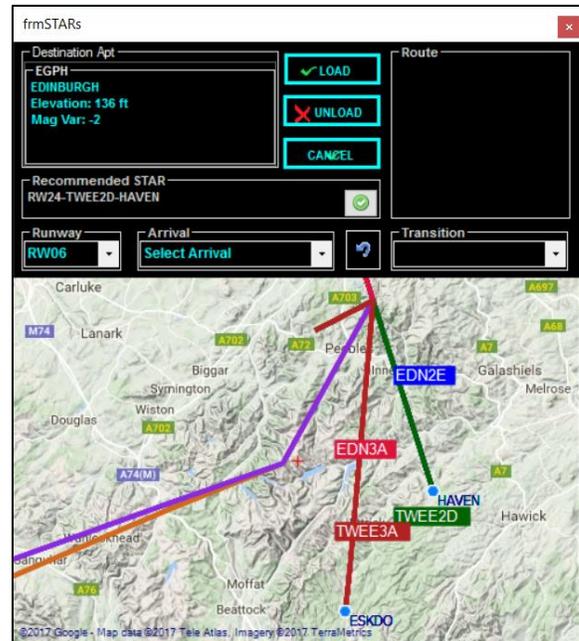
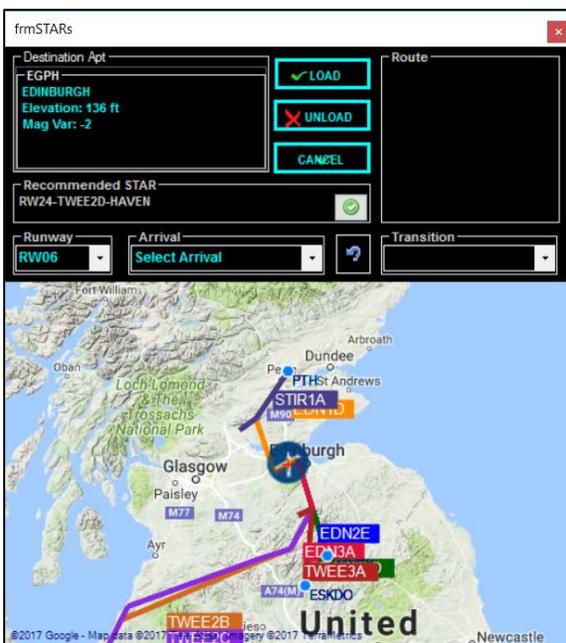
Notice it's very much like the SID pane. We'll use it in much the same way.

It's worth noting at this point all maps in P2A can zoom and pan/scroll in the same manner as the main map. It's sometimes helpful to zoom or scroll in the SID or STAR panels to find a desired Transition point or see the details of the SID or STAR before loading it.

First, we'll enter RW06 as the Runway.

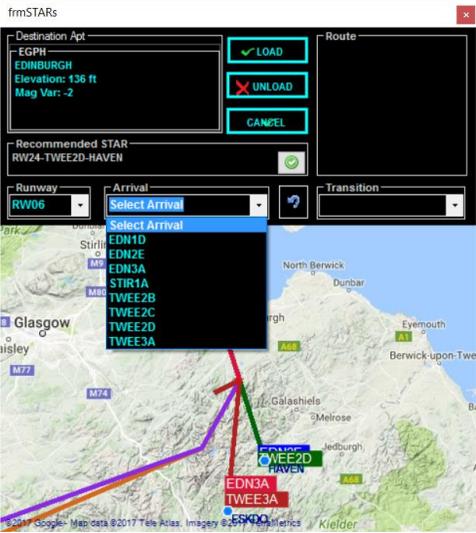
NOTE: *It may take a few moments for P2A to calculate and display the new set of STARs for this runway.*

We're approaching from the south, and it appears there're several STARs that might work, yet they're all bunched up. Let's zoom in using the mouse wheel and position the map to see the southern transitions more clearly.



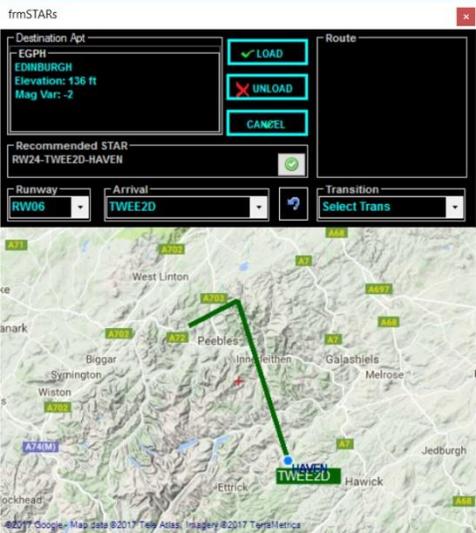
We see that ESKDO and HAVEN seem to be the best possible enroute transitions. Knowing we're coming from the Southeast, we'll choose HAVEN by clicking it on the map.

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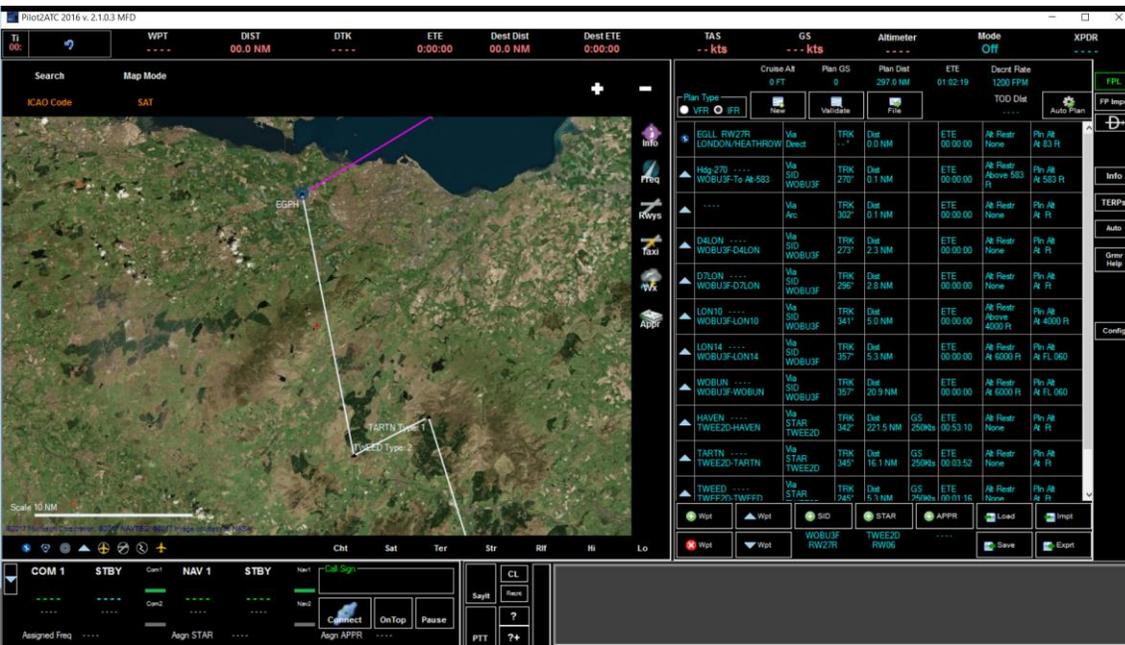
We see the first STAR route (EDN2E) will take us east of the airport when we're landing to the west. Checking the Arrival Drop-down, we see there's another STAR (TWEE2D) that'll take us west of the airport.

To ensure we get the TWEE2D arrival, click on the green rectangle on the map – or – select TWEE2D from the SID dropdown.



We then get the following and can click on the HAVEN transition on the map or select it in the Transition dropdown.

Clicking Load and zooming in on the main map reveals the selected STAR gives us a route to a position setting us up for an approach to RW06.



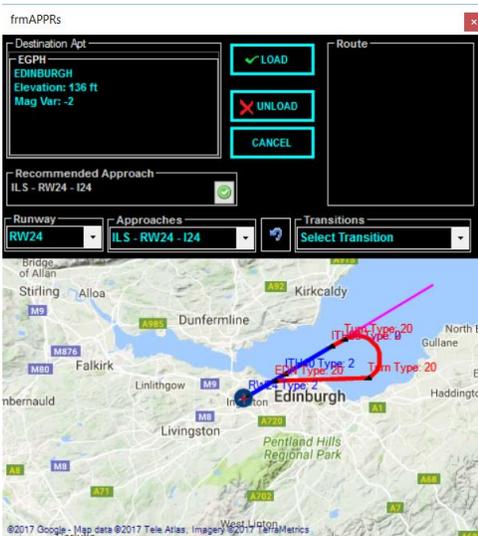
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Flying the STAR

Similar to flying the SID, if you're cleared to "Fly the xxxx arrival...", expect to receive altitude instructions from ATC. However, if you're cleared to "Descend via the xxxx arrival...", you're expected to follow the altitude guidance in the STAR – you won't be given any altitude guidance from ATC.

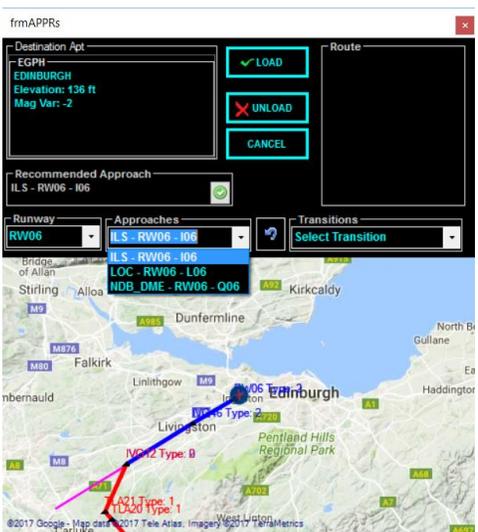
Entering an Approach

Again, for planning purposes, enter a desired approach. ATC may not give it to us, but for fuel calculations and other planning activities, we should enter it now. It only takes a few seconds, much like the SID and STAR. Begin by clicking the APPR button to open the Approach panel. It looks a great deal like the other two and we'll use it the same way.



For now, just select our RW06. Then, we'll choose the ILS approach if there's one available for that runway. Be patient here. P2A does a lot of calculating after you select the runway.

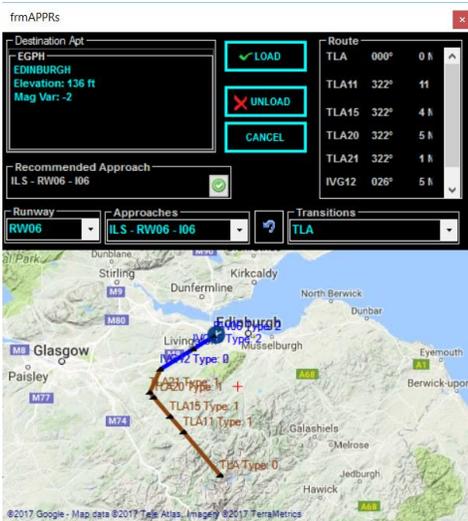
Notice two [2] other approaches to RW06 are available, but we'll take the ILS for planning purposes.



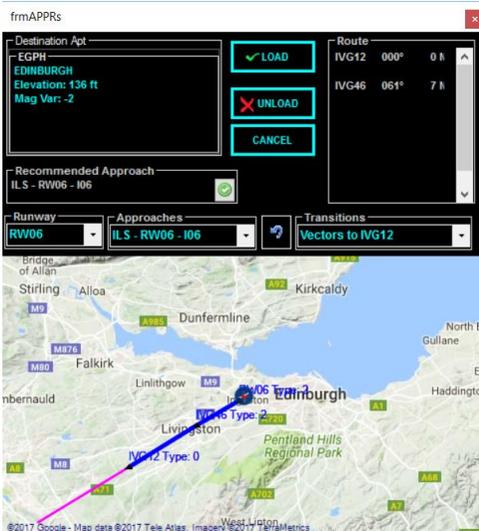
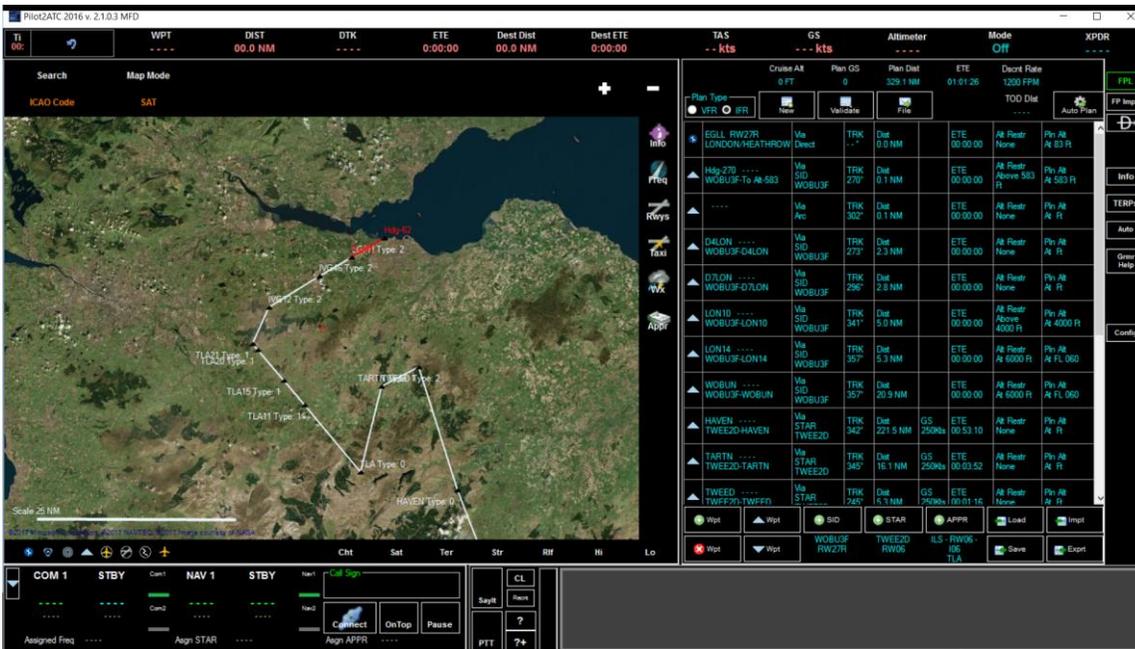
Notice the initial display of the approach shows it with no transitions (The red lines are part of the missed approach path).

The transition dropdown shows one transition available – and it appears it might fit nicely into our plan.

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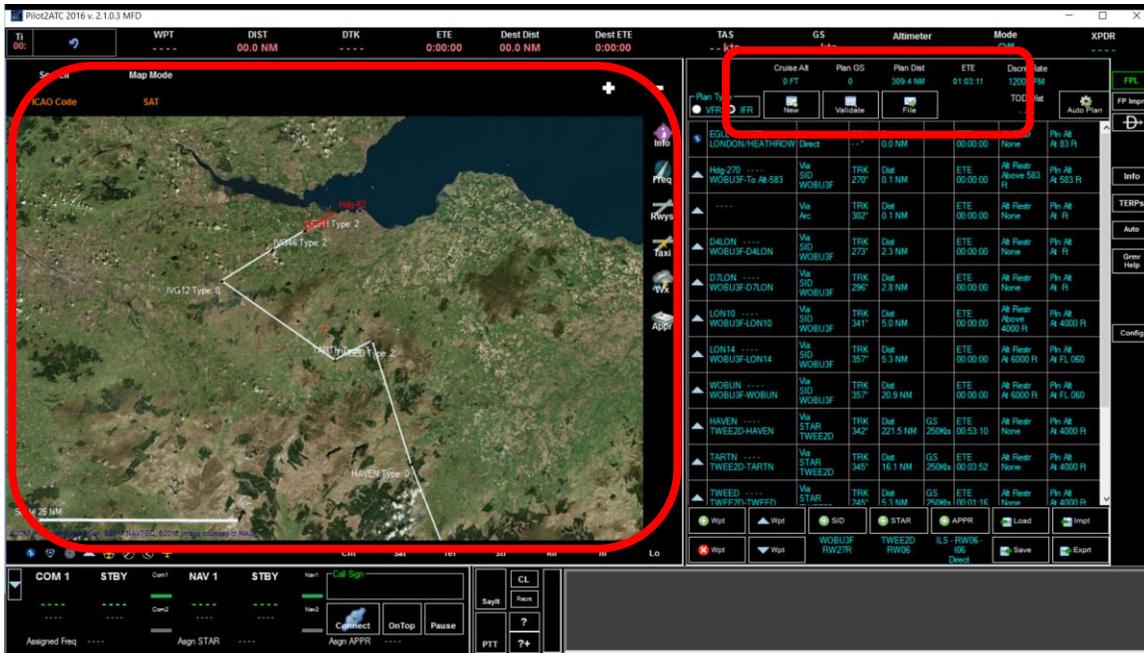
Click LOAD and the approach will be added to our flight plan so we can see if we're going to keep the TLA transition.



It appears this transition would have us doubling back on our course, so open the APPR window again and select Vectors to IVG12 in the transition dropdown.

COMMENT: Be sure to select RW06 and the ILS approach again.

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Clicking Load and zooming in, we see that the route looks reasonable. We've got all our procedures selected. The flight plan route is now complete and we can enter the Cruise Altitude and Groundspeed as before. If all looks good after that, we can save the Flight Plan, export the flight plan and finally file it with ATC. All as before in the simple flight plan discussion.

One other thing to point out before we move on is that the names of the SID, STAR and Approach that are in the current Flight Plan are displayed below the corresponding buttons. This may come in handy if we're trying to determine if ATC is clearing us for the procedure already in the plan or a different one.

IFR Flight Plan Without An Approach

If you're flying without a STAR, enter an IFR flight plan with no approach specified. The route will be direct from the last waypoint to the airport. Usually, this is useful for GA Flights from one airport to another. As you approach the destination, ATC will assign an approach and either give vectors, or clear you for the approach. In either case, enter the approach into the aircraft GPS, and optionally, also into P2A.

To enable this behavior, you must:

- check the *ATC Assigns Approach* option on the *FltPln* tab of *Config*; and,
- un-check the *AutoLoadPlannedProcedures* option on the same tab.

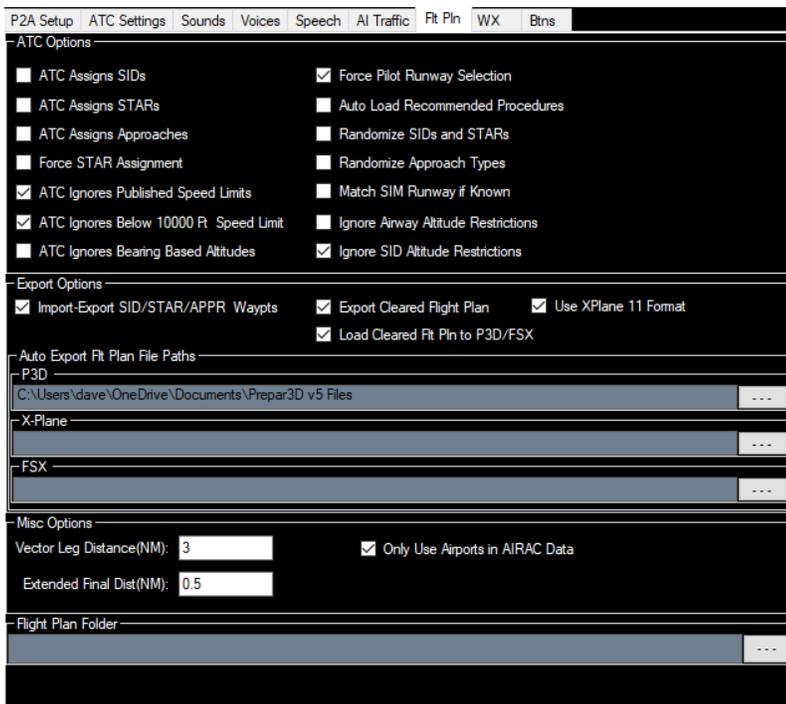
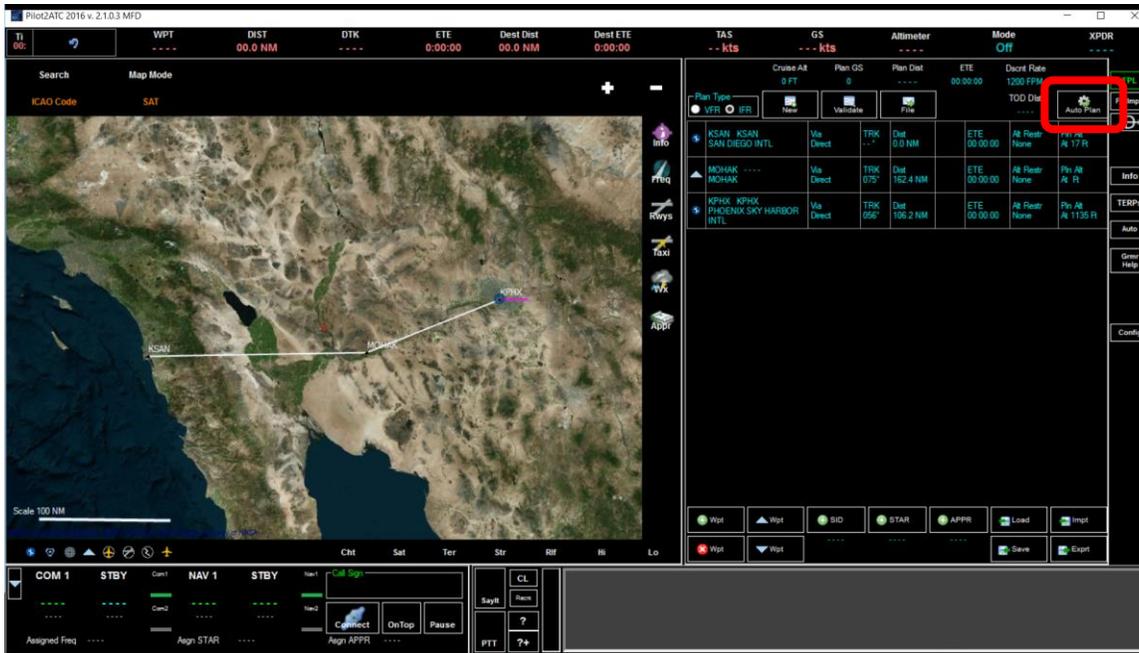
Auto Plan Button

Since we now know how to plan the flight, let's mention the *Auto Plan* button. It's located in the upper right of the Flight Plan window and is meant to give a reasonable set of procedures for an IFR flight, given the Departure and Destination airports and any intermediate waypoints you've entered.

NOTE: *It doesn't plan the Airways or enroute waypoints.*

To try this feature out, let's enter a route from San Diego, California (KSAN) to Phoenix, Arizona (KPHX), with a single waypoint of MOHAK.

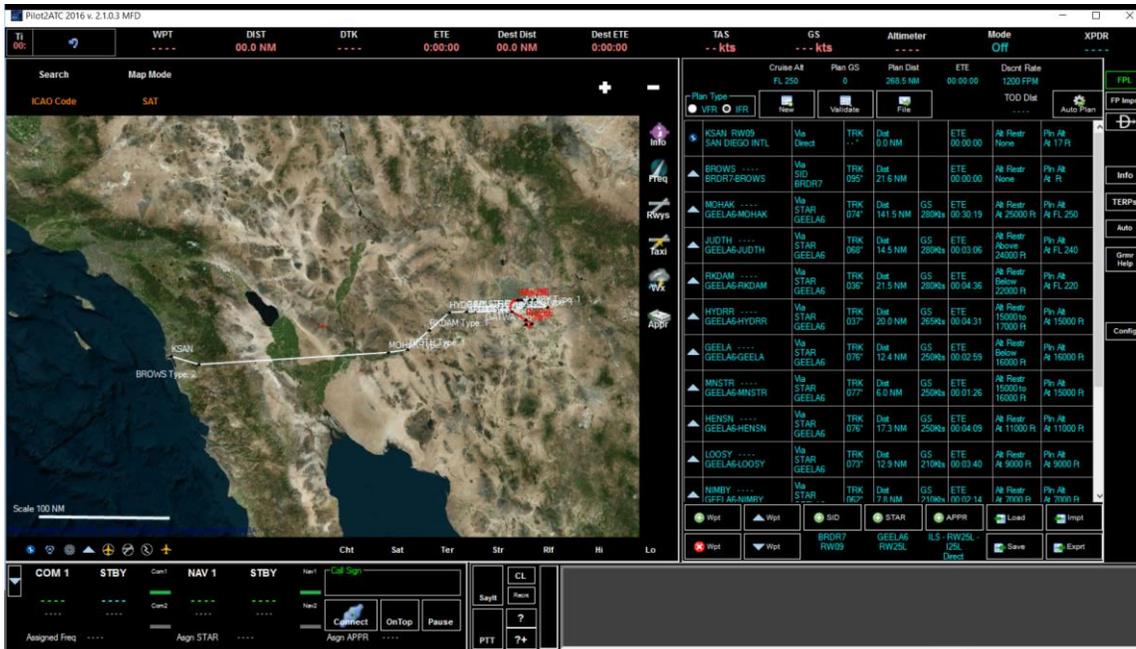
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Before we click the *AutoPlan* button, we must choose – on the *FitPin* tab of *Config* – what procedures we want to have added for us. In this case, we choose all.

Click the *Auto Plan* button and wait a minute or two while P2A does its magic.

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In this case, it takes less than a minute and we have a complete and flyable Flight Plan. Here's a closer look at the arrival. Note it found a STAR with the MOHAK transition.



Now, a few notes on how to get best results:

1. Be sure the SIM has been running for a while so the active runways are more likely to be correct. Connect to the SIM before using Auto Plan.
2. Auto Plan gives procedures for the ones you've selected on the FltPln tab of config for ATC to assign.
3. Auto Plan will give you the same procedures ATC would've assigned you. If you don't like what's given, make the changes manually (as described earlier) and be sure the "Force Pilot Runway Selection" is checked so you'll get the procedures you expected.
4. Auto Plan will do its best to give a good combination of STAR and Approach. Sometimes, the best STAR is no STAR at all, so don't be surprised if you don't get a full set of procedures, even when ATC Assigns xxx check for all.

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A Word About TOD (Top of Descent)

The TOD calculated by P2A is used by ATC to start the descent, and, if you're flying a plane without a fancy FMC, for you to know when to start down. Successive altitudes are calculated so you'll know at what altitude you need to be for each waypoint after the TOD.

P2A now calculates the TOD dynamically while you're enroute, adjusting it based on the aircraft's actual Groundspeed. You'll see the Distance and ETE to TOD at the top of the main window and the TOD to Dest value in the upper right of the flight plan will change as airspeed changes during cruise. You'll also see the TOD displayed on the moving map as a green arrow like below:



But what if you're flying an aircraft with a full-function FMC? Here's a short write-up by Maury Pratt, a P2A user and Beta tester giving a great explanation when flying the PMDG 737 NGX.

PMDG 737 NGX Procedure Notes

To Establish VS Descent Rate:

We're accustomed to setting up the plane's FMC with our flight plan to include a suitable STAR to the destination airport; consequently, the FMC will compute a TOD point that enables descending according to desired crossing altitudes at the various arrival waypoints. The descent begins automatically at the TOD; we need to do anything further to manage the arrival except monitor airspeed.

But what happens when you're flying with an ATC add-on, such as P2A? This obliges you to follow Center's instructions, which might include a "descend now" call. So what rate of descent (VS) will you need to hit the STAR chart's required crossing altitudes? What's more, that descent rate will likely change as you progress through subsequent waypoints.

So here's the situation: Suppose ATC has instructed you to begin your descent at other than your FMC-calculated TOD. For example, the current Center might say (in this example, a flight from KSAN to KPHX). "Descend to cross MOHAK at Flight Level Two Five Zero then descend via the GEELA6 arrival with the MOHAK transition...". Our question now is what VS setting(s) will produce these results? Well, if you're flying PMDG's 737 NGX, you're in luck.

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There's a graphic buried deep in the ND display panel that, in addition to showing the usual plan view of the flight path (magenta line) through the STAR's successive waypoints, also includes a graph of the computed *vertical* path (much like that in an approach chart) showing waypoint crossing altitudes (adjusted to comply with at/above/below crossing restrictions at subsequent waypoints). By adjusting the MCP's VS descent rate a projected flight path is superimposed on the graph, which then moves dynamically either above or below the computed path line as you adjust the VS value. This allows you to place the setting where the dynamic line matches the computed path line, thus achieving an accurate and timely arrival.

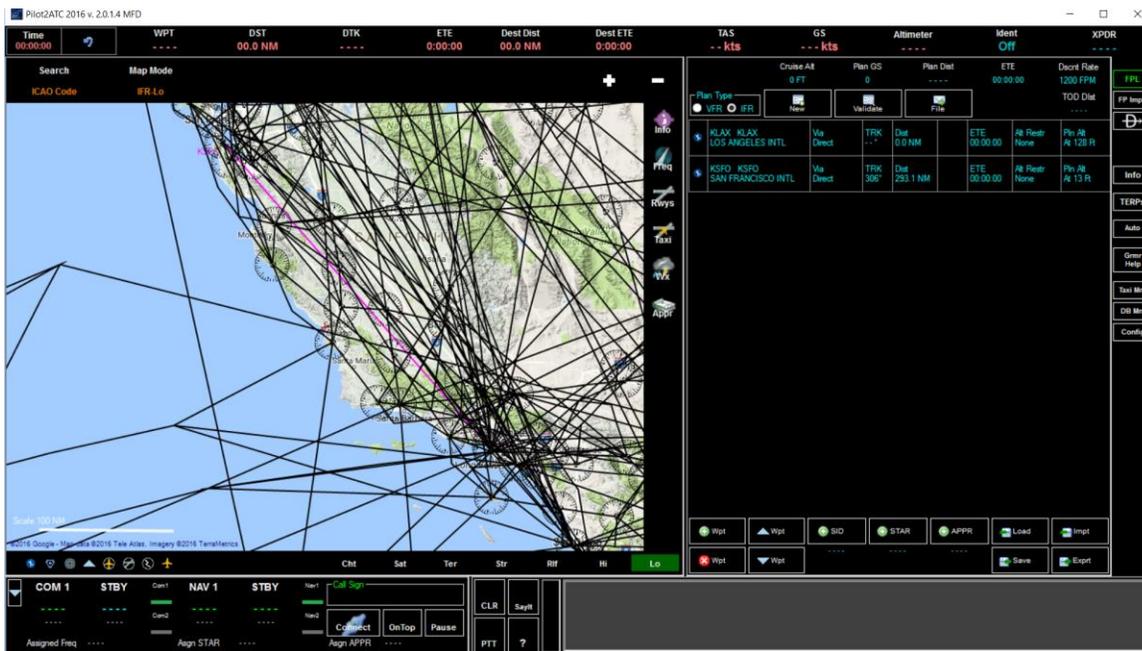


To call up the ND's Vertical Situation Display (VSD) view: While in the usual MAP mode, click on the EFIS CTR button (the one that selects the ND's APP/VOR/MAP/PLAN mode) until the ND appears as shown above. This must be one of this plane's best kept secrets!

NOTE: See the *PMDG NGX FCOMv2 Chapter 10.10 pages 36-40* for VSD operational details.

Adding Airways to a Flight Plan

Once a basic flight plan has been defined, add Hi or Low airways to it. Let's say we're planning a flight from KLAX to KSFO and have entered our departure and destination airports into the Flight Plan. Opening the "Lo" airway map, our screen would look something like this. The magenta line represents the flight plan.



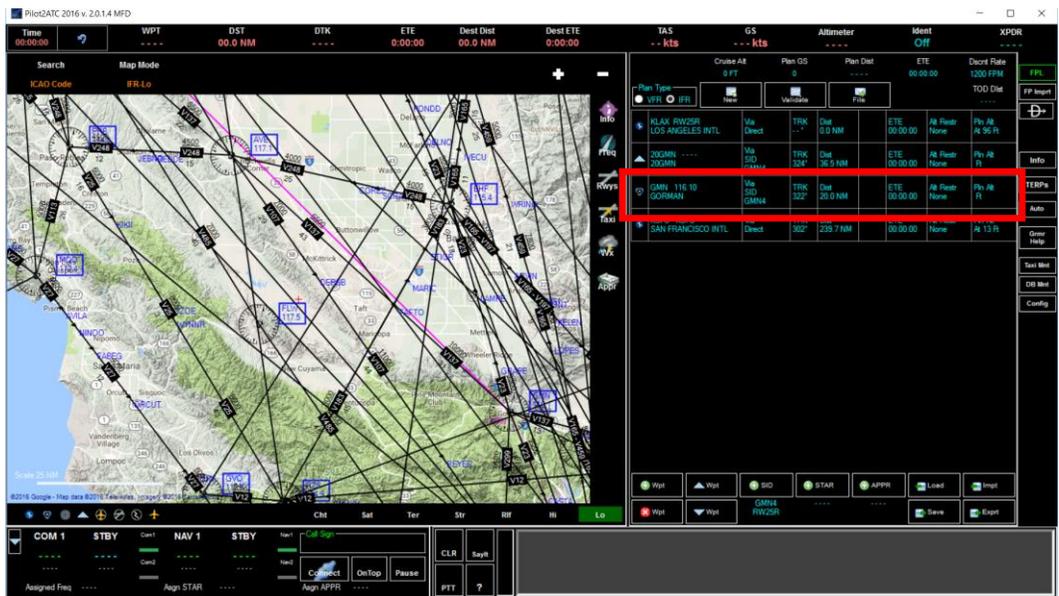
Zooming in the map on KLAX, the names of the VORs, Airways, etc. can be seen. SMO is a nearby VOR, so let's see if there's a SID taking us to that VOR.

Looking at the map and flight plan, it looks like the preferred SID will take us further North to the GMN fix. So we load that SID into the plan.

Moving the map to see more of our route, we can see that V137 seems to be the airway that'll take us in the right direction. In fact, we should take it to the ROM VOR, then take V485 toward KSFO. We can either see what STAR we want for the arrival or take V485 all the way to the SJC VOR.

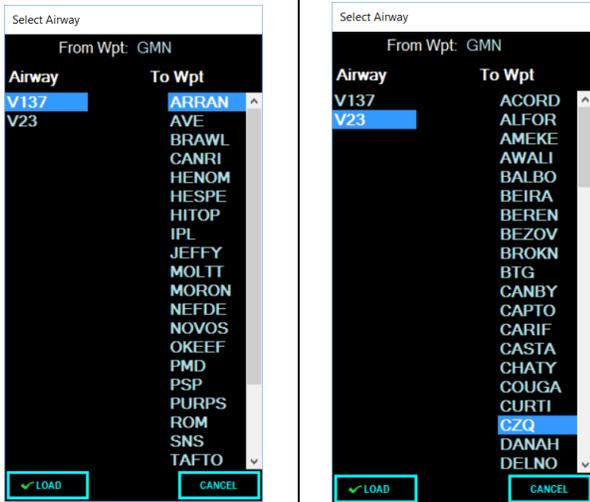
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Entering the STAR, we see that the Transition fix is the CZQ VOR. This is a more inland route than we might plan had we been flying VFR or not doing a Standard Arrival. If we want to use this arrival, the V23 from GMN to CZQ will work perfectly. Let's choose that and enter it.



To enter the V23, we can click on the image of the GMN VOR in the Flight Plan (red box above) which opens the Waypoint Options menu. On this menu, we select Load Airway which opens the Select Airway menu.

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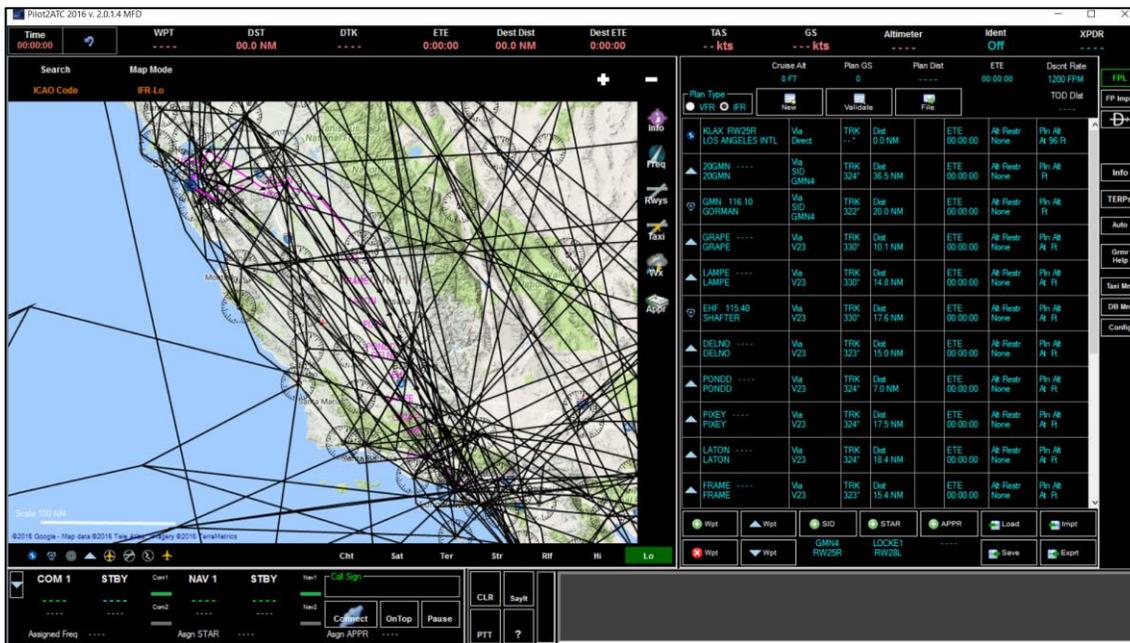
LEFT IMAGE

Once the “Select Airway” box opens, the available airways are shown.

RIGHT IMAGE

Select V23 as the Airway and all possible Waypoints on this airway will be listed to the right.

Select CZQ as the To Wpt. click Load, and the flight plan will be modified to add all the waypoints between GMN and CZQ along V23. Each waypoint will also be shown as being Via V23, rather than Direct.



We now have a flight plan using the GMN4 SID, V23, and the LOCKE1 STAR. All we need to do is add the desired Approach.

The process above demonstrated many different features around airways, including viewing them on the map. If you want the minimum effort way to enter an IFR Flight Plan with airways, follow these simple steps:

1. Enter your Departure and Arrival airports into the flight plan.
2. Select the desired SID.
3. Select the desired STAR.
4. click on the image to the left of the last SID waypoint to see what airways are available.
5. Select an airway that'll get you to your STAR transition point (First waypoint in STAR) if possible.
6. Select that waypoint and you're done.
7. If you can't get directly to your STAR transition point, use the Hi or Lo map to find a suitable intermediate point and proceed as in the full instructions above.

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Let's take a slightly more realistic example where we've a route we found on one of the Internet sites like FlightAware® – KMCO SAV J55 CHS J79 JFK DPK KSWF.

1. Enter the airports and waypoints – KMCO SAV CHS JFK DPK KSWF.
2. Click on SAV's VOR image; select Load Airway.
3. Select J55 and then choose CHS.
4. Click the Load button.
5. Click on CHS VOR image and select Load Airway.
6. Select J79 and choose JFK.
7. Click Load.

You should see the following:



When loading airways, be sure to go in the proper order – from departure airport to destination airport – of the Flight Plan. Otherwise, you may get unpredictable results, similar to the following.



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This “mess” was achieved by the following steps:

1. Enter the airports and waypoints KMCO SAV CHS JFK DPK KSWF.
2. Click on CHS’s VOR image, select Load Airway.
3. Select J55 and then choose SAV (going backwards toward the departure airport in the flight plan).
4. Click the Load button.
5. Click on JFK VOR image and select Load Airway.
6. Select J79 and choose CHS (again, going backward).
7. Click Load.

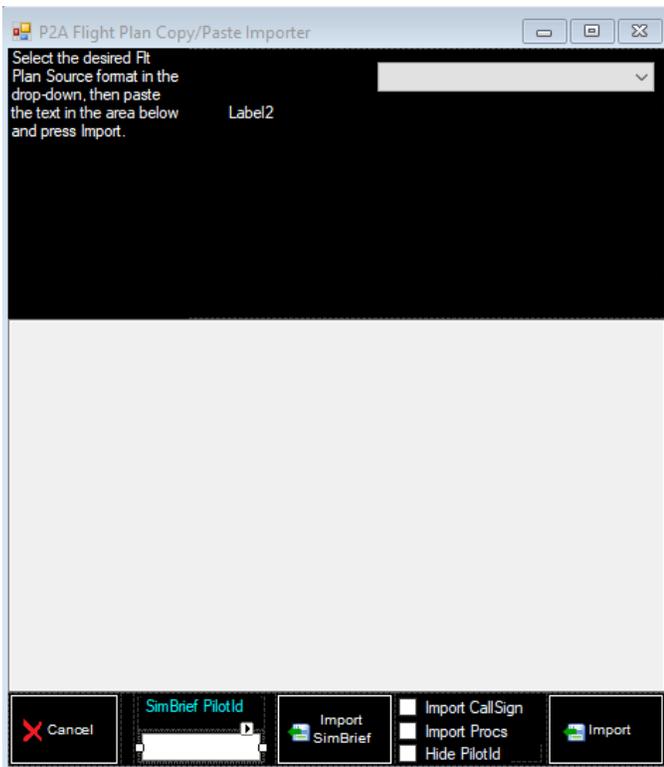
This could be a *very long* flight!

Importing Flight Plans

There’re two [2] ways to import flight plans. First, you can import an X-Plane (.fms) or FSX/P3D (.pln) plan from hard disk by clicking the *Impt* button and selecting the file to import.



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Another way to import flight plans is to use the FP Import button just under the FPL button to open the import window where you can paste a flight plan, in the proper format, from the Internet and have P2A import it for you.

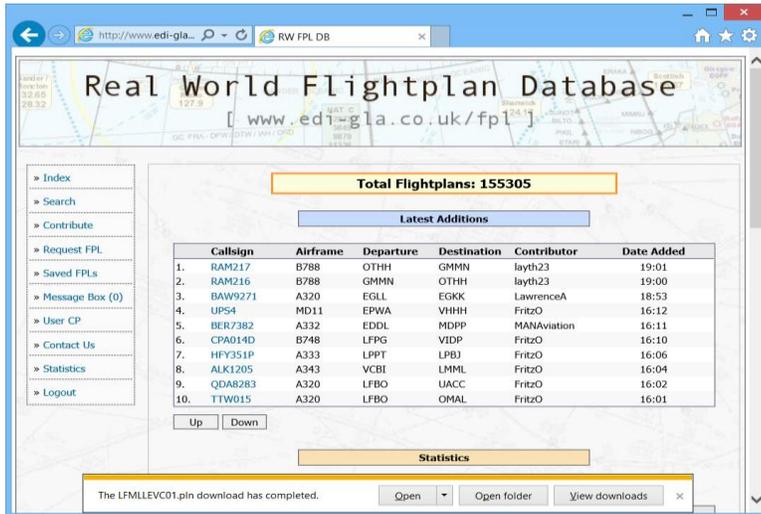
This feature currently supports flight plans from FlightAware®, SimBrief, Flightplan Database, PFPX, OnlineFlightPlan, Real World Flightplan Database websites as well as the Navigraph Charts Flight Planner.

Or, if you use SimBrief, you can import directly from the Web by entering your SimBrief PilotID number and pressing the Import SimBrief button to the right of the PilotID. You can check the Import CallSign and Import Procs to import the SimBrief Call Sign and Procedures from the Web also.

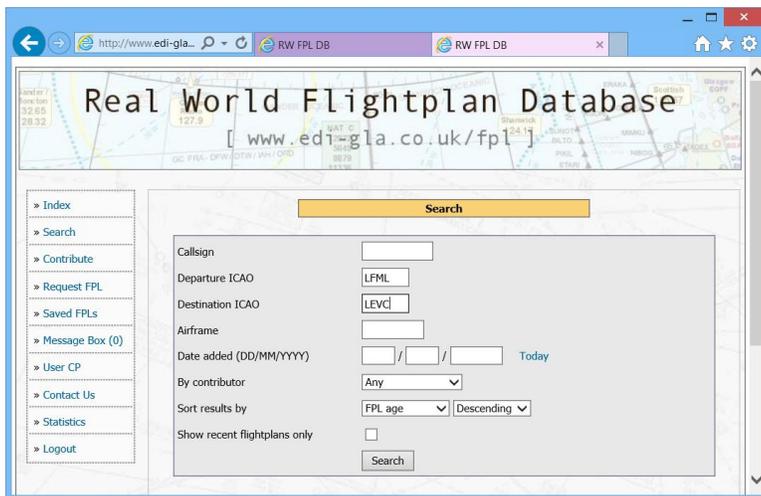
After entering your PilotId, you can check the "Hide PilotId" checkbox so your ID is hidden, yet still set as the active PilotId.

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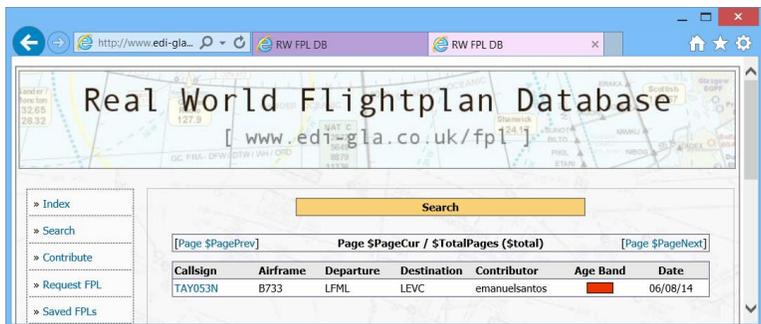
Taking an example from Real World Flightplan (<https://edi-gla.co.uk/site/index> | free registration required), you'll see a screen like this:



Click Search in the left pane to open the Search window and enter the Departure and Destination airports.



click Search and you get:



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Select the Flight Plan by clicking on the Blue Callsign.

Real World Flightplan Database
[www.edt-gla.co.uk/fpl]

> Index
> Search
> Contribute
> Request FPL
> Saved FPLs
> Message Box (0)
> User CP
> Contact Us
> Statistics
> Logout

View Flightplan

Flightplan ID	158454	Age band	
Contributed by	emanuelsantos	Date added	6 Aug 14
Viewed	36 times	Saved	0 times

Callsign	TAY053N	Operator	
Equipment	M/B733/H	Aircraft	Boeing 737-300
Departing	LFML Provence, FR	Destination	LEVC Valencia, ES
Dep. time	0510Z	ETA	0622Z
FL/ALT	F310	TAS/Mach	N0444

Route
N0444F310 MAMES UM984 BISBA UN975 BCN UM985 SOPET/0112

Remarks
PBN/B2 DOF/140806 REG/GJMCT EET/LECB0020 OPR/NPT RMK/00442476882630 CS/NEPTUNE IFFPSRA

Save FPL Changes (0) Report Error Print

Highlight the entire route (red box) in the bold font. Click Ctl-C to copy it to your clipboard. Then, place your cursor in the P2A Flight Plan Copy/Paste Importer window and click Ctl-V to paste it into the white text area.

Be sure you've Real World Flightplan Database selected in the drop down window. Then, read and follow the instructions beneath the drop-down before you click the Import button. In this case, we need to add the Airport ICAO codes separated by slashes ("/") in the text window:

P2A Flight Plan Copy/Paste Importer

Select the desired Flight Plan Source format in the drop-down, then paste the text in the area below and press Import.

Real World Flightplan Database

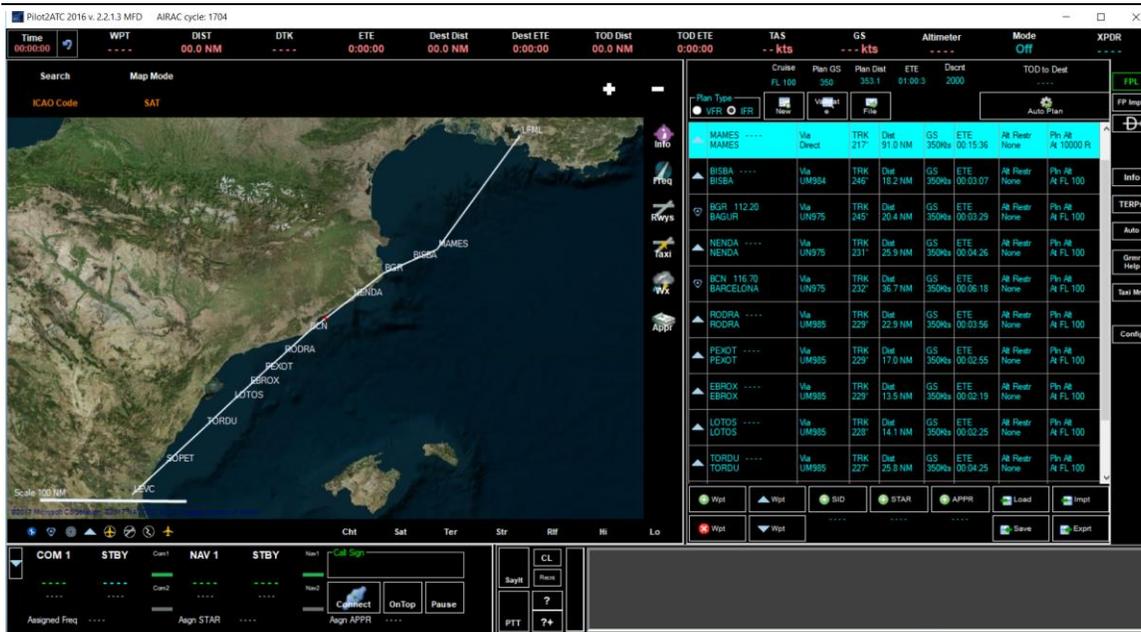
Only paste the portion of the route that has waypoint and airway identifiers. Place the Departure Airport ICAO Code followed by a blank in front of the route line and a space followed by the Destination Airport ICAO Code after the end of the line.

LFML N0444F310 MAMES UM984 BISBA UN975 BCN UM985 SOPET/0112 LEVC

Cancel Import

Then, click the Import button and your flight plan should be imported into the FPL window.

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If you get an error message, find another flight plan and try again. It reads the first time *most* of the time, but sometimes, there's an anomaly in the flight plan route line and you have to find another one.

Exporting Flight Plans

Export flight plan files you've imported or created by clicking the Expt button. This'll bring up the Export Flight Plan dialog:



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Set up the destination directory for each of the flight plan types you plan to export by specifying the full path to the folder. In the example above, the P3D and X-Plane flight plans will be exported to the standard folders for those SIMs. The Flight Factor flight plans will be exported to the 757....routes folder, which is where the FMC looks for company routes.

Place a checkmark next to each flight plan type to which you want to export the current flight plan.

NOTE: Multiple flight plans can be exported at the same time.

X-Plane Notes	There're two [2] X-Plane formats – one for XP-10 and the other for XP-11. The XP-11 format is a new format that, at present, isn't used by many, if any, X-Plane 11 aircraft. It stores the procedures (SID/STAR/Approach) in addition to the route. Future GPSs and FMCs may use this, but for now, most X-Plane 11 aircraft still use the XP-10 format's .fms file.
FF A320 Notes	There are two [2] separate entries for the Flight Factor A320. At present, if you have Navigraph as a data provider for the A320 data (nav.db files), the format of the exported routes is slightly different from the ones that work with the NavDataPro-supplied nav.db files. Be sure to check the appropriate one. If you check both, you'll get two [2] new routes if they're different. When appending routes to the corte.in file, if there's already an identical entry, the new entry won't be made. Finally, if you want the export to include the procedures, you must check the "Export SID/STAR/Approach Waypoints" option on the FltPln tab of Config. Otherwise, only the Departure and Destination airports and enroute waypoints will be exported, letting you enter the procedures in the FMC.
Base File Name	The default Base File Name is the Departure Airport code + "-" + Destination Airport code. You can set this to anything you like. For example, some FMCs prefer the 8 character name with the "-" omitted.
Overwrite Existing Files	If you don't want P2A to check for existing files, and overwrite them if they <i>are</i> there, you can check the "Overwrite Existing Files" option. In the case of the FF A320, multiple routes are stored in a single file named corte.in. If you check this option for that type of export, the exported route will be appended to the end of the existing file. Otherwise, a new file with a different name and only one route will be created.
Export SID/STAR/ Appr	Some aircraft cannot import flight plans with procedures, so if you don't want the procedures to be exported to .fms or .pln and some other plan types, uncheck this box. This does not apply to some specific aircraft formats that require the procedures to be dropped.
Export Button	<p>When you're ready to export and close the dialog, click this button. It will check for valid folder paths and create the flight plans you've specified. If you haven't checked the "Overwrite Existing Files" option, it will add numbers to the end of the name and allow you to store up to ten [10] files with the same Base File Name.</p> <p>Only the "enroute" waypoints will be exported. Some formats allow inclusion of procedure names and in those files, this information will also be included. If you've the "Export SID/STAR/Approach Waypoints" option checked in the Config->FltPln tab, then some export formats, including the Text Line format, will include the waypoints associated with the procedures in the plan.</p> <p>If the flight plan is exported successfully, a message with the exported name will appear in aqua in the Speech Text Information window in the bottom right of the main P2A screen.</p> <p>NOTE: <i>User-defined waypoints are not exported except in the .fms formats.</i></p>
Close Button	If you decide not to export, click this button to dismiss the dialog window.

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Printing Flight Plans

Pressing the Print key above the flight plan will open a print dialog where you can select a printer and print the flight plan. If you want to get a PDF instead of a hardcopy, you can get free PDF Printers online and install it as one of your Windows printers. Here's an article that shows one way: [How to Add or Reinstall the Microsoft PDF Printer - Microsoft Community](#)

Climb Rate	Cruise Alt	Plan GS	Plan Dist	ETE	Dscrit Rate	TOD to Dest
2500 FPM	FL 170	180	285.7 NM	01:35:13	1000 FPM	----

Plan Type	New	Validate	File	Print	Auto Plan
<input checked="" type="radio"/> VFR <input type="radio"/> IFR					

Alt	Via	TRK	Dist	GS	ETE	Alt Restr	Pln Alt
D113B ---- D113B	Via SIDDET1K	TRK 089°	Dist 0.1 NM	GS 180Kts	ETE 00:00:03	Alt Restr Above 590 Ft	Pln Alt At 590 Ft
DE34A ---- DE34A	Via SIDDET1K	TRK 119°	Dist 6.2 NM	GS 180Kts	ETE 00:02:03	Alt Restr No Rst	Pln Alt At 5500 Ft
DE29C ---- DE29C	Via SIDDET1K	TRK 102°	Dist 5.0 NM	GS 180Kts	ETE 00:01:39	Alt Restr Above 3000 Ft	Pln Alt At FL 060
D283T ---- D283T	Via SIDDET1K	TRK 102°	Dist 9.0 NM	GS 180Kts	ETE 00:02:59	Alt Restr Above 5000 Ft	Pln Alt At FL 060
D283P ---- D283P	Via SIDDET1K	TRK 103°	Dist 4.0 NM	GS 180Kts	ETE 00:01:19	Alt Restr At 6000 Ft	Pln Alt At FL 060
D283E ---- D283E	Via SIDDET1K	TRK 103°	Dist 11.0 NM	GS 180Kts	ETE 00:03:39	Alt Restr At 6000 Ft	Pln Alt At FL 060
DET 117.30 DET - DETLING	Via SIDDET1K	TRK 103°	Dist 5.0 NM	GS 180Kts	ETE 00:01:39	Alt Restr At 6000 Ft	Pln Alt At FL 060

Wpt	Wpt	SID	STAR	APPR	Load	Imprt
Wpt	Wpt	DET1K RW09L DET	EKDU1B RW05R EKDUS	ILS - RW05R - I05R DIRECT	Save	Exprt

Print

General

Select Printer

- Fax
- Microsoft Print to PDF
- Microsoft XPS Document Writer
- OneNote (Desktop)
- OneNote for Windows 10
- Samsung CLP-320 Series

Status: Ready Print to file Preferences

Location: Find Printer...

Comment:

Page Range

All Selection Current Page

Pages: 0

Number of copies: 1

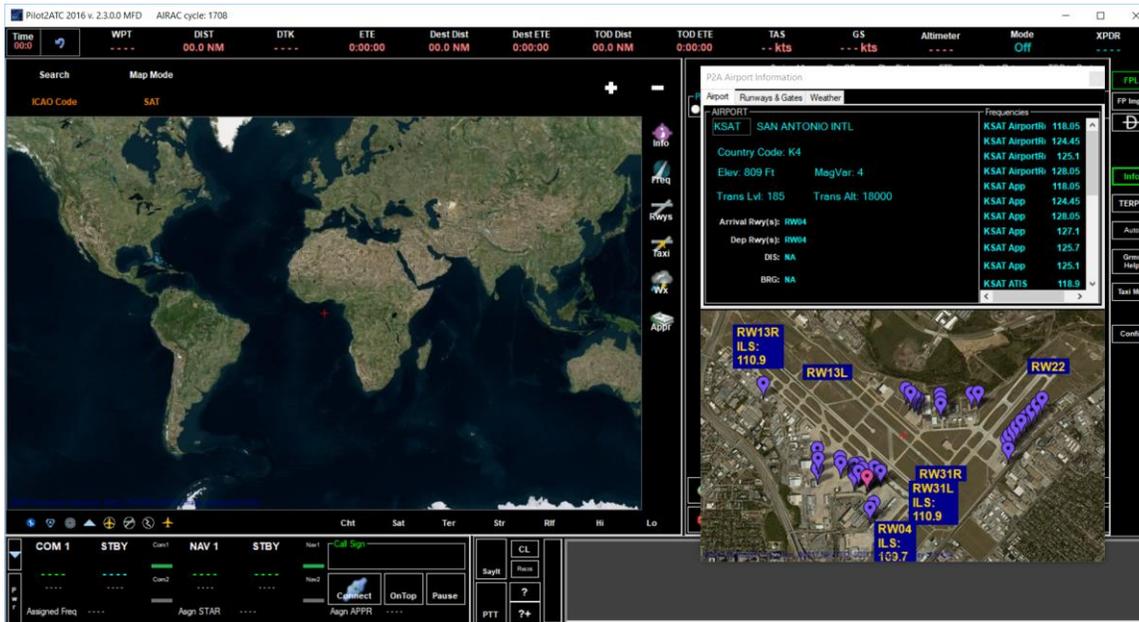
Collate

Print Cancel Apply

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Info Panel

The *Info* button brings up a panel with information about the airport currently selected in either the map or flight plan. If none are selected, it'll display the current airport (if on the ground) or the Destination airport (if in the air with a flight plan entered). Enter an Airport Code in the text box underneath the Panel name AIRPORT and it will show that airport's information. In the screenshot below, we've entered the code KSAT for San Antonio, Texas. This is the airport we'll use later in the section on Taxiway and Gate editing.



There're three [3] tabs along the top of the Info panel – Airport, Runways & Gates and Weather.

Airport Information

On the left side of the Airport panel is some basic information about the Airport including the Identifier, Name and Elevation, Magnetic Variance, Transition Level and Altitude, Arrival and Departure Runways, Distance and bearing from the aircraft, if applicable. These last two [2] fields with show NA if not connected to the SIM.

The current arrival and departure runways displayed on this panel may show dashes if there isn't an active runway designated. If weather is available and winds are out of limits based on the Max Crosswind/Tailwind limits, the runways will be shown in red.

COMMENT: *The Transition Level is the lowest usable Flight Level and is based on the Transition Altitude, which can vary from region to region (this is always 18,000 feet in the US and Canada) and the Altimeter. Here's a discussion of the concepts: http://www.skybrary.aero/index.php/Transition_Altitude/Level*

If you'd like information on a different airport, click on the airport identifier – KSAT in this case – and enter the identifier of the airport you want to display. You could also just click on the desired airport on the map in the Map panel and it would change the display as well.

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Frequencies



Also on the Airport panel is a display of all the frequencies associated with the selected airport. Click on any of the frequencies to select it as the Standby frequency.

If Com1 is selected, clicking on KSAT ATIS will set Com1 Standby frequency to 118.9. Very convenient!

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Runway & Gate Information

Runways
RW25R Asphalt 9186 X 148 Ft
ILSs
 RW25R ILS CAT III 111.35 248 IFNW
 RW25R ILS CAT III 109.75 248 IFWR
 Crosswind(kts) Right: 8 Headwind/Tailwind(kt) Head: 9.2 Pattern Dir: **Right** Alt: **1400 Ft**

Gates
 119 - Gate_Medium
 Filter: Airline Gate Type: Any

RW07L ILS: 110.3
RW18
RW07C ILS: 111.35

The Runway & Gates Tab provides information on all the runways at the selected airport. clicking the Arrow keys in this panel moves the display to the next or previous runway, cycling through all the runways. For each runway, it displays the Name, Surface Type, Length and Width, Crosswind and Headwind/Tailwind components, and Pattern Direction and Altitude. If the runway has an ILS, the frequency, bearing and identifier for the ILS are also displayed. If a runway has more than one ILS, all of them will be displayed (This is fairly rare, but EDDF RW 25R/07L have multiple ILSs).

For additional situational awareness, the Runways Names and Gates are also shown on the Satellite view below the information panel.

Runways
RW04 Asphalt 8505 X 150 Ft
ILS 109.70 Brg 037
 Crosswind(kts) Right: 1 Headwind/Tailwind(kt) Head: 4.9 Pattern Dir: **Left** Alt: **1800 Ft**

Gates
 30 - Gate_Medium
 Filter: Airline: AAL-American Airlines Gate Type: Any

RW22
RW31R
RW31L ILS: 110.9
RW04 ILS: 109.7

Runways
RW04 Asphalt 8505 X 150 Ft
ILS 109.70 Brg 037
 Crosswind(kts) Right: 1 Headwind/Tailwind(kt) Head: 4.9 Pattern Dir: **Left** Alt: **1800 Ft**

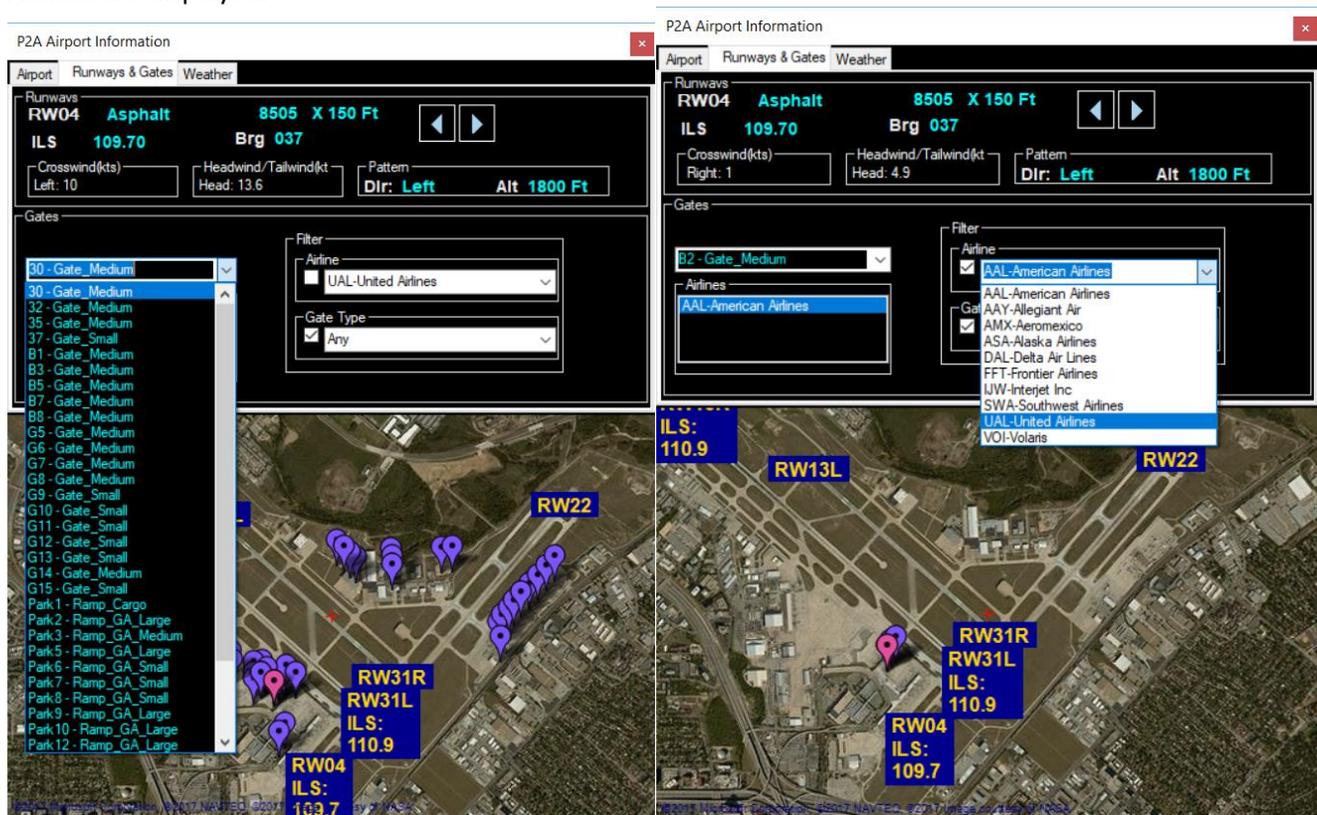
Gates
 30 - Gate_Medium
 Filter: Airline: AAL-American Airlines Gate Type: Any

ILS: 110.9
RW13L
RW31R
RW31L ILS: 110.9
RW04 ILS: 109.7

The Gates dropdown displays all the valid gate names for the airport. These can be used when requesting Engine Start and Pushback on departure or for requesting taxi instructions on arrival. The Filter to the right can filter the gates and parking areas by Airline or Parking Type.

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In the screenshots below, all Gates and Parking Types are being displayed. On the right, only gates for American Airlines are displayed.



Checking the checkbox next to UAL in the Filter box applies a filter to just show United Airlines we get this:



When setting up for arrival, pre-select a gate or parking spot by clicking on the dot or selecting it from the list. If you do this, when you call for Taxi after landing, parking will be assigned as follows:

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If You Preset Gate or Cargo Ramp or Military Ramp Position

- **Request Taxi to the Gate or Taxi to the Ramp** without being specific, you'll be assigned the Preset if it matches the requested type (Gate or Cargo Ramp or Military Ramp). Otherwise, you'll get a random assignment.
- **Request a specific Gate or Ramp position**, you should get that gate or position if the speech is properly recognized *and* the position exists at the airport.

If You Don't Preset the Position

- **Request Taxi to the Gate or Ramp** and you'll get a random gate or ramp assignment. If you have an Airline call sign, you'll get one selected from those allocated to that airline; otherwise, it'll be from all Gates or Ramps of the requested type.
- **Request a Specific Gate or Ramp Position** and you should get that gate or position if the speech is properly recognized.

If You Preset a GA Ramp or Water Dock position

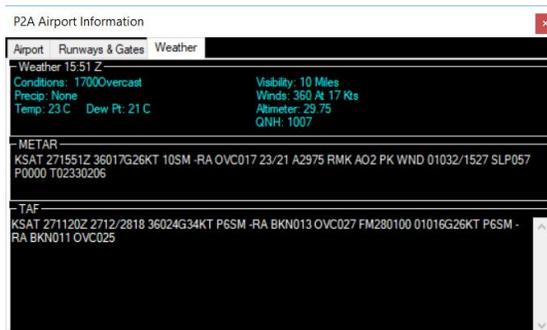
Request Taxi to the Ramp or Taxi to the Water Dock and you'll get taxi directions to the GA ramp or water dock containing the preset parking spot. You'll not be assigned a specific parking space as you would with Gates and Cargo Ramp spaces.

If You Don't Preset GA Ramp or Water Dock position

Request Taxi to the Ramp or Taxi to the Water Dock and you'll get taxi directions to a random parking spot on the field if it has one of that type. Otherwise you'll be told there's no parking of that type at the airport.

SPECIAL NOTE: *These are gates that are added in the section on Taxiway and Gate maintenance later in this User Guide. These won't be in the default data. In fact, the default data has no information at all about Airlines. You must edit the airports – or – import the data from scenery files in order to add this information.*

Weather



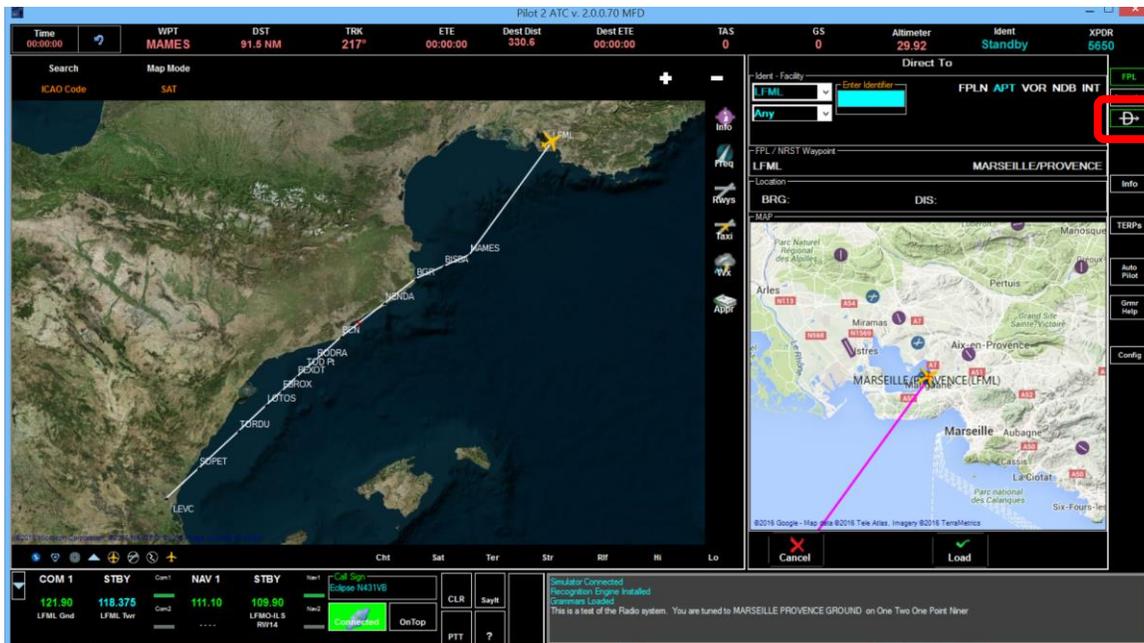
The weather panel displays the most recent METAR and TAF (Terminal Area Forecast) for this airport, obtained from the NOAA site on the Internet. It may vary from the information being given on ATIS in the SIM because it's pulled independently, directly from the website, whereas the ATIS information is provided according to the settings on your SIM.



The bottom half of the Info panel displays a close-up of the airport runway layout with the runway names displayed for situational awareness. If an ILS is available for that runway, its frequency is displayed below the name.

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Direct To Panel



Sometimes during flight, you may need or want to deviate from your flight plan. Perhaps you get a clearance to bypass some out-of-the-way waypoints or perhaps you need to land for an emergency at a different airport than your destination.

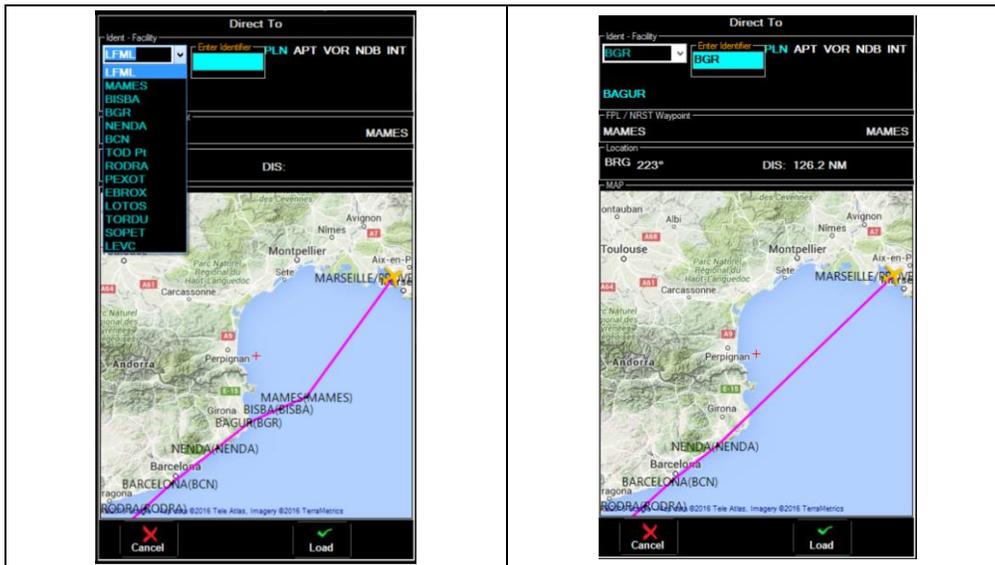
The Direct To panel allows you to quickly modify or replace your flight plan to reflect these changes. Clicking the *Direct To* button (red box) will open the DirectTo or DTO panel. In the upper right, you can select the source to search for the point you want to fly direct to.

If you're flying an already-filed Flight Plan and want to modify it to go direct to a waypoint, you need to contact ATC and get permission for the DirectTo route before actually flying the revised Flight Plan. You'll need to say something like "*<CallSign> request direct to XXX...*" where XXX is the ICAO code for the direct to identifier spelled phonetically. For example, it might be "*Beech One Victor Bravo request direct to Sierra Golf November*" to go direct to a VOR or NDB with identifier SGN.

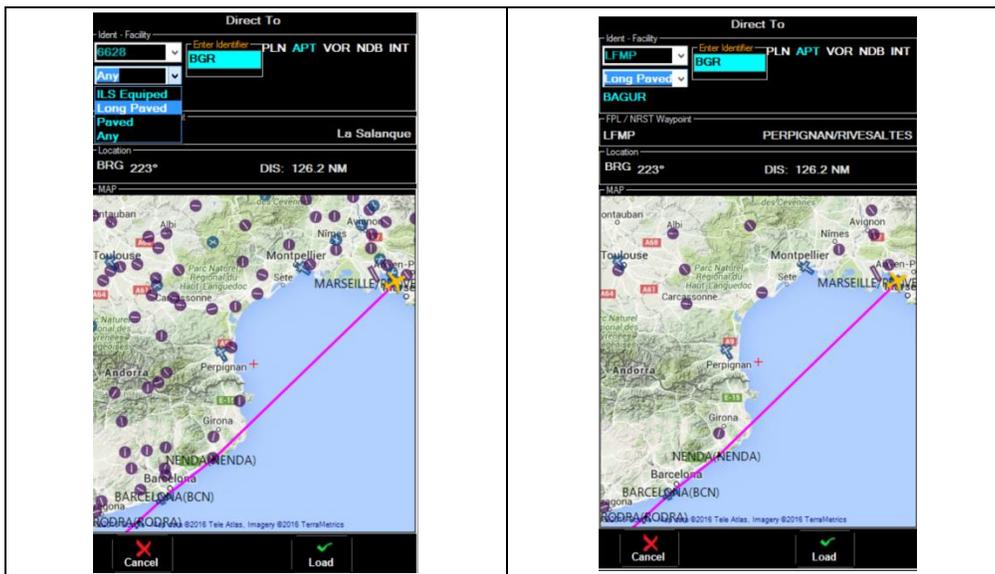
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You can go direct to:

- **FPLN** – A waypoint in your flight plan. All the waypoints in your flight plan will be listed in the Top left drop-down box. You can select the desired waypoint there or enter it in the Identifier text box and the intervening

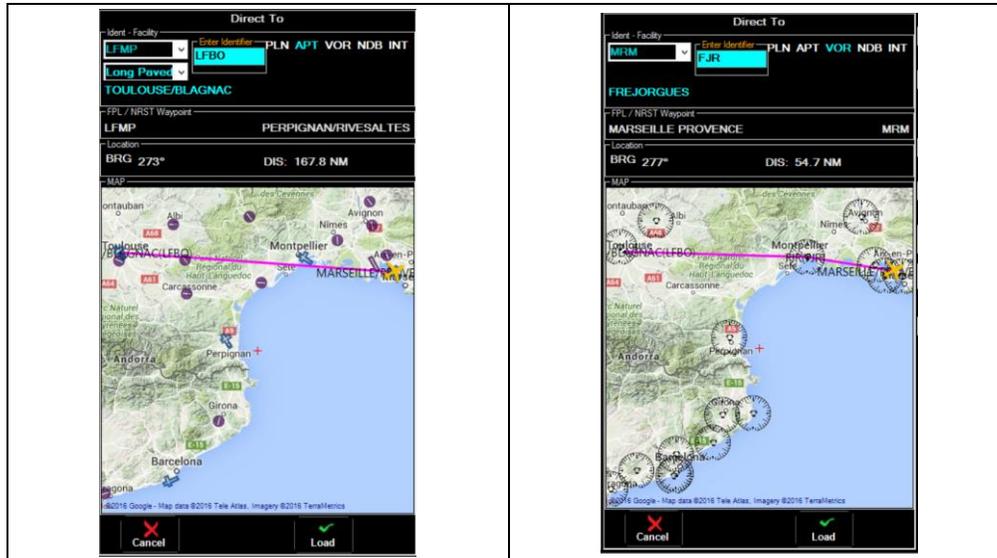


- waypoints will be dropped from the Ft Plan.
- **APT** – Airport lets you select any airport, either from the drop-down or by entering the Identifier in the blue text box. The second drop-down enables you limit the type of airport chosen – in this case Long Paved.



Once you select an airport, you'll get a direct flight to that airport, replacing your flight plan if you click the **Load** button. Of course, you can click **Cancel** and avoid any changes to the flight plan.

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After getting the DTO airport selected, you can view VORs, NDBs, and Intersections (INTs) and select one [1] or more of them to create a “quickie” flight plan.

NOTE: When you choose to view INT, you’ll get a lot of little triangles on the map with no letters. You can roll over them and see their Identifier, or if you know the waypoint Identifier you want, just type it into the Identifier Text Box.

CAUTION: Select your NavAids in REVERSE order, starting with the one nearest the Destination. Remember, you’re saying you want to go from your current position DIRECT TO the selected NavAid.

COMMENT: This is great for emergencies or a quick VFR flight to a nearby airport. The more you use it, the more you’ll like it.

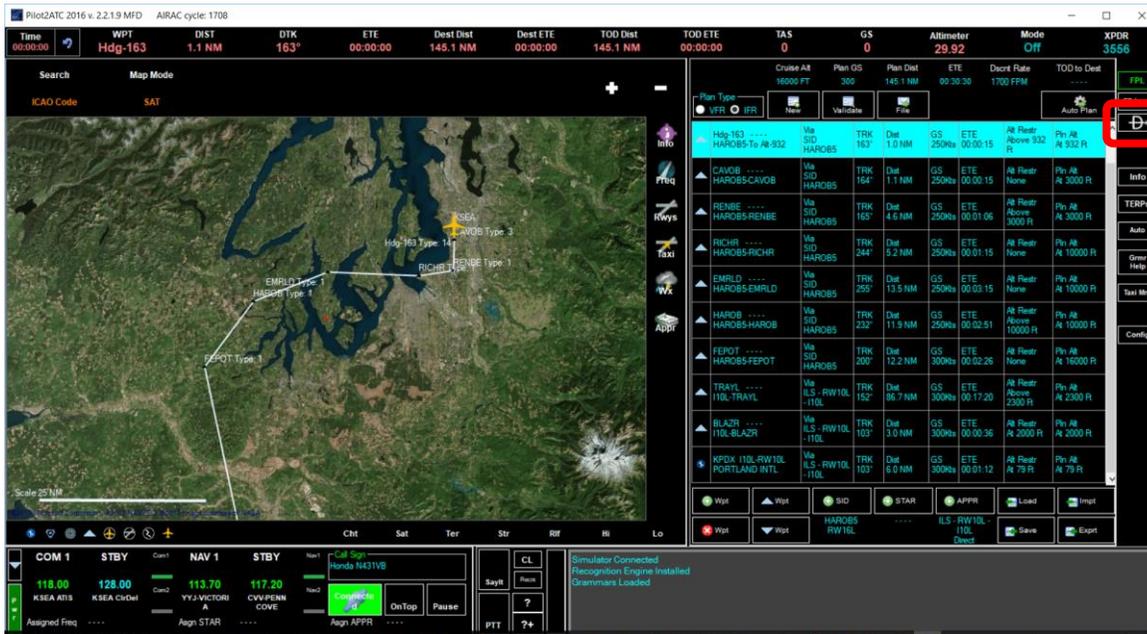
Once finished entering our changes, click load and it’s entered in the FPL pane and the map, replacing our previous flight plan.



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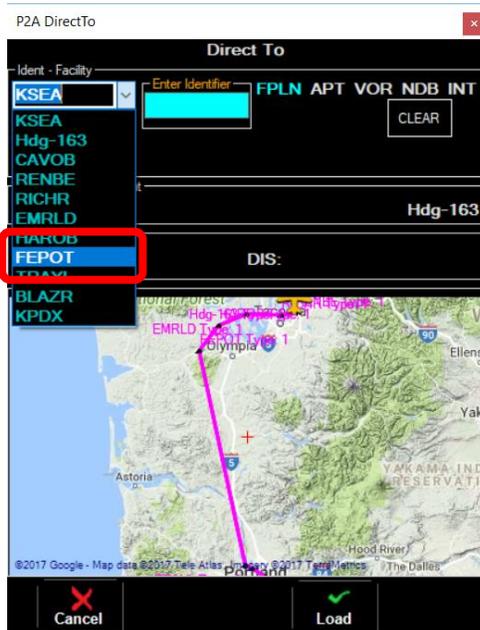
Sample DirectTo Entry

Load Flight Plan.

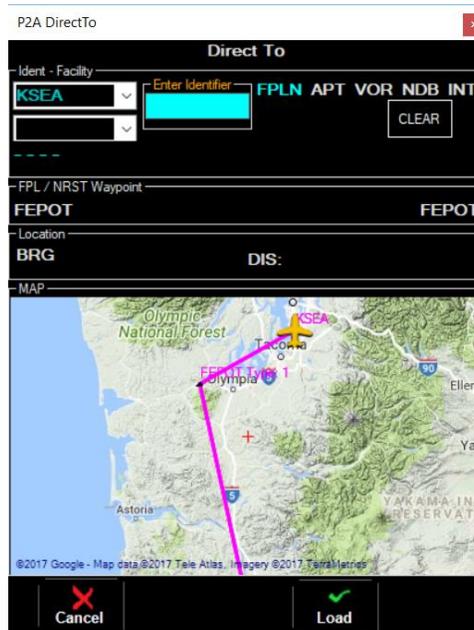


Click DirectTo button.

Select FEPOT from dropdown.



Review results. Direct to FEPOT.



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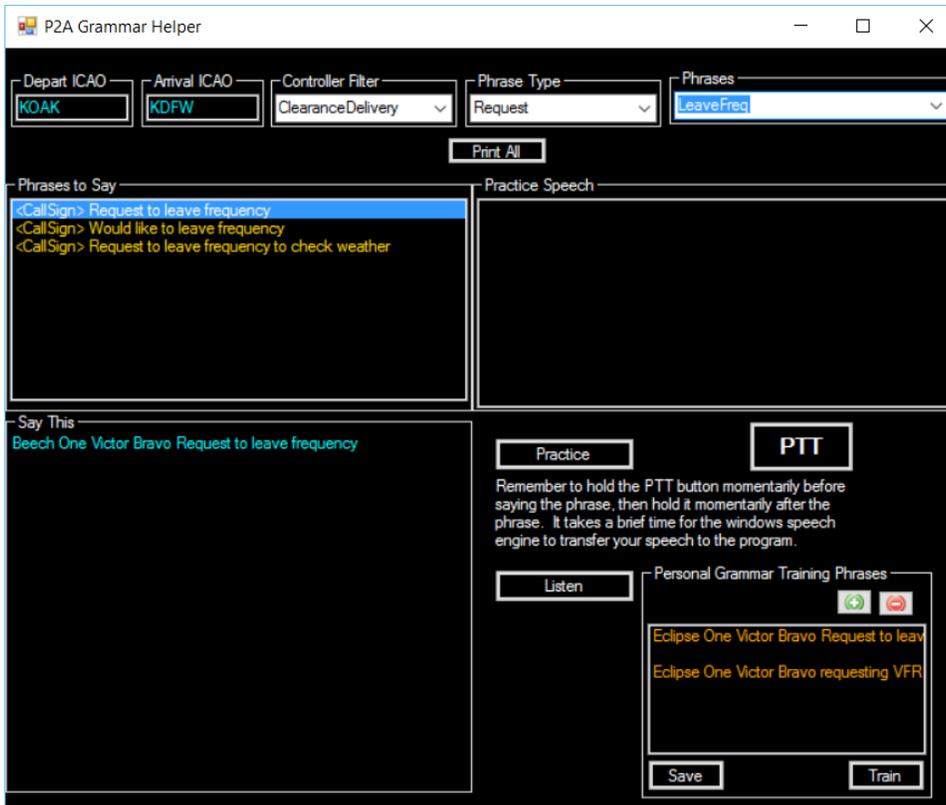
Click Load. Review new flight plan direct to FEPOT.



IMPORTANT NOTE: Be sure to get permission from ATC to fly this new route or you'll get nagged about being off course until you get to FEPOT.

Grammar Help (GRMR Help)

Clicking the Grmr Help button will open a screen enabling you to practice saying phrases and also getting familiar with selecting phrases with *SayIt*.



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Enter any valid Airport ICAO identifier code for the Departure Airport and Arrival Airport. That'll customize your experience to those airports. If you have a flight plan loaded when you open Grammar Help, those airports are loaded by default.

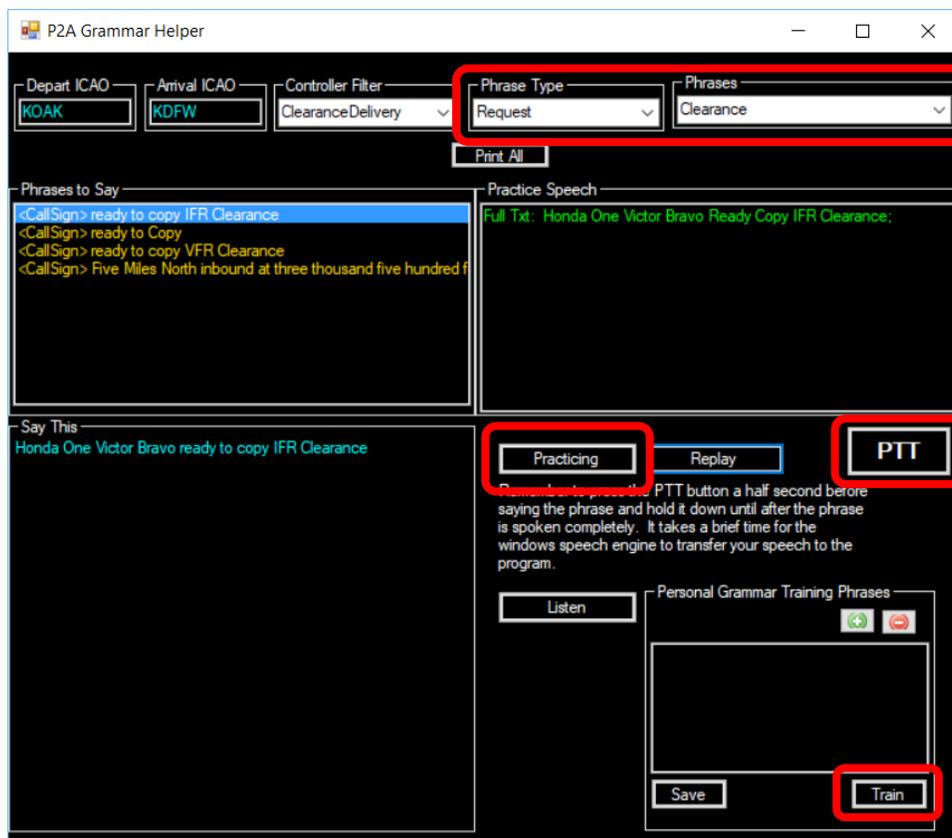
Practice Speech

To practice speech, click the **Practicing** button (red box below). Select the Controller with whom you want to practice, the Phrase type and finally the phrase name you want to practice. All this is done in the drop-downs at the top of the screen.

Once selected, you'll see gold text in the upper left "Phrases to Say Box". Select a phrase. It will be decoded and displayed in blue in the "Say This" box.

If you'd like to listen to the phrase before saying it, click the *Listen* button.

Click the large *PTT* button on the screen to the right of the Practice button and say the Say This phrase exactly as its written. If you're recognized, your speech will show up in green in the "Practice Speech" box.



Print All key

To obtain a print out of all phrases, click the *Print All* key.

:: OR ::

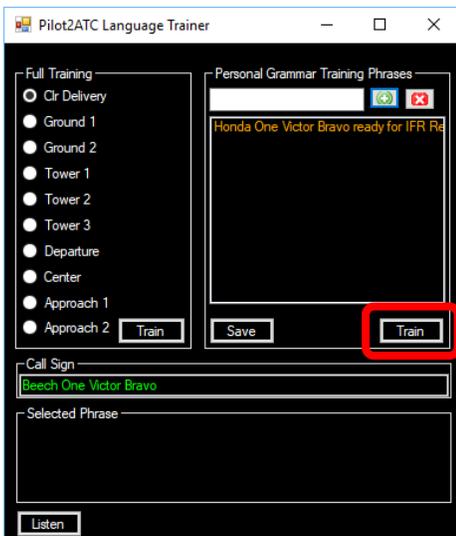
Open the Grammar Phrases .pdf file located in the Documentation folder.

If your voice isn't heard or not recognized, you'll get the text "Full Txt:" in the window. If this happens, you can click the *Replay* button and hear – in your own voice – what the recognizer was trying to interpret. If there was absolutely no recognition or if there's something wrong with your microphone settings, you may not hear anything on replay. However, you should try other phrases and see if something is heard before you assume something is wrong with the microphone.

This is a great way to learn the language of ATC and to practice and/or test your pronunciation. ENJOY!

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Speech Recognition Training

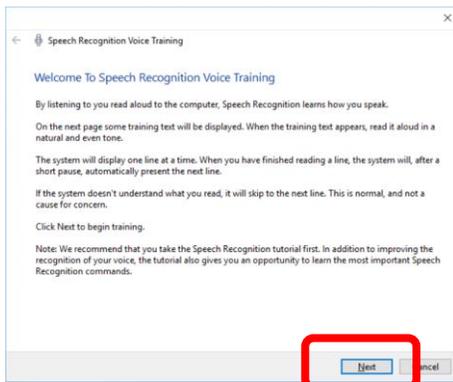


If you want to improve speech recognition, the speech recognition engine can be trained to work better with your voice. To start the training, click the **Train** button in the Personal Grammar Training Phrases box (red box in image on the previous page).

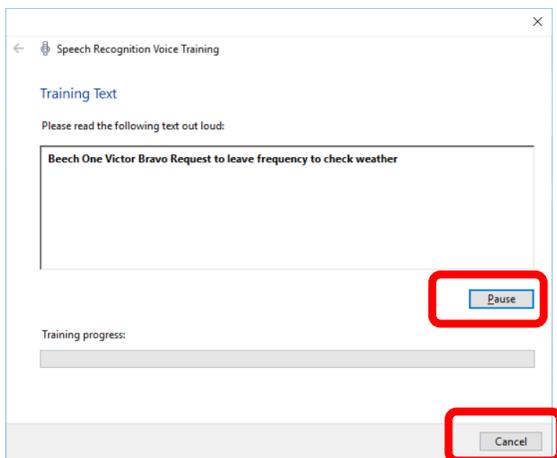
Completing that action will open this window.

There're ten [10] training scripts included with the P2A Language Trainer. For best results, you should work through all of them.

To begin training on any of the standard scripts, select the Controller you want and click the **Train** button. The following screen will appear:



You should recognize this as the standard Windows Speech Training screen. Click Next to begin training.



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Speak each phrase presented to you. The phrases will change when they're recognized. If the trainer seems to get stuck, click the *Pause* button and then the *Resume* button. That resets the trainer and it usually continues on from there. On the last screen, after all the phrases have been spoken, click the *Cancel* button to exit.

If your PC is not a Native English US PC (not sold in the USA) then you will need to do some setup to get the Speech training to work. You can change the settings for training and then back to what they were afterwards.

Before Training

Sign into the User Account you will use P2A With and set the following settings in Windows Speech:

Region Tab

Country or region – United States

Regional format – English (United States)

Language Tab

Windows display language – English (United States)

Preferred languages – English(United States) at top of list

Speech Tab

Speech Language – English(United States)

Recognize non-native accents for this language – Check if you are not a native US English speaker

Control Panel

Speech Recognition

Advanced Speech Settings - Microsoft Speech Recognizer 8.0 for Windows (English-US)

Sign out and sign in to your Windows User Account You must do this to have the new settings take effect.

Train – Do the Training

After Training – Set Preferences back if desired

Region and Language Tab - Your preferred language settings

Speech Tab and Advanced Speech Settings – Leave on English(US)

Sign out and sign in

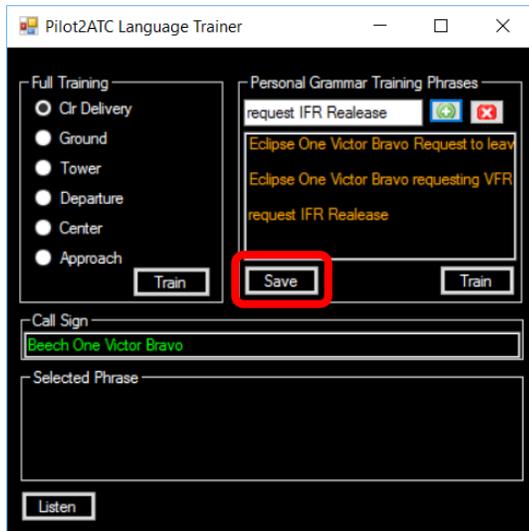
Start P2A and notice the improved recognition rate!

Personalized Speech Training

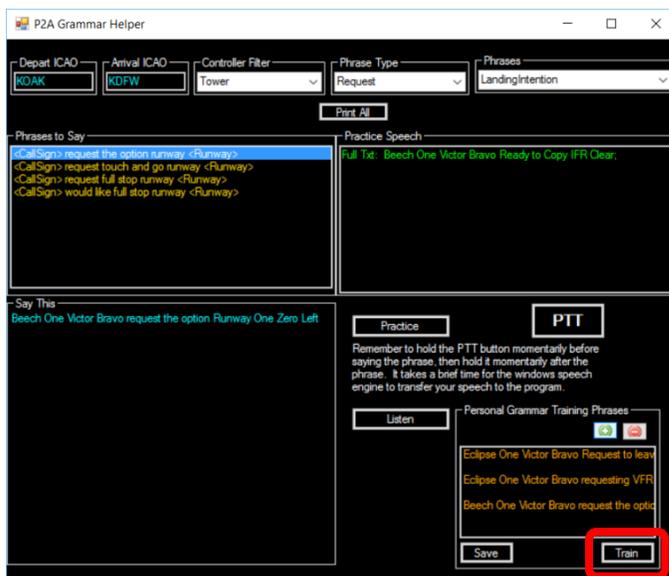
After going through the standard training, there may be some phrases still not being recognized. You can build a personalized script with just these phrases. There're two [2] ways to do this.

1. In the Trainer window, type or paste a phrase into the text box at the top of the Personal Grammar Training Phrases box. Click the Add (+) button to add it to the list of phrases. If you want to remove a phrase, select it and click the Delete (X) button. Click the *Save* button to save the script. click the *Train* button in the Personal Grammar Training Phrases box to Train on this personalized script.

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2. If the phrase you want to practice is in the Grammar Help screen, add it directly from there.
 - a. Get the phrase into the Say This box. Click the Add (+) button in the Personal Grammar Training Phrases box.
 - b. Find other phrases you want to practice and repeat Step a.
 - c. Click the *Save* button to save the script. Click the *Train* button to open the Language Trainer. Your new script should load into the trainer window.



Click the **Train** button in the Personal Grammar Training Phrases box. You'll now be able to train on this custom script.

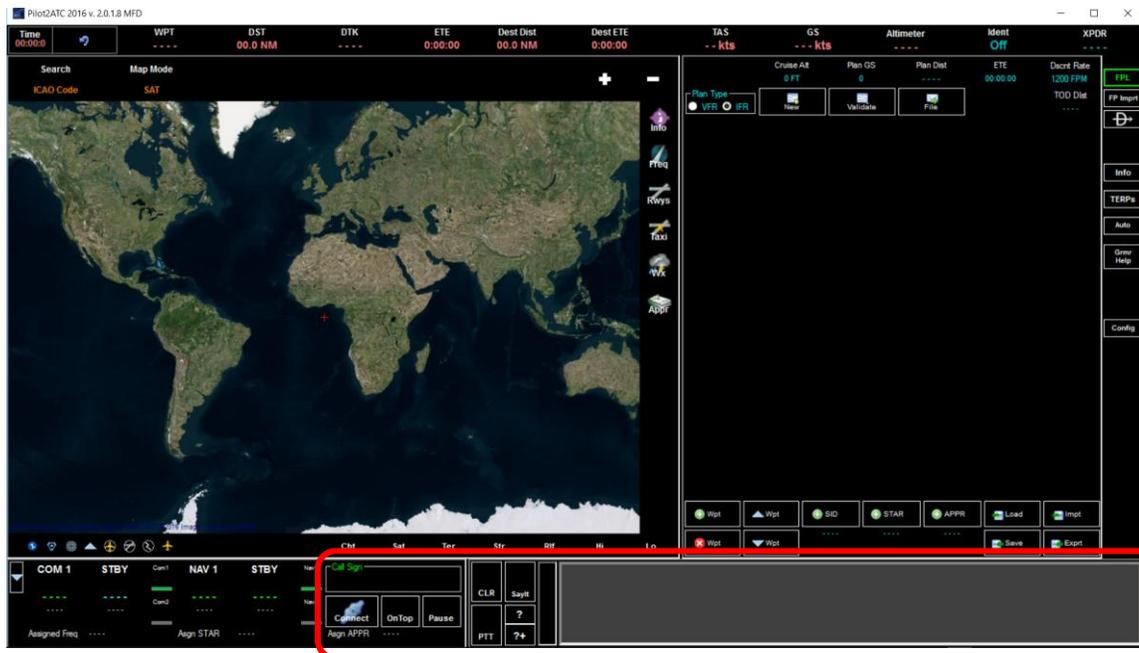
Listen Before You Say

In the training window, select a phrase from the personalized script and it'll be placed in the Selected Phrase box. Click the *Listen* button below that box and you'll hear the phrase pronounced.

Unfortunately, you can't listen to the phrase in the P2A Language Trainer window while the Windows Training window is open. Listen and practice **before** you click the *Train* button. However, if the phrases you're practicing are from the Grammar Help Screen, you can go back to that screen and use its Listen feature to listen to the phrase during the training session.

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ATC Interaction Area



The ATC Interaction portion of the screen is at the bottom of the main MFD screen (red box). Starting in the upper left corner of the highlighted area, here are the features for each item/button:

- 1. Call Sign** panel displays the call sign entered into the configuration. Be sure to use this call sign when communicating with ATC or you'll not be recognized. The simulator-assigned call sign will display here once you've connected, or you can enter a different call sign and P2A will recognize that new call sign for all its interactions with you. Valid General Aviation call signs include three [3] types. For Beech N31VB, they'd be:
 - a. Full Tail Number:** November Three One Victor Bravo
 - b. Manufacturer + last 3 of tail number:** Beech One Victor Bravo
 - c. Last 3 of Tail Number:** One Victor Bravo

NOTE: For airline call signs, **American Flight 365** would be: *American Three Six Five*
- 2. Connect** – click this button to connect to the SIM. You should wait until your flight simulator is up and running before clicking the connect button. When connected, you'll hear a Windows chime and the button background will turn green, and the text will change to Connected. Also, there will be three messages in the Speech Text window on the right indicating that the Simulator is connected, the Speech Recognition Engine has started and the Grammars were loaded successfully. **If you don't get all three – even if the Connected button turns green – you may have trouble with the speech recognition.**

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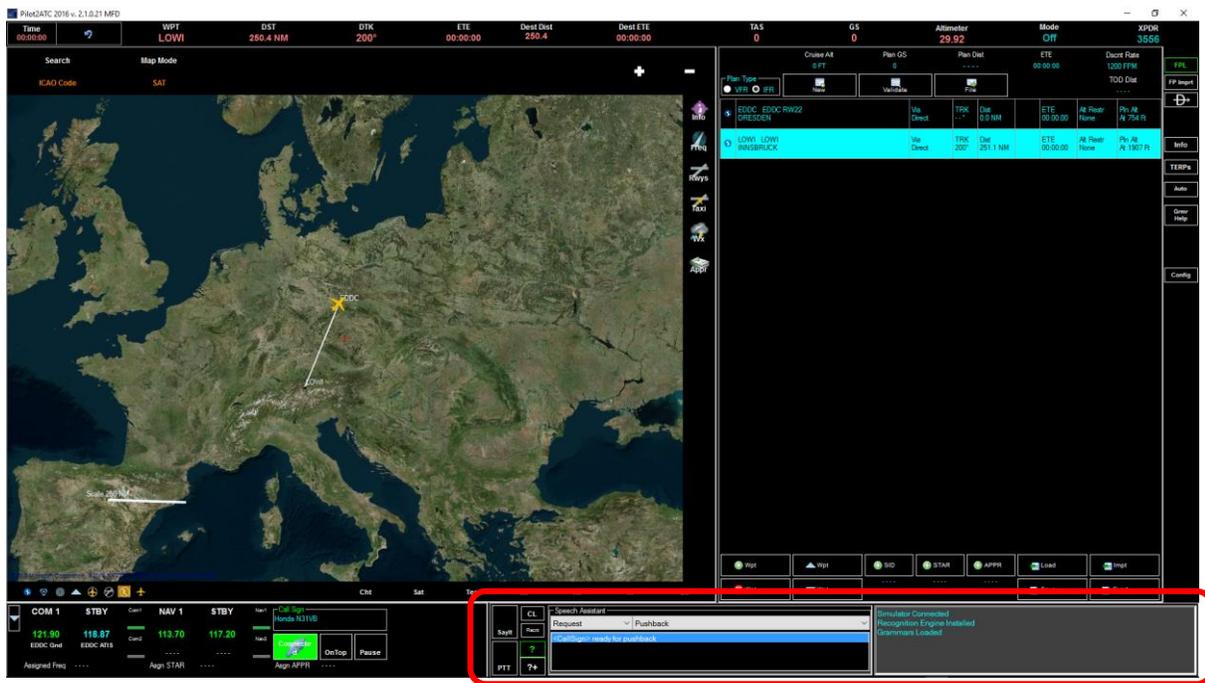
Also, the first time you connect, you may get a Windows Security message like the one below. Select “Allow Access” so P2A can communicate with your SIM.



- 3. On Top** – click to keep this window on top of all others on the desktop. This makes it easy to place P2A off to the side of the cockpit/flight deck so it doesn't obstruct the view of outside or the instruments.

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4. **PTT (Push to Talk)** – You can use this instead of a joystick button to communication with ATC. If you use a joystick button, you'll see this button turn green when the joystick PTT button is clicked. If your joystick button doesn't work – but this PTT button does – it indicates the joystick button isn't configured properly.
5. **SayIt** – clicking this button invokes the *SayIt* function of P2A. If the last entry in the Conversation Area is in gold and starts with a “~” character, that phrase will be spoken by P2A acting as the Pilot and interpreted by ATC. This feature is to aid those having trouble being recognized by the Controller. You can also say the phrase yourself to practice speaking to ATC and it should be recognized in most cases.
6. **CLR** – click to clear the Speech Text window.
7. **Recnt** – click to bring up recent *SayIt* phrases after they are not available.
8. **“?” Help** – click to open the *SayIt* Speech Assistant panel displaying all the accepted phrases and allowing you to interact with ATC without speaking yourself.
9. **“?+” SayIt Plus** – click this button to open the *SayIt* Plus window.
10. **Conversation Area** displays your communications with ATC. It's very handy for helping with read-backs and getting assigned frequencies correct. Other status messages are displayed here to help in troubleshooting, but they can be ignored. And of course, the gold text is an integral part of the Speech Assistant. It can be saved to a file for each flight, if desired. See the Speech Tab in the Configuration Panel for this option.



Using the SayIt Feature

The SayIt function is designed to assist the Pilot in interactions with ATC. There are four [4] types of interactions supported:

Request	Report	Information	Readback
Pilot initiates a request for some action – such as altitude change or approach type.	Pilot reports something to ATC – such as position or altitude. Center handoffs are a good example of a report.	Pilot requests information – such as Weather or Active Runway.	Pilot reads back instructions given by ATC.

Readback assistance is generated by P2A in Speech Text window. After receiving instructions from ATC, text in gold will appear in the window. If there's a “~” character at the beginning of the text, clicking the *SayIt* button will say that text out loud and it'll be recognized by the speech recognition engine.

Pilot2ATC® User Guide

The other three [3] types of interaction are initiated by the Pilot and can be selected in the Speech Assistant panel to the left of the Speech Text window.

Expanding the area:



The *SayIt* function only displays phrase options when a valid ATC Com Frequency is active. Tuning in Ground, it will look like the following.



You'll notice there're two [2] dropdowns on the top of the Speech Assistant panel. The **left** one allows you to select the type of interaction you want to initiate: Request, Information, Report. Notice Readback isn't one of the options because those are generated based on what ATC instructions are given.

To display the Speech Assistant, you must be connected to the SIM and then click the “?” button to the left of the Speech Text Box. Once the Speech Assistant is visible, adjust the size of the window to suit your needs. Also be aware you'll need to have a Flight Plan filed for many of the phrases to be generated properly.

Let's take an example to illustrate its use. We're at the gate at WMKK and ready to taxi. We've selected Request in the left dropdown and Taxi in the right Dropdown. A list of possible phrases is displayed in the list with gold letters. Some of the words are surrounded by < >. This indicates that these values will be filled in by P2A in most cases. If the value isn't known to P2A and reasonable choices are not known, the Pilot will need to read the phrase, substituting the correct value for the words in < >. A good example would be when the Pilot wants an altitude change. Only the Pilot knows what altitude is desired.

In this case, an obvious choice is the phrase requesting taxi to the <ActiveRunway>. Selecting that line with a mouse click replaces <ActiveRunway> with Runway One Four Left and places the gold text in the speech text pane, ready to click the *SayIt* button. Clicking *SayIt* will start the interaction.



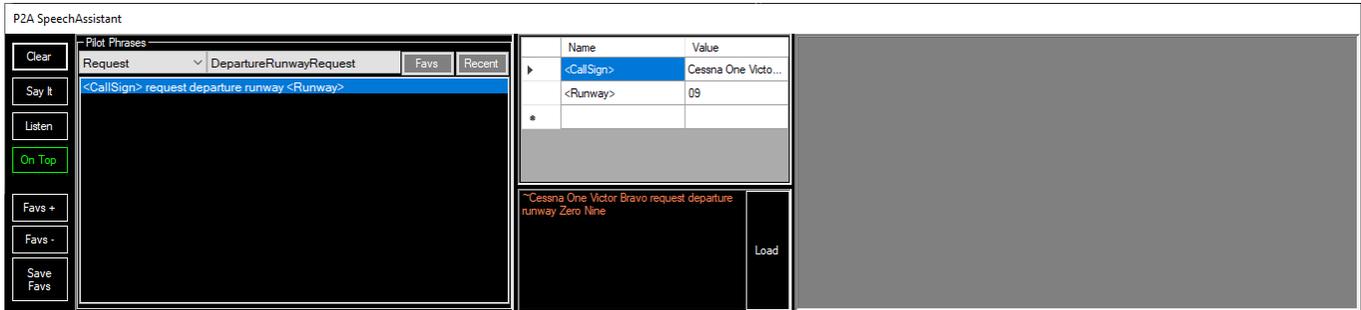
Remember, in some cases the program won't be able to figure out what the options are, so you, as the Pilot, may need to read the phrase.

Be advised that the Speech Recognition Engine takes longer to interpret these phrases than those you say yourself, so be patient. Also, it's a good idea to try saying the phrase yourself to get the practice, but if you're having trouble being recognized, the Speech Assistant and *SayIt* function are there to help.

Using the SayIt Plus (?+) Feature

When you click the “?+” button, a separate window – as pictured on the next page – will open. It's a separate window that can be left open and placed anywhere on your screens to aid in using the *SayIt* function.

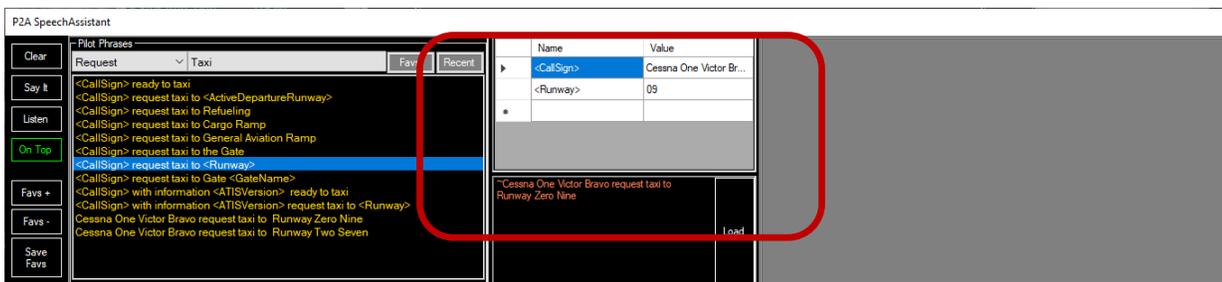
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Notice there's an area in the middle where you can supply values for the phrase variables. If there're any < -> words in a phrase, they're listed in this area. If P2A knows what value to use, like the Call Sign above, it will be filled in. If not, it will be blank and you can fill it in. As you enter values, the resulting phrase is displayed below the grid in orange.

Once all values have valid values and you're satisfied with the phrase, you simply click the *Load* button. This moves the phrase to the Speech Text Window on the right and you can click the *Say It* button to speak it. While this extra "Load" step may seem unnecessary, it actually allows you to build the phrase while other automated exchanges with the Copilot and ATC are occurring. Then, when you're ready to make the call, load it and *Say It*.

Double-click the load button to load *and* say the phrase, making the separate clicking of the *Say It* button unnecessary.



Also notice that in the screenshot the <Runway> value is in short form in the grid, while in the bottom Load window and Speech Text Window, they're in speech form. If entered in short form, they'll be translated to the long speech form.

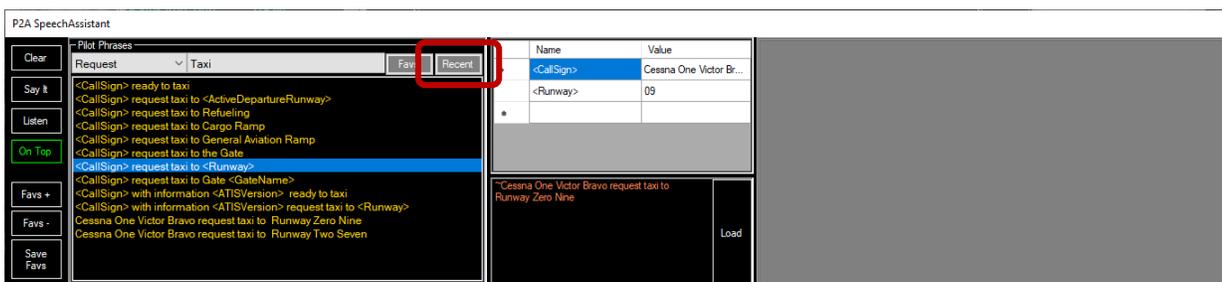
For altitudes, enter a numeric value like "5,000" for altitudes in feet. Don't enter the word 'feet'. For flight levels, enter "FL" followed by the flight level – like "FL 230".

You can size the window and the various areas in the window to suit your needs.

To close this window you must click the "?+" button in the main window again.

Recalling Previous SayIt Phrases

Sometimes, you may not be interpreted correctly by P2A and would like to use *SayIt* instead of your own voice to reply to ATC. Once you try to respond with your own voice, however, the *SayIt* phrase is no longer active.

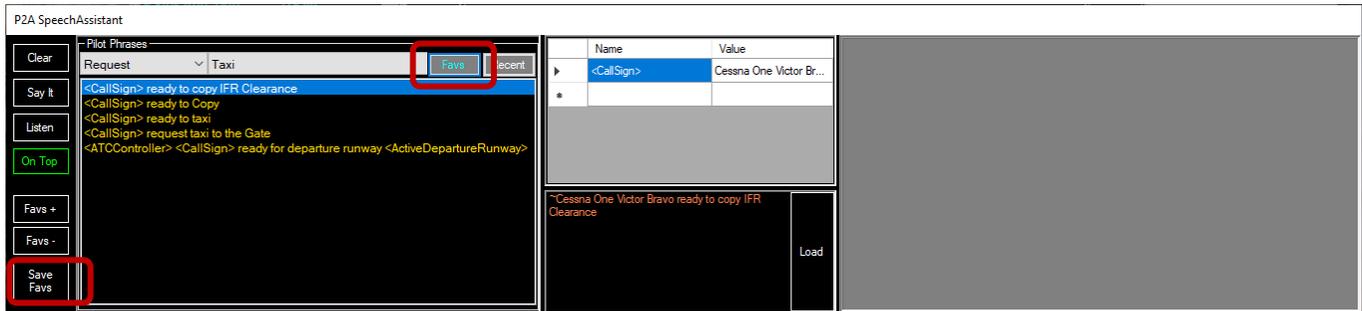


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Click the *Recent* button to the right of the *Say/It* button or Phrase Name drop-down and a sequential list of *Say/It* phrases from previous interactions will be displayed. Choose the last one – or any you want to say – and click *Say/It*.

Favorite SayIt Phrases

There are probably only a dozen or so phrases you will use on every flight, like requesting clearance and taxi, permission to take off, etc. You can save these phrases as a Favorite by pressing the Favs+ button while the phrase is highlighted. Then, after you have your set of favorites selected, press the Favs button at the top and the favorites that are relevant for the selected controller will display. Below is a set of Favs for Ground Frequency.



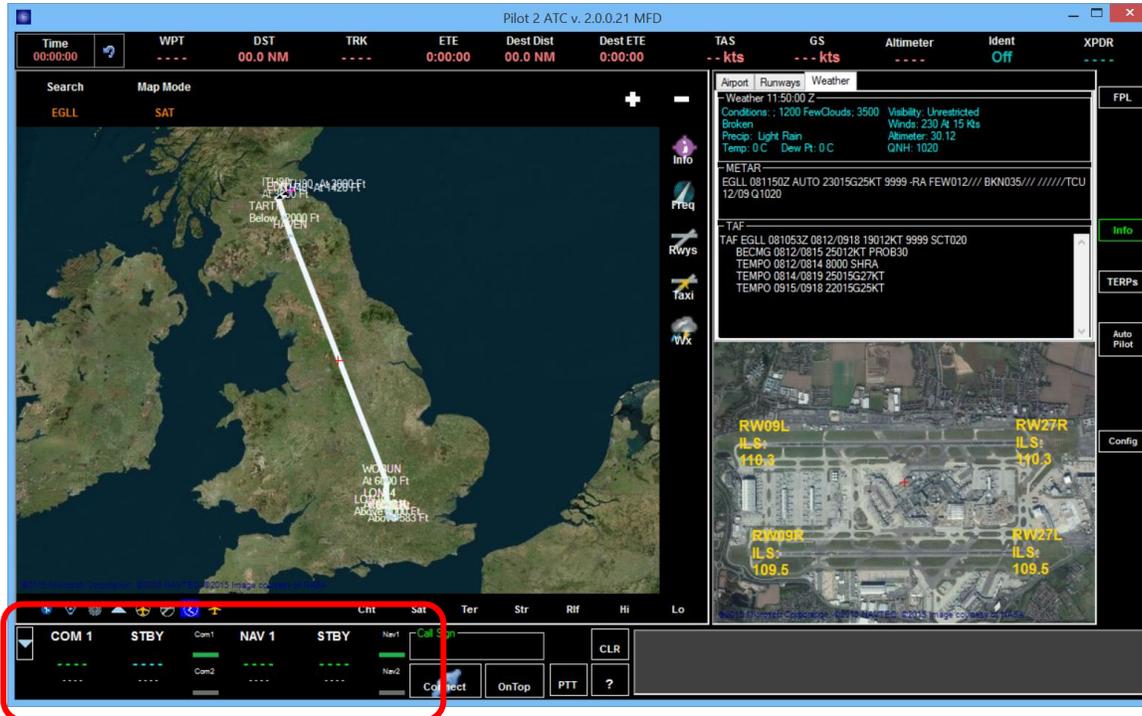
You can press the Favs- button to remove the highlighted phrase from the Favorites list.

After you edit your Favorites, be sure and press the Save Favs button to save them.

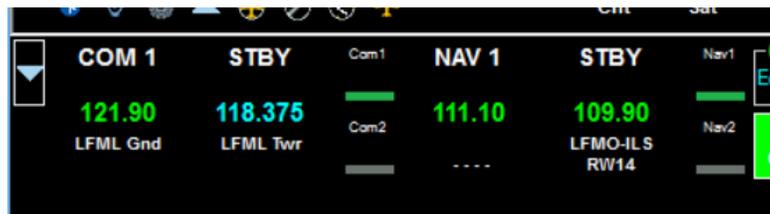
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Radio Stack Area

To the left of the ATC Interaction area is an area where you can control the Com and Nav radios. If you prefer to control them from inside the cockpit or from other devices such as the Saitek Radio panel, that's not a problem. This area will reflect any changes made elsewhere. It's here for convenience.



Com Frequencies



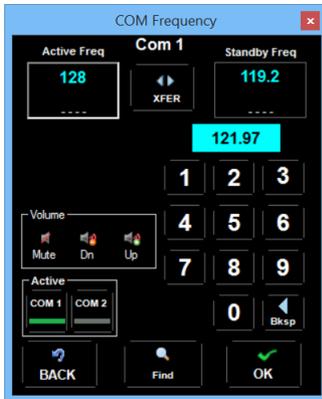
The left half of this area is for controlling the Com Radios. When not connected to the SIM – or – if the Battery and Avionics switches are not turned on, this area will display dashes because the radios will be turned off.

Once connected and turned on, though, the selected frequencies will display. If set to a frequency within radio range, the name of the Controller or Nav aid will display below the frequency. Otherwise, dashes will indicate that this isn't a valid frequency at this location, as in the screenshot below.

Clicking Com1 or Com2 will select the active Com channel.

NOTE: This may not work in some aircraft. If not, select the Com channel in the cockpit or via other means. While most aircraft implement their radio functions in a compatible manner with P2A, some don't.

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Clicking on the Standby Frequency, opens the Com or Nav Frequency window.



Once this window is open, use the keyboard or the displayed numeric pad to enter a frequency. Click the *OK* button or the *Enter* key on your keyboard. The frequency will be placed in the Standby Freq area and the Controller Name will appear below the frequency.

If you click Enter on the keyboard *after* using the keyboard to enter a frequency, the window is closed and perform the swap on the main window Com area. Great time saver!

You don't need to enter the decimal point – the program does this for you. To set the radio to 121.975, enter 12197. That's why you don't see a decimal in the numeric pad.

Use the *XFER* key (Swap key) to swap this freq to the Active frequency.

Now you're ready to communicate...

Notice even though we only entered 121.97 in the top Screenshot, the Frequency selected is 121.975. That's because 121.975 is truncated to 121.97, both in conversation with ATC Controllers and in many frequency displays. Both of them, however, are really 121.975.

Toggle between Com1 and Com2 by clicking the respective button under the Volume control area. This works with many aircraft in all the SIMs, but may not work with some. This is true of all the radio and autopilot functions due to various aircraft implementing these functions differently. As long as the values are "settable" using FSUIPC/XPUIPC, then P2A can set them. And while rarer, it's also possible something changed in the cockpit won't show up in P2A. Be sure to check how your aircraft interacts and adjust accordingly.

Notice the Mute and Volume Dn/Up buttons on the left (red box in image above). This is where you can control the volume of all ATC Voices and the ATC Chatter, if you've enabled that feature. The volume change is not immediate, as it actually changes the Voice Volume. For example, if on ATIS frequency, you lower the volume, you will not notice the change until the ATIS voice finishes it's current reading and starts giving the weather again.

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Click the Find button at the bottom and this expands the Com Frequency window to reveal a search area.



By default, this search is done on the Nearest Controllers. Select a type in the Frequency Type dropdown and it'll display one or more frequencies in the Search Frequency Result (red box). If no frequencies are found within the range specified, the area goes blank.

If more than one frequency meets the search criteria, you can scroll through them using the left and right arrows (red box) on either side of the Frequency window.

Another way to search is using Airport Identifier (Apt ICAO).

Enter the ICAO code for the airport you want to search and click the *ICAO* button (red box) to limit the search to that airport.

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In this screen, we can find the Approach Frequency for our destination Airport EGPH, for example.



The search may start automatically, depending on the options selected. If not, clicking the *GO* button will do the requested search.

Clicking the Search OK button moves the found frequency up into the Standby Freq display at the top of this form and sets the selected Com radio (Com 1 in this case) to that frequency.

Notice the Controller name is blank because the frequency is out of range.

It might also display a name different from the one selected in the Search window because there's another Controller, in range, that has that same frequency.

To dismiss the frequency window, click the Back Key, or as mentioned early, the Enter key when entering the frequency with the keyboard.

Nav Frequencies

The Nav portion of the Radio Stack area is almost identical in its function to the Com side. The main difference is in the search window functions.

Like the Com Frequency window, enter frequencies directly using the numeric pad on screen or the keyboard. Select the Nav Channel Nav1 or Nav2 and swap active and standby frequencies.

Looking at the search portion of the screen, you see we can select VOR, NDB or ILS either by clicking on the appropriate button at the very bottom of the window or by selecting one of them in the Freq Type dropdown. Once we do that, we'll search for the nearest navaid to the aircraft if the NRST button is clicked – or for the navaid nearest to the airport whose ICAO code is entered in the Apt ICAO text box if the ICAO button is highlighted.

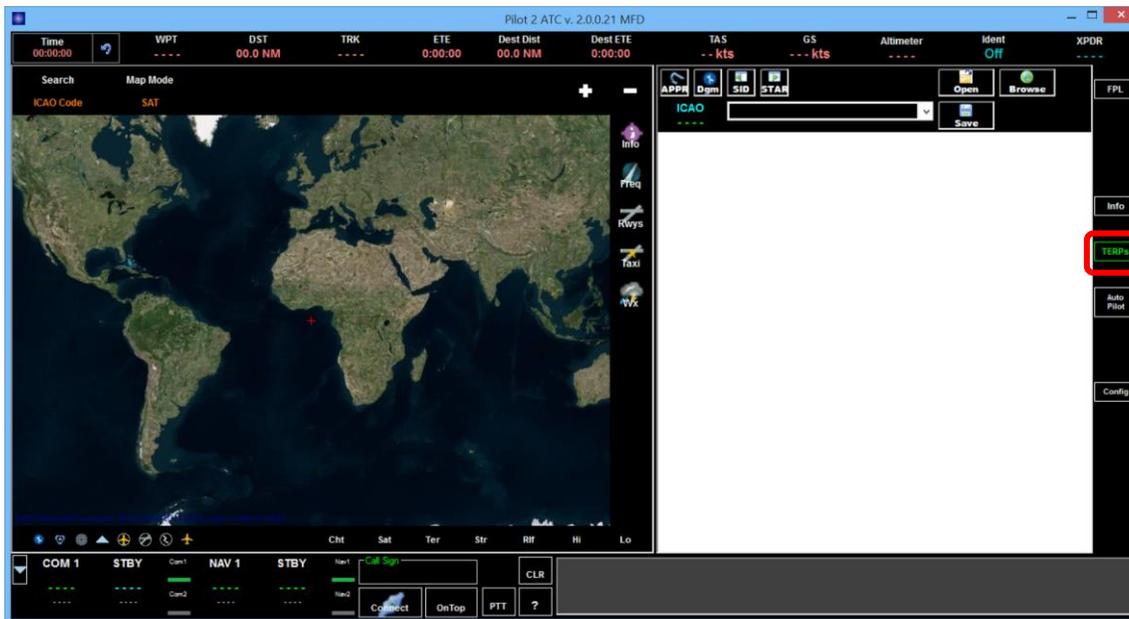
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Clicking the Lower OK button places the frequency in the Standby Freq window and changes the Nav radio standby frequency. Depending on where the aircraft's location, whether on the ground or in the air, you may or may not get a Navaid name to display.

TERPs (Terminal Procedures) Panel

Clicking the TERPs button (red box) opens the TERPs Panel.



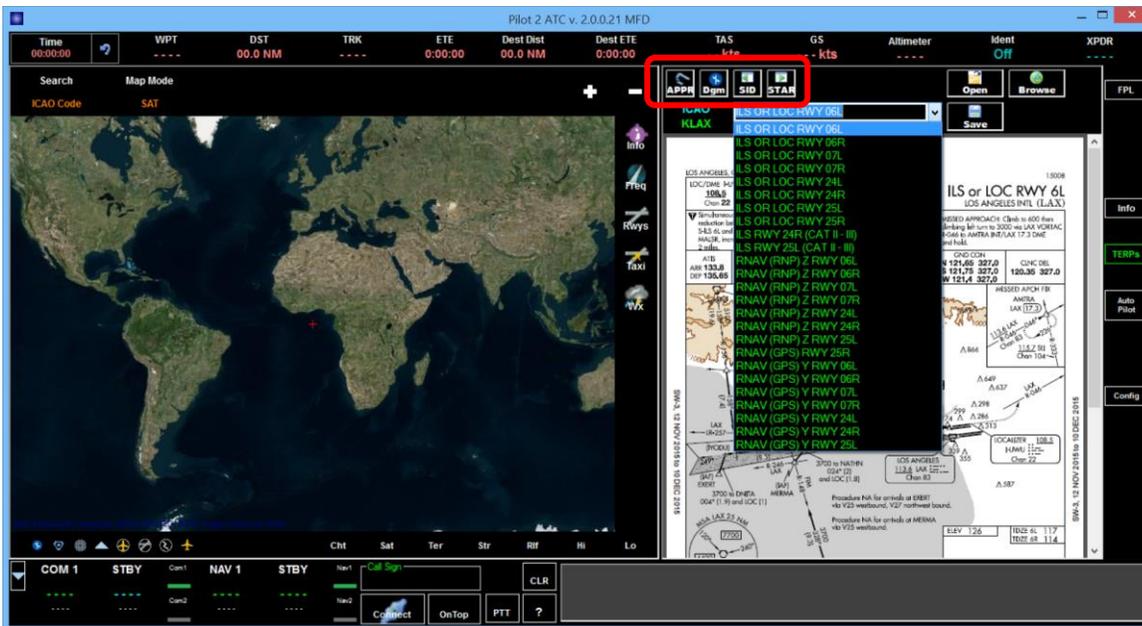
When not connected to the SIM, it will appear as a large blank display area below the controls area.

The Terminal Plates for the US are built-in to P2A. This is because they're readily available on-line from the FAA in .pdf file format.

COMMENT: *If you want to display charts from other countries, see the instructions for the TERPs PDF File Folder Path in the Config section of this manual.*

Clicking on the ICAO selection area will enable you enter a US ICAO code – like KLAX – which will populate the drop-down with the charts available for that airport and the first Approach chart displayed.

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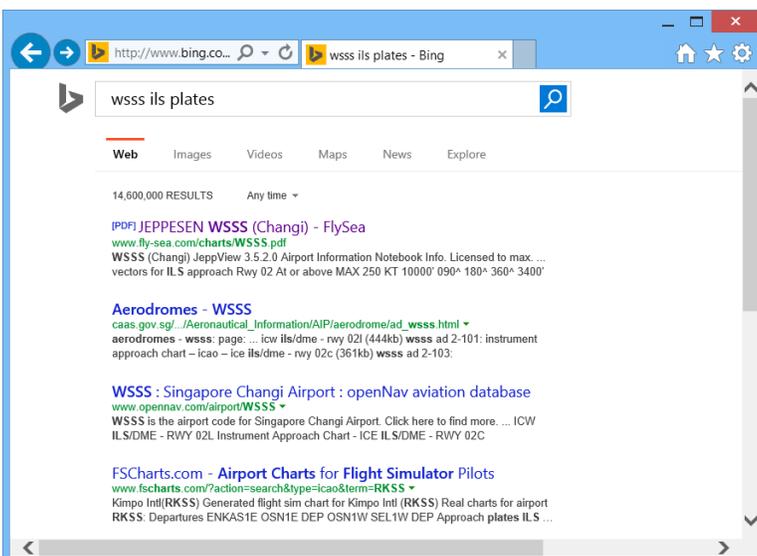
The buttons above the ICAO selection area allow you to select Approach, Airport Diagrams, SIDs or STARs. Doing so will display the list of that type of plate in the drop-down so you can select it.

BUT WHAT ABOUT THE REST OF THE WORLD? For those asking this question, you haven't been forgotten!

To the right of the ICAO selection area, are three [3] buttons. The first two [2] – Open and Save – allow you to open any .pdf file from your local hard drive; the Save button will save the currently displayed .pdf to your hard drive. The third button – Browse – opens a browser window where you can paste a web address or browse the web to find charts.

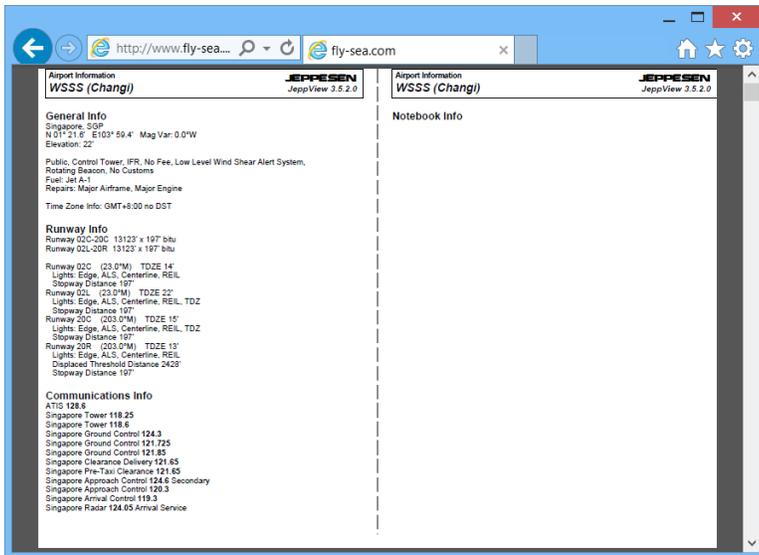
Grabbing Charts from the Web

There're many free sources of plates and charts on the Internet for personal use. With a little BING search on the ICAO code + "ILS plates", I've found many free sources for these charts. Let's try and find some plates for Singapore Changi Airport (WSSS). Doing a Bing search on WSSS ILS plates yields the following:

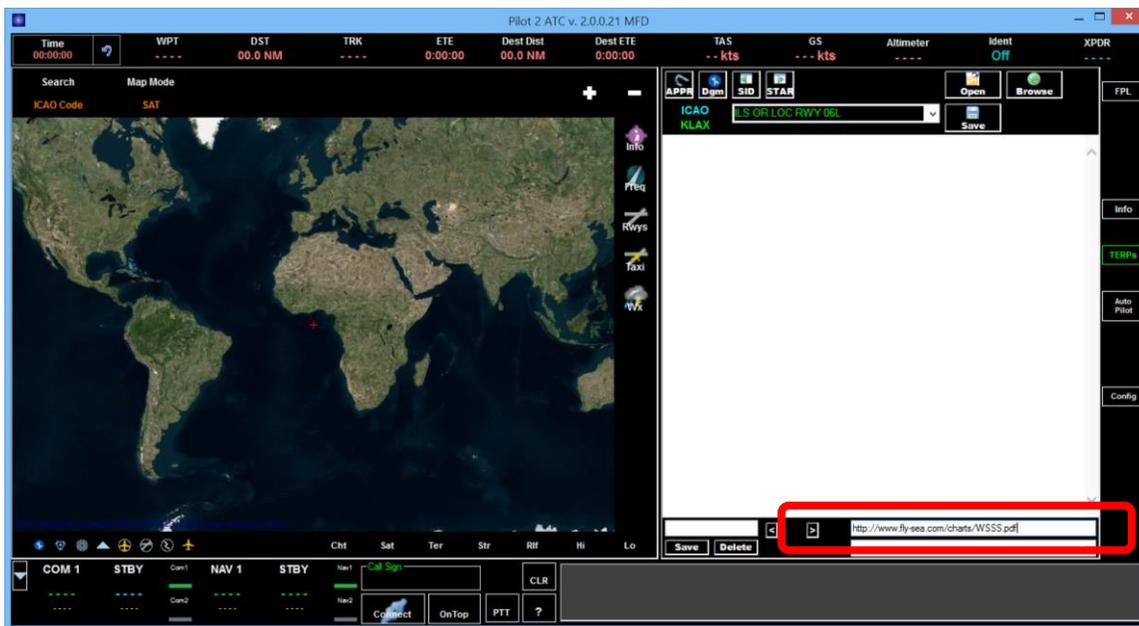


The very first one is a .pdf from Jeppesen. Navigate to that page in your browser and you see:

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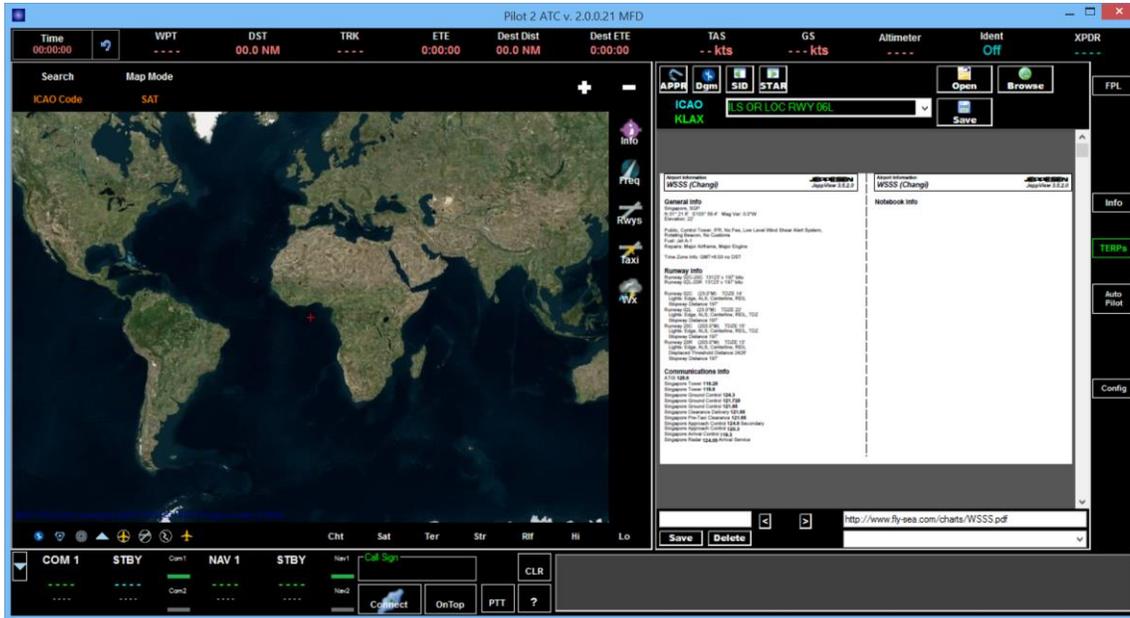


This is a multi-page document with all the charts for WSS included. Copy the url for this document to your clipboard by placing your cursor in the browser address (url) window. Click Ctl-A followed by Ctl-C. Now, click the *Browse* button in P2A and paste the copied url into the Browser Address window (red box) at the bottom of the panel.



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Click Enter and you now have that same PDF in the P2A browser.



Scroll down and see all the charts included in that document – including SIDs, STARs and Approaches and a lot of other information on the airport.

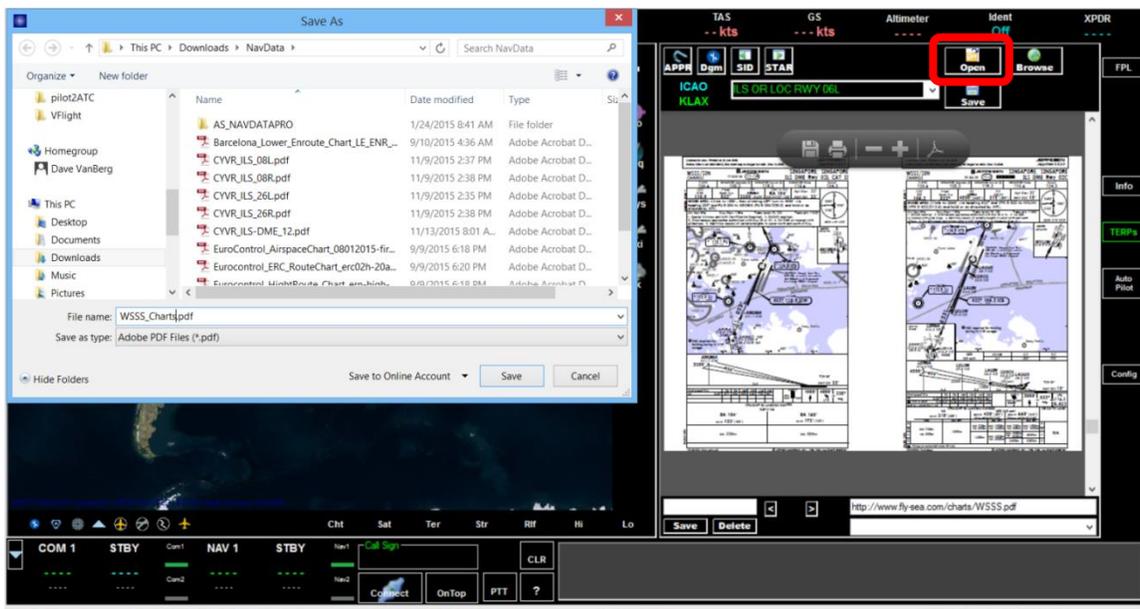


Saving To Local Hard Drive

Since the document is a .pdf, it can be saved to your local disk by clicking the *Save* button (red box), entering a file name and a folder path in the Save Window. If you save locally, you may want to create a directory structure that'll make it easy to find the charts the next time you want them.

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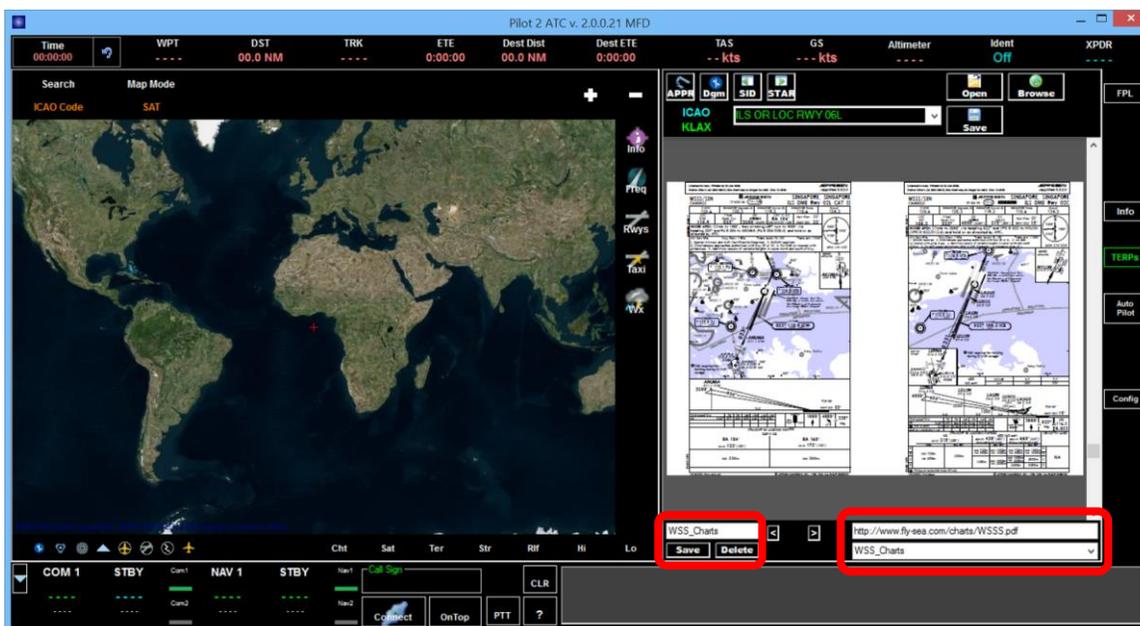
For now, I just save to my NavData folder:



The .pdf can be easily retrieved by using the *Open* button (red box).

Saving The URL

If you don't have a lot of disk space – or just prefer to access things on the web – use the *Save* button to save the URL in the P2A settings, making it readily available for next time. To do this, enter a name in the small box above the save button and click *Save* (red box). The name, along with the associated URL, is then added to the drop-down list (red box) and will be available next time the Browser area is opened.



To finish off the Browse area, the two [2] arrow keys – Left and Right (area between the red boxes) – are for navigating Forward and Backward during a browsing session. While they do work, I normally find that browsing in the browser, finding what I want and then pasting its URL into the window works best for me.

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Charts from Chart Tools

There're also many services offering charts for a one-time (ex: SimPlates) fee or a subscription (ex: Navigraph and others). As long as their charts can be saved in .pdf form, they can be stored locally and accessed using the Open button in P2A.

Charts from SIMPlates

So far, I'm a fan of SimPlates (<http://www.dauntless-soft.com/products/simplates/> | payware) because they only charge a one-time fee and then give you access to their charts forever.

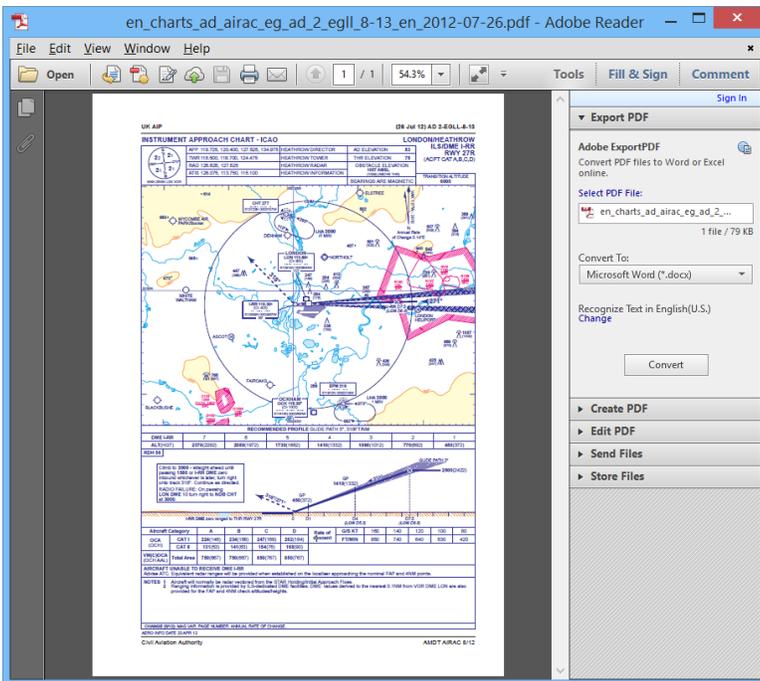


They may or may not be as up-to-date as subscription services, but they're certainly very recent and more than adequate for Flight Simulation use. When you want to get a plate, search for the ICAO code. It brings up a list of all the charts for that airport. Here, we search for Heathrow (EGLL) in London. I further narrowed it to ILSs with a checkbox on the left.



Clicking on the ILS for RW 27R, it opens the chart in our default .pdf viewer (Adobe® Reader®).

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Now, I can merely save it to my local hard drive – as we did with the one in the browser – and it’s available for the next time. Again, creating a reasonable folder structure will help you in future searches.

Charts From a Subscription Service

Getting charts from a subscription service may be more difficult, depending on how they’re delivered. I subscribe to Navigraph (<https://www.navigraph.com/>), among others, and am able to save their charts using a free Print-to-PDF tool I found on the web.

COMMENT: *There’re many such tools, I just picked the first one that popped up in a BING search and it works great.*

With this approach, you find the chart you want and use the chart application’s Print function to print the chart, selecting the Print-To-PDF tool printer. This lets you save it to your file structure as before and then retrieve it later.

Of course, you’ll have to manually update these charts periodically, but this is a mechanism to get them into P2A to enhance the immersive experience.

Auto Pilot

Below the TERPs button is the Auto Pilot button bringing up the autopilot. It must be connected to the aircraft in the SIM, and it doesn’t do anything unless you’re connected to your SIM.



This gives quick and easy access to most Autopilot functions of most aircraft. Unfortunately, some aircraft’s autopilots have limitations, while others – *especially* add-on aircraft – may have custom Autopilots that don’t interact with FSUIPC or XPUIPC. Experiment with your aircraft’s Autopilot before using this convenience feature. Of course, you can always use the Autopilot in the cockpit and it shouldn’t be affected by P2A.

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Clicking on any of the five [5] settings displays brings up a Numeric pad where the on-screen pad or your keyboard can be used to enter the desired value. Clicking the *Enter* key on the keyboard or on-screen numeric pad closes the window and enters the value.

Below each setting display window are three [3] controls:

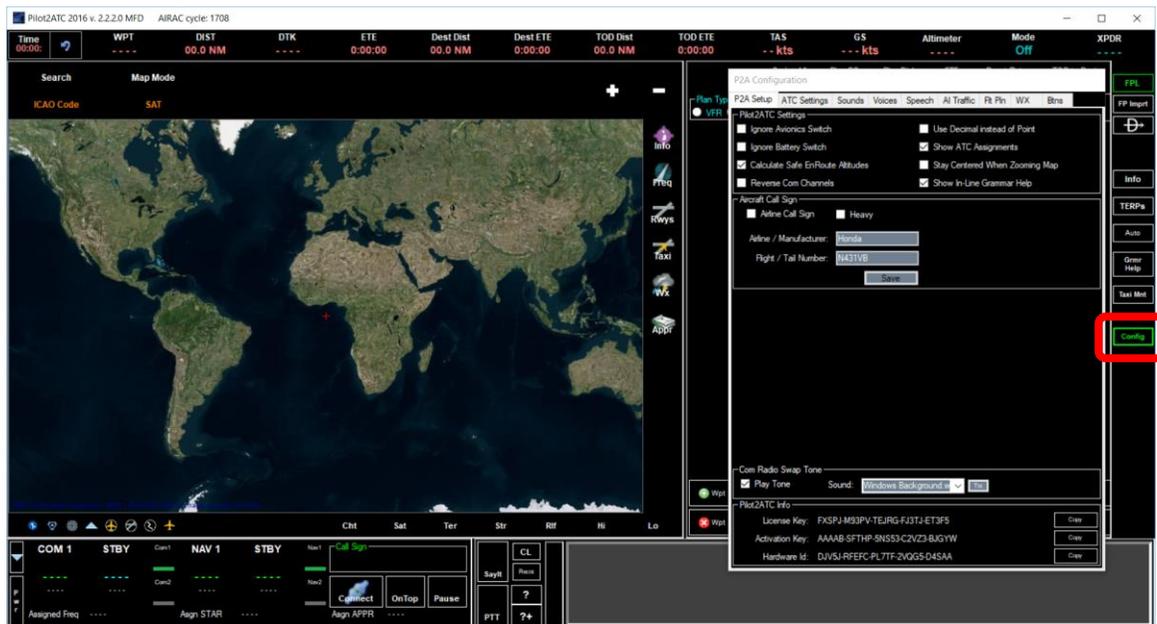
- **Left Arrow** – to decrease the value.
- **Pause Button** – to set the value to the current aircraft Heading, Course, Airspeed, etc.
- **Right Arrow** – to increase the value.

I find these setting displays much easier and faster than using the ones built into the SIM. However, if you prefer to make all your settings in the SIM, they'll be reflected in P2A.

The eight [8] buttons on the right perform the same functions as buttons with similar names in the SIM cockpit. Also, if you click the button in the cockpit, the corresponding button on P2A's Autopilot will be turned on or off. Again, experiment with each new aircraft on the ground to see what functions work and which ones don't.

Configuration Panel

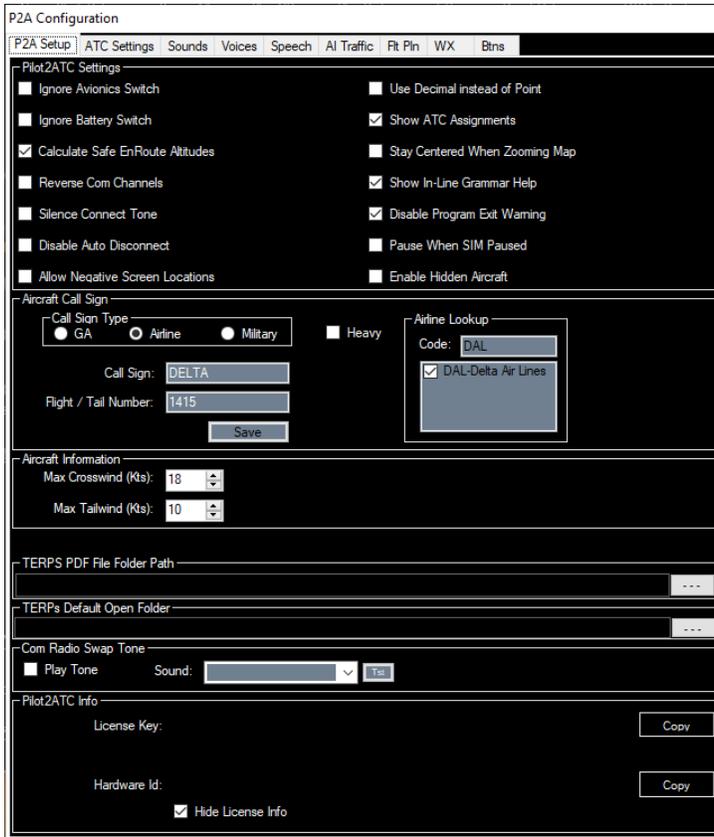
To access the configuration panel, click the Config button (red box). It'll open a panel containing all user-settable values.



There are nine [9] tabs across the top allowing access to all the settings. We'll discuss these in order from left to right.

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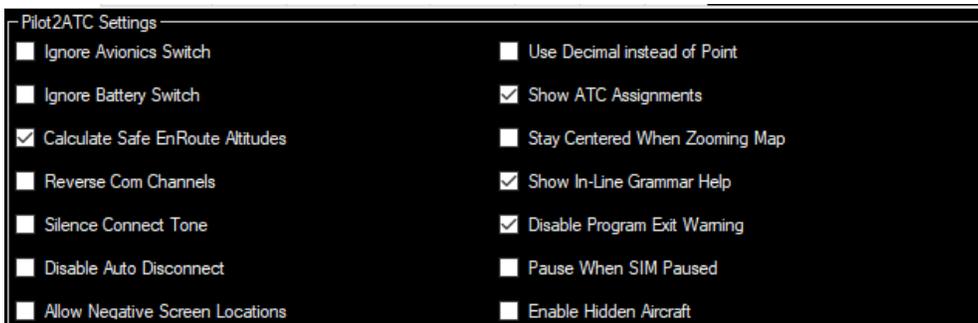
P2A Setup



The setup screen has some of the key settings you need to configure before using P2A and some optional ones.

P2A Settings Checkboxes

The ten [10] check boxes in the Settings group enable you to select some common options.



- **Ignore Avionics Switch and Ignore Battery Switch** – P2A Radio and Nav functions won't work unless you're connected to the SIM. Further, by default, you must have the Battery and Avionics switches turned on. In most aircraft, this isn't an issue, except you may think something is wrong with P2A if you forget to turn them on. Some aircraft don't have either one or both of these switches. Checking this box will tell P2A to ignore these switches. So if you don't have them in your aircraft – or you don't want to get frustrated figuring out why P2A radios won't come on – check one or both of these boxes.
- **Calculate Safe Enroute Altitudes** – P2A can calculate minimum enroute altitudes for your flight plans. However, this takes some time. If you're flying long distances at high altitude, there's no value in this, so check this box. If you're flying at low altitudes, in mountainous terrain, check this box so you get this added

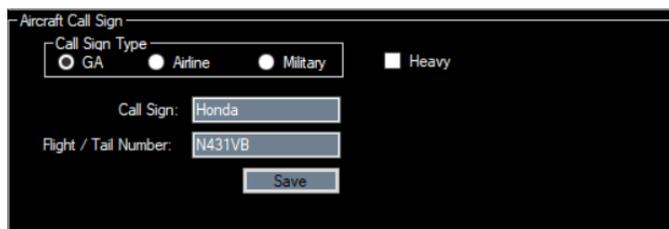
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safety check. When checked, P2A will add the Minimum Enroute AGL altitude (set elsewhere) to the highest terrain feature for each leg of your route as the Minimum for that leg.

- **Reverse Com Channels** – In some aircraft, selecting the Com1 Channel in the aircraft causes P2A to display Com2 as the active channel. If that occurs, check this option to get them in sync. Normally, though, you should leave this option unchecked. Also be aware some aircraft – including the default Cessna 172 in X-Plane – can activate both Com1 and Com2 at the same time, as in many real cockpits, to allow you to monitor one frequency while talking on the other. Be sure P2A is set to the Active or talking channel so it can hear you when you transmit.
- **Silence Connect Tone** – Check this option if you don't want the tone that sounds when you connect and/or disconnect to the SIM to sound.
- **Disable Auto Disconnect**-Disables the automatic disconnect action when the SIM crashes. Requires user to manually press the disconnect button. (Not recommended to use this option)
- **Allow Negative Screen Locations**-For some multi-screen PC environments, Windows assigns negative screen location values. Enabling this feature will allow P2A to save these negative values and use them to position windows on the screen. If you enable this option and your PC is not using negative location values, the next time you open P2A, it might open in a "Phantom" location, causing it to not be visible.
- **Use Decimal Instead of Point** – Checking this box will change the spoken frequencies to use the word "decimal" (as in Europe and other parts of the world), instead of "point" (as in the USA). Check this box to hear "Decimal".
- **Show ATC Assignments** – When this option is checked, the most recently-assigned radio frequency, STAR and Approach will show in small white letters below the Com/Nav section of the main window.
- **Stay Centered When Zooming Map** – If checked, the map will stay centered at its current screen location when you zoom using the mouse wheel. By default, it'll center on the Mouse position. Use the Plus (+) and Minus (-) buttons in the upper right of the Map panel to zoom in and out while staying centered at the same screen location.
- **Show In-Line Grammar Help** – This toggles on and off the display of the gold text and the *SayIt* function. If you don't use it, unchecking this box will prevent the Gold text from getting in your way. **THIS OPTION MUST BE CHECKED FOR THE COPILOT FEATURES TO WORK.**
- **Disable Program Exit Warning** – If you just want P2A to exit when you click the "X" close button without confirming you want to exit, then check this option.
- **Pause When SIM Paused**-Pauses P2A automatically when you pause the SIM.
- **Enable Hidden Aircraft**-Adds a third click to the "Center on Aircraft" button. This third click will hide the user's Yellow aircraft marker on the map.

Aircraft Call Sign

It's crucial the call sign you plan to use with P2A be set up BEFORE attempting to use the voice recognition. The voice recognition WON'T WORK if you try using a call sign other than the one set up here.



- **GA Call Sign** – The General Aviation (GA) Call Sign consists of a Manufacturer/Model Name in the Call Sign area and the tail number of the aircraft in the Flight/Tail Number area. For example, a Cessna Skyhawk could have either Cessna or Skyhawk in the Call Sign area, but not both. The Tail Number will vary from country to country. In the US, they all start with the letter N. This must be entered as a series of alpha and numeric characters with no spaces, as seen above.

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The screenshot shows the 'Aircraft Call Sign' window. Under 'Call Sign Type', the 'GA' radio button is selected. The 'Call Sign' field contains 'Honda' and the 'Flight / Tail Number' field contains 'N431VB'. The 'Heavy' checkbox is unchecked. To the right, the 'Airline Lookup' section is empty, with a 'Code' field and a large empty text box below it. A 'Save' button is at the bottom.

- **Airline Call Sign** – When you want to enter an Airline call sign, selecting the Airline Call Sign Type opens an Airline Lookup box to the right, as seen above. You'll need to know the Airline Code and enter that in the small text box labeled Code (ex: AAL for American Airlines, BAW for British Airways, DAL for Delta Airlines, etc.). The full list of codes is available in the Taxi Mnt screen where they're used for assigning gates to airlines. The list isn't available in this screen because it's over 6,000 entries long.

The screenshot shows the 'Aircraft Call Sign' window. Under 'Call Sign Type', the 'Airline' radio button is selected. The 'Call Sign' field contains 'SPEEDBIRD' and the 'Flight / Tail Number' field contains 'N431VB'. The 'Heavy' checkbox is unchecked. In the 'Airline Lookup' section, the 'Code' field contains 'BAW' and the list below it has 'BAW-British Airways' checked. A 'Save' button is at the bottom.

Once you enter the Airline Code – BAW in this case – that Airline's assigned Call Sign will be entered automatically in the Call sign area. The airline name will appear in the large text box of Airline Lookup, allowing you to confirm the correct code is entered. Notice the Call Sign for BAW is Speedbird.

You'll then need to change the Flight/Tail Number to a Flight Number. Normally, this is a series of Numeric characters and again, no spaces are allowed.

The screenshot shows the 'Aircraft Call Sign' window. Under 'Call Sign Type', the 'Airline' radio button is selected. The 'Call Sign' field contains 'SPEEDBIRD' and the 'Flight / Tail Number' field contains '2333'. The 'Heavy' checkbox is checked. In the 'Airline Lookup' section, the 'Code' field contains 'BAW' and the list below it has 'BAW-British Airways' checked. A 'Save' button is at the bottom.

- **Heavy** – If your call sign will include the term heavy like “Speedbird 2333 Heavy”, check this box. This box can be checked for any type of call sign. You never know, you might be piloting a rich person's private jumbo jet.

The screenshot shows the 'Aircraft Call Sign' window. Under 'Call Sign Type', the 'Military' radio button is selected. The 'Call Sign' field contains 'Striker' and the 'Flight / Tail Number' field contains '33'. The 'Heavy' checkbox is unchecked. The 'Airline Lookup' section is empty. A 'Save' button is at the bottom.

- **Military Call Signs** – The Military Call Sign option lets you enter any pronounceable word as the Call Sign – as is customary in a Military call sign – and a small number. Typically, a Military Squadron will have a shared Call Sign like “Striker”, and then each Pilot will have their number. A full call sign, therefore, might be “Striker 33”.
- **Save** – **YOU MUST CLICK THE SAVE BUTTON.** If you don't click the Save button, your call sign will remain what it was before. Be sure to save it. If you're connected to the SIM, it will show up in the Call Sign area at the bottom of the screen. If not, it will show up there when you do connect.

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Aircraft Information

This area allows you to enter the wind limits for the aircraft you'll be flying. The limits should be available in the Aircraft Performance information. Default values are: 18 knot Crosswind and 10 knot Tailwind.



Max Crosswind (Kts):	18	Min Takeoff Rwy Length:	5000
Max Tailwind (Kts):	10	Min Landing Rwy Length:	6500

When displaying the active runways, if either of these limits is exceeded, the runway names will be displayed in red and you'll get a warning message. Of course, P2A must have weather information available before this warning can be given.

Min Takeoff/Landing Rwy Length: Enter the minimum runway length in feet for your aircraft's takeoff and landing. This will ensure that you don't get assigned a 2000 ft runway for a 747 takeoff, for example.

TERPs PDF File Folder Path

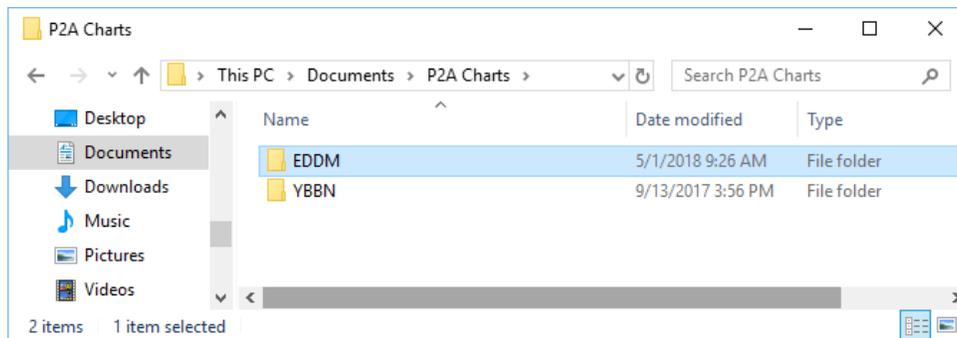
The TERPs window can display .pdf files for the Aeronautical charts in the US. This is primarily because there's a single source (the FAA) for all such content in the United States. Other countries, however, have their own sites with similar .pdf content. The problem in trying to make them accessible is that each site has different content and formatting. To address this problem, you can now download that .pdf content into a file structure allowing P2A to open the correct list of .pdfs for each airport for which you have content.

To start, create a main TERPs .pdf folder somewhere on your hard disk that's accessible to P2A. Usually, having it in your Documents folder will work. Below, I've created a folder named P2A Charts in my Documents folder.



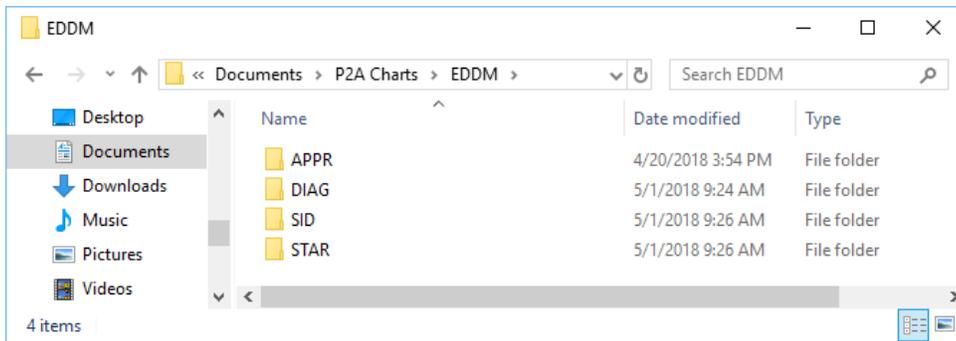
TERPs PDF File Folder Path	C:\Users\Dave\Documents\P2A Charts
TERPs Default Open Folder	C:\Users\Dave\Documents

Add a folder for each Airport, using the airport's four-letter ICAO Code. Here there's an entry for EDDM and YBBN.



Next, within each Airport folder, create a folder for each type of chart that can be saved:

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- **APPR** – Approach charts like ILS, RNAV, VOR approaches, etc.
- **DIAG** – Airport Diagram charts, information documents, etc.
- **SID** – Standard Instrument Departure (SID) charts.
- **STAR** – Standard Terminal Arrival (STAR) charts.

Only these four [4] names will be recognized. Also, notice they correspond to the four [4] Chart Type buttons (red box below).

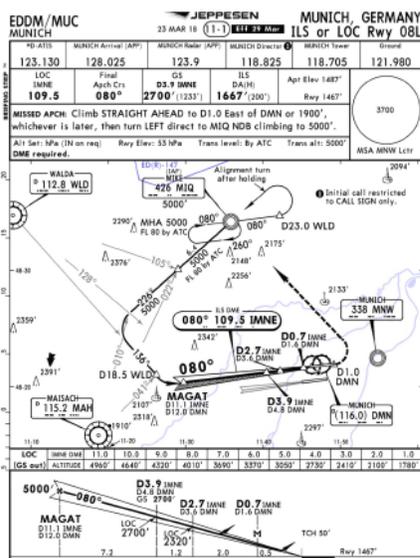


Finally, find the charts you want to add to each folder and download them to your PC. Be sure you name them with a name that'll be recognizable in the drop-down list. For example, for EDDM, the names are formatted as follows:

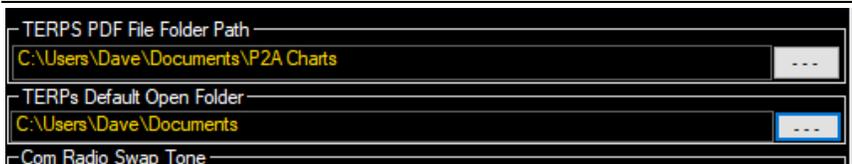
RWName_ApproachType_AirportIdentifier
08L_ILS_Loc_EDDM

Yours can be whatever you want, but starting with the Runway or procedure type and placing the Airport at the end is a good way to do it.

After populating the folders, the TERPs panel will function for those airports just like it does for US Airports.



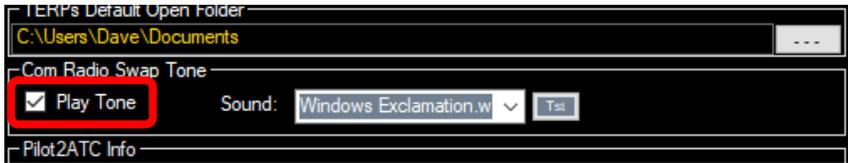
TERPs Default Open Folder Path



Click the button on the right to set the default folder to use when Opening PDF files in the TERPs panel using the Open Button. This is handy if you've downloaded PDF Approach Plates, etc. Organize them in a folder and have the Open File button start in that folder each time.

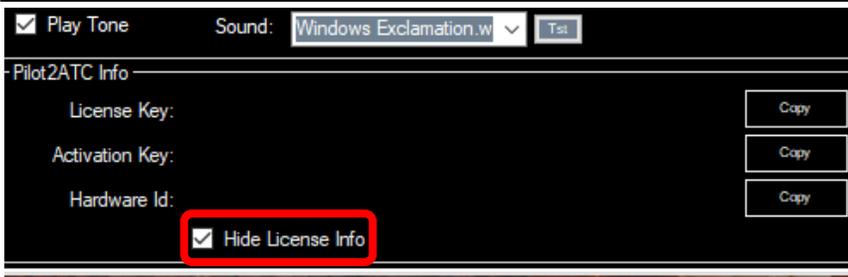
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Com Radio Swap Tone



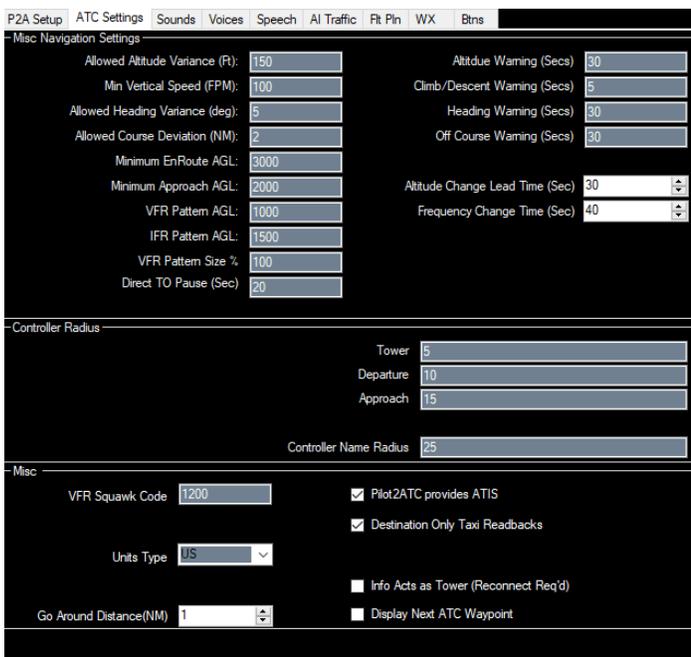
Selecting a tone and checking the “Play Tone” option will play this tone when the Com radio frequencies are changed. If you’d like to add a custom tone, create a .wav file for it and place it in the Windows Media folder. By default this is located at “C:/Windows/Media”.

Plot2ATC Info



The License Key, Activation Key and Hardware Id may be needed by our support team to help you with registration and activation issues. This is just a convenient place for you to look up that information. You can click on one of the Copy keys and the corresponding License, Activation Key or Hardware Id will be copied to the clipboard so you can paste it into an email or other document.

ATC Settings



The ATC Settings tab has quite a few settings affecting how ATC behaves. We’ll go through each of these settings.

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Misc Navigation Settings

Misc Navigation Settings			
Allowed Altitude Variance (Ft):	150	Altitude Warning (Secs)	30
Min Vertical Speed (FPM):	100	Climb/Descent Warning (Secs)	5
Allowed Heading Variance (deg):	5	Heading Warning (Secs)	30
Allowed Course Deviation (NM):	2	Off Course Warning (Secs)	30
Minimum EnRoute AGL:	3000	Altitude Change Lead Time (Sec)	30
Minimum Approach AGL:	2000	Frequency Change Time (Sec)	40
VFR Pattern AGL:	1000		
IFR Pattern AGL:	1500		
VFR Pattern Size %	100		
Direct TO Pause (Sec)	20		

- **Allowed Altitude Variance** – Vertical variance (in feet) allowed before ATC warns you to return (climb or descend) to your assigned altitude or flight level.
- **Min Vertical Speed** – The minimum climb or descent rate ATC will accept as being in compliance with an altitude assignment. If you're climbing at less than this rate, you'll be asked by ATC to climb and maintain your assigned altitude.
- **Allowed Heading Variance** – The degrees of heading change required before ATC gives you a new heading. For example, if the bearing to the next point when being vectored by ATC is 270° and your heading is 276°, you'll get a heading change to 270°. If your heading is 272°, ATC won't give you a heading change. This prevents getting very small heading changes constantly – and 5° seems to be a good setting for this.
- **Allowed Course Deviation** – Distance in nautical miles the aircraft is allowed to stray from the planned course before ATC informs you [1], you're off course, and [2], gives you a correction back to the planned course.
- **Minimum Enroute AGL** – The minimum altitude (in feet) above ground level on a flight. This is used for altitude assignment minimums and when validating Flight Plans. If you fly IFR, setting this to at least 5,000 feet is a good idea as it's used in some cases for initial altitude assignments for SIDs.
- **Minimum Approach AGL** – The minimum altitude (in feet) above ground level when approaching the destination airport and before entering the pattern.
- **VFR Pattern AGL** – The altitude (in feet) above ground level for VFR traffic patterns. Default is 1,000 feet.
- **IFR Pattern AGL** – The altitude (in feet) above ground level for IFR traffic patterns. Default is 2,000 feet.
- **VFR Pattern Size %** – P2A calculates a default pattern size based on the airplane being flown when you start the program. It can be increased using values over 100 or decreased using values under 100, giving you more or less time to set up and make turns in the pattern.
- **Direct TO Pause (Sec)** – The number of seconds to suspend the off-course warning after ATC approves a Direct-To change to the Flight Plan. This should be set to an amount of time you think will be required to set up the Direct TO changes to the Flight Plan and get the aircraft onto the new course. Remember, the Pilot's Flight Plan isn't followed by ATC – it's up to the Pilot to ensure their flight plan is in sync with ATC's clearances. For example, before changing the flight plan using the Direct TO feature, be sure ATC has either issued a "Cleared direct to ..." command or approved a Direct TO request from the Pilot.
- **Altitude Warning (Sec)** – Number of seconds between altitude warnings if off altitude and Vertical Velocity is below the Min Acceptable Vertical Speed. This setting is for enroute altitude. Approach altitude warnings will have one-half the delay.
- **Climb/Descent Warning (Secs)** - Number of seconds lead time ATC will give additional Climb/Descent instructions. If you need a little more time to avoid your AutoPilot from leveling off, increase this setting.

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- **Heading Warning (Sec)** – Number of seconds between heading warnings if off assigned heading. This setting is for enroute heading. Approach heading warnings will have one-half the delay.
- **Off Course Warning (Sec)** – Number of seconds between off course warnings if off course and not following instructions to get back on course. This setting is for enroute off course. Approach off course warnings will have one-half the delay.
- **Altitude Change Lead Time (Sec)** – This sets the number of seconds, based on your rate of climb/descent ATC will give you the next altitude assignment. 30 – 60 seconds is about right to provide a smooth climb/descent without having to level off.
- **Frequency Change Time (Sec)** – Lets you set the number of seconds ATC allows after giving a frequency change for you to make the change and contact the new Controller. If you take longer than the specified time, you'll get a reminder from the Controller to make the change.

Controller Radius

Tower 5

Departure 10

Approach 15

Controller Name Radius 25

Controller Radius

These settings set the distance in nautical miles of each Controller's airspace. When flying an airliner or other fast jet, it helps to set these values a little higher, *especially* for the approach radius. 5, 10 and 25 for Tower, Departure and Approach will usually work well. For short flights, be sure that the combination of Departure and Approach radius is less than the distance between airports so that they don't overlap.

The Controller Name Radius is used when searching for names to recognize along the route of a filed Flight Plan. The default of 25 is normally a good choice. Make this number too big and you could get a longer wait for filing and not much, if any, benefit.

Misc

Misc

VFR Squawk Code 1200

Units Type US

Go Around Distance(NM) 1

Pilot2ATC provides ATIS

Destination Only Taxi Readbacks

Info Acts as Tower (Reconnect Req'd)

Display Next ATC Waypoint

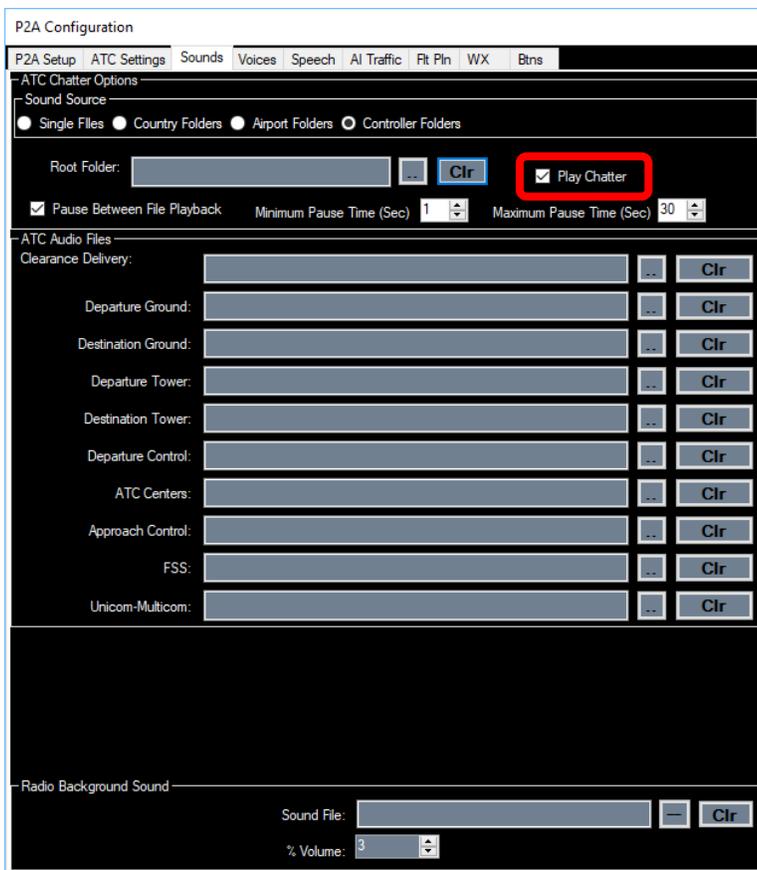
- **VFR Squawk Code** – Sets the squawk code you want P2A to use for VFR flights. In the US, this should always be 1200. In other parts of the globe, they have different codes, so set the one appropriate for your area if you're going to fly VFR.
- **Units Type**
 - a. US – Altimeter is in Inches of Mercury and altitude in feet
 - b. Metric-Feet – Altimeter is in millibars (QNH) and altitude in feet
 - c. Metric – Altimeter is in millibars (QNH) and altitude in meters
- **Go-Around Distance(NM)**- Sets the distance before the runway that you will be given a Go-Around instruction if the runway is not clear for landing.

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- **P2A provides ATIS** – This option, when checked, will have P2A provide the ATIS weather rather than the SIM. This is most useful for P3D and FSX users who have their voices turned off.
- **Destination Only Taxi Readbacks** – This option lets you do Taxi clearance readbacks without repeating the route. With this option checked, “Taxi to Runway Zero One via taxiways Alpha, Charlie, X-Ray” can be read back as “Taxi to Runway Zero One.” It simplifies the read back and can reduce frustration.
- **Info Acts as Tower** – Checking this option causes Controllers of type Info to perform the duties of a Tower. This is to accommodate certain regions in the world where this occurs. Default setting is unchecked.
NOTE: *If you change this setting while connected to the SIM, you must disconnect and then reconnect to have it take effect.*
- **Display Next ATC Waypoint** – When this option is checked, the next ATC waypoint will be displayed in the Speech Text Window in Red, as well as in the Conversation Text File, if the Conversation Text File option is enabled on the Speech tab.

Sound Settings

This panel lets you set up your ATC Chatter options.

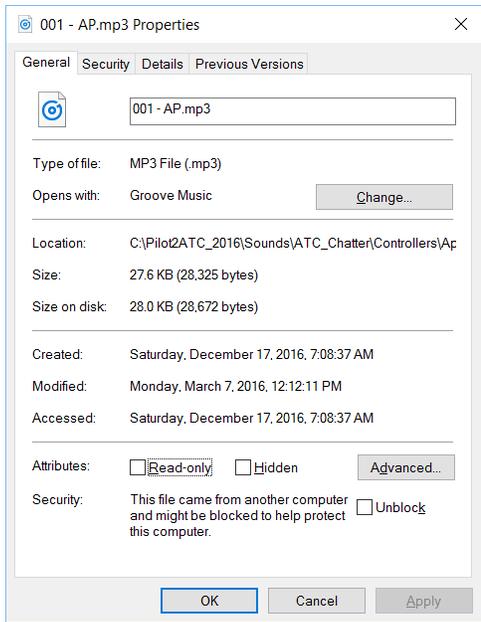


You’ve a choice of how to set up the background chatter. You may even wish to not enable it at all.

To disable it completely, just leave the Play Chatter checkbox unchecked.

NOTE: *When you download files for Chatter, your PC might block the file for Security reasons. If the files don’t plan in P2A, you should check this by right clicking on the file and selecting Properties. At the bottom of this dialog (See Below), check the Unblock option. You’ll have to do this for each file that isn’t playing. Of course, if they’re playing, then don’t do anything.*

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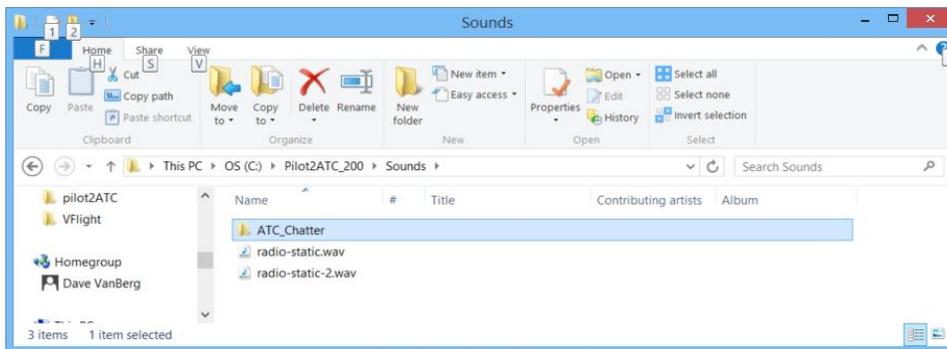


If you want to hear the background chatter, you can either have a single .wav or .mp3 file for each Controller – **or** – set up folders for each Controller having multiple files played in succession – **or** – set up folders for each country in which you'll fly containing files for each Controller – **or** – set up folders for Countries and Airports with folders of files for each Controller.

When you have multiple files, you'll want to check the "Pause Between File Playback" option and enter a number for the maximum seconds to pause.

If this did not confuse you, then you're a lot smarter than me.

Let's take a look at some example file structures to make sense of all this.



Here we see the default P2A_200 Sounds folder with the radio-static files shipping with the product. We also see a folder named ATC_Chatter. If you're going to use distinct files for each Controller, place those files in the ATC_Chatter folder and point to them in the *Config* panel.

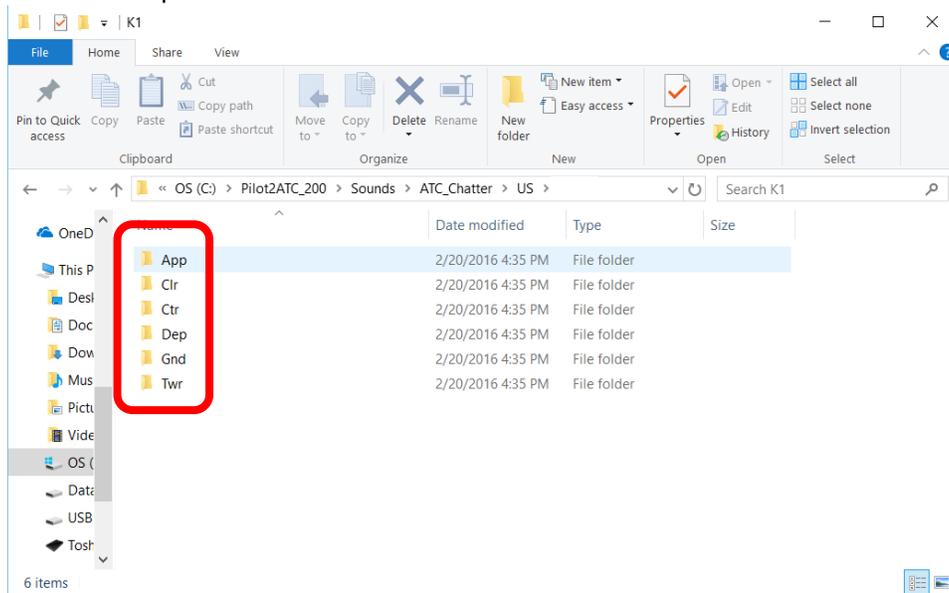
Country and Airport Folders Option

If you're going to use the folder approach, enter one or more Country folders directly in the ATC_Chatter folder. These folders must be named based on the ICAO country codes. Here's a link to an article on Wikipedia on this topic: https://en.wikipedia.org/wiki/International_Civil_Aviation_Organization_airport_code

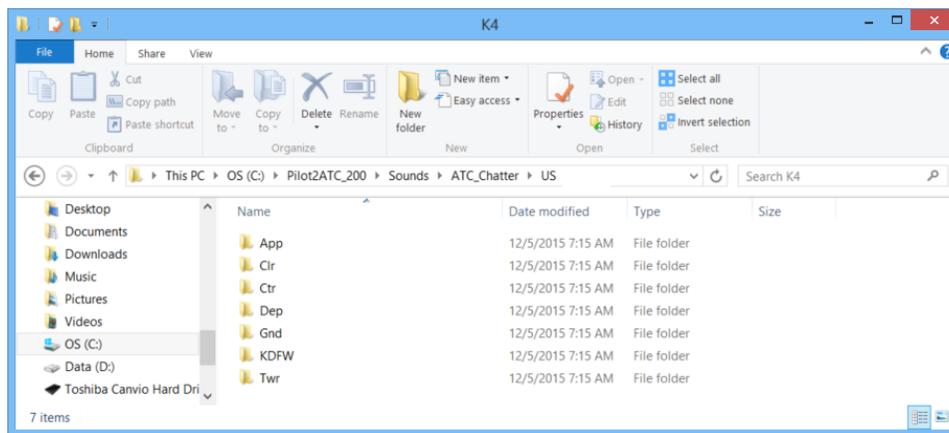
Based on the ICAO table, the UK is EG (Europe-Great Britain), Spain is LE (L for Southern Europe and E for España). The US is divided into seven [7] regions – K1 through K7. For the US, you should create a folder named US.

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In this example, we have a folder for each Controller type at the US country level, and we can have folders for individual airports if desired.



If we want separate folders for an airport, we can create that separation in the folder corresponding to the Country (or Region in the case of the US). So, for example, KDFW is in region K4 and we have this:



Now you're probably wondering why this is so complicated... Well, the AIRAC data and P2A database have a Country Code associated with each Controller and P2A uses that information to look for the folder you want to have played for that Controller. If it doesn't find it, it will look for the designated file and play that single file in a loop. If you don't have a designated file for that Controller type, then no ATC Chatter will play for that Controller.

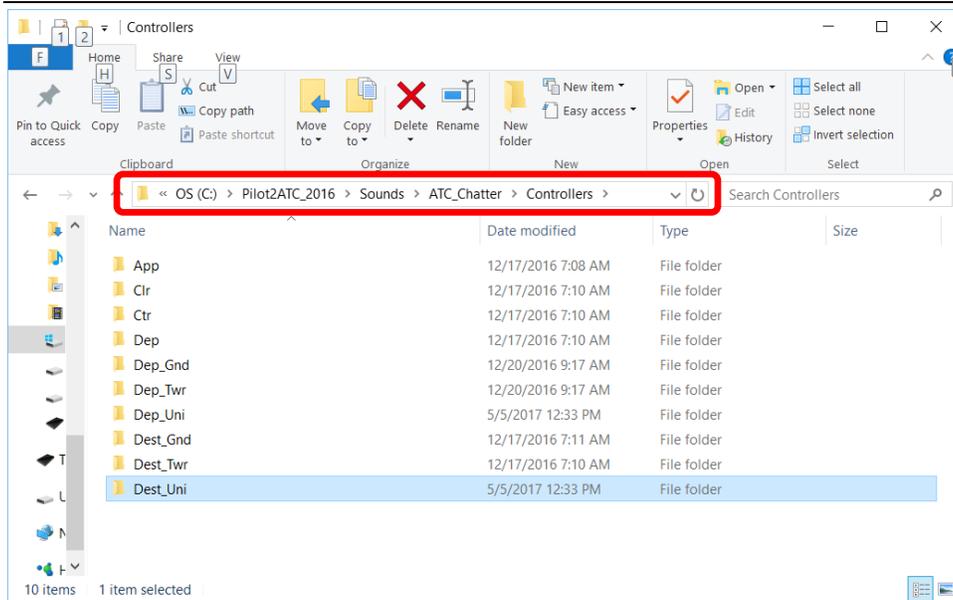
Hopefully, this clarifies how to create the folder structures. Now, for the Root Folder Path. If you use the default Sounds folder located in the P2A program folder, you can leave the Root Folder blank in the config panel.

Controller Folders Option

If you want to have universal folders for each Controller type, the structure is much simpler. Create a single sub folder in the ATC_Chatter folder named Controllers. Then, for each Controller, have a folder named, as in the screenshot below.

COMMENT: In this case, my P2A folder name is P2A_2016. Be sure and place this structure in your installation folder.

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This is the folder structure to use if you're getting your ATC Chatter from X-ATC-Chatter. **Here's a link to their site:**

<https://www.stickandruderstudios.com/x-atc-chatter-overview/>

This is the easiest route to getting a very realistic experience with almost no effort on your part.

The Dep_Uni and Dest_Uni folders are optional if you want to have Chatter on the Unicom/CTAF frequency. You'll have to find files to place here on your own.

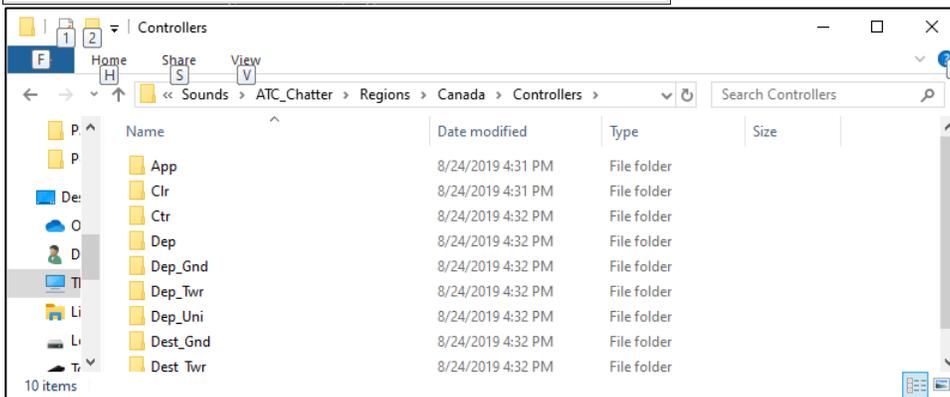
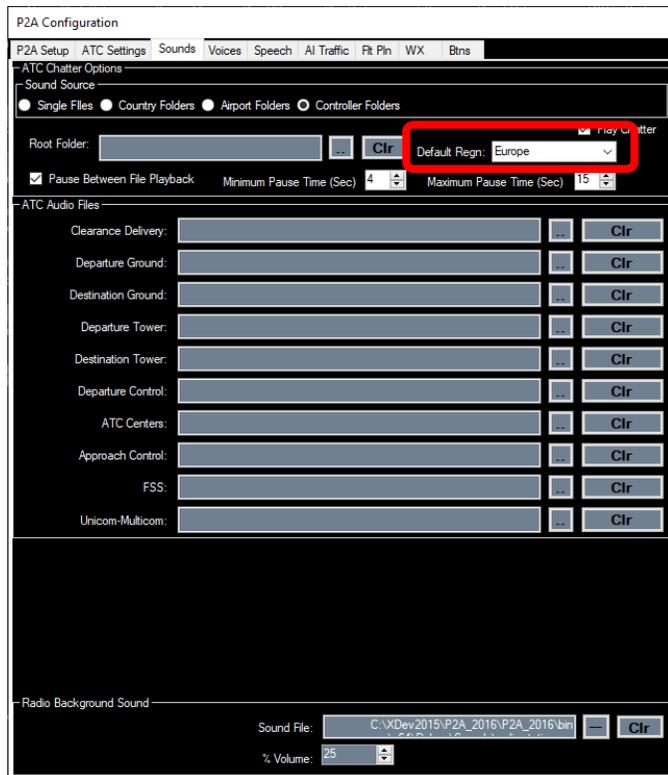
Set up the folders and choose the Controller Folders option and you'll be ready to go.

If getting your files from X-ATC-Chatter, just copy and paste the folders from one of the regions into your Controllers folder.

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Controller Folders with Regions

If you only need files from a single region, place the Controller folders (App, Clr, Ctr, etc.), as above, directly in the Controllers folder. If, however, you want to implement the Regions of X-ATC Chatter, copy the Regions folder and all of its contents to the ATC_Chatter Folder.



Each Region folder will then have a Controllers folder with all the Controllers listed as above.

Select your desired Default Region from the drop-down on the Sounds tab of Config (Europe is selected as the default – red box.). If the program can't determine what region you're in – or if the folder for the desired Controller in your region is empty – it'll use this default region's files... So, be sure your default region has files for all Controller types.

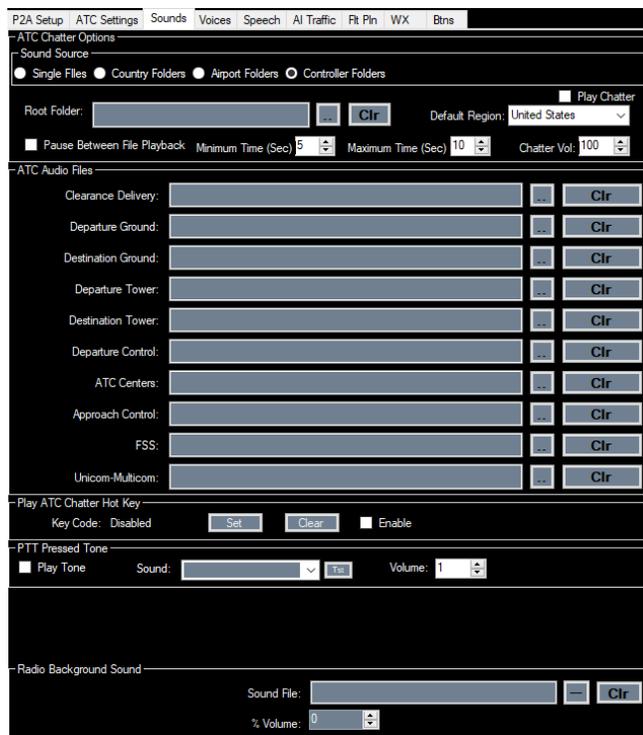
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Designated Files Option

This is probably the simplest option. When you select this option, place the name of a file for each Controller in the text box next to each Controller's name in the ATC Audio Files area.

COMMENT: *The half-hour files at LiveATC.net work well for this option.*

Alternate Root Folder



If you want to store your ATC Chatter files on another drive or in another root folder, click on the “...” button (red box) and find the folder you're using as the Root folder. It's the folder containing the “ATC_Chatter”. You must have a folder with that name containing the country codes, etc. (as explained above) in order for the ATC Chatter to play the right files.

If you use the default location for these files, leave this blank as above.

Pause Between File Playback – Checking this option will have the program pause a random number of seconds between the end of one chatter file and the beginning of the next. The random number of seconds will be selected from values between the Minimum Pause and the Maximum Pause times.

Minimum Pause Time – This is the minimum number of seconds for the pause between playing of chatter files.

Maximum Pause Time – This is the maximum number of seconds for the pause between playing of chatter files.

Chatter Volume: Use this to control the volume of Chatter relative to volume of controller voices.

Play ATC Chatter Hot Key: This sets a Hot Key to Toggle the Chatter on and off.

PTT Pressed Tone: If you want, you can enable a tone to sound when the PTT button is pressed. Select the .wav file you want and set the volume here.

Radio Background Sound

Find the static file you want to use for the background noise for the radio. By default, the program uses the “\radio-static.wav” we saw earlier in the Sounds directory. If you're operating in a remote region of the globe, you may want to find a noisier static file for use here. Otherwise, leave this field blank to use the default.

The “%Volume” field lets you control the volume of the static. Set it from 0-100%.

COMMENT: *I prefer it somewhere at or below 10%.*

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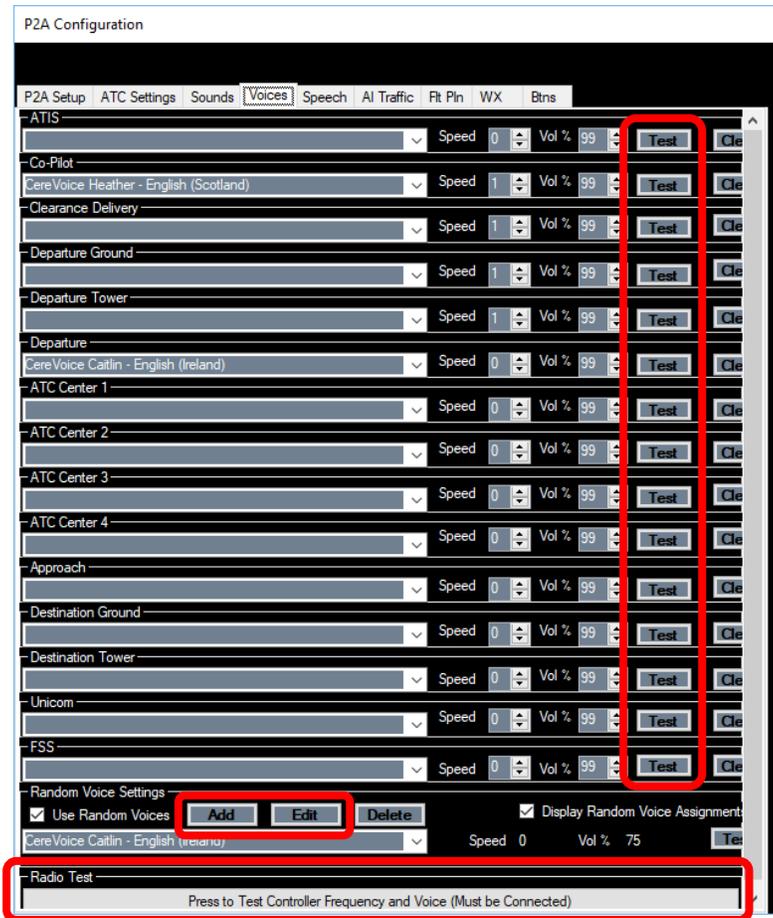
Voices

The Controller voices are SAPI 5.x compliant voices driven by the Microsoft's Text to Speech or Speech Synthesis engine. If you leave this section blank – and you have Windows 8 or 10 – you'll get one male and one female voice chosen randomly for the Controller when you dial in their frequency.

NOTE: For Windows 7, there's only one voice by default – Anna.

Of course, you can purchase and install additional voices for Windows 7 | 8 | 10. If you install additional language packs like Spanish in Windows 8 | 10, you'll also get additional voices.

COMMENT: Believe it or not, the Spanish voice speaks English with a Spanish accent and makes for a realistic experience in Latin countries.



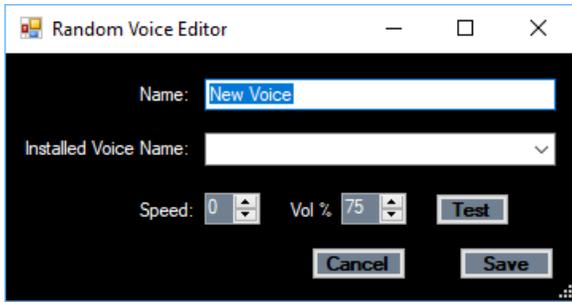
Assigned Voices

P2A will search for all SAPI voices installed on your system and display them in the drop-down box below each Controller's name. You select which voice to use for each Controller. The speed and volume of the voice can also be set, which can make it sound like a totally different voice. Experiment a bit and you'll hear some interesting results by clicking the Test button (red box) after you make a change.

Random Voices

If you want P2A to select voices randomly for a pool of voices, check the "Use Random Voices" option. Then, you can Add, Edit and Delete voices to manage the pool. Clicking the Add or Edit button (red box) will bring up the Random Voice Editor dialog:

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Add virtual voices by assigning them a name, selecting a “real” installed voice and then adjusting the speech Speed and Volume to make them sound different from the default. Use the **Test** button to hear what they sound like. When you’re satisfied, click the **Save** button.

Be sure to give each virtual voice a unique name.

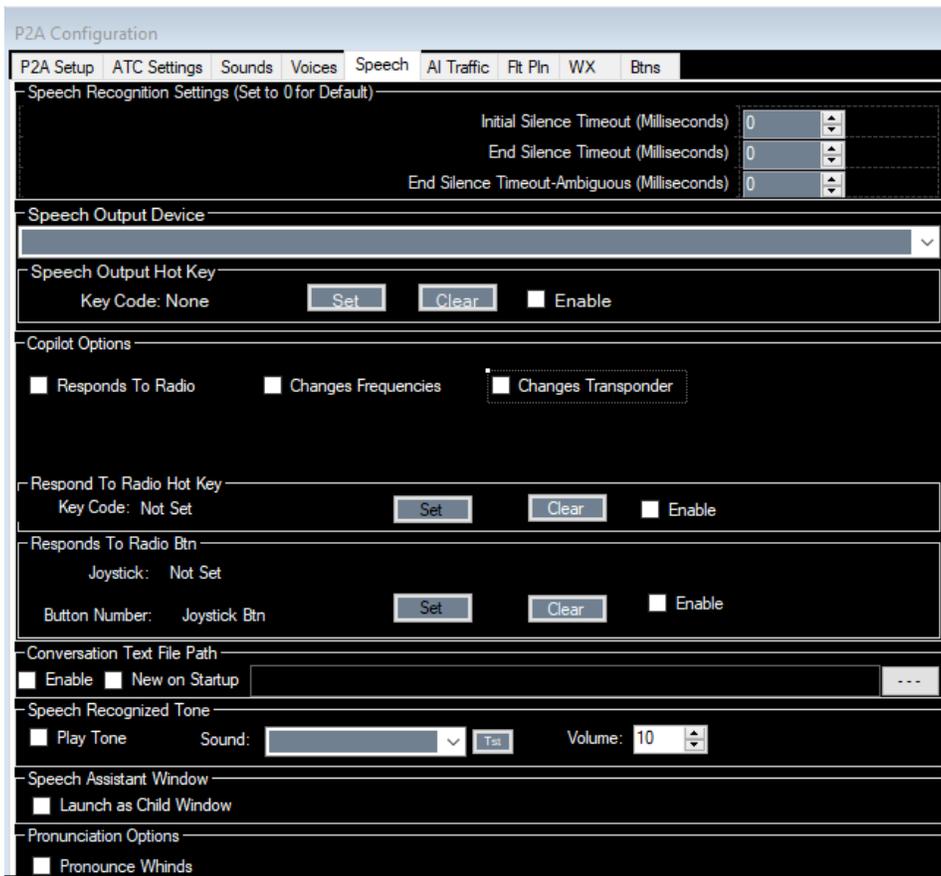
Clicking the **Delete** button will delete the entry from the Random Voices list – and if it’s a Virtual Voice, the definition of

that voice is lost. You can “delete” real voices, but that only removes them from the Random Voice list. It doesn’t uninstall or in any way affect the actual installed voice.

Radio Test

And finally, the “Press to Test...” button (red box) at the bottom of the Voice tab can be used to hear if the main program radios are working. When clicked, it will announce the currently-active Com Controller and the frequency on which they’re transmitting. It should correspond to the Controller you’ve dialed into Com1 or Com2, depending on which Com channel is active.

Speech Tab



Speech Recognition Settings

There’re three [3] settings here, but they can be critical to Speech recognition. P2A listens to what you’re saying as long as you’re holding down the PTT button. However, these settings can affect how it listens.

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- **Initial Silence Timeout** – The number of milliseconds (1,000 ms = 1 second) *after* you click the PTT button the Speech Recognition Engine stops listening. The default for this setting is 500ms (1/2 a second), which is about right for most users. You shouldn't have to adjust this setting.
- **End Silence Timeout** – The number of milliseconds the Speech Recognition Engine waits to see if you've more to say after it's sure it heard something it understands. The default here is 300 ms. If you find you're being recognized for the first part of a statement and P2A isn't getting the second part, it could be you're pausing longer than this and not long enough for P2A to begin another Recognition cycle.
- **End Silence Timeout Ambiguous** – This is the number of milliseconds the Speech Recognition Engine waits to see if you're going to say more when it's not sure it understands what you're saying. It hopes you say something more that'll improve its confidence in accurately understanding you. The default setting is 200ms.

NOTE: *In most cases you won't want to change any of these. Leaving them at 0 uses the defaults. If you set them and want to return to the default settings, just reset to 0.*

DEVELOPER COMMENT: *Speech recognition in Version 2.0 is vastly different than Version 1.0. So even if you'd adjusted these settings in Version 1, try the defaults in Version 2 before you start making changes.*

Speech Output Device

If you want the output sounds – including the Controller voices – to go to an output device other than the default, select that device from the drop-down. This is useful when the SIM uses only the default output device and you want the engine sounds going to the speakers, but want the P2A Controller voices in your headset. Select the headset in this dropdown.

Speech Output Device Hot Key

Set this Hot Key to cycle through the available Speech Output devices. This would be most useful for those who have multiple sound outputs and need to change the selection while flying... perhaps in a cockpit environment.

Copilot Options

To relieve the cockpit workload, you may want to take advantage of the P2A Copilot. They can respond to radios and change radio frequencies.

NOTE: ***IN ORDER FOR THE COPILOT FEATURES TO WORK, YOU MUST HAVE THE "SHOW INLINE GRAMMAR HELP" OPTION CHECKED ON THE P2A Setup TAB.***

- **Respond to Radios** – When this option is checked, the voice set up for the Pilot in the Voices tab – or the default voice, if none is set up – will say all the automated read-backs posted to the Speech text window. If this isn't checked, click the **SayIt** button manually to say these phrases. The Copilot will also handle the initial calls to Departure, Center, Approach and the Arrival Tower on IFR flights.
- **Changes Frequencies** – With this option checked, if ATC tells you to contact another Controller on a different frequency, the Copilot will automatically set the new frequency in the standby Com window and swap it to active, relieving you of the work of twisting the dials or typing in the frequency.
- **Change Transponder** – With this option checked, when ATC directs a new Squawk code, the copilot will enter the code and switch the Transponder mode to Active.

This feature only works after the spoken read-back phrase is recognized. If, for any reason, the phrase isn't recognized, you can set the frequency manually.

IMPORTANT NOTE: *You must also have the "Show In-Line Grammar Help" option on the main P2A Setup Tab of Config checked for the Co-Pilot to work.*

If you have the Changes Frequency option checked, the Copilot will attempt to set up the frequencies for ATIS and Clearance Delivery when you connect to the SIM with the aircraft on the ground at an airport with those frequencies available.

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How it Works – The Copilot generally doesn't initiate any requests. They only do read backs of calls from ATC or many of the initial contact reports. The Pilot (you) must initiate any requests. So, on a typical flight, you would:

- Listen to ATIS to get the weather.
- Tune to Clearance Delivery and say "<CallSign> ready to copy".
- Listen to the clearance and set up your squawk code, etc. based on the clearance.
- Your Copilot will read back the clearance....you just keep working.
- Your Copilot will tune the Ground Frequency after receiving the "Readback Correct" call from ATC.
- You must call for Pushback, Engine Start and Taxi. The Copilot will do the readback and make the frequency change if a new frequency is given.
- Similar interactions occur during the flight and arrival phases.

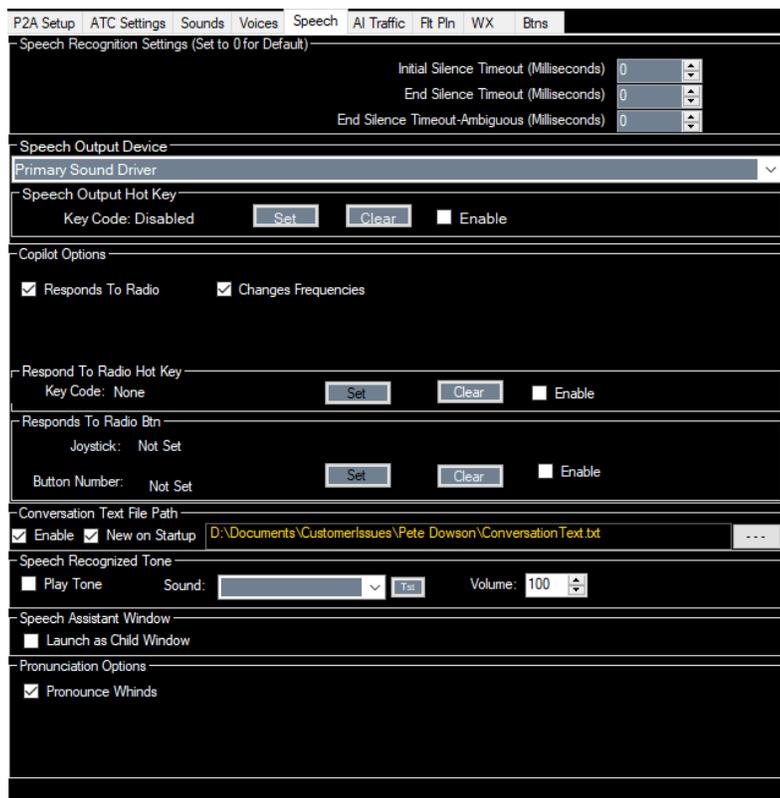
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Conversation Text File Path

If you want P2A to create a text file of your ATC Conversation for a flight, set the file name to which you want it to write and check the **Enable** option. By default, the Conversation Text file is preserved across flights. If you want to start a new file each time you start Pilot2ATC, then check the **New on Startup** checkbox. Be aware this'll save the conversation for a single P2A session and when you close P2A and start a new flight, the old file will be replaced. If you want to record and keep multiple flights, be sure to rename the old file before starting a new flight.

Speech Recognized Tone

If you check this box and select a tone from the dropdown, P2A will play that tone whenever it recognizes your speech input. This is useful for those who hide P2A during flight and only use the ATC and voice functionality. You have a choice of all the .wav tones P2A finds in your system's tone folder.



Clicking the **Tst** button (red box) enables you listen to the tones so you'll be able to select one you like.

After you set the tone AND CHECK THE CHECKBOX – if you're connected to the SIM when making this change – you'll need to RE-CONNECT to the SIM for this to take effect. Click the Connect button twice to do this.

Speech Assistant Window

Launch as Child Window – Checking this option will keep the Speech Assistant window connected to the main window.

EXAMPLE: *If in a VR environment with the main P2A window inside the cockpit, click **SayIt+** and the Speech Assistant Window will open in the VR Environment. Unchecking the option will have the window behave independently from the main P2A window.*

Pronunciation Options

Pronounce Whinds – Check this option if your voices are pronouncing winds as in “winds a watch”. This varies from voice to voice, so choose the setting that best suits your voices.

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AI Traffic

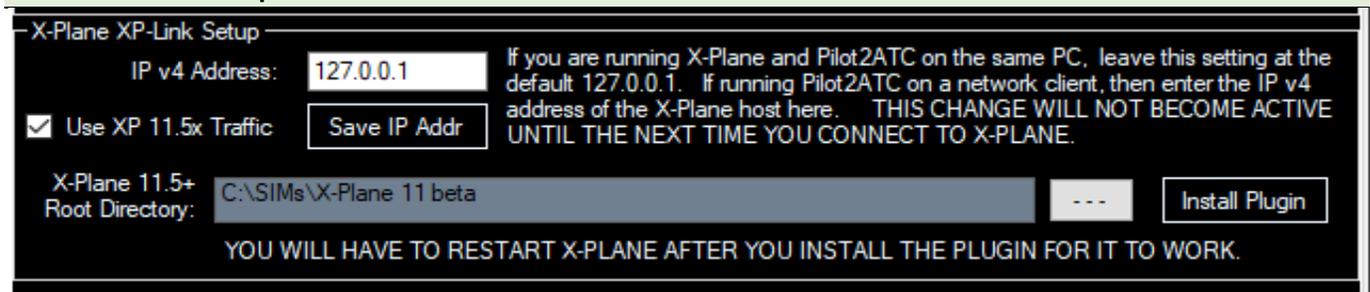
The AI Traffic tab gives you the ability to tailor the Traffic alert experience. The settings are:

- **No Joy Traffic Alert Interval** – The number of seconds after the Controller is told you did not see the traffic (“No Joy”) you’ll be given another alert. *The default is 30 Seconds.*
- **No Joy Traffic Alert Distance Interval** – The number of nautical miles the traffic can close on you before you receive another alert. A fast-moving target may trigger this distance alert before the time alert is triggered. *The default is 1.5 nautical miles.*
- **Sighted Traffic Alert Interval** – The number of seconds after you tell the Controller you have the traffic (“Tally Ho”) you’ll be given another alert. *The default is 120 seconds.*
- **Traffic Alert Proximity** – The distance, in nautical miles, from your Aircraft a target must be before you receive an alert. *The default is 15 nautical miles.*
- **Traffic Alert Vertical separation** – The maximum altitude difference between your aircraft and the traffic before you receive an alert. *The default is 5,000 feet.*
- **Airborne Traffic Alerts On** – Determines if you’ll receive verbal traffic alerts while airborne. The default setting is On, but this feature allows you to turn off traffic alerts if you desire. *The default is “On”.*



The default values work well for GA aircraft. For fast GA aircraft and airliners, it’s suggested some of these limits be increased. For example, if you’re traveling at 500 knots toward another target traveling at 400 knots, you’re closing at 900 knots. The 1.5 nautical mile distance interval would result in approximately 10 alerts per minute... not a good idea.

X-Plane XP-Link Setup



X-Plane 11.5 and up enable AI Traffic up to 63 aircraft instead of the old 19 limit. To enable this new X-Plane feature, you must install a custom P2A_XPLink plugin and do some additional setup in the above panel.

- **IP v4 Address** – If you are running Pilot2ATC® on a networked client, you need to enter the IP v4 Address of the X-Plane host machine here. Then press the ‘Save IP Addr’ button to save and validate the address.
- **Use XP 11.5x Traffic** – Check this box if you want to enable this feature.
- **X-Plane 11.5+ Root Directory**-Use the --- button to browse to the Root directory of the X-Plane installation you want to enable. That is the folder that contains the X-Plane exe file.
- **Install Plugin**- After you have entered the X-Plane Root directory, press this button to automatically install the P2A_XPLink plugin. If X-Plane is running, you will have to restart it to activate the plugin.

Enable New AI Traffic Feature in X-Plane

Each traffic engine may differ, but for most, you need to remove the 19 AI Airplanes in the AI section of X-Plane’s aircraft selection. Then, enable TCAS mode in the traffic engine. This works in Traffic Global and something similar should work in other engines. A little experimentation may be required.

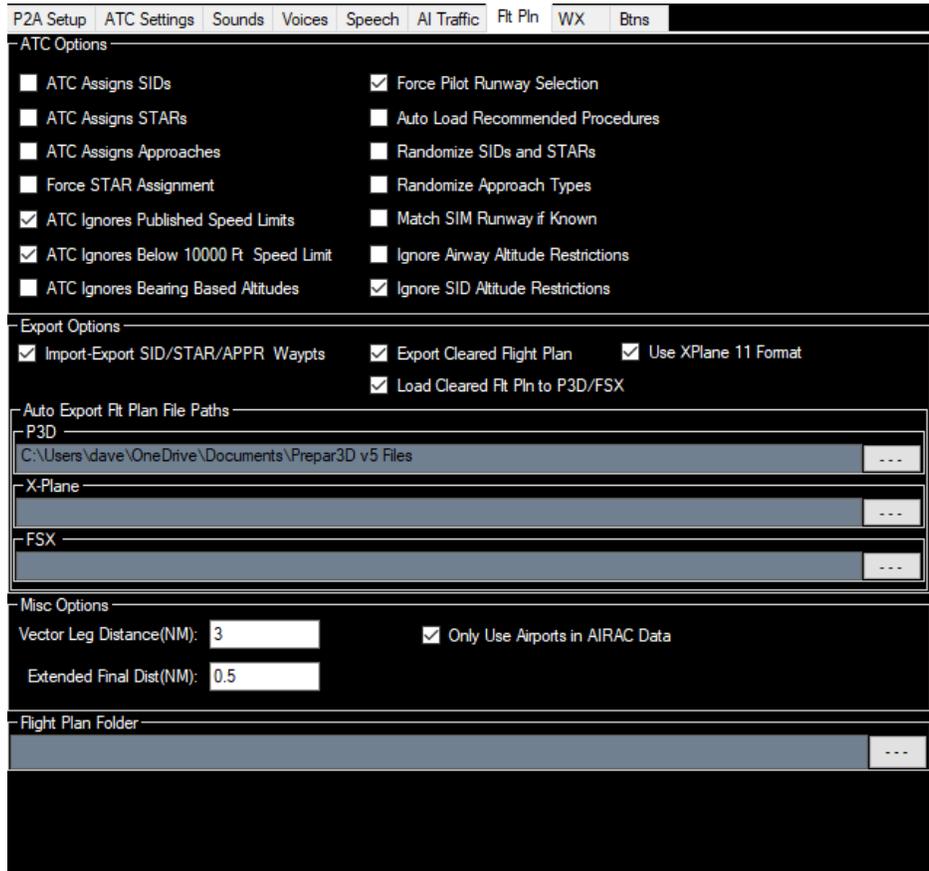
When connecting for the first time, depending on how/where Pilot2ATC® is installed, you may get a Security Firewall warning asking for permission to let Pilot2ATC® communicate with X-Plane. Allow this connection.

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Flight Plan

This tab has the options associated with Flight Planning and the Flight Plan.



ATC Options

ATC Options are used in determining what procedures are assigned by ATC. Most of the options only apply to IFR flights, but some, like the “Force Pilot Runway Selection”, apply to all flights.

If none of these options are selected, ATC will use the procedures selected in your Flight Plan if they’re for the arrival airport’s active runway or if you have the “Force Pilot Runway Selection” option checked. If you try and file an IFR flight plan *without* a valid Approach specified, you’ll receive an error message at filing time.

If you’re flying General Aviation and want to take off without the approach, file a VFR flight plan and then request your desired approach in the air.

ATC Assigns SIDs – Check this option if you want ATC to assign your SID and give it to you during the Request for IFR Clearance. Remember to update your flight plan and your FMS/GPS so you fly the assigned SID. It may be different, however, from the one for which you planned. If this option isn’t checked – but you have a SID specified in the flight plan – ATC will assign you a SID aligned to the active runway.

ATC Assigns STARs – This option will have P2A determine what arrival procedure (STAR) is best, based on the active runway, and assign it to you while you’re enroute. If you prefer to fly the procedures you have in your Flight Plan:

- a. uncheck this option and the following one; and,
- b. check the “Force Pilot Runway Selection” option discussed below.

ATC Assigns Approaches – P2A ATC will assign the recommended approach procedure for the arrival airport. This’ll be the highest precision IFR approach available for the active runway at the arrival airport. Be sure to modify your Flight Plan and enter the correct Approach into your FMS or GPS unit. Also, remember a valid IFR

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Flight Plan must contain an Approach. You'll get an error message when you try and File the Flight Plan if it doesn't.

Force STAR Assignment – P2A will not normally assign a STAR if the it causes a much longer route or very sharp turns over just connecting directly to an approach with a transition. If you prefer to have a STAR assigned when they're available, check this option and this check for a better route without a STAR will be bypassed and you'll generally be assigned a STAR if it exists for the destination runway.

ATC Gives Vectors to IAF (Removed) – If you've been using P2A for a while, you'll notice this option is missing. It was the source of much confusion. Vectors will be given by ATC:

- a. When requested by the Pilot for a published approach or visual straight-in. If an approach, be sure it's to the active runway for that airport or you have the "Force Pilot Runway Selection" option checked.
- b. When the assigned approach is a precision approach without an enroute Transition Point or STAR available for the approach runway. This is most likely to occur when flying in the US to small airports with precision approaches, but no STARs.
- c. When the active arrival runway has no precision approaches, vectors to a visual straight-in will be the default approach type.

ATC Ignores Published Speed Limits – This option will stop ATC from directing you to slow to the speeds published in the SID, STAR or Approach procedures you're flying.

NOTE: *Aircraft designated as "HEAVY" in the call sign will be given leeway to exceed the published speeds for safety reasons.*

ATC Ignores Below 10000 Ft Speed Limit – There's a pretty much universal ATC rule to fly at 250 knots or less when under 10,000 feet MSL. If you want to fly a low level bombing run at 500 knots – or just don't want to be nagged about your speed – check this option.

NOTE: *Aircraft designated as "HEAVY" in the call sign will be given leeway to exceed the 250 knots speed limit for safety reasons.*

ATC Ignores Bearing Based Altitudes – The rule enforced by P2A is Easterly routes must use Odd Thousand foot increments or Flight Levels and Westerly use Even Thousand foot increments and Flight Levels. While this is common in much of the world, some countries have "North-South" rules, and some even allow any altitude. So, checking this option lets you select any cruise altitude and not have it checked for compliance with the standard rule.

Force Pilot Runway Selection – By default, P2A selects active runways based primarily on wind direction, as is done in the real world. However, there're many circumstances where you might want ATC to let you select a different runway. By checking this box:

- a. If you ask for a specific runway when you call for Taxi, ATC will assign you that runway.
- b. If you request a specific approach at your arrival airport, you'll be given that approach even if it's not to the active runway.
- c. If you have a SID, STAR or Approach specified in your flight plan to a runway that isn't the active runway, you'll be given that SID or Approach. The STAR will be assigned to align with the Approach.

Auto Load Recommended Procedures – Checking this option will have P2A determine the recommended SID, STAR, and/or Approach for the flight plan when you "File" it and add it to the filed Flight Plan. The procedures to be added are determined by the values of the ATC-Assigns SIDs, STARs and Approaches options. The procedures loaded for the Arrival airport may change enroute, but this way, you know what to expect while still planning the flight. Also, if you have the option to Export Cleared Flight Plan and Load Cleared Flight Plan checked, this full Flight Plan will be exported and loaded for you.

If you want to fly an IFR plan where the route is direct from the departure airport to the arrival airport, un-check this option and check the "ATC Assigns Approaches" option. That way, your approach won't appear in the Flight

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Plan and you'll not be called "off course" when flying this direct route. As you near the destination airport, ATC will assign your approach and give you vectors or clearance direct to the IAF for the approach.

Randomize SIDs and STARs – This option will provide a little more variety to your flight plans. If the Flight Plan has multiple SIDs (or STARs) for a connecting waypoint in the flight plan, this option will randomize (mix up) the selection of the recommended SID or STAR. If there aren't any connecting waypoints in the flight plan, it will be ignored. This option will be applied to the selection of procedures using Auto Plan and when ATC is assigning them.

Randomize Approach Types – This option will provide even more variety to your flight plans. Instead of always being assigned the most precise approach type – usually an ILS approach – you'll be randomly assigned the RNAV or even the VOR approach for your destination airport.

Randomize Vector Approaches – This option will have ATC provide vectors at random, even on approaches where vectors are not indicated, based on the procedure or rules for the approach.

Match SIM Runway if Known – If this option is checked, the program will attempt to determine the SIM runway in use and force that runway as the active, regardless of winds and other factors. However, the SIM runway isn't always known by the program. So, it may not be chosen in all cases where this option is checked.

Ignore Airway Altitude Restrictions – If checked, this option ignores the enroute airway altitude restrictions when calculating the Planned Altitudes and descent. If False, then planned altitudes will be modified in the Flight Plan to conform to the airway max and min altitudes.

NOTE: *If the Cruise Altitude isn't within the max and min altitudes of the airways on the route, either the airways should be changed or the Cruise Altitude altered to keep the cruise altitude within limits.*

Export Options

Import-Export SID/STAR Waypoints – When checked, an export of a flight plan will export all waypoints visible in the Flight Plan window, including those associated with a SID, STAR and Approach. By default, exported flight plans only include the Departure and Destination Airports and the Waypoints in between added by the user. Exporting them all will work well for importing the flight plan into the SIM or, for example, into the default FMS of X-Plane, which doesn't separately let you add the procedures. Most GPSs and third-party FMSs do allow you to enter the procedures separately, so use the default option for those devices.

When importing .pln files from P3D or FSX, if this option is checked – and the plan includes SIDs, STARs or Approaches – they'll be added to the Flight Plan. If an imported waypoint is invalid, the identifier will be flagged with "***" so, if desired, it can be deleted or changed. If an airway or procedure is no longer valid, it will also be flagged with "***".

Export Cleared Flight Plan – This option exports the flight plan to the folder designated in the Flight Plan Path for the active SIM. This'll occur when ATC reads your Flight Plan clearance to you. If the Flight Plan path isn't set, the export won't take place. Once the flight plan has been exported, use the Flight Plan Load function of the SIM to load it into the aircraft. This works for all SIM types. The Flight Plan will be saved with a name of "Current Flight Plan XXXX-YYYY", where XXXX is the departure airport ICAO code and YYYY is the destination airport ICAO code.

Load Cleared Flight Plan into P3D/FSX – Check this option if you want P2A to load the flight plan into the SIM for you.

Use X-Plane 11 Format - Check this box to export plans for XP11 or XP12. Uncheck if using XP10.

Misc Options

Vector Leg Distance (NM) – When you get vectors to the IAF, it will be to a point before the IAF in order to give you time to get aligned on final before passing over the IAF. This number is the distance before the IAF to which you'll be vectored. If you're flying a large aircraft at higher speeds, make this a little longer – like 4 nautical miles. If you're flying a slow GA aircraft, make this very small – like 1 nautical mile.

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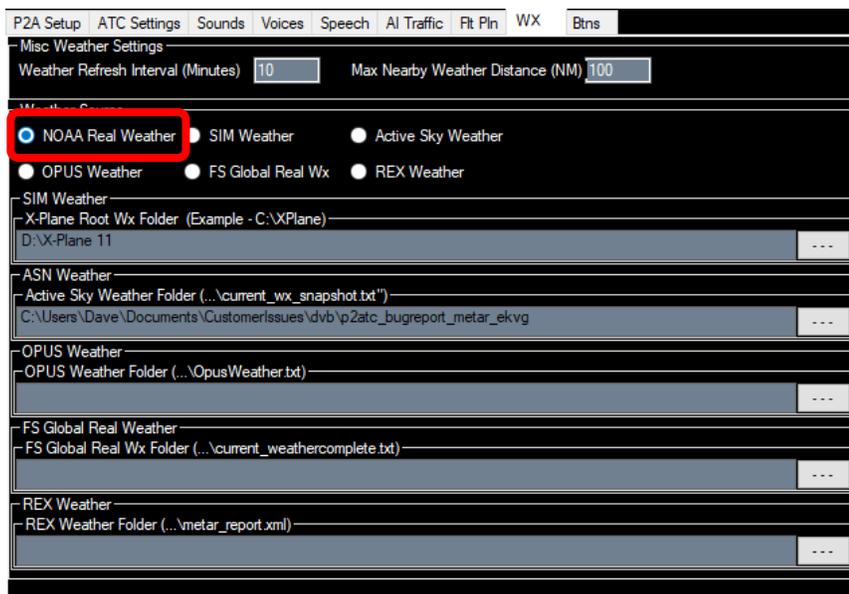
Extended Final Dist (NM)-P2A adds an Extended Final point in line with the final approach for vectoring to give you additional time to get lined up on final. If you find you are being taken out too far, reduce this setting.

Only Use Airports in AIRAC Data-Checking this option will only load the airports found in the AIRAC data. If you don't fly to remote dirt strips or backcountry strips, you can safely check this option and save significant time when starting P2A.

Flight Plan Folder

Set the default folder for storing your flight plans. When you Open, Save, Import or Export a Flight Plan, the file dialog will go to this folder – or the last Flight Plan folder you accessed.

WX (Weather Sources)



The WX tab allows you to choose the weather source you want P2A to use.

By default, it will download Real Weather from NOAA (red box). If you check this option, no other information is required.

Weather Refresh Interval

Weather Refresh Interval (Minutes) – The amount of time between trips to the NOAA website to download METAR and TAF information. The default setting is 15 minutes, primarily because that's how often the data is updated in the real world. You can set it longer or shorter here, but unfortunately, it won't affect how fast NOAA (or your chosen weather engine) updates their data. You'll also want to close and reopen the weather display window to refresh the display if it's open while you're flying.

Max Nearby Weather Distance (NM) – Specifies the maximum distance P2A will search for an active weather station. In remote areas, you may not be able to get a weather report if this is set too small.

Weather Source

Check the weather source you want P2A to use.

NOAA Weather – Check this option to continue retrieving real weather from the Internet.

SIM Weather – This option uses weather information provided by the SIM. In the case of FSX and P3D, it pulls it directly from the SIM using FSUIPC, so no additional information is required. In the case of X-Plane, it pulls it from the METAR.rwx file in the X-Plane root directory, so you need to specify the X-Plane Root directory information for this to work. You also need to verify that the METAR.rwx file exists there. Check X-Plane documentation on how to create the METAR.rwx file for custom weather. The short version is "Real weather files are initially downloaded

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via the last tab in the Weather screen in X-Plane.” Once downloaded, this file can be modified and stored to provide custom weather scenarios.

Active Sky, OPUS, FSGRW and REX Weather – These options let you pull your weather from one of these popular weather engines. When using FSGRW, you’ll need to be sure the “Export Data” option is checked so it will export the weather data to a file that can then be pointed to in the appropriate file selection area. Active Sky for X-Plane also places the current_wx_snapshot.txt file in an App Data folder at C:\Users\\AppData\Roaming\AS_XPL\Weather or C:\Users\\AppData\Roaming\HiFi\AS_XPL\Weather.



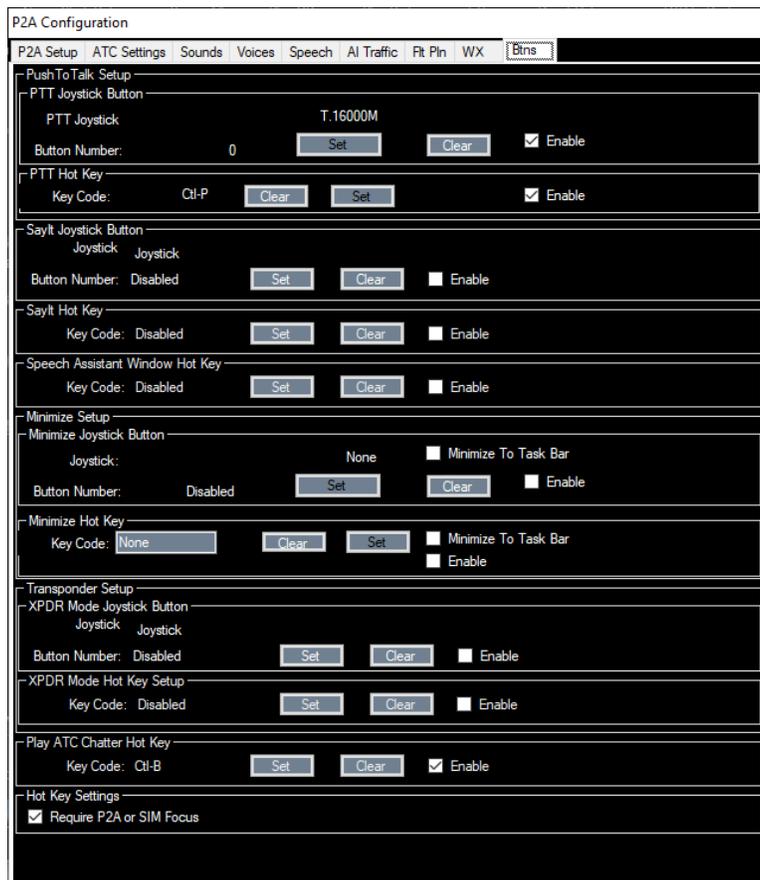
Be sure to enter the file location for the sources you want to use in the appropriate box in the lower section of this tab. The file name example for each type of weather engine is given in parentheses () after the engine name.

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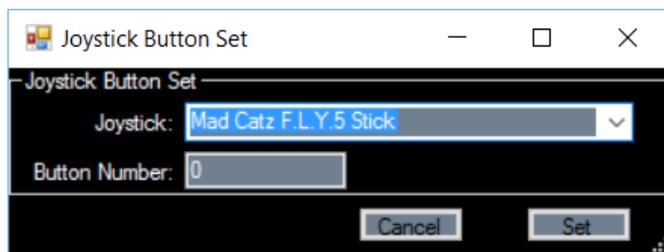
Buttons (Btns)

This tab is where you set all the Joystick buttons and Keyboard Hot Keys.

PTT Button and Hot Key

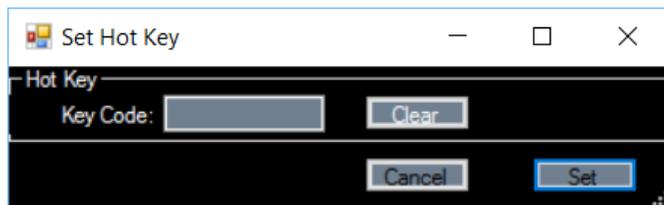


Joystick PTT Button – To set up the joystick, click on the Set button in the PTT Joystick box.



In the resulting window, select your joystick or yoke device in the Drop-Down. Click the button you wish to use as the PTT (Push to Talk) button. The button number will automatically appear in the Button Number text box when you do this. As luck would have it, I use the trigger button on my joystick and its button number is 0. So, the first time I set this, I wasn't sure it was working. If this happens to you, click another button, see that the number changes and then click the button you want again.

PTT Hot Key – This sets the hot key on the keyboard you can use as a PTT button.



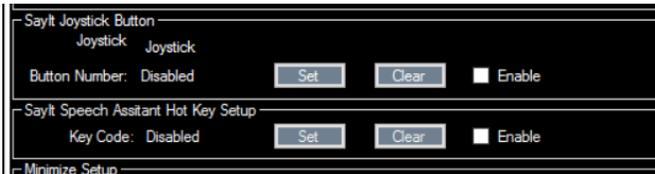
You don't have to set this, but some users find it helpful to be able to use an alternate means of clicking the PTT button. You might also use this to map a custom hardware button to a key and then set that key here to operate the PTT button. To set the PTT Hot Key, click the Set button in the PTT Hot Key box.

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In the resulting window, click an Alpha-Numeric key you want to be the Hot Key. This letter or number should display in the Key Code text area.

Click the Clear button to disable the Hot Key feature.

SayIt Settings



The next two [2] boxes allow you to set up a HotKey or a Joystick button – or both – to perform the same function as the **SayIt** button on the screen. If you use **SayIt** a lot, having one or both of these enabled would probably be a good idea. Check the “Enable” check box to enable them. This avoids inadvertent activations.

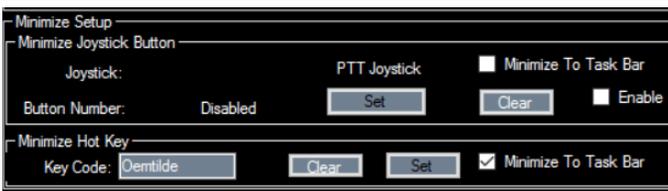
To set either the Joystick button or the Hot Key, click the respective Set button and follow the instructions from the PTT settings paragraph above. click the Clear button to disable the Hot Key or Button.

Speech Assistant Window Hot Key



This sets a Hot key to Open and close the **SayIt+** Speech Assistant window.

Minimize Button and Hot Key

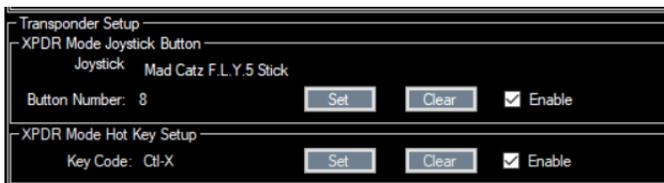


This sets a button or Hot Key that’ll toggle the view of P2A. When you click the hot key, P2A will display in the minimum window size, taking out the map and flight plan. Click again, and it’s restored to full size. Be sure to select a hot key not used by other programs because this hot key, unlike the others, is *always* hot.

Setting the button and Hot Key is done in the same way as the PTT Button and Hot Key.

Minimize To Task Bar Option – Checking this option will toggle P2A between visible and totally hidden instead of between minimized and full.

Transponder Button and Hot Key



This sets a button and/or Hot Key to toggle through all four [4] Transponder modes: Off | Standby | Active | Alt. This action is the same as clicking on the Transponder mode in the upper right of the main window and is primarily useful to those users flying with P2A not visible.

Play ATC Chatter Hot Key



This hot key allows you to toggle the ATC Chatter on and off, avoiding the need to go into Config to accomplish this during a flight.

Hot Key Settings

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This area has settings applying to all enabled hot keys.

Require P2A or SIM Focus – If this option is checked, either P2A or the SIM must have the focus in order for the Hot Key to be active. This option is useful if you have other programs that might use the same Hot Key and you want to be able to use them while P2A is running. The PTT Hot Key isn't affected by this setting and so should be a unique key across all applications.

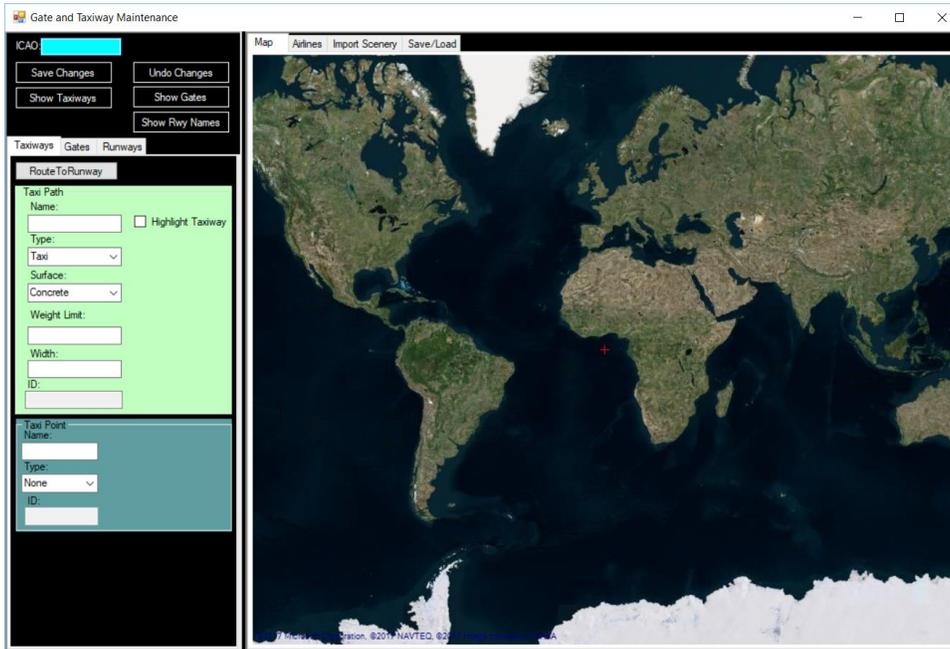
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Taxiway Maintenance

Taxiway definitions in the database are usually close enough to provide a good ground operation experience. Sometimes, however, airport taxiway names change or new taxiways are added that aren't in the database. In these rare cases, changes can be made to the default taxiway configuration using the **Taxi Mnt** button.

NOTE: *This feature makes changes to the P2ABaseData.mdf database file located in the Data subfolder of the P2A installation folder. Be sure to make a backup of this database file before beginning to use Taxiway Maintenance. ALSO, only use this window when NOT FLYING as it prevents using the main window while open.*

Click the **Taxi Mnt** button to the right of the flight plan on the main P2A Screen. The following window will open.



Enter the airport code (EGPD) in the ICAO text box and the map will zoom into the desired airport.



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Viewing Taxiways

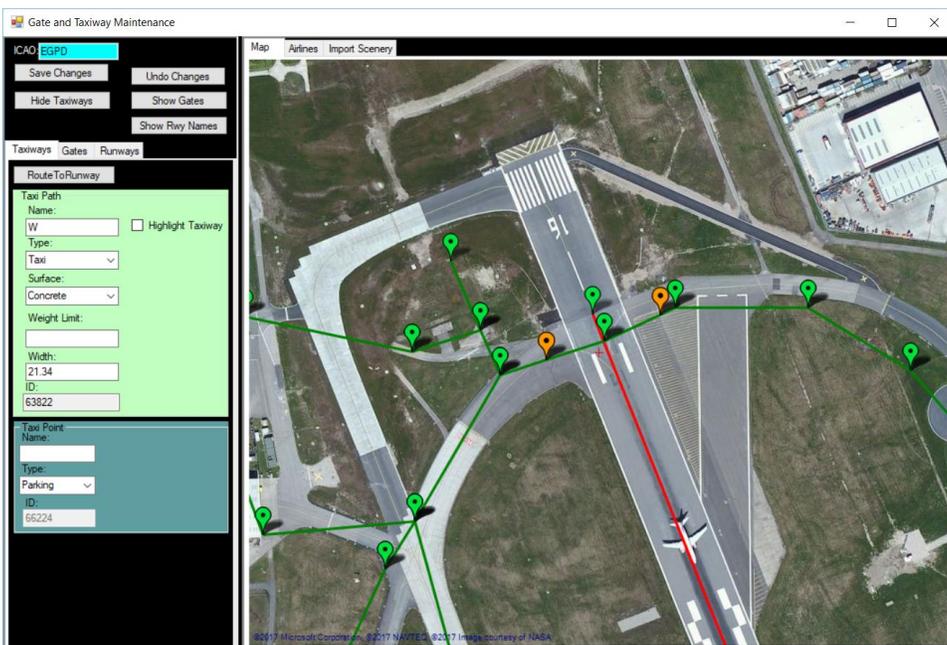
Click the Show Taxiways button to see the taxi paths and runways.



Each of the green “push pins” represent a taxi point; each green line represents a taxi path. A collection of same named taxi paths makes a taxiway. Near the runway, you should see the “Hold_Short” taxi points displayed as orange pins.

The green taxi paths are active taxiways. The red lines and push pins are runways.

To work on an area of the airport, use the mouse wheel to zoom into a level that makes the area you want to work on visible with adequate separation of the pins to be able to select items.

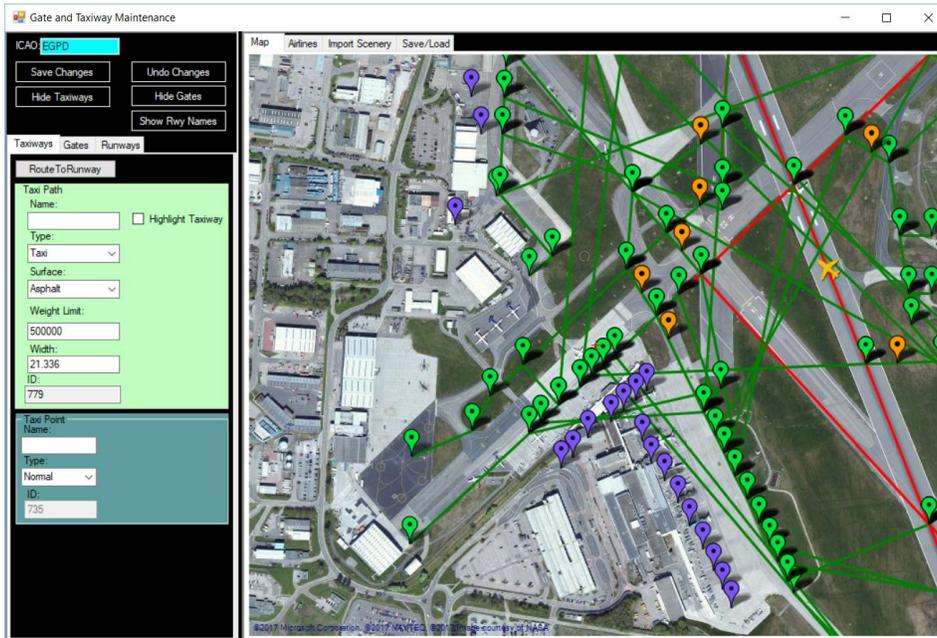


If you haven't yet imported taxiways, there may be extraneous green lines (taxi paths). We'll clean these up when we import the taxiways.

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Viewing Gates

To view the gates, click the Show Gates button.



The Purple “push pins” represent Gates, including Ramp parking spots.

Importing Airport Taxiways and Gates

We can import the taxiway data from our FSX, P3D or MSFS installation using Pete Dowson’s MakeRwys tool. Download that tool here: <http://www.schiratti.com/dowson.html> or [Pete & John Dowson's Software \(fsuipc.com\)](http://www.fsuipc.com)

IMPORTANT NOTE: *Be sure and read the documentation, especially if you’re using it with MSFS as things have changed in the newest version 5.x.*

After you’ve run MakeRwys according to their instructions, you’re ready to import Taxiways and Gates into the P2A database. While there’s a facility to do this for all airports in a single import, realize any prior changes will be overwritten and it may take a considerable amount of time to do all the airports (10 to 20 minutes). Also, many airport sceneries don’t have enough valid taxiway information to enable P2A to create taxi routes. **You should BACKUP your P2ABaseData.mdf and P2ABaseData_log.ldf files before importing.** Then, test the ability of P2A to create taxi routes before you import another airport. Again, importing one airport at a time is highly recommended. We’ll demonstrate importing just the taxiways and gates for EGPD.

If you’ve added scenery that includes airports not in the AIRAC data, if they have defined runways and taxiways, they’ll also be imported from MakeRwys. **In order for these airports to be usable, be sure to uncheck the option in Config->Flt Plan to “Only Use Airports in AIRAC Data”.** That option, when checked, only loads the AIRAC airports to improve load times at startup.

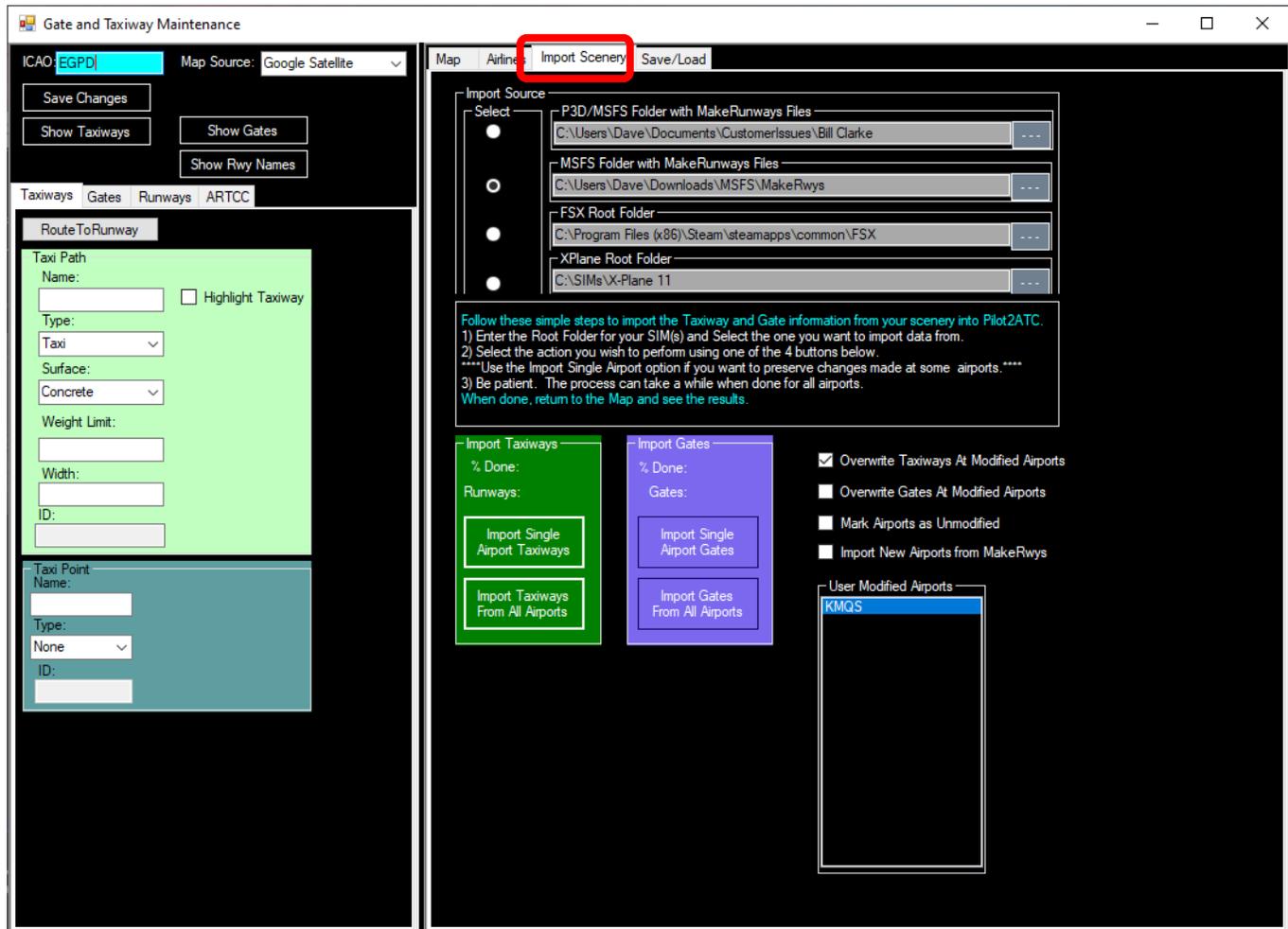
For X-Plane, the import can be done for a single Airport at a time and the airport must exist in the database. You should only import an airport you’re confident has good taxiway and gate information in a Custom Scenery file or the default scenery, but be sure and backup your P2ABaseData.mdf file in case the imported data isn’t as good as the default data.

When you import taxiways or gates, a save file is created (See Save and Load section for details) in the P2A_Backups folder of the Data file. If you don’t like the results of the import, load the backup file and you’ll be restored to the condition before the import. This saved file is replaced each time you import. If you want,

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manually save the existing taxiway or Gate data to different names to create multiple restore possibilities if making changes or importing from various sources.

To get started, click the Import Scenery tab (red box) and you'll be presented with this screen.



To start, enter the folder where your MakeRunways.exe file was run. **Be sure the runways.xml, t5.csv, r5.csv and g5.csv files are in the folder you specify.** By default, this will be in the folder you ran MakeRunways from. You also need to select which source you want to use by checking the button next to the desired SIM. Make sure you have ALL scenery layers active before running MakeRwys.exe.

COMMENT: *If using X-Plane, be sure and enter the X-Plane root installation directory.*

Notice the green and purple boxes beneath the instructions.

- The green box is used to import Taxiway and Runway data from the t5.csv and r5.csv files created by MakeRwys or from the X-Plane scenery files.
- The purple box is used to import Gate data from MakeRwys g5.csv file or X-Plane scenery files.

Import Taxiway Options

Overwrite Taxiways At Modified Airports – Checking this option will replace taxiway data for all airports, even if they have been modified manually. If you have made modifications to your airports that you want to keep, be sure to uncheck this option.

Overwrite Gates at Modified Airports–Checking this option will replace Gates at all airports, even where you have modified the gates manually. Uncheck this option if you want to keep your manual modifications.

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Mark Airports as Unmodified-Check this option if you want the airports to be removed from the Modified Airports list.

Import New Airports from Make Rwys- When importing all Taxiways/Gates from Make Runways, you can check this option to include airports from the Scenery that are not in the AIRAC data. These are usually small or back-country strips, private grass strips, etc. If you do import New Airports, when you start P2A again to refresh the data, it will take several extra minutes to merge data the first time. After that, it will save the merged airport identifiers and subsequent loads will be much faster.

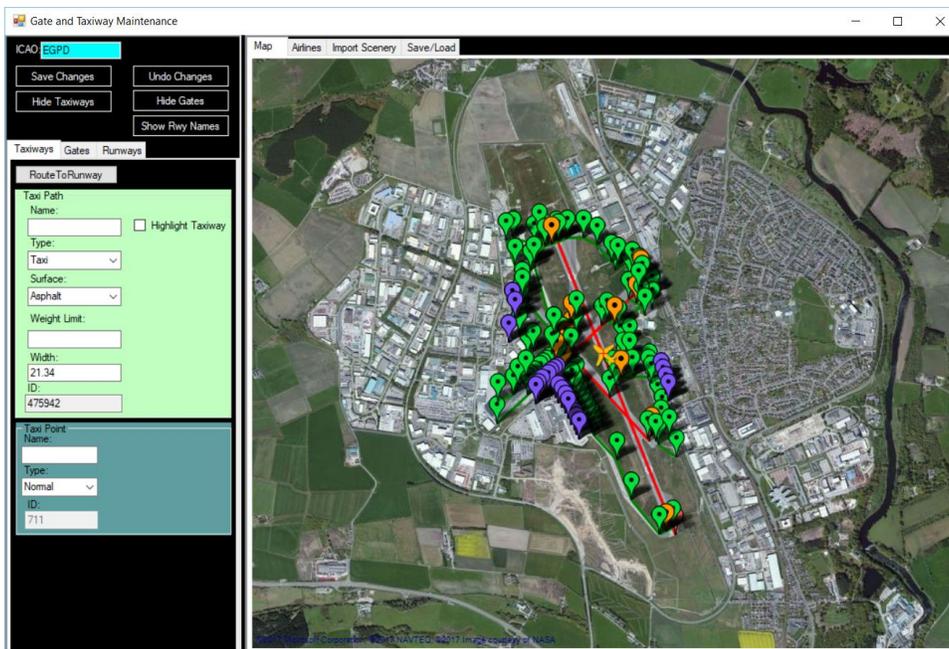
Import Taxiways

To import the taxiways for the selected Airport (EGPD), click the “Import Single Apt Taxiways” button in the Import area at the bottom of the left pane. Answer “Yes” to the Data Loss Warning message and “No” to the Run MakeRwys message, unless you want to run MakeRwys again.

NOTE: If you’re running P2A on a remote PC, you can’t start MakeRwys from P2A. You’ll just get an error no taxiways were found.

The program will now import the taxiways listed in the t5.csv file and the runways listed in the r5.xsv file. For EGPD, it goes quickly since this is a small airport. Large airports might take several minutes, though most will finish in less than a minute.

When done, the map will zoom out to show the entire airport and our screen now looks like the following. We’ll edit these taxiways later.



For X-Plane, the program will read the scenery_packs.ini file. If the airport is listed as active, will import the apt.dat file in the specified folder – or – if none is found in the scenery_packs.ini file, from the global default apt.dat folder.

IMPORTANT NOTE: *If importing from Custom Scenery, the folder name that contains the Earth nav data/apt.dat file must include the Airport ICAO identifier in the folder name and that folder must be listed in the scenery_packs.ini file before any other folders that have the airport identifier in its name.*

For example, of the following five [5] scenery_packs.ini entries, only the three [3] bolded ones will be looked at for import.

- **SCENERY_PACK Custom Scenery/Aerosoft - EDDF Frankfurt/**
- **SCENERY_PACK Custom Scenery/X-Plane Landmarks - Chicago/**

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- SCENERY_PACK Custom Scenery/X-Plane Landmarks - Las Vegas/
- **SCENERY_PACK Custom Scenery/KCLT/**
- **SCENERY_PACK Custom Scenery/KACT/**

If you have the following entries, you'd have to reverse the order so KBPT_Roads, which doesn't contain airport data, comes after KBPT_Scenery_Pack containing the apt.dat file.

```
SCENERY_PACK Custom Scenery/KBPT_Roads/  
SCENERY_PACK Custom Scenery/KBPT_Scenery_Pack/
```

Many X-Plane scenery artists don't specify which taxi points are "hold short" vs "normal" points. If that's the case, import and manually change each taxi point next to the hold short lines of the runways to a type of "Hold_Short".

COMMENT: *If you're modifying an airport using WED, put the phrase "hold short" in the name of the appropriate points / vertices and it will be read in with the import by P2A.*

Gate Imports

Before moving on to editing the taxiways, let's import the gates. To do so, select the Gates Tab in the left pane and the screen will look like the following.

Click the Import Single Apt Gates button in the purple area of the Import tab, answer "Yes" to the Data Loss Warning message and "No" to the Run MakeRwys again message.



The new map is displayed as before, but with just the Gates showing. If you have custom scenery, it could be quite different from before. We'll edit these gates a bit later.

- In the case of P3D/FSX, the data is read from the g5.csv file created by MakeRwys.exe. Airline associations, if they exist in the g5.csv file, will be imported along with other gate information.
- In the case of X-Plane, the data is read from the same apt.dat file that was used in the Taxiway/Runway import. These files don't contain airline assignments, so these will have to be done manually after import.

Importing ARTCC Center Information

ATC Centers (or ARTCCs), control IFR traffic outside areas controlled by Towers, Approach and Departure controls. The boundaries of these Controllers' authority and their frequencies are included in the P2A Database. However, this data may become outdated.

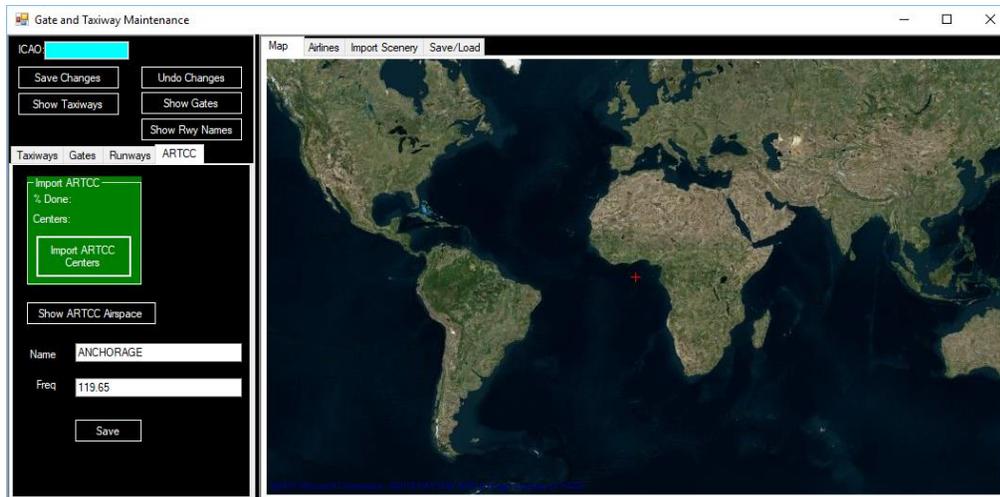
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The ARTCC tab in the left hand pane, allows you to import updated Center data from your P3D or FSX scenery file. FSAeroData (<https://www.fsaerodata.com/>) offers a subscription for updated P3D/FSX data that includes an updated bvcf.bgl file.

This file is located in your P3D or FSX scenery folder at\Scenery\World\Scenery\bvcf.bgl.

To accomplish this do the following:

- Download the BGL2XML utility (<http://www.scruffyduck.org/bgl2xml/4584282773>) to convert the scenery file to an .xml file which can be read by P2A.
- Run the utility to create a file named bvcf.bgl.xml
- click the Import ARTCC Centers button and point to the file that you've converted to xml in the previous step.

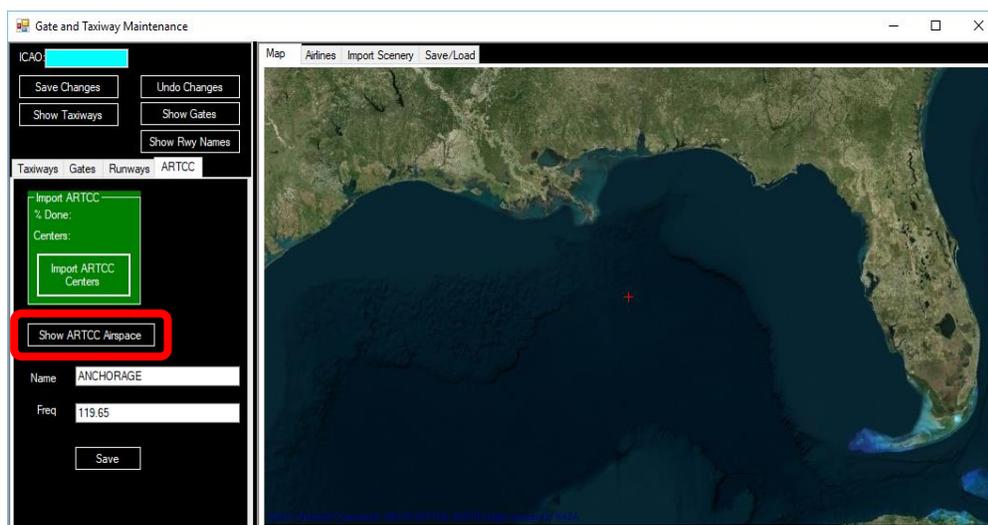


Editing ARTCC Center Names and Frequencies

Edit the Controller names and frequencies if needed on this tab. The boundaries can't be edited here. Follow these steps to edit a center Controller's data:

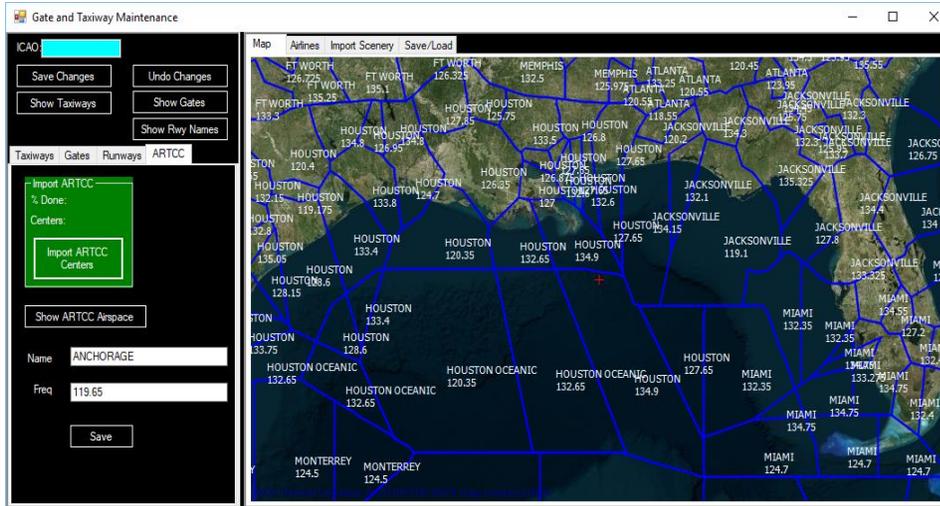
- Zoom the map in to the area in which the Controller boundary will be. The smaller the area displayed, the faster the boundaries will render.

NOTE: *Large areas can take a LONG time.*

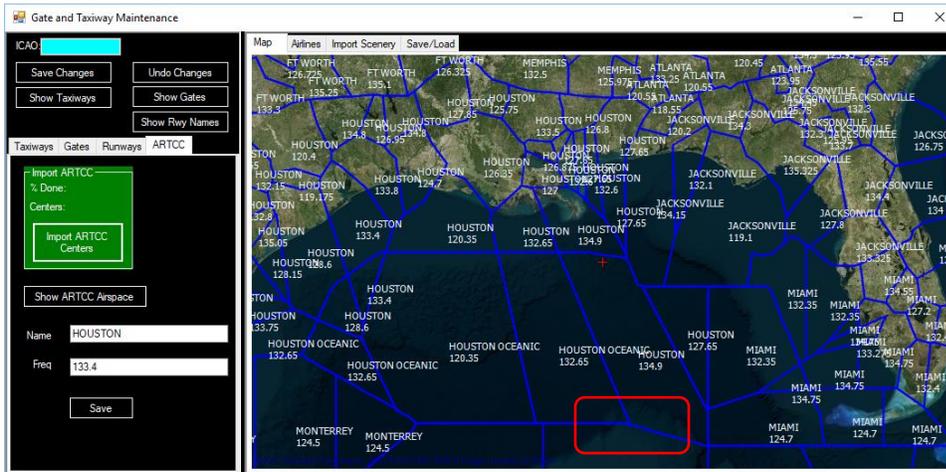


- Click the "Show ARTCC Airspace" button (red box) and wait for the boundaries to show. This area took about 20 seconds to show the following.

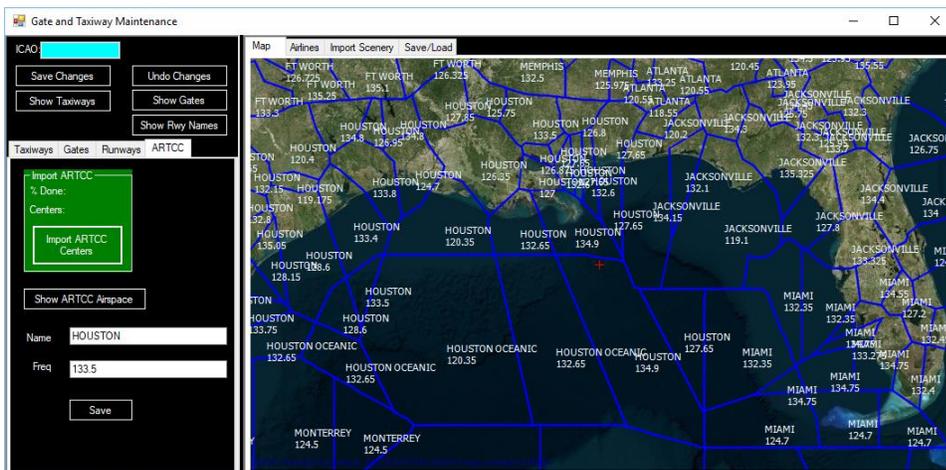
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- Click on the Controller name you wish to edit. This'll populate the edit area on the left with that Controller's Name and Frequency.



- Now make the desired changes and click Save. In this case, we'll change the frequency to 133.5. After clicking Save, the new information is displayed on the map and saved to the database.



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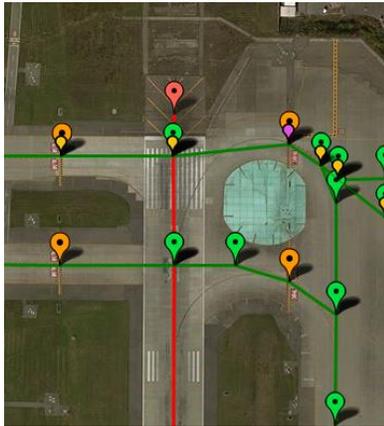
Taxiway Maintenance

Taxiway maintenance completed in P2A only affects the determination of taxi routes for ATC and the drawing of taxi routes on the map when you click the **Taxi** button. Therefore, it's only worthwhile when your taxi instructions are not in sync with the depiction of the airport in the SIM. To affect the smooth movement of AI Traffic, etc., edits should be made in a tool designed to modify the SIM's scenery – such as WED for X-Plane.

Taxiway Editing Rules

Here are some rules or guidelines to follow when adding or editing taxiways in P2A.

1. Keep it simple. Don't try and smooth out curves with multiple taxi points etc. Remember, aircraft won't be following these lines. They'll only be used to determine a route. If a curve is already defined, it can be left unless it's violating one of the rules or causing some other problem. For example, a large curve could cause the most direct route to appear longer to the program and cause it to create a route that seems illogical.
2. **SAVE OFTEN**. If you're adding and deleting taxi points and paths, they don't get IDs assigned until you Save. This can cause some confusion when certain actions are taken, resulting in errors or lost work. **SAVE OFTEN**.
3. Hold Short points should be associated with one and only one Runway.
4. Hold Short points should only be used adjacent to runways that'll be crossed or entered into directly. No intervening taxi points should stand between the Hold Short point and its associated runway. The taxi point highlighted below should be removed so the Hold Short Point connects directly to the Runway taxi point.

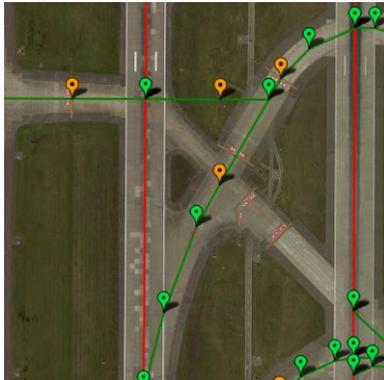


5. Runways should extend beyond any Hold Short points that attach to the runway. In the first screenshot below, the runway end should be extended into the overrun so the two [2] Hold Short points are adjacent to the runway rather than behind it, as in the second screenshot.



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- All taxiways crossing or connecting to a runway should have one [1] Hold Short point adjacent to the associated runway and a connecting taxi path to the runway taxi point. And remember rule 3. In the following screenshot, the taxipoints in red boxes should be deleted. The taxi path and Hold Short cutting across the grass (Blue Box) should also be deleted. The remaining Hold Short point can be moved back to the line also.

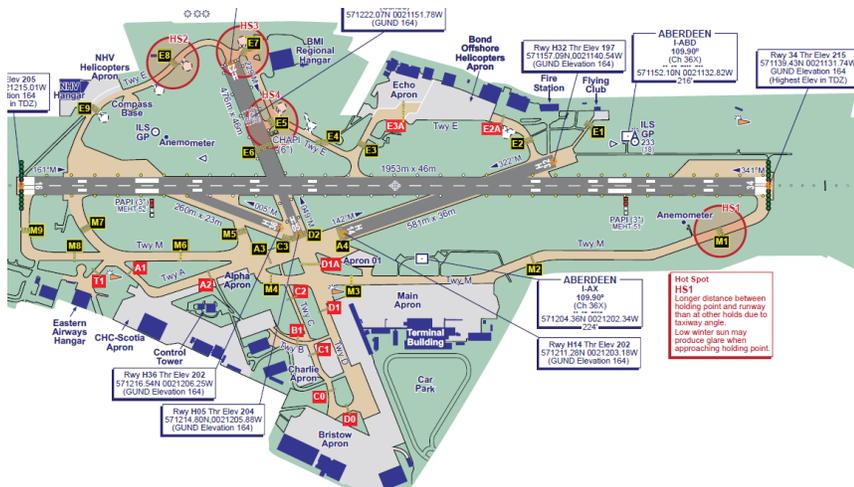


When done, it would look like the **left** screenshot below – or – if you want to add the diagonal taxiway, the **right** screenshot below.



Taxiway Edits

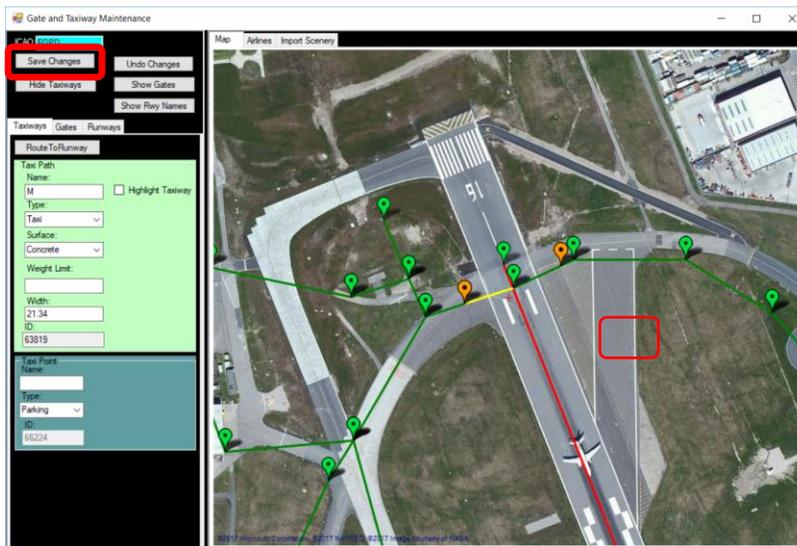
At Aberdeen, the database has the main taxiway parallel to runway 16 and named W. On the chart, it's named M. We'll merely rename the taxi paths that make up that taxiway to make it conform to the current Airport Diagram.



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To change the name of the taxiway, follow these steps:

1. Select the first taxi path to be renamed by clicking on the green line while the cursor is the small hand symbol. The line turns yellow to indicate it's selected, and the Taxi Path Name on the left is W.



2. Change the Name of the Taxi Path to M. Click on each Taxi Point, and if they're named W, rename them to M. Note not all Taxi Points have names – that's okay. You can leave these blank.
3. Select the next Taxi Path. Repeat the steps above until all taxi paths named W have their names changed to M.
4. Click the Save Changes button (red box).
5. You can click the Hide Taxiways button and then the Show Taxiways button to see if the changes are saved. You're done, so close the window and respond Yes to the dialog on whether to save changes or not.

Adding Taxi Paths

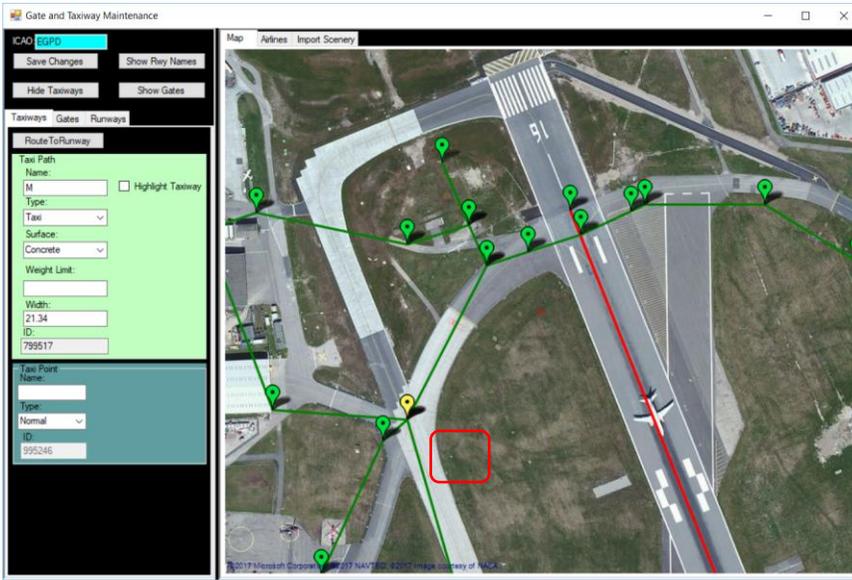
Notice the taxi paths going to the Departure point for Runway 16 are missing. The hold points M8 and M9 in the airport diagram are not represented in the database, so let's add some taxi paths.

First, we want the new taxi paths to connect into the existing Taxiway M. So let's choose the taxi point in taxiway M that we can use to start from.



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Notice it's not lined up quite right... Select it and move it slightly to the left to be in the middle of the taxiway.



To create the new taxi path:

1. Right-click the selected taxi point and choose "Add Taxi Path – First Taxi Point" from the drop-down menu.



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2. Right-click in the middle of the taxiway near the turn to the right and select “Add Taxi Path – Second Taxi Point” from the menu.



3. A new taxi point and a connecting taxi path will be drawn on the map.



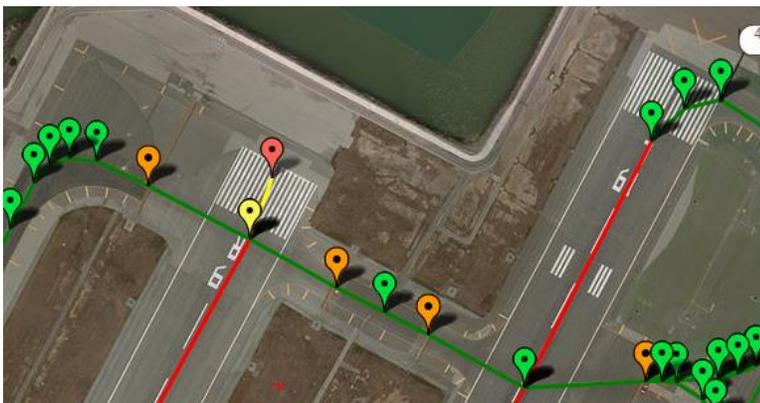
4. Name the new Taxi Path M – if it's not already named that. It'll take on the attributes of the connected taxi point.

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5. Connect our new path with the Runway. Move the TaxiPoint at the very end of the runway back to the very start of the runway. Like before, select the new taxi point and right click, selecting Add Taxi Path – First Taxi Point. Then select the Green Taxi Point at the very end of the Runway and right click, selecting Add Taxi Path-Second Taxi Point. Our Taxiway now looks like:



NOTE: *If this were a parallel runway situation where the taxiway needed to cross over this runway, instead of connecting to the taxi point at the very end of the runway, we would need to add a taxi point to the runway just before the very end and connect our taxipaths on either side to that taxi point. For example, RW19R at KSFO in the screenshot to the left needs to be modified.*



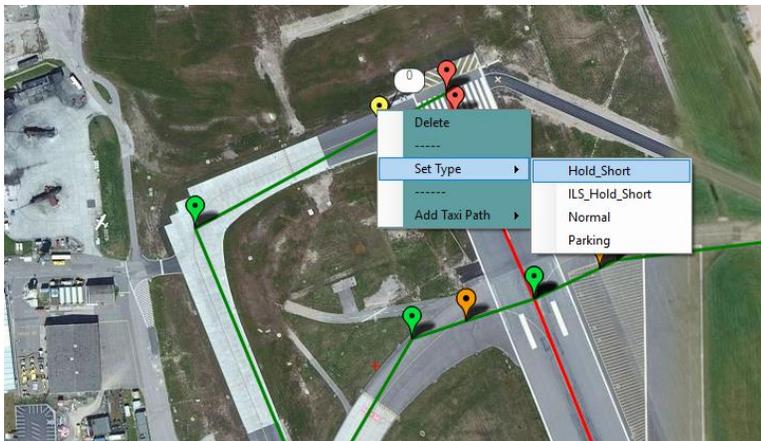
To look like the following screenshot with the changes highlighted in yellow and also a new taxi point added between the 2 Hold Short taxi points. Hold short taxi points should connect directly with the normal taxi point that's part of the runway (yellow below). Also, Hold short taxi points should always be separated by at least one normal taxi point so the program treats them separately (Green taxi point with red box below).

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- Now we can add a Hold Taxi Point by first selecting the new taxi path, right clicking and selecting Add New Taxi Point, as in the following screenshot.



- Now select the new taxi point and change the taxi point type to Hold Short, as in the following shot:



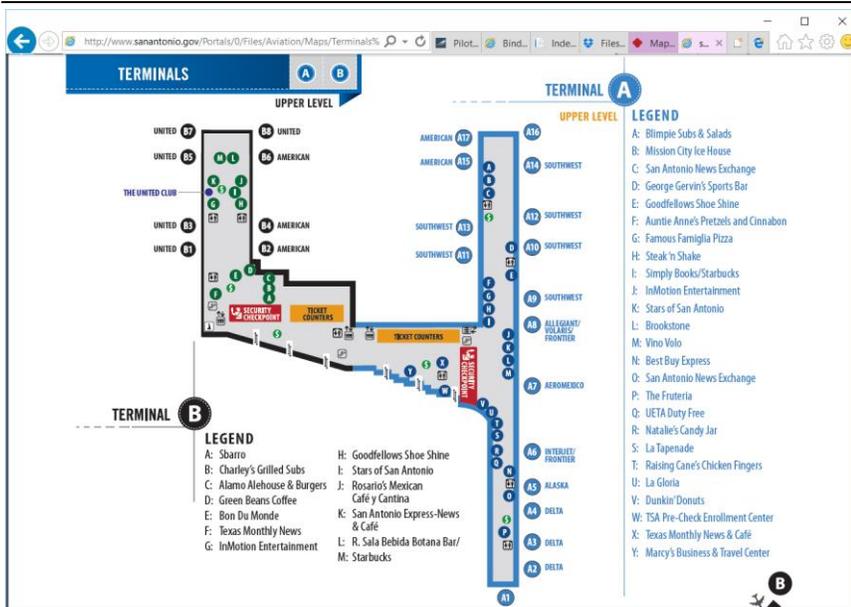
- Click the Save Changes Button, close the window and choose Yes to the prompt. Then, reopen to see that the changes were saved properly. Finish editing the airport by dragging taxi points to their proper locations and renaming taxi paths to match the airport diagram.

Editing Gates and Parking

Now let's take a look at editing Gates and Parking areas. We'll use KSAT – San Antonio International Airport in Texas.

The first task is to find an airport diagram with Gate, and preferably Airline information. Here's the one for KSAT:

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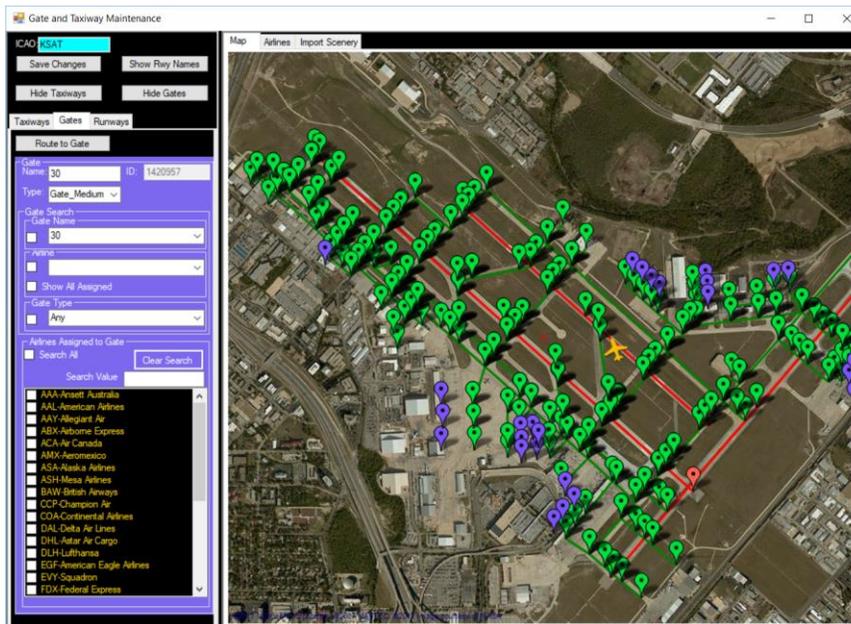


This is better than most as it has both gate names/locations and assigned airlines. Most major airports have such maps, but some are easier to find than others.

Enter KSAT in the ICAO text box in the upper left of the Taxi Mnt Screen and click Enter. As you can see in the screenshot below, the Taxiways and Gates from FSX have already been imported, so we have a nice clean airport to start with.

On the left side of the screen, you'll see the selected gate shows Name, Type and ID. The ID is only for troubleshooting and can't be changed. There's also a list of Airlines we can associate with each gate.

The Airline list is a small subset of the full airline list that's found in the Airlines Tab, "behind" the Map tab.

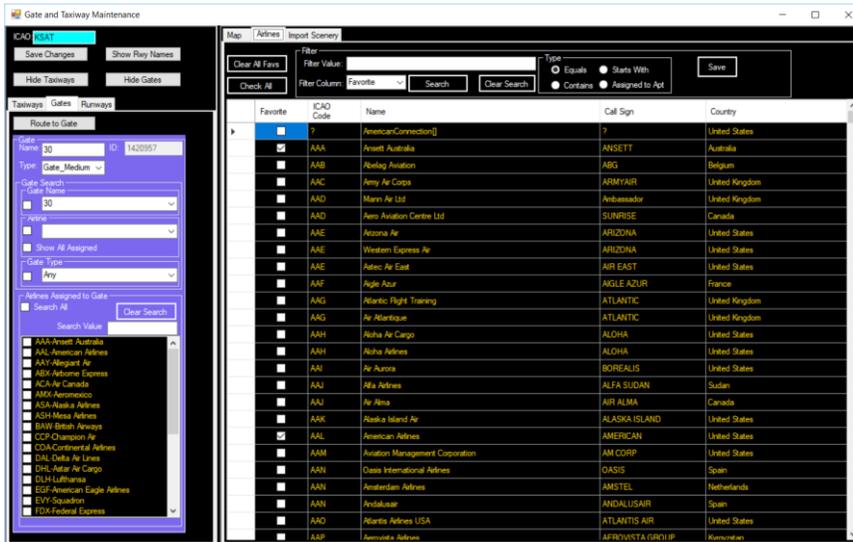


Let's first take a look at the Airlines tab then come back to the gates.

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Airlines Maintenance

Click on the Airlines tab above the map and you'll see the following:



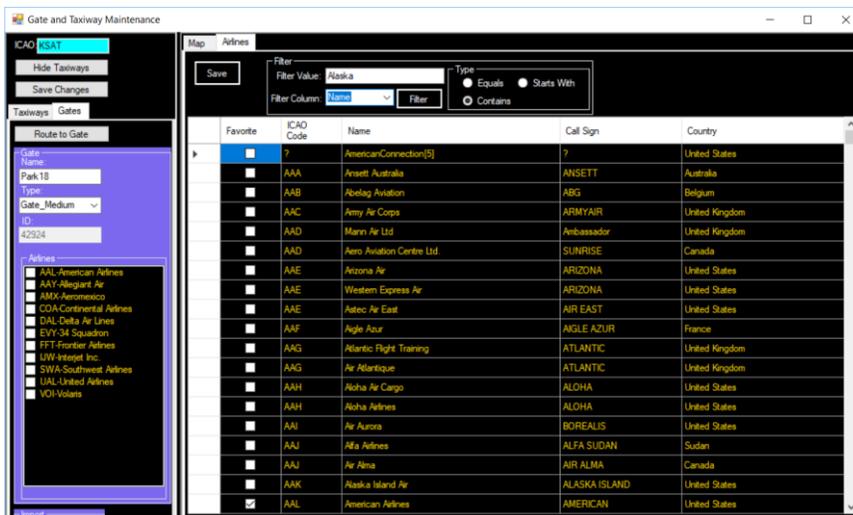
This is a comprehensive list of airlines from around the globe. It includes the Airport Code, Name, Call Sign used by their flights, and Country. There're well over 6,000 airlines in this list!

Normally, you'll be interested in working with a very small subset of these at any given time. The Favorite column allows you to place a checkmark next to an airline and add it to the list of "favorites" that's displayed under the gate definition in the left pane.

Above the list, you'll see a Filter area that'll help you find the Airline(s) you want to add to the favorites list.

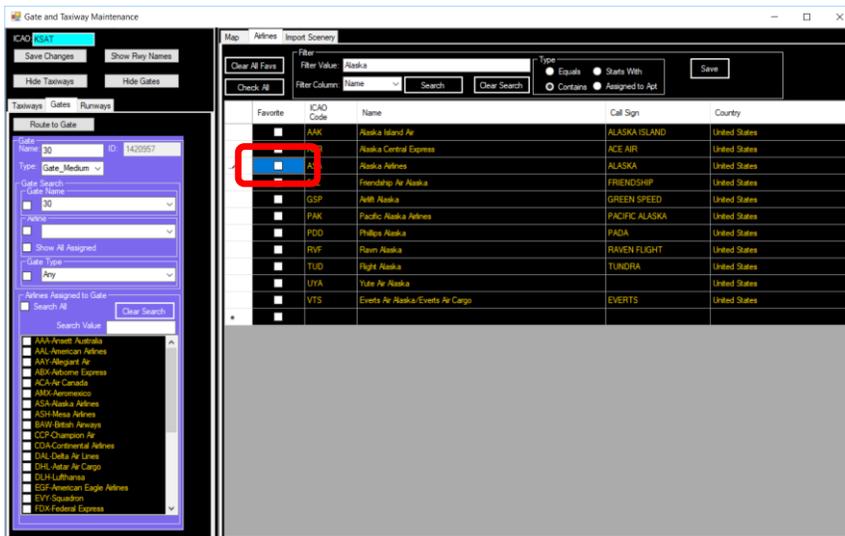
Looking at the KSAT Terminal map, you'll see there's a gate for Alaska Airlines, which isn't in our favorites list, so let's search for it and add it to the list.

First, enter Alaska into the Filter Value. Then select "Contains" as the Filter Type so it will search for any value that includes the work Alaska. Finally, select Name as the Filter Column.

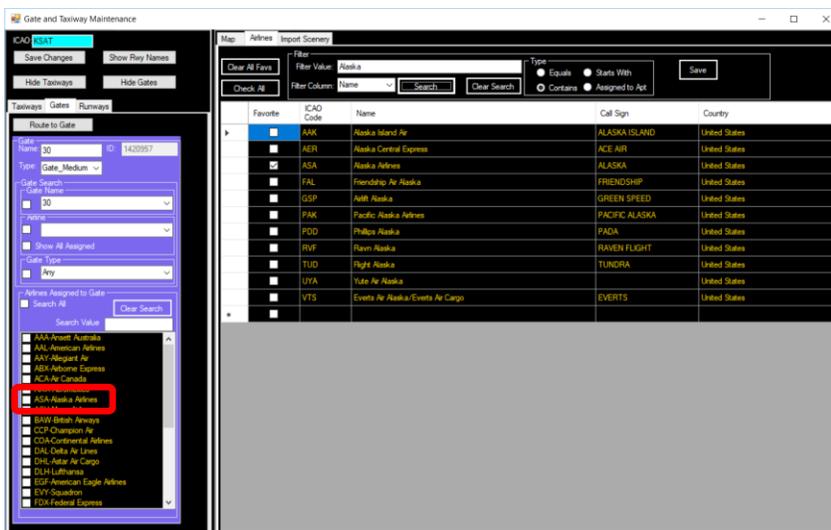


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Click the Search Button and you get this:



Only 11 of the 6,000+ airlines contain the word “Alaska”. The one we want (red box) has an ICAO Code of ASA. Check the Favorite box (red box) and click Save. It will be added to our favorites list on the left.



Now we’re ready to edit the gates, so click the Map tab at the top and we’ll start editing.

Moving, Adding and Deleting Gates

We interact with Gates in about the same way as we did with Taxi Points.

Select – Click on the Push Pin

Move – Place the mouse over the marker so you see the Gate name; click the mouse button; move the push pin; and, release the mouse button.

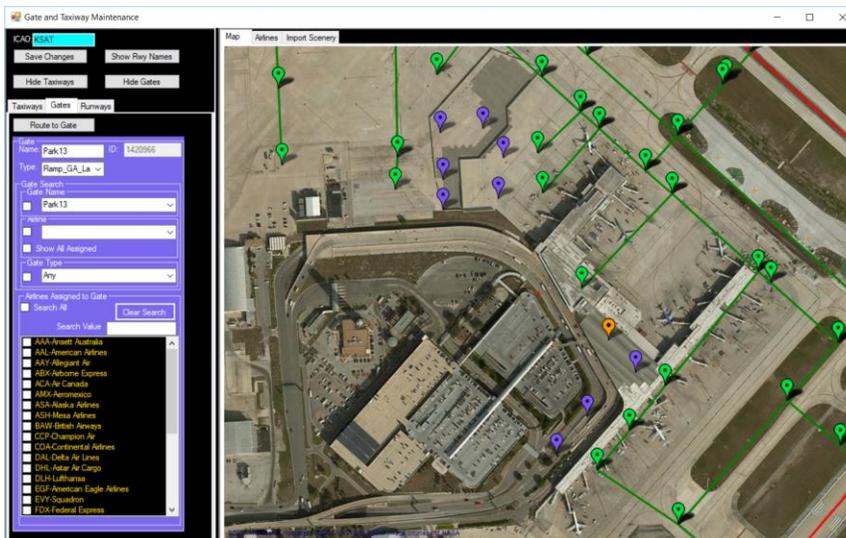
Delete – Select the Gate Marker, then right-click and select Delete Gate from the menu.

Adding – Place the mouse where you want a gate, right click, and select Add Gate from the menu.

Let’s try adding some gates to the Terminal at KSAT.

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First, zoom in so you can see the terminal area. Notice it looks a lot like the Terminal map. You'll also notice there're no Gates at the Terminal. Moussing over the few purple markers near the terminal, you'll see they're all misplaced parking areas. Click on them and you see they're of type Ramp_GA_Large. You can move them to an appropriate area for now... almost anywhere will be better than the middle of the food court!



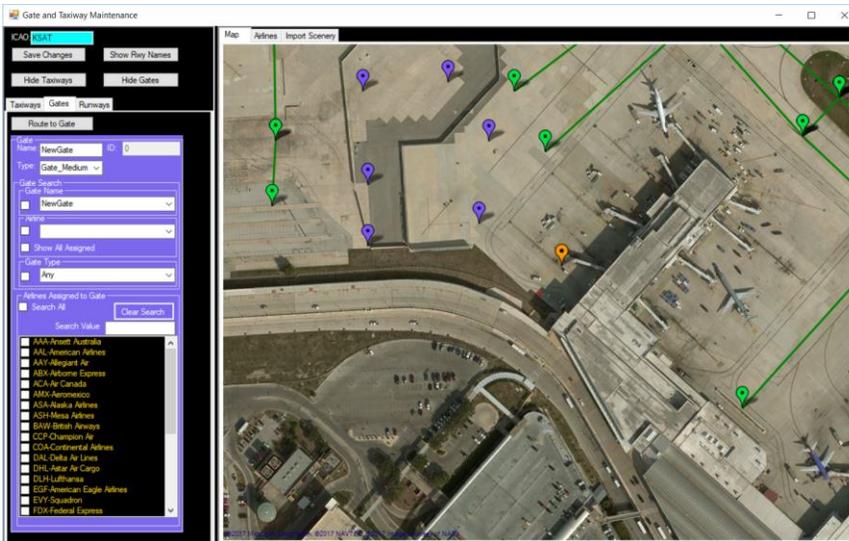
Also notice the taxiway to the Southeast of Terminal A... It needs to be moved out to the Ramp Taxiway line so we can add gates there. Practice your moving skills and get the taxiways near the terminal all lined up properly. If you click on a marker and the map starts moving instead of the marker, click on the map. Then, try clicking and moving the marker again. Below is what mine looked like, but I didn't finish with cleaning it all up.

We'll start adding gates at B1 (red box).



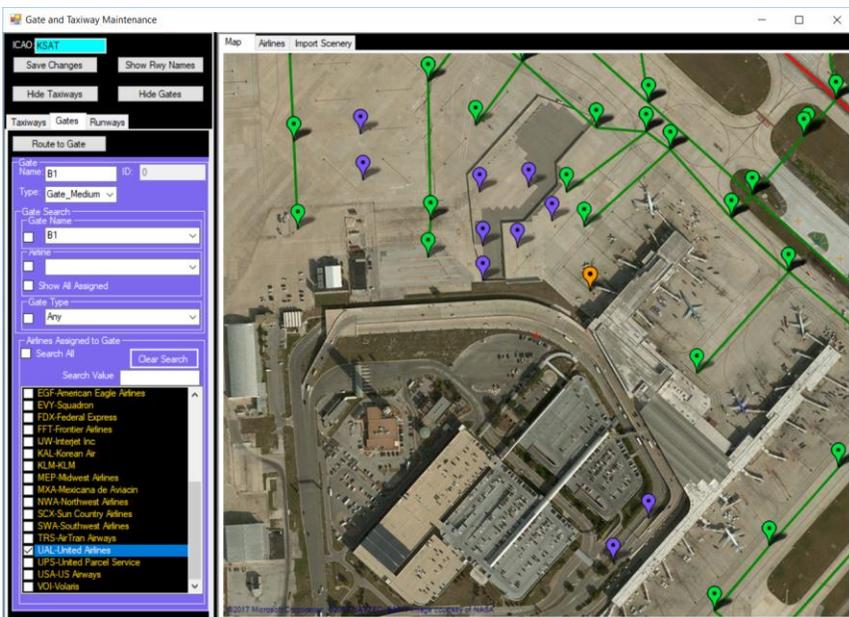
Notice the Satellite Photo makes it easy to see *exactly* where each gate should be placed. Just put your mouse where you want a gate, right-click and select Add Gate.

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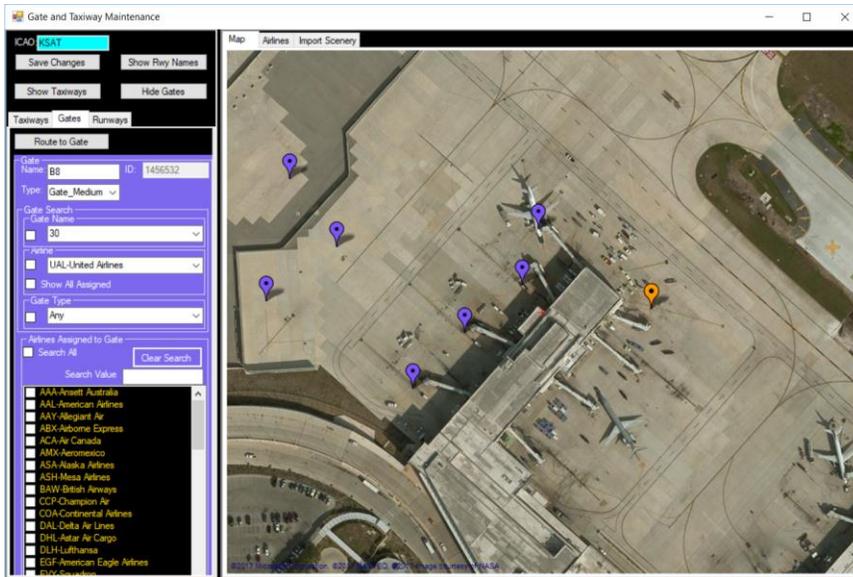
The Gate Marker is added and the Gate information on the left shows the new gate's data.

Change the name to B1. Leave the Type as Gate_Medium. Put a check next to United Airlines (UAL) since this gate is assigned to them. Click Save and you've added your first gate. Repeat for all the other gates and you'll be done.

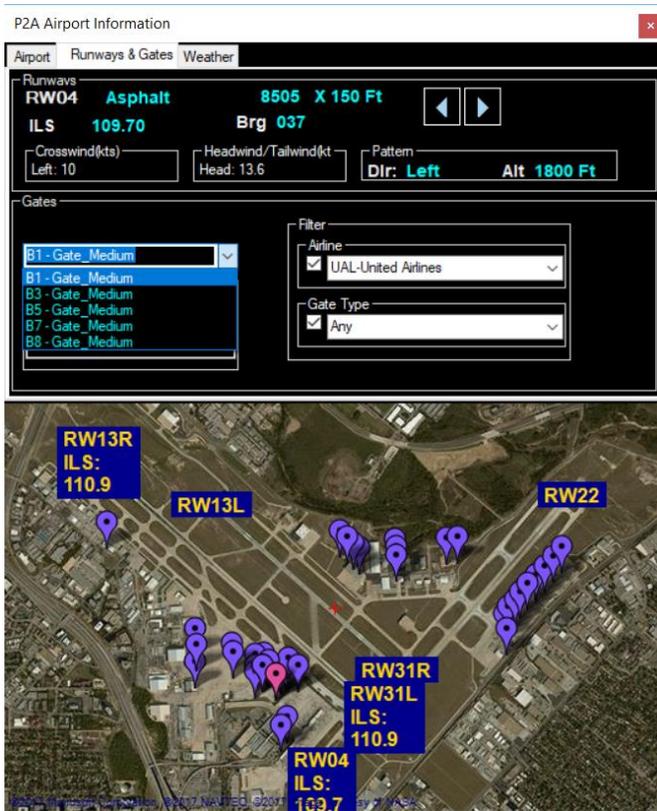


I've added Gates B1 through B8. Notice the markers are placed at the end of the Gate Taxi line on the concrete, **not** on the empty gate. B7 is placed over the aircraft that's parked on the line.

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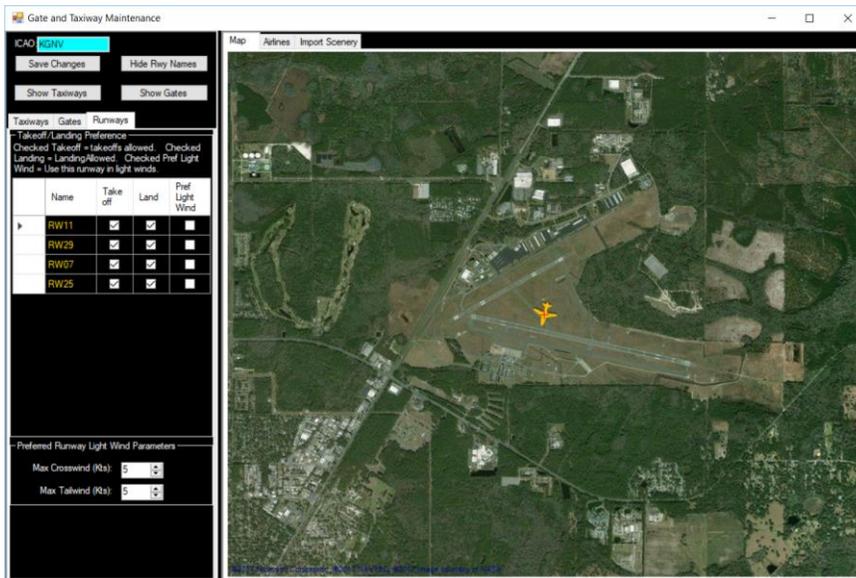
You'll also notice the ID of each gate when you first create it is 0. It'll change to a valid ID value *after* you save your work. We check our work in the Info Panel. Filter on UAL for the airline and Gate for the type and we get this:



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Runway Preferences

To use the preferred runway capability, open the Runways tab in the Taxi Mnt window with the desired airport selected. Here, it's Gainesville, Florida (KGNV).



When runways are imported from P3D or FSX, the program picks up the CT (Closed for Takeoff) and CL (Closed for Landing) markings, if any. In the default P3D and FSX – or in X-Plane – there're none of these. All runways are designated as available for Takeoff and Landing. So it looks like the markings above.

If we want to never use Runway 07/25, then remove those check marks and that'll eliminate them from consideration as active runways. If we always want to use RW 11 when winds are light enough to allow that, we check it as the Preferred Light Wind runway, as below.

COMMENT: *You'll see an error message if you uncheck all runways from the Takeoff and Landing columns since that would leave the airport useless.*

We need to define "Light Winds" for our preferred runway. By default, light winds are defined as crosswind and tailwind components less than or equal to 5 knots. If the Preferred runway meets these criteria, it'll be used instead of other runways that might be more favorably aligned. You can change these default values in the Preferred Runway Light Wind Parameters area below the list of runways.

This less-than-optimal wind alignment runway usage is common at large airports when winds are light and variable and normally would favor the availability of Instrument Approaches, proximity of the runway to parking areas, etc.

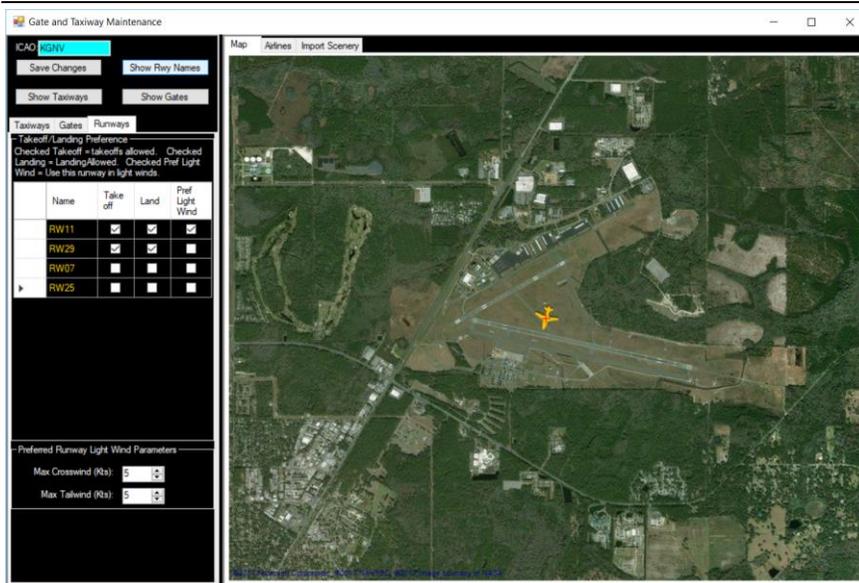
Information about preferred runways, if any, is normally available in the Airport's Operations Information (AOI) charts.

Misnamed and Missing Runways**:

When importing runway information, P2A also compares the runway names to those available in the installed AIRAC data. If there's a discrepancy, "***" is appended to the name, indicating you should do some research and either rename the runway – or – if the runway no longer is in use, uncheck both Land and Takeoff boxes.

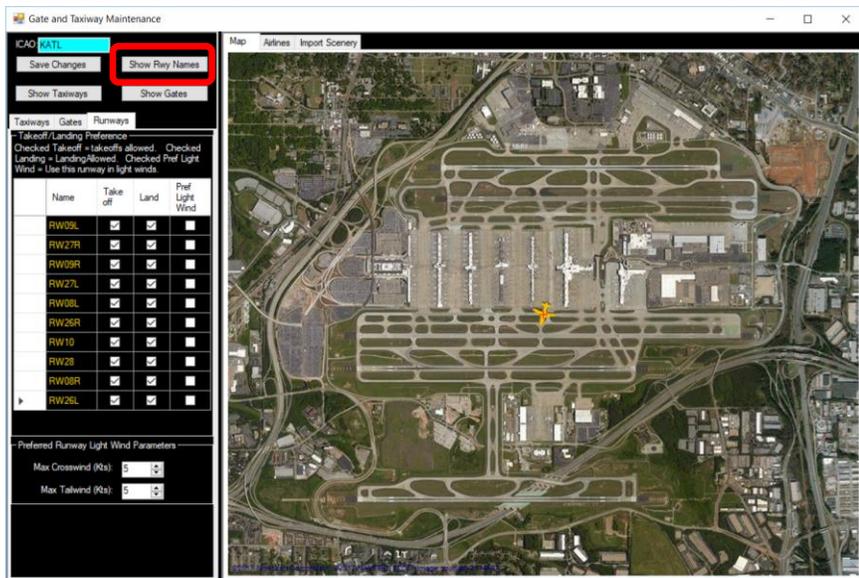
When renaming a runway, be sure to remove the "***" and include the RW in front of the runway number.

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Save your changes.

Let's take a quick look at Atlanta Hartsfield International (KATL) in Atlanta, Georgia.



There're a lot of parallel runways here. So, for efficient airport operations, preferred runway rules sometimes exist, as outlined in the AOI document below.

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06-APR-2017 United States Atlanta Hartsfield-Jackson Atlanta Intl
ATL-KATL 1-10 **A0I** A0I

GENERAL	
Operational Hours	
ATS Hours / AD OPS Hours: H24	
Airport Information	
RFF:	FAA INDEX E / CAT 9/10
Fuel:	JET A
PCN:	RWY 08L/26R, 09L/27R: 62/R/A/W/T RWY 08R/26L, 10/28: 74/R/A/W/T RWY 09R/27L: 68/R/A/W/T
Operation	
Traffic Notes Low Level Windshear Alert System (LLWAS) in operation. Does not indicate wind at ALT, or updrafts/downdrafts. After having exceeded preset THR, TWR will transmit centerfield and displaced BDRY wind. Terminal Doppler Weather Radar (TDWR) in operation.	
Preferential RWY LDG: RWYs 08L/26R and 09R/27L. TKOF: RWYs 08R/26L and 09L/27R. ACFT with wingspan above 65m / 214ft should expect RWYs 09L/27R and 09R/27L. Weighted Takeoff/ Landing Recategorization (RECAT) RECAT phase I is applied at this airport. See CRAR United States.	
Transponder OPS ASDE-X in use, operate transponders with ALT reporting Mode and ADS-B (if equipped) enabled on all airport surfaces.	
Low Visibility Procedure Below RVR 1200ft down to and including RVR 600ft: - RWY 08L and 09R AVBL for ARR. All TWYs AVBL except TWY B2, B4, B6, B10, N5 and S south of RWY 09L/27R. - RWY 08R and 09L AVBL for DEP. All TWYs AVBL except TWY A west of A3, B2, B4, B6, B10, N5 and S south of RWY 09L/27R. During RVR less than 600ft and while de-icing pads are in operation the alternate taxi route northbound will be through TWY G. A follow-me vehicle will escort the ACFT O/R.	
TWY Restriction TWY V restricted to ACFT with MAX wingspan 52m / 171ft. TWY F east of Ramp 5 north and west of TWY DIXIE MAX wingspan 65m / 214ft. TWY M between L14 and L16, TWY N between P and SC and TWY N between U and K MAX wingspan 68m / 224ft. ACFT with wingspan exceeding 65m / 214ft MAX taxi speed 13KT on TWY A, L, M, S, J.	

© Ude 2017

To see runway names, click the Show Rwy Names button at the top. This'll make it easier to visualize the rules and make the correct choices.

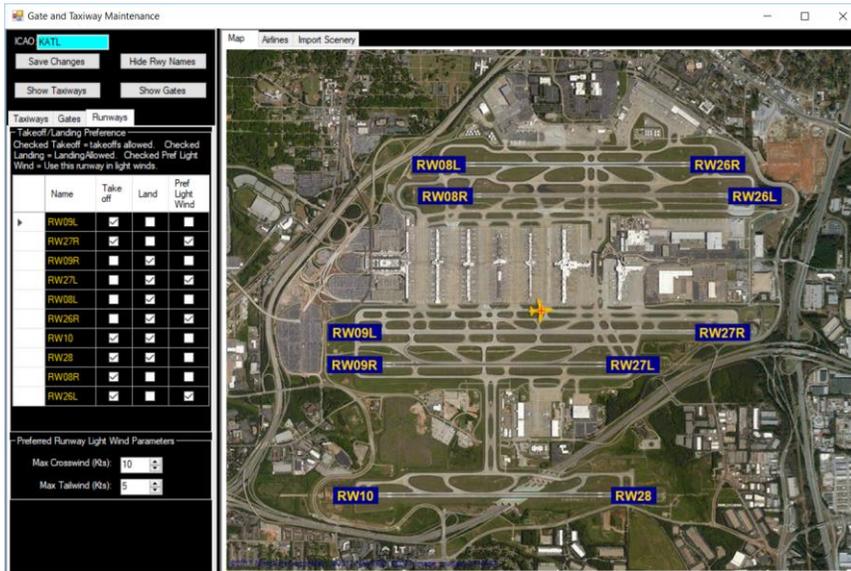
From the chart, Runways 08L/26R and 09R/27L are preferred for landing. So, let's uncheck the Takeoff boxes for those four [4] runways as shown below. Looking at the map, these are the outboard runways from the center terminal area and this is a common operational rule.

Now, we can uncheck the Landing boxes for the "inboard" runways 09L/27R and 08R/26L.

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Finally, while it's not in the AIO chart, we can decide a Westerly flow is preferred in light winds, and so mark all the Westerly runways (26R, 26L, 27R, 27L) as Pref Light Wind runways.

Now our runway assignments will be closer to the real operations at the airport.

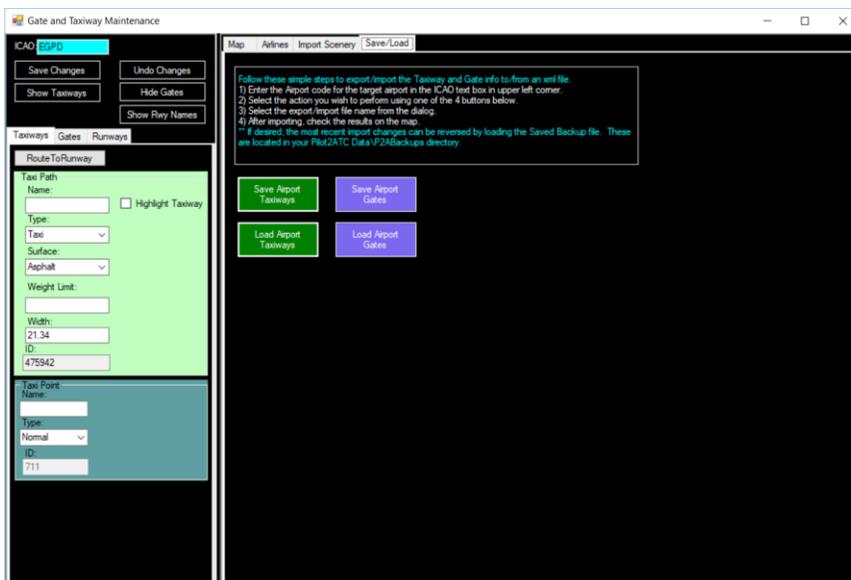


Save and Load

This feature lets you save the Gates and Taxiways from an airport as backup or to share with others. When you import taxiways or gates, a save file is created in the P2A_Backups folder of the Data file. If you don't like the results of the import, load the backup file and you'll be restored to the condition before the import.

It also allows you to make all the detailed changes needed to get great taxi instructions, etc. at your favorite airports from P2A and then share those with your friends and other Simmers using P2A.

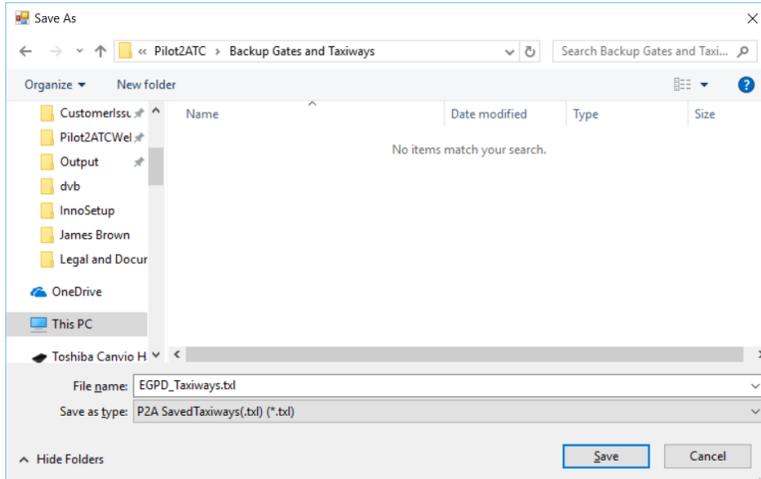
Click the Save/Load tab. You'll see the following screen. Follow the instructions in the box to Save or Load files.



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Saving Taxiways

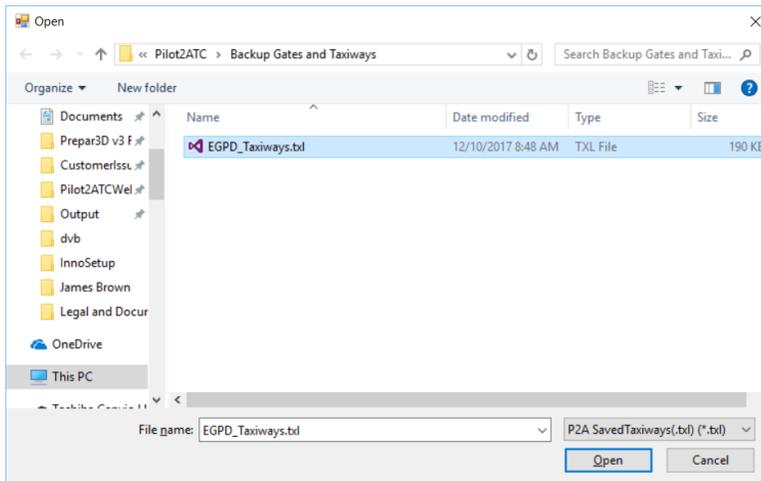
To save taxiways at EGPD, click the “Save Airport Taxiways” button and specify the file name and location of the file to save. A default name is provided, but it can be changed to anything we want.



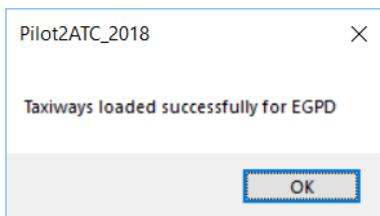
That’s all there’s to it.

Loading Taxiways

To load the saved taxiways, reverse the process and click the Load Airport Taxiways button, answer “Yes” to the warning, find the file we saved and click Open.



The taxiways will be loaded into the database.



Saving and Loading Gates

The process for gates is identical to that for Taxiways. Use the Gate Save and Load buttons instead of the Taxiway Save and Load buttons.

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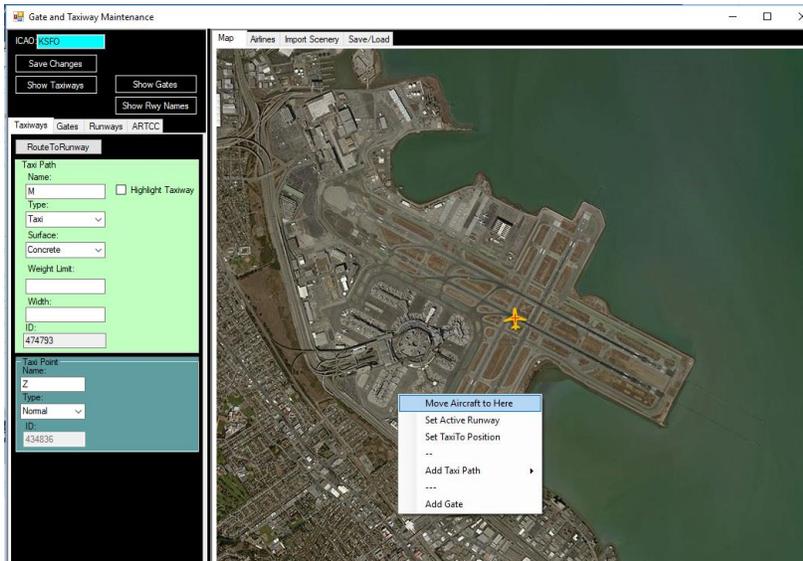
Testing Taxi Paths

Once you've edited taxiways and gates, you can test to see that taxi routing will work with the new data.

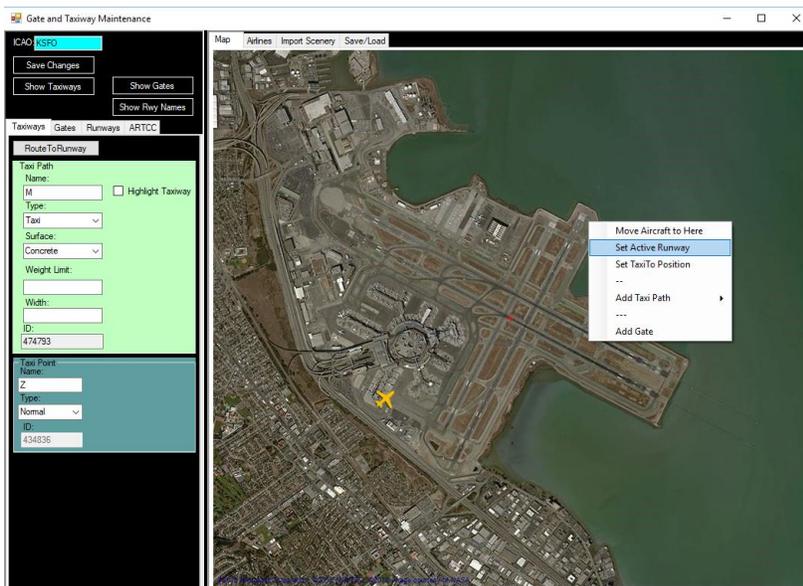
Test Taxi To Runway

To test taxiing to a runway, identify the starting position of the aircraft and the active runway or other taxi point to which it will taxi. Do the following using the mouse right-click menu:

1. Click on or near the gate or other area from which you want to taxi and choose "Move Aircraft to Here". The yellow aircraft icon will move to that position.

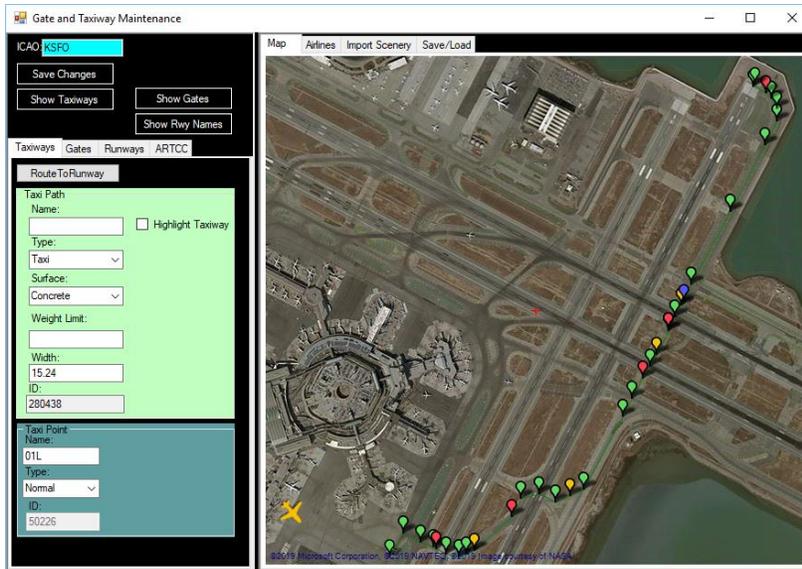


2. Click on the departure end of the desired runway and select "Set Active Runway"



3. Click the "Route to Runway" button on the Taxiways tab on the left of the screen and the taxi route will be display with small pins and a green line. The first time this is done, it may take several minutes to display the route because the program has to read in all the taxiway details for the first time. Subsequent routes should display faster.

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Yellow and blue pins are Hold Short and ILS Hold Short points.

- a. Red pins are HoldShort or ILS Hold Short points that'll be used in the taxi instructions for holding.
- b. Green pins denote normal taxi points.

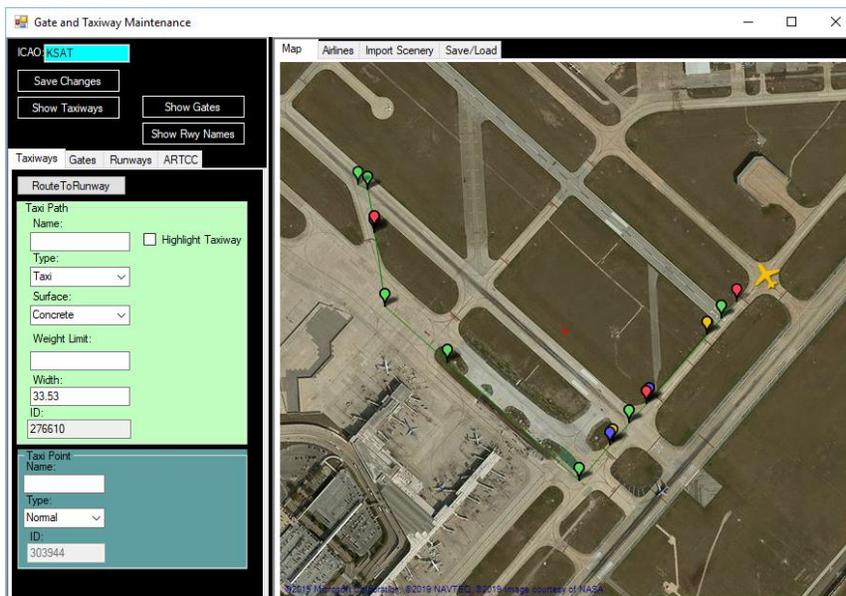
As long as the path starts near the aircraft and ends near the desired runway, it should work for getting taxi instructions. Notice the path may not start in the parking area because, in many cases, there're no connected taxiways there.

4. Check to see if the defined taxiways will yield a good route. Notice each pin right before crossing a runway is red. This is how it should be.

Test Taxi to Anywhere on Airport

Taxi to any spot on the airport – for example from anywhere to a taxiway intersection. To do this:

1. Click on the Taxiways Tab on the left of the screen.
2. Click where you want to taxi from and choose Move Aircraft to Here. The yellow aircraft icon will move to that position.
3. Click at any location on the airport and select “Set Taxi to Position” from the right click menu. Click the “Route to Runway” button on the Taxiways tab on the left of the screen and the route will be displayed as below.

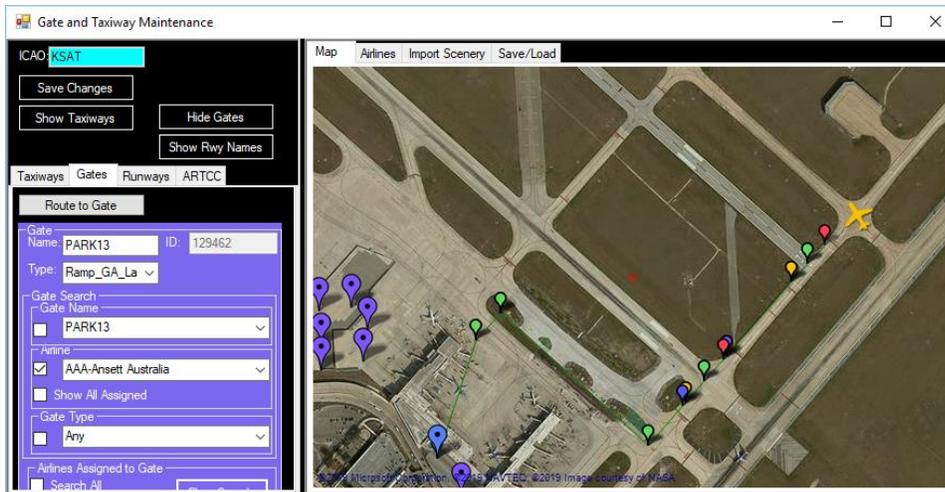


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Test Taxi To Gate

To test taxi paths from a runway to a gate:

1. Click on the Gates tab on the left of the screen.
2. Click where you want to taxi from and choose Move Aircraft to Here. The yellow aircraft icon will move to that position.
3. Select the desired gate on the Gates tab – or – by clicking on the displayed gates on the map. Blue gate below.
4. Click the “Route to Gate” button on the Gates tab on the left of the screen and the taxi route will be displayed as before.



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Reference Documentation

Here are some interesting and useful references for our users.

General Reference Materials:

FAA Handbooks and Manuals: https://www.faa.gov/regulations_policies/handbooks_manuals/

“Flying an Approach with the Garmin GTN 750” by BruceAir

<https://onedrive.live.com/view.aspx?resid=110AA5B593D58477!8858&app=WordPdf>

The P2A website: <https://p2atc.com/>

P2A Tutorials

There are a number of videos you may view by visiting the P2A website. They'll provide an idea of how the program works.

DEVELOPER COMMENT: *Watching them, you'll notice P2A takes up a significant part of the movie screen. It was enlarged for movie-making purposes. When in actual use, it's resizable, and at its optimal size, takes up about 1/4th to 1/3rd of a screen. With a 2+ screen SIM setup, it fits nicely to the left or right of your SIM. It doesn't have to be on top of your SIM window.*

[P2A :: Quick Start - Configuration](#)

[P2A :: Sneak Peak - Version 2.0](#)

[P2A - Version 2.0 - More Features](#)

[P2A - IFR Flight Planning](#)

[Pilot2 ATC - SayIt Tutorial](#)

[P2A - Version 2.2 - New Features](#)

[P2A :: Taxiway Maintenance \(KEGE\)](#)

[P2A :: VFR Pattern Work \(KDAB\)](#)