FS Flight Builder

USER'S MANUAL

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The latest installer can always be found at:
http://www.arduiniwebdevelopment.com/fsflightbuilder/fsflightbuilder.zip

If you have comments or would like to request a future enhancement, please contact me at the email address above.

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Revision Sheet

Release No.	Date	Revision Description
Rev. 0	1/16/2017	User's Manual Created
Rev. 1	7/26/2018	Added New Functionality

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1. GENERAL INFORMATION

1.1 Overview

FS Flight Builder is a program for Lockheed Martin's Prepar3D, DoveTail Games' FSX Steam Edition, and Microsoft's FSX. It is primarily designed to create flights for General Aviation (GA) pilots. The program started as a simple program to parse SkyVector flight plan links and create FS Flight Plans, but has since evolved into much more than that.

In addition to parsing links from SkyVector.com, FS Flight Builder will also allow you enter your flight path manually. Once a flight plan is in place, the application will allow you to choose the starting position for the departure airport, choose whether or not the flight is VFR or IFR, choose the type of route to be flown (direct, VFR to VFR, Low Altitude Airways, or High Altitude Airways), and choose the aircraft to fly.

Once these parameters are set, you can create a flight, which will include a mission file that will automatically load in the kneeboard of the selected aircraft during the flight. The mission file will include runway, frequency, weather (METAR) information for both the departure and destination airports. It will also include charts (Airport Diagrams and Instrument Approach Procedures) for each.

2. GETTING STARTED

2.1 Required Applications

FS Flight Builder will generate its database using two free flight simulation utility applications:

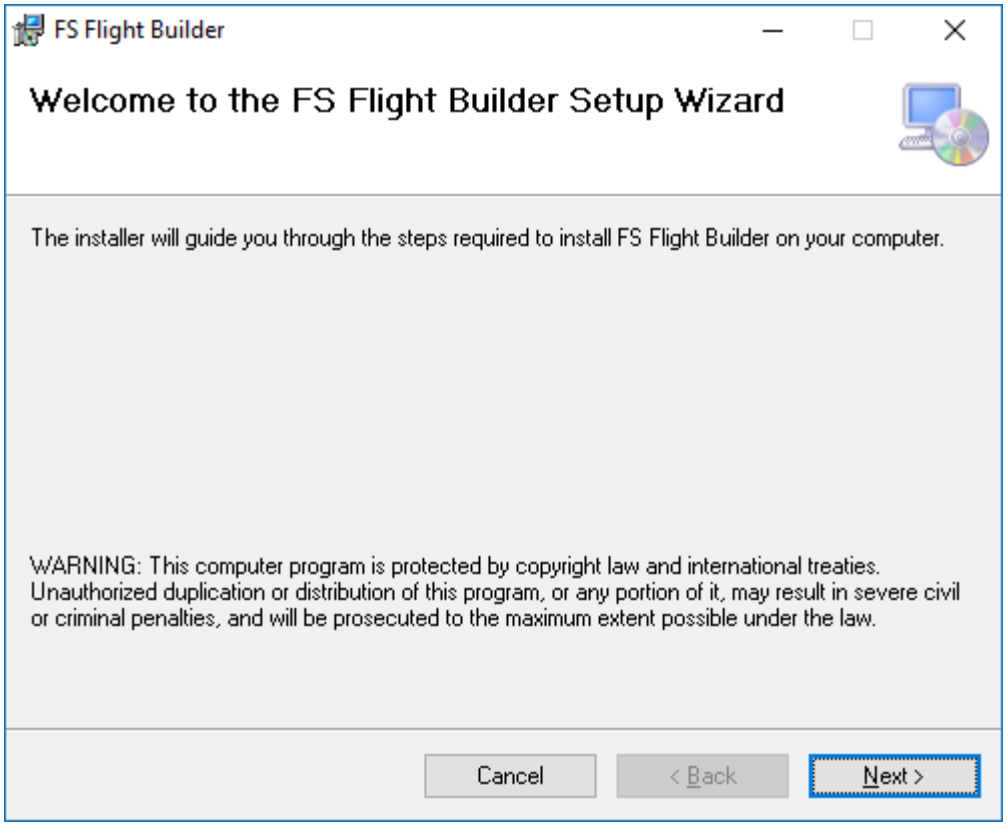
1. MakeRunway from Peter Dowson (http://www.schiratti.com/dowson.html)
2. BGL2XML From Scruffy Duck Software (http://www.scruffyduck.org/bgl2xml/458428773)

NOTE: For Prepar3D V3 and later, the BGL2XML files MUST be version 1.7 or later (https://www.fsdeveloper.com/forum/attachments/bgl2xml-17-zip.28553**)**

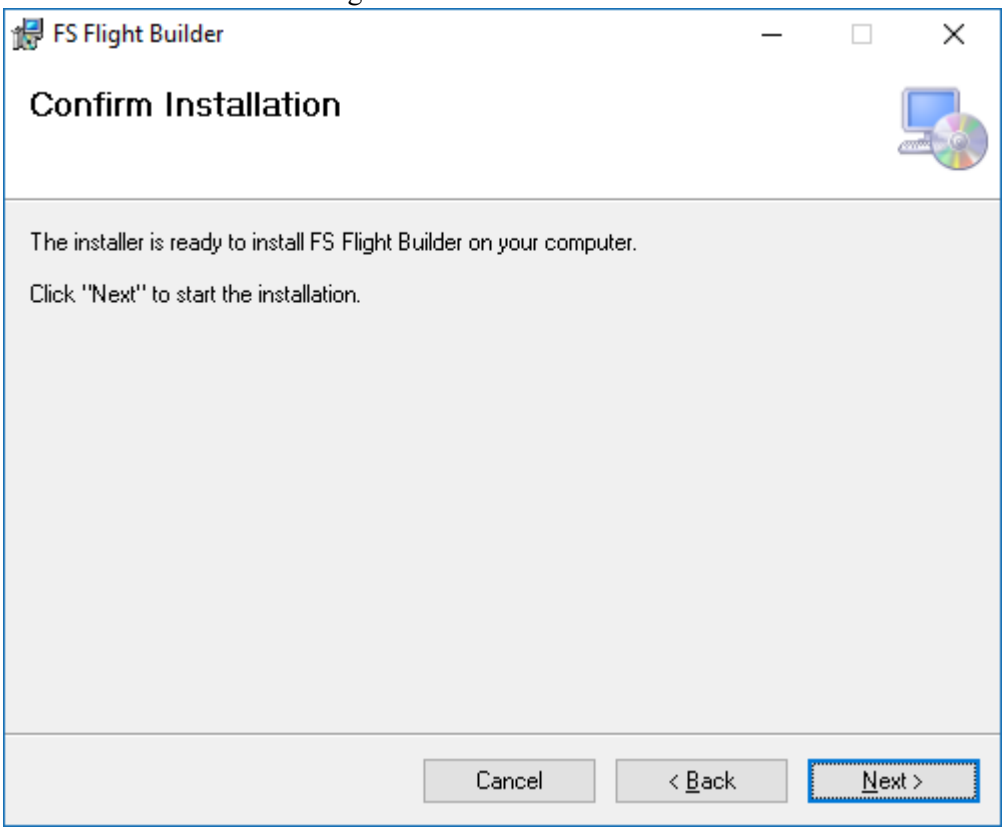
2.2 Installation

The FSFlightBuilder.zip file contains all of the files necessary to install the application. Begin by running "setup.exe". This will begin the installation of FS Flight Builder.

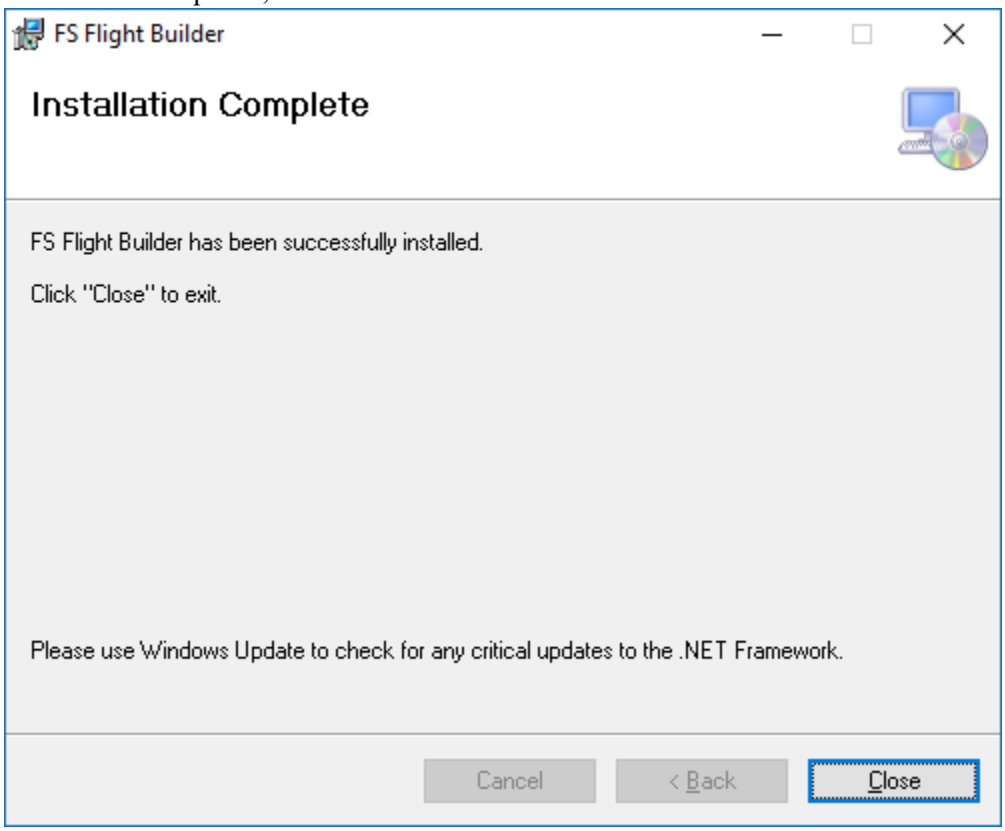
Click "Next" from the first screen and continue through all screens until you get to the last installation screen.



Click the “Next” button to begin installation



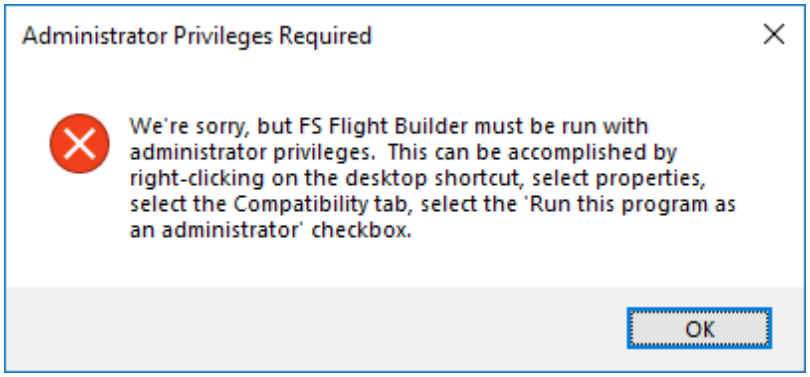
Once the installation completes, click “Close”.



2.3 Running the Application for the First Time

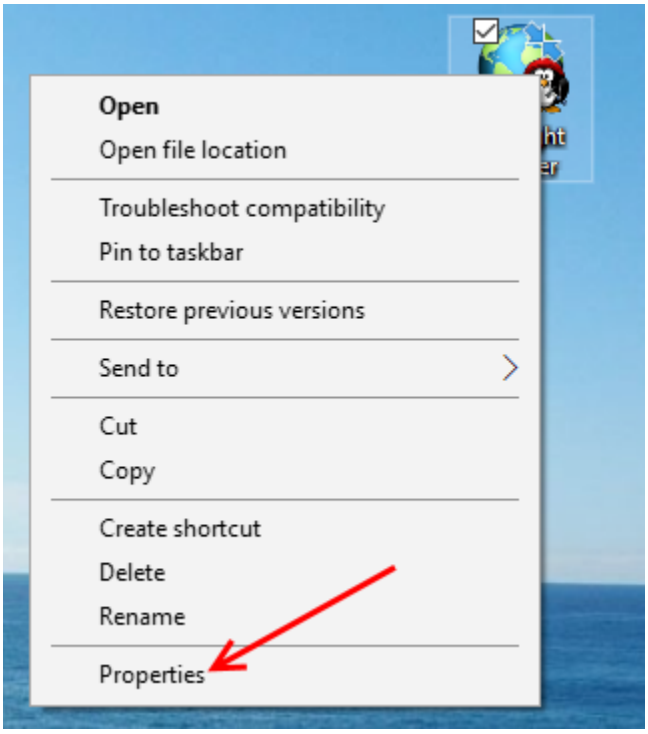
It's important to note that, because FS Flight Builder needs access to your flight sim folders and system registry (to determine which flight sims are installed), the FSFlightBuilder.exe must be configured for administrative access. See the note above (or Google it) to see how it's accomplished.

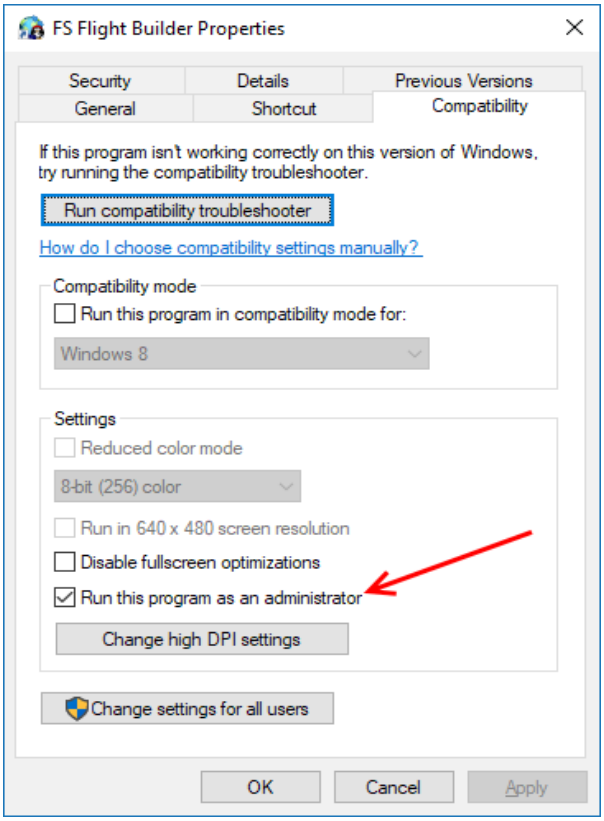
If Administrator access is not installed, you will see this message:



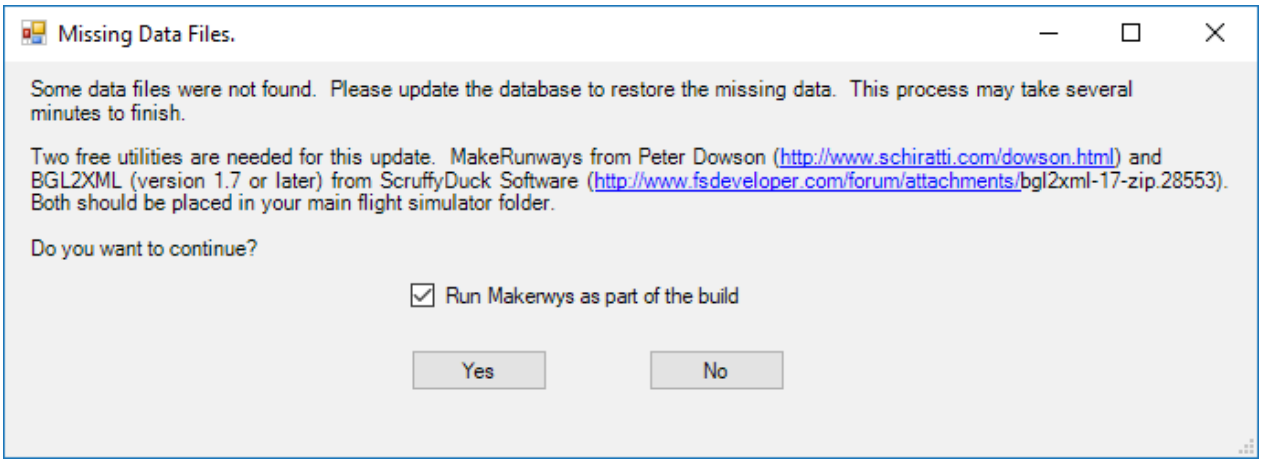
To set administrator access on the application in Windows 10, follow these steps:

Right-click on the desktop icon and select Properties and check the "Run this program as administrator checkbox.





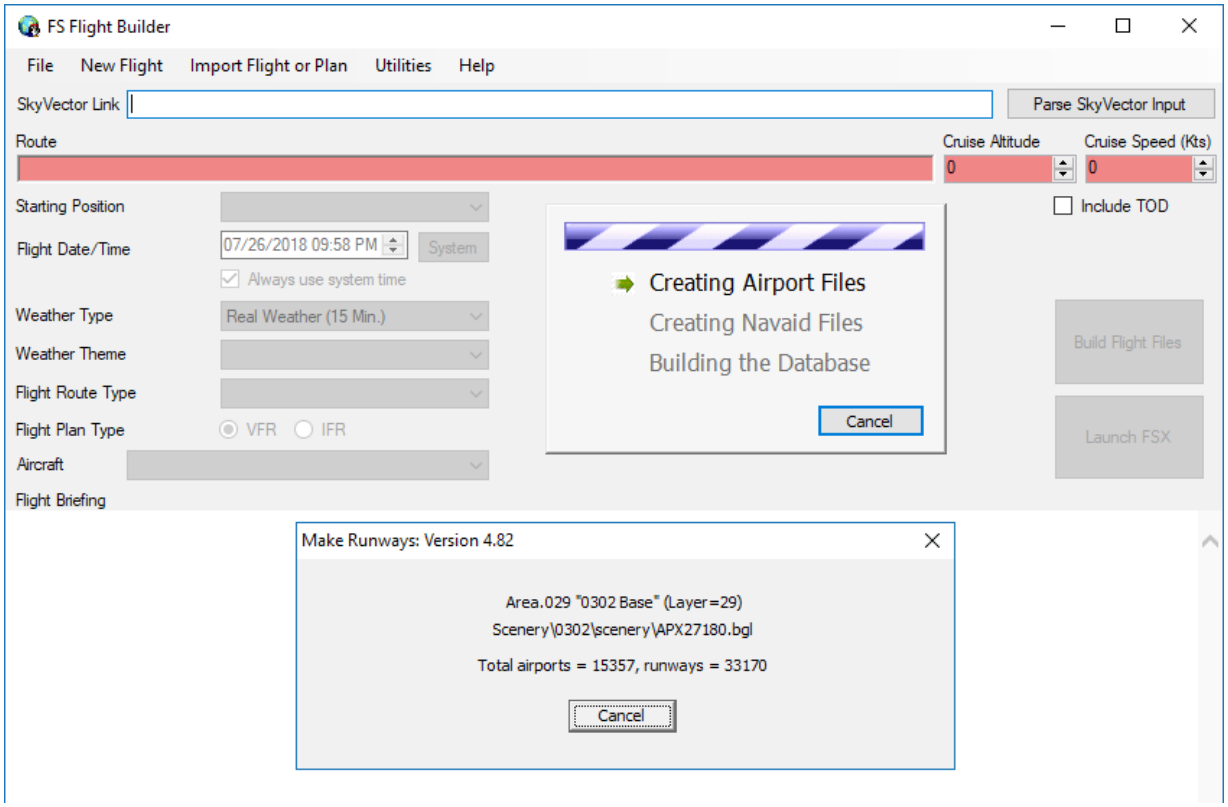
When the program is run for the first time, it will need to create the necessary database files before it can start. You will see this message:



Click "Yes" to create the database files. This may take a few minutes.

NOTE: The MakeRunways utility only needs to run once for each flight simulator installed. If you haven't changed your scenery since the last time it was run, please uncheck the "Run Makerwys as part of the build" checkbox for a faster build time.

While the database files are being built, progress will be displayed as follows:



3. USING FS FLIGHT BUILDER

3.1 File Menu

Multiple function can be performed using the Menu. This section will explain each of the functions.

3.1.1 Database: Update Aircraft Only

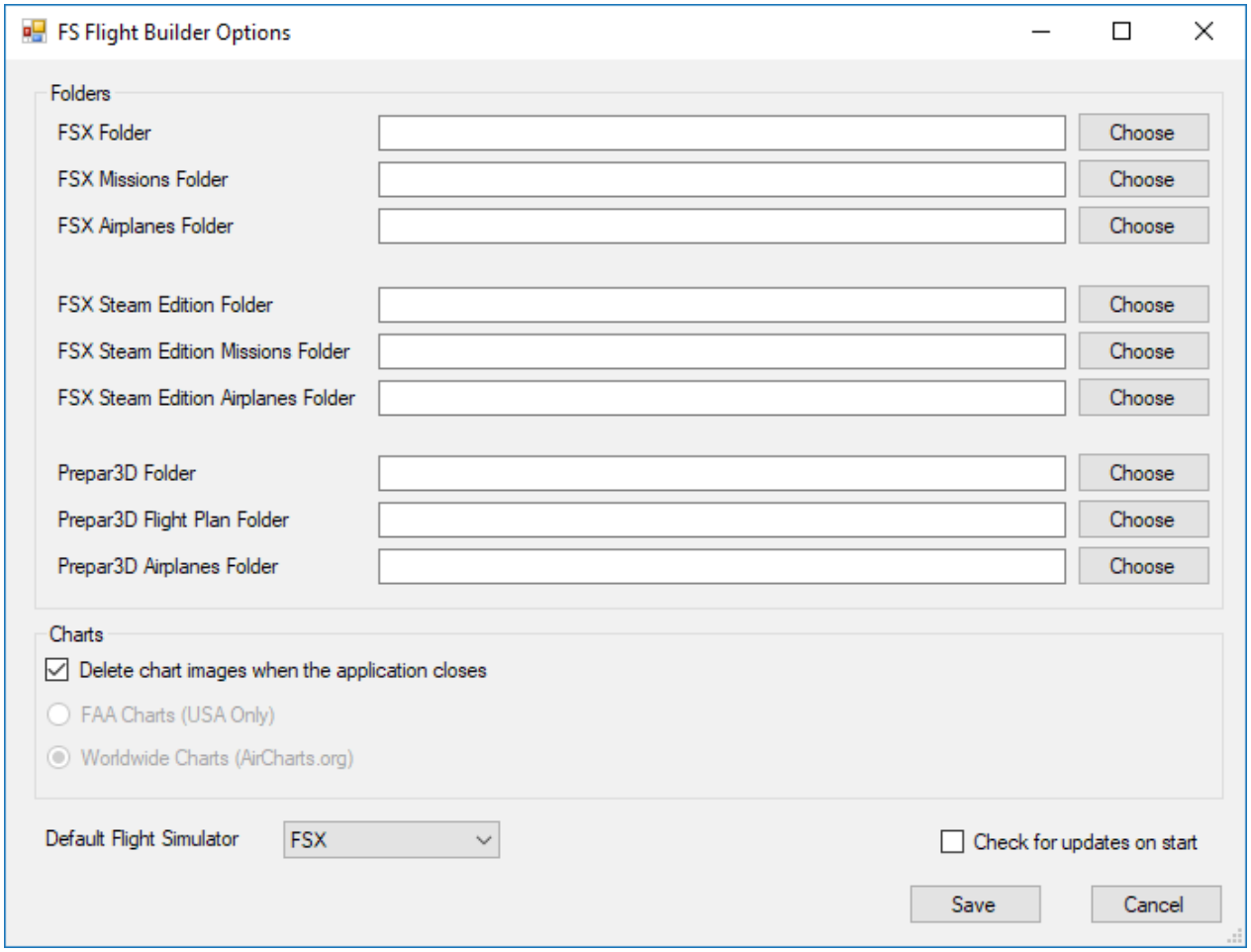
Any time you add an aircraft to your flight simulator, you'll want to select this option to update the application's aircraft database to include the new aircraft.

> **NOTE: If you're using Prepar3D and your aircraft are located outside of the primary Prepar3D path, the application should be able to find them. It will read the settings in the add-ons.cfg file, located in your AppData folder.**

3.1.2 Database: Update Full Database

Whenever you add new scenery to your flight simulator, you'll want to run this option to rebuild the airport and navaid databases.

3.1.3
Options



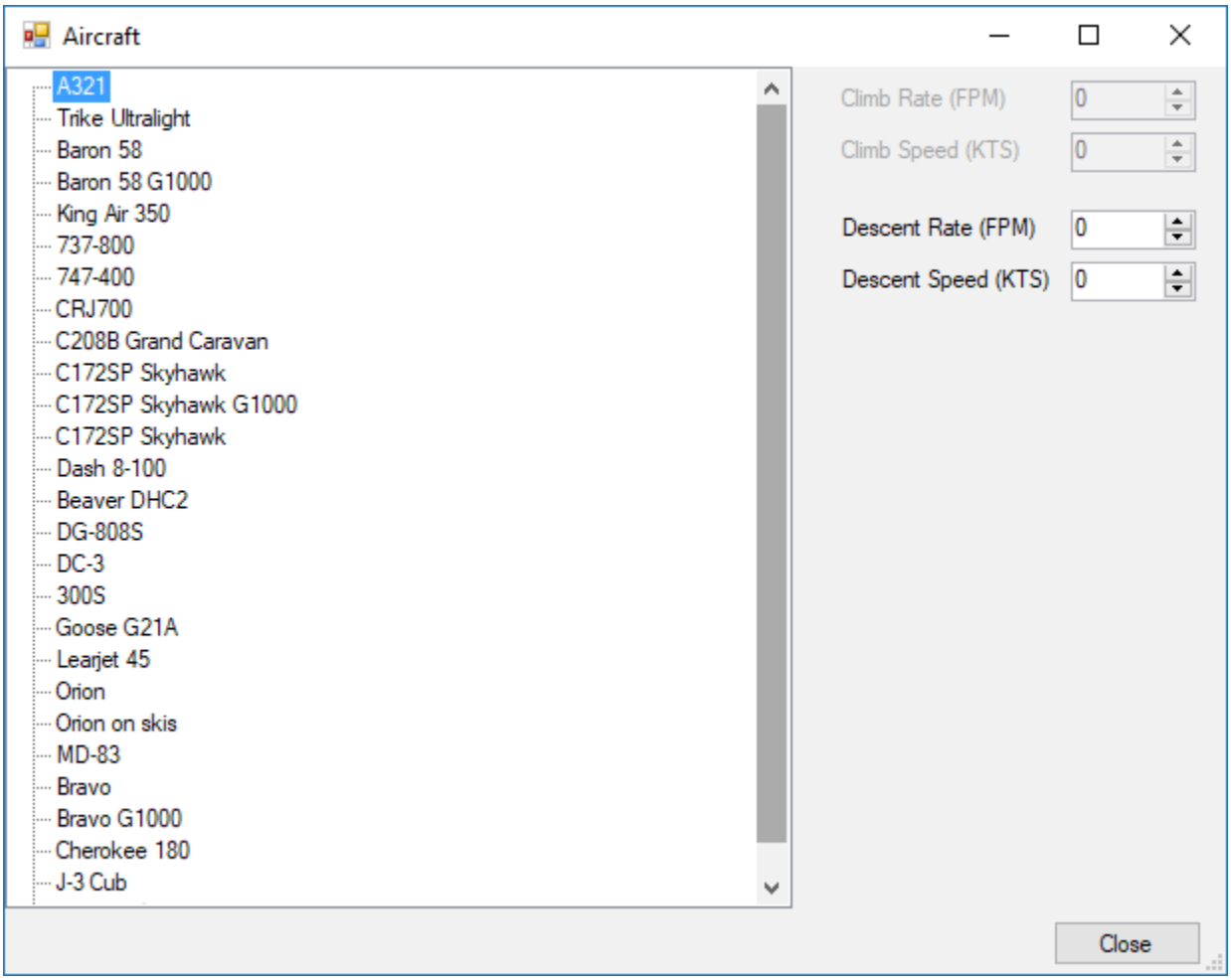
The Options dialog is used to identify the folders for the flight simulator executable and flight plans. There are options to select folders for all three versions of flight simulator.

NOTE: The flight Plan folder for FSX and FSX Steam Edition should point to a sub-folder of the Missions folder, while the Flight Plan folder for Prepar3D should point to the Flight folder (typically in My Documents).

When the program loads, it will try to find all of the installed flight simulators and automatically add the appropriate folders to the options screen. The "Default Flight Sim" drop-down list is used to select the flight simulator you'd like to use if multiple installations are found.

3.1.4 Aircraft Editor

FS Flight Builder has the ability to calculate the top of decent for the flight. In order to do so, it will need some performance information regarding the descent rate and descent speed of the aircraft. This screen will allow you to enter that information.



Enter the descent rate and descent speed for each aircraft.

Lastly, you can choose to automatically check for application updates each time FS Flight Builder is run. If an update is found, you'll be given the option to install it and re-run the application.

3.1.5 Check for Updates

Select this option to manually check for application updates. If an update is found, you'll be given the option to install it and re-run the application.

3.1.6 Exit

This option will close FS Flight Builder.

3.2 New Flight

Selecting this menu option will reset the FS Flight Builder screen to prepare for a new flight.

3.3 Import Flight or Plan

This option allows you to choose a previously saved flights (.fxml for Prepar3D and .flt for either FSX versions) or flight plans (.pln).

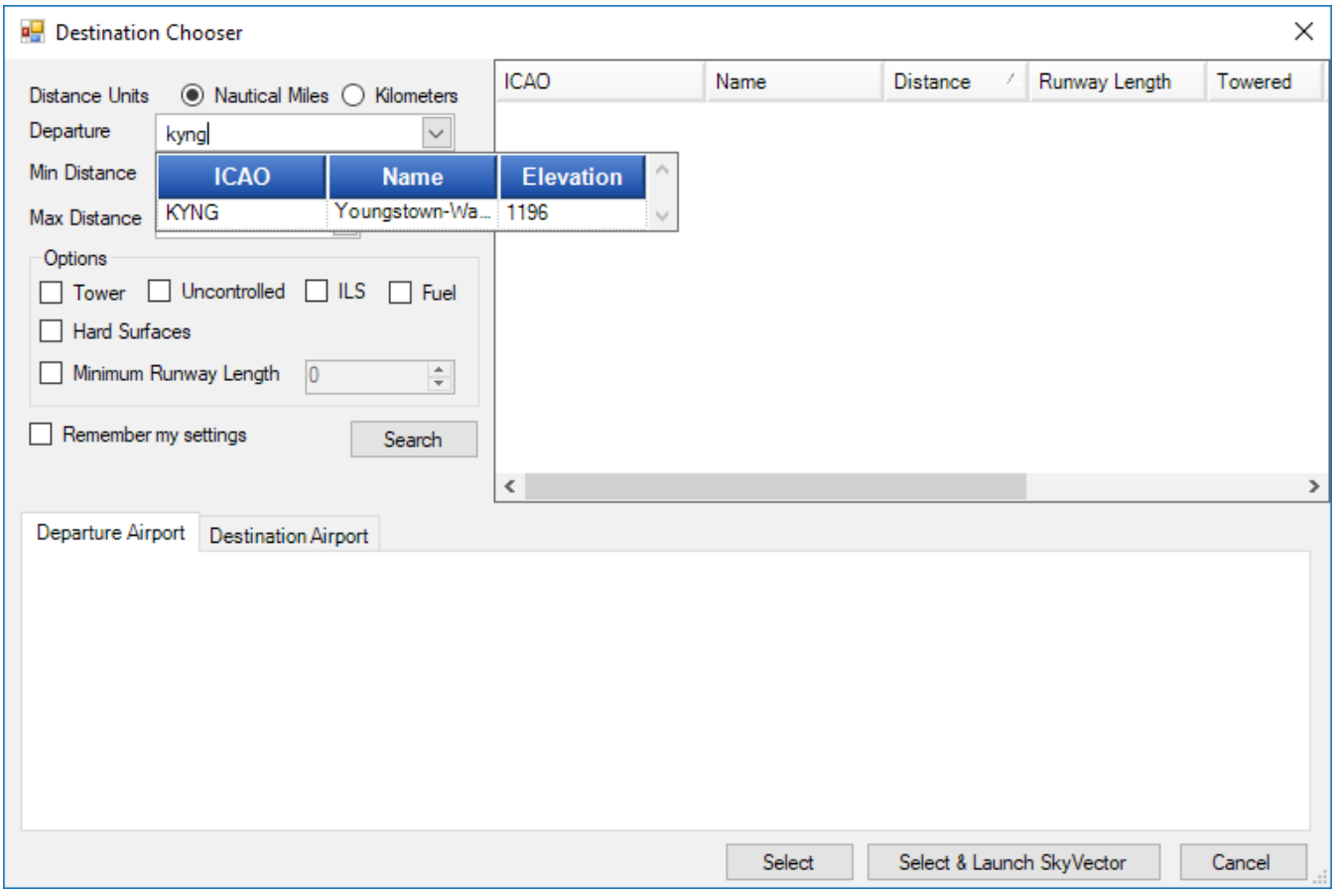
Once a flight or flight plan is selected, the associated information will be updated on the FS Flight Builder screen.

3.3 Utilities

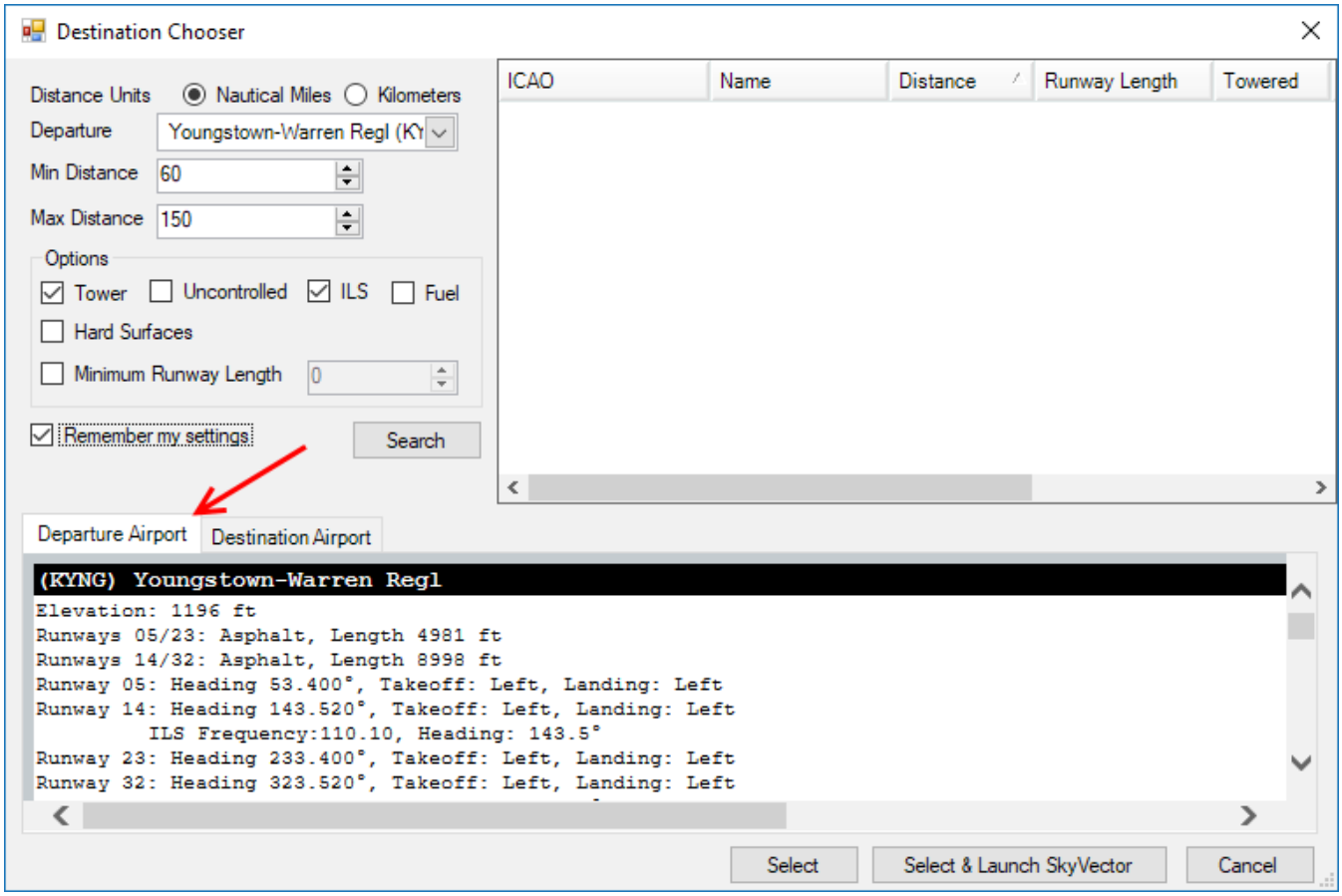
3.3.1 Destination Chooser

Have you ever started up flight simulator and wondered "where do I want to go today"? This screen can help to solve that problem. The Destination Chooser screen allows you to enter your departure airport and choose various filters for your destination (i.e. distance, tower availability, ILS availability, runway length requirements, etc.).

As you begin entering the airport ICAO in the Departure entry, the list will be filtered based on the information entered.



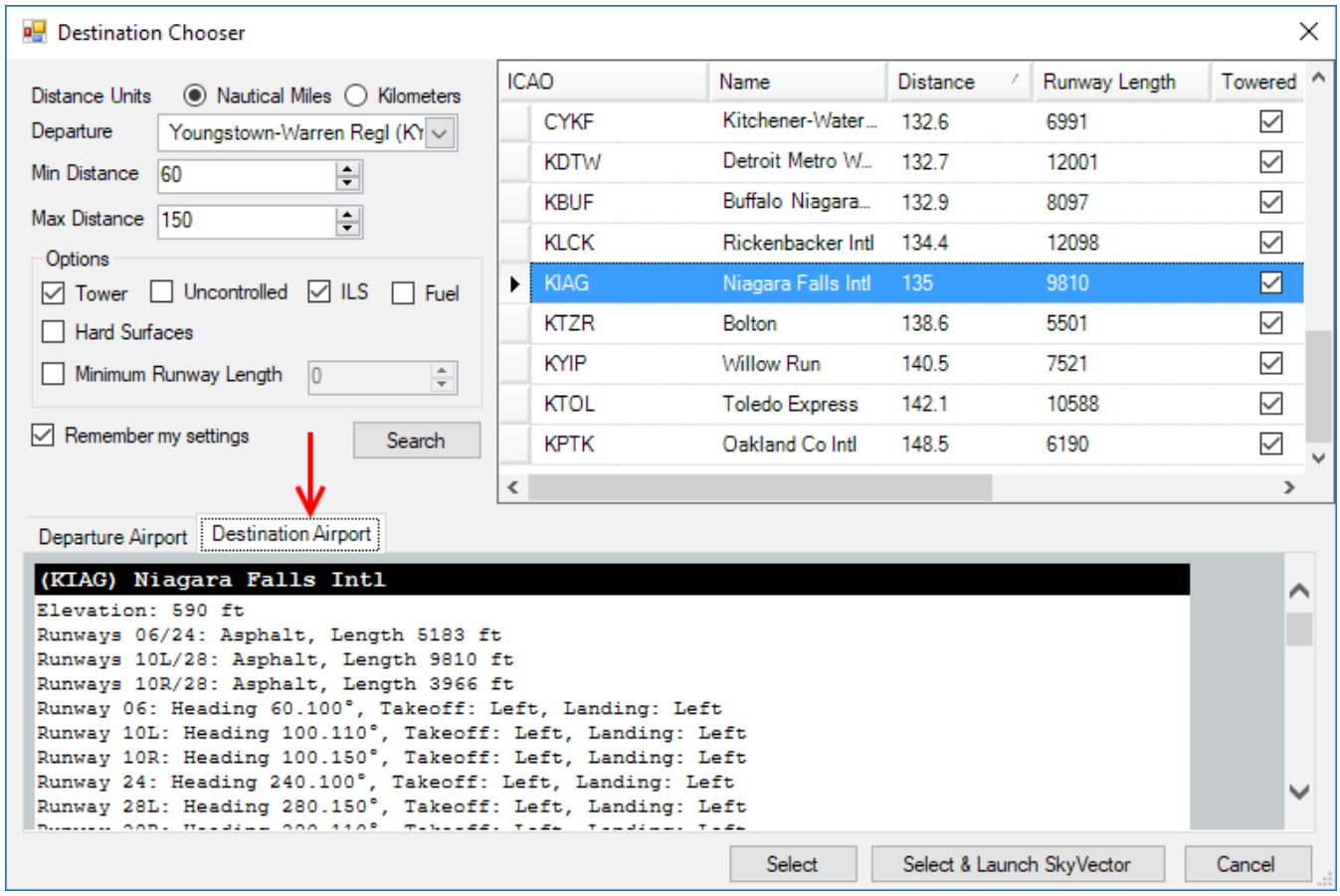
Once the departure



airport has been selected, information about the airport is displayed in Departure Airport tab found at the bottom left portion of the screen.

Once you've selected your departure airport and any appropriate filters, clicking search will give you a listing of the airports that meet your criteria, sorted by distance (although you can sort any way you choose, even sort on multiple columns).

Once you choose your destination, the airport information will be displayed in the Destination Airport tab at the bottom of the screen. When ready, you can either open the flight in FS Flight Builder to continue creating your flight plan, or open it in SkyVector to choose additional waypoints, etc.



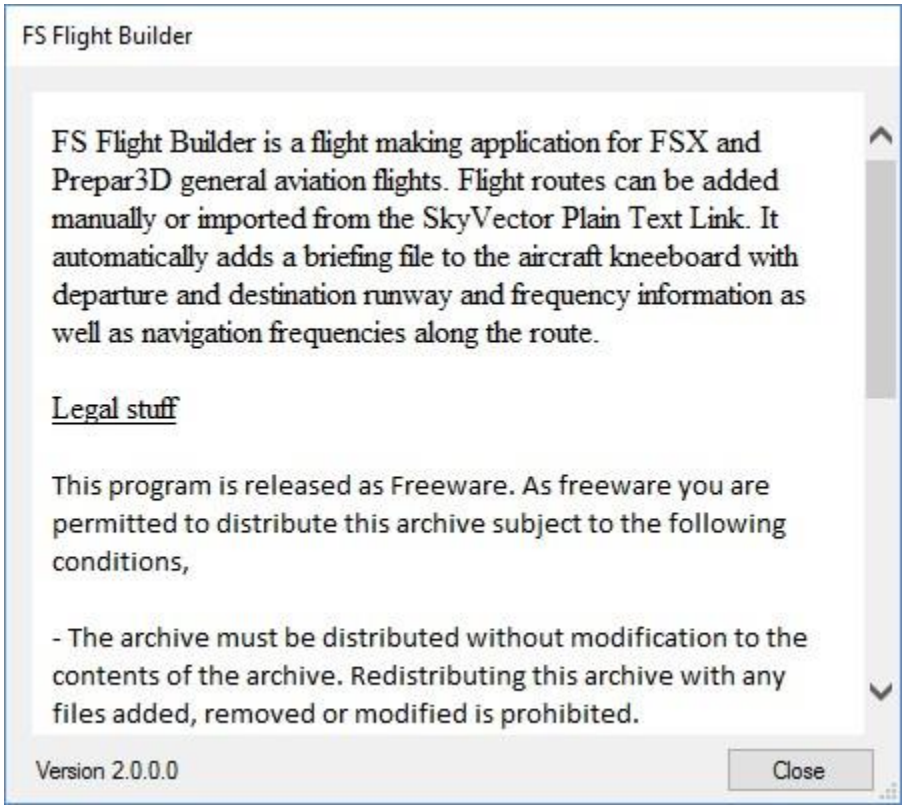
3.4 Help

3.4.1 User Guide

Opens this document.

3.4.2
About

Selecting this menu option will show the About screen, showing the legal information and current application version.



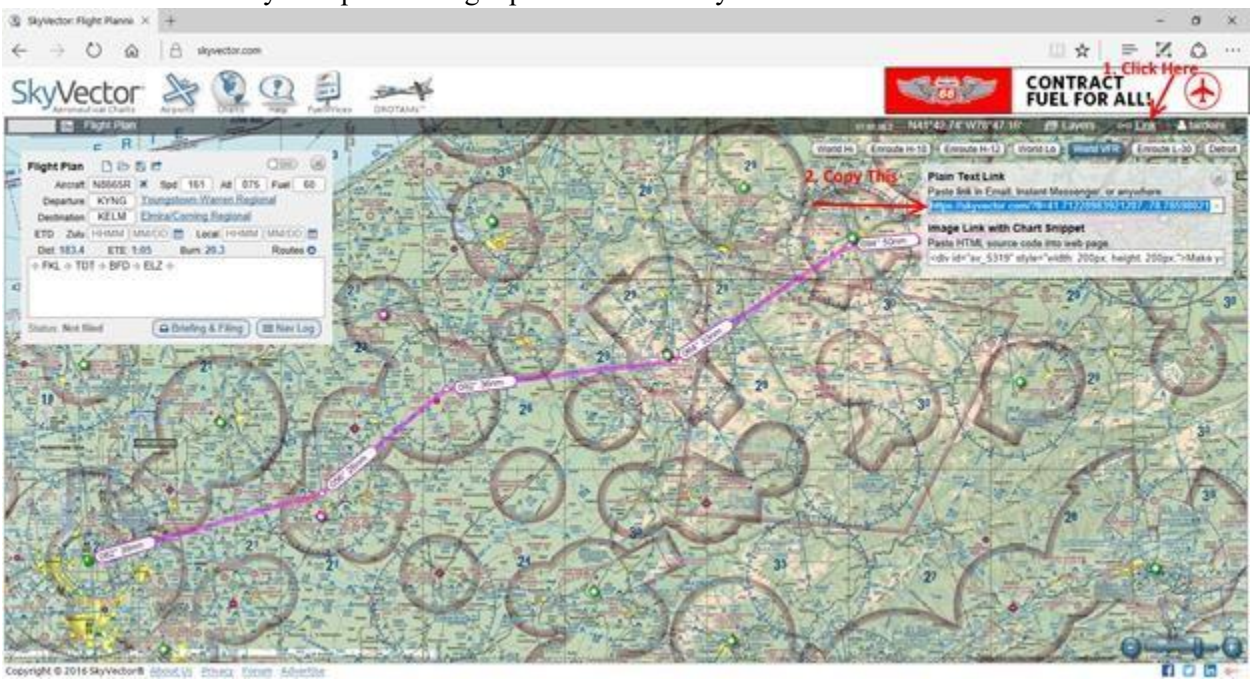
3.5

The FS Flight Builder Screen

This is the main FS Flight Builder screen. Each of the numbered items are described below.

1 SkyVector Link

a This is where you'll past the flight plan link from SkyVector.com



2. Parse Vector Input Button
   a. Once the input from SkyVector is pasted into the "SkyVector Link" box, clicking on this button will parse the input and:
      1. Create the route and put it into the "Route" box
      2. Add the altitude (if it was set from SkyVector) to the "Cruise Altitude" box
      3. Fill the "Starting Position" drop-down list with the appropriate starting positions for the departure airport.

3. "Route" Box
   a. There are two ways to enter a route in FS Flight Builder.
      1. The first is to parse a SkyVector input as described above. The path can then be manually adjusted by typing in the "Route" box
      2. The second is to simply enter the route by hand.
         a. Keep in mind that the route MUST start at an airport and end at an airport.
         b. If victor airways are entered, FS Flight Builder will search the database to find the appropriate waypoints.
      3. If weather information is available for the airport, it will be highlighted in one of these colors:
         a. Green: VFR conditions
         b. Blue: MVFR conditions
         c. Magenta: LIFR Conditions
         d. Red: IFR Conditions
      4. Hovering over an airport that is highlighted will show the current weather for that airport.

   NOTE: A departure and destination airport must be entered in order to use any of the functionality described below.

4. "Cruise Altitude" Box
   a. The cruise altitude can come from the SkyVector input or can be entered manually
   b. It's currently displayed in feet. A future enhancement will be made to allow you to choose Imperial or metric units.

   NOTE: The cruise altitude must be entered in order to use any of the functionality described below.

5. "Cruise Speed: Box
   a. The cruise Indicated Airspeed (in knots) can be entered manually, but will automatically adjust when an aircraft is selected.

6. "Starting Position" Drop-down List
      1. This list will contain the possible starting positions, based on the departure airport from the

7. "Route" box.
      1. These SHOULD match up to the positions available in the flight simulator. They come from the airport database.

8. "Flight Date/Time" Box
      1. Use this box to determine the date and time for your flight.

2. If the "Always use system time" checkbox is selected, every new flight will set the flight date and time to the current date and time.

9. "System" button
   a. This button will set the "Flight Date/Time" box to the current system date and time.

10. "Flight Route Type" Drop-down List
    a. This selection allows you to identify the flight route. Options are: i. Direct
        (a) VOR to VOR
        (b) Low Victor Airways
        (c) High Victor Airways

11. "Flight Plan Type" Radio Buttons
    1. These buttons will determine the type of flight plan that will be filed.
    2. For VFR, it's always a good idea to check the weather conditions at your departure and destination airports to make sure that VFR conditions actually exist.
        i. If the departure or destination airports are in IFR conditions, a red "IFR Conditions" warning message will be displayed if VFR is selected.

12. "Aircraft" Drop-down List
    1. This list will contain all of the aircraft currently installed in your flight sim's SimObjects\Airplanes folder.
    2. Once an aircraft is selected, the picture will be displayed, and the "Cruise Speed" will be updated.

13. "Aircraft Image"
    a. If the aircraft contains an image ("thumbnail.jpg" in the aircraft's texture folder), it will be displayed here.

14. "Build Flight Files" Button
    a. Once all of the flight information is entered, this button will be enabled. Clicking it will first open the Charts screen and allow you to choose any available charts for your departure and destination airports. Once the charts have been selected and the screen is closed, the briefing file will be created (described below).

15. "Launch" Button
    1. Clicking on the "Launch" button will attempt to start the flight simulator and automatically load the Flight file created from the "Build Flight Files" button. It will try to launch the flight simulator without the Startup screen
    2. If the selected flight simulator is configured to show the startup screen, the application will do the following:
        (a) Make a copy of the flight simulator config file
        (b) Update the copy to turn off the startup screen option
        (c) Rename the current config file to "AWD.cfg".
        (d) Rename the copied file to the flight simulator's config file name
    b. When FS Flight Builder is closed, it will check to see if it updated the flight sim's config file. If it did it will:
        (a) Delete the updated config file

(b) Rename the "AWD.cfg" back to the original config file name, thereby restoring the configuration to its original settings.

16. "Flight Briefing"
    a. When the "Build Flight Files" button is clicked, the following files are created:
        i. The flight sim Flight file (.fxml for Prepar3D, .flt for either FSX version)
    b. This includes the starting position, time of day, and aircraft
        i. The flight plan file
    2. This includes the route, the flight route type, and the flight plan type
        i. The Mission file
        (ii) This is an html file that will be displayed in the aircraft's kneeboard. It currently includes the basic flight information (departure / destination airports and cruise altitude). For the departure and destination airports, it also includes runway information (including lighting and traffic pattern information), frequency information, weather (METAR) information (parsed text as well as the raw METAR), and charts.

PLEASE NOTE: An internet connection is required in order to get weather and chart information