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Mission-X User Guide

Preface

The following user guide is meant to make your first steps with Mission-X plugin easier.
The idea behind Mission-X was to create a simple framework for sharing adventures using XML (markup language) with minimal to no programming knowledge. The plugin should give X-Plane pilots a sense of purpose to their flights or at least help them find new airports around their spawned location. This could include anything from VFR adventures to Air Transport flights. Missions are only limited to the Mission Designer's creativity.
The user guide will explain the following topics:

1. Plugin Installation
2. Plugin Menu
3. Plugin Commands
4. Mission Pack Installation
5. Plugin Screens
6. MX-Pad
7. Setup Window
8. Random Missions
9. Convert LNMP to Mission-X file screen.
10. Known Issues

You can find the latest version of the Mission-X plugin and missions for downloading at my website: *Snagar Development Site* (Please pay attention to the mission compatibility version)
Another source of missions is the X-Plane.org community. Navigate to -

The forum folder holds the plugin and applications I wrote and missions that were uploaded to the site.

For more details on mission design and creation, read the "Designer Guide" in the "docs" folder of the plugin.

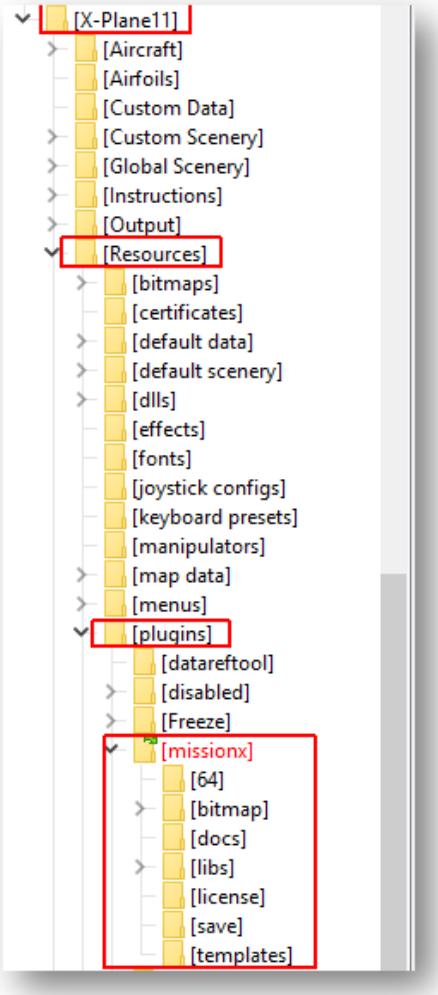
Snagar

1. Plugin Installation

“In order to install the plugin, all you need to do is download the plugin file (see Preface for plugin and mission sources) and to extract it under the “***plugins***” directory, located at:

{X-Plane}/Resources/plugins.

After you extract the downloaded plugin file, your folder structure should look something like the following:



The plugin is located in the **{X-Plane}/Resources/Plugins/missionx** directory. The binary is located in folder [64] and there is one “release” file for each OS and one “debug” file too.
Designers should use the “debug” file (just rename to “win.xpl” or “lin.xpl" or “mac.xpl” depending on your OS).

Release files represent even plugin numbers (higher than the debug). The debug plugin version is always smaller, but shares the same code. The main difference is the information that is dumped to the Log.txt file.

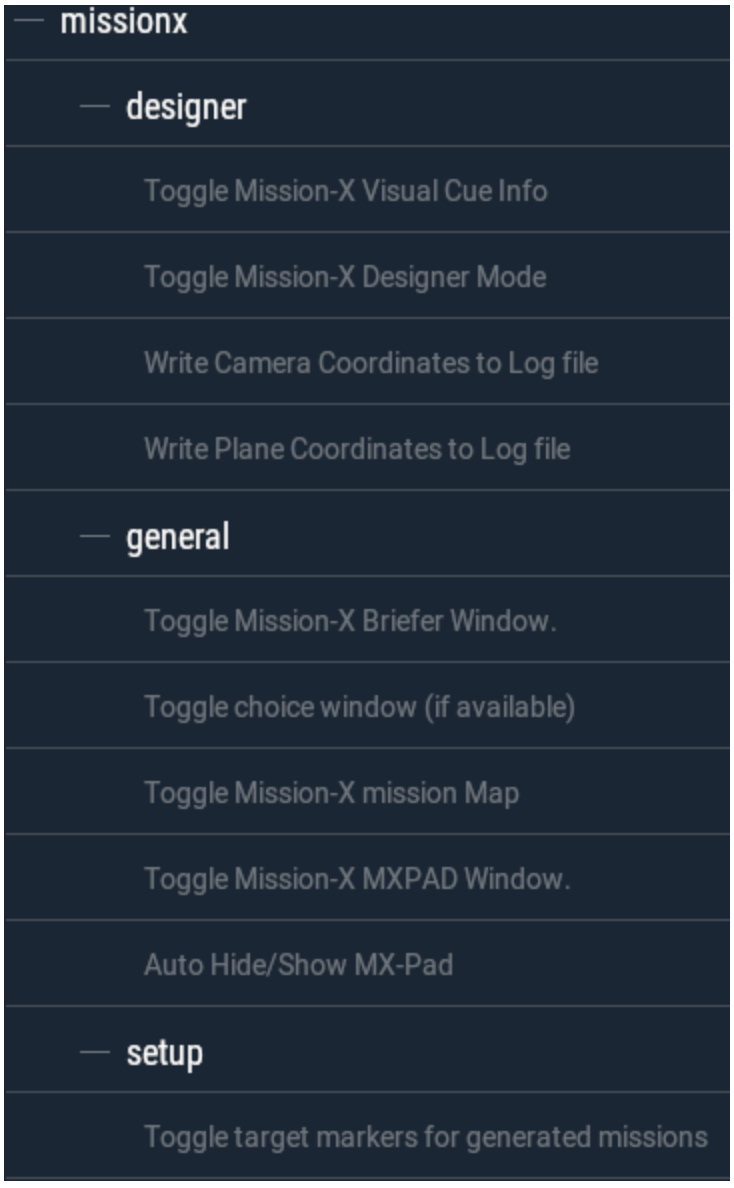
2. Plugin Menu

The plugin menu is simple yet allows you to map most of the menu items to a command. I'll expand that topic in the next chapter.

1. Toggle main Mission-X window.
2. Toggle MX-Pad (only when mission is active).
3. **Tools Menu** allow you to:
    a. Create an external Flight Plan from a GPS Flight plan.
    b. Modify point.xml is a template designer tool (check template doc)
4. **Options Menu**
    a. Auto Show/Hide MX-Pad
    b. Disable mission cold and dark directive.
    c. Toggle Designer Mode - *only in the DEBUG build of the plugin*. Allow display the Cue and script print commands.
    d. Toggle CueInfo - *only in the DEBUG build of the plugin and in XP11*. Will display lines in the 3D X-Plane world that correspond to targets, object messages and such.
5. Manually run optimization of all airports data files to assist the "random generate engine". *Suggestion:* run it everytime you add or remove a scenery or there is an X-Plane update.

3. Plugin Commands

Mission-X has few custom commands that should make certain actions more approachable and easier to activate. Some are specific for designers and some are replacement for the menu items. You can map the commands to keys or buttons.



Designer commands are meant only to be used during mission creation and tests. Users should not use them.

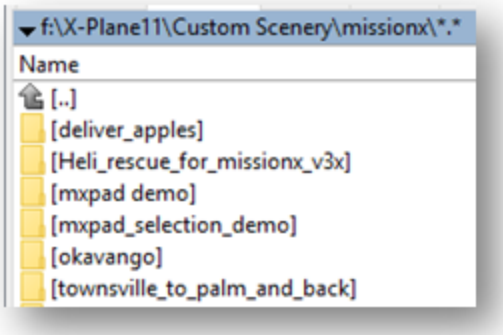
General commands hold the main actions simmer should map to make feature accessibility easier, like: toggle main Briefer UI screen, or bring the 2D map to the front.
If you switch the “Auto Hide/Show” MX-Pad option then it acts like an “autopilot”, once you manually hide/show it, it will disable the feature until you re-enable it.

Setup If you want to show/hide “target” markers, you can toggle them using a command. Just bind it to a key or joystick. This is dependent if 3D markers were placed above the targets.

4. Mission Pack Installation

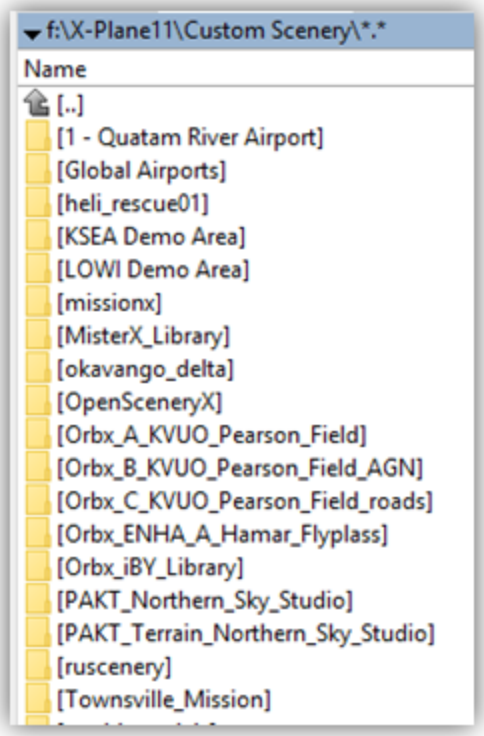
A Mission pack installation will be done manually.
The “mission designer” should pack his/her mission into a compressed file that can be easily extracted to “X-Plane” folder. But every designer should also explain how to install their mission files.

In a nutshell, all mission files should be located in one folder:
“***{XP11}/Custom Scenery/missionx***” folder. Each mission should have a dedicated folder.



Each mission folder can hold sub-folders to organize mission assets, and a mandatory folder by the name “*briefer*” which holds the mission files.

Please do not modify any file if you are not sure what the impact will be.
In most cases, you will have to copy the mission folder into this specific directory.



Other files that could be part of a mission are the “*scenery files*”.
In order to enhance the mission, a designer might ask to download special scenery libraries, or they might create one for the mission.
In most cases the scenery folders should be placed in:
“***{XP11}/Custom Scenery/***” folder.

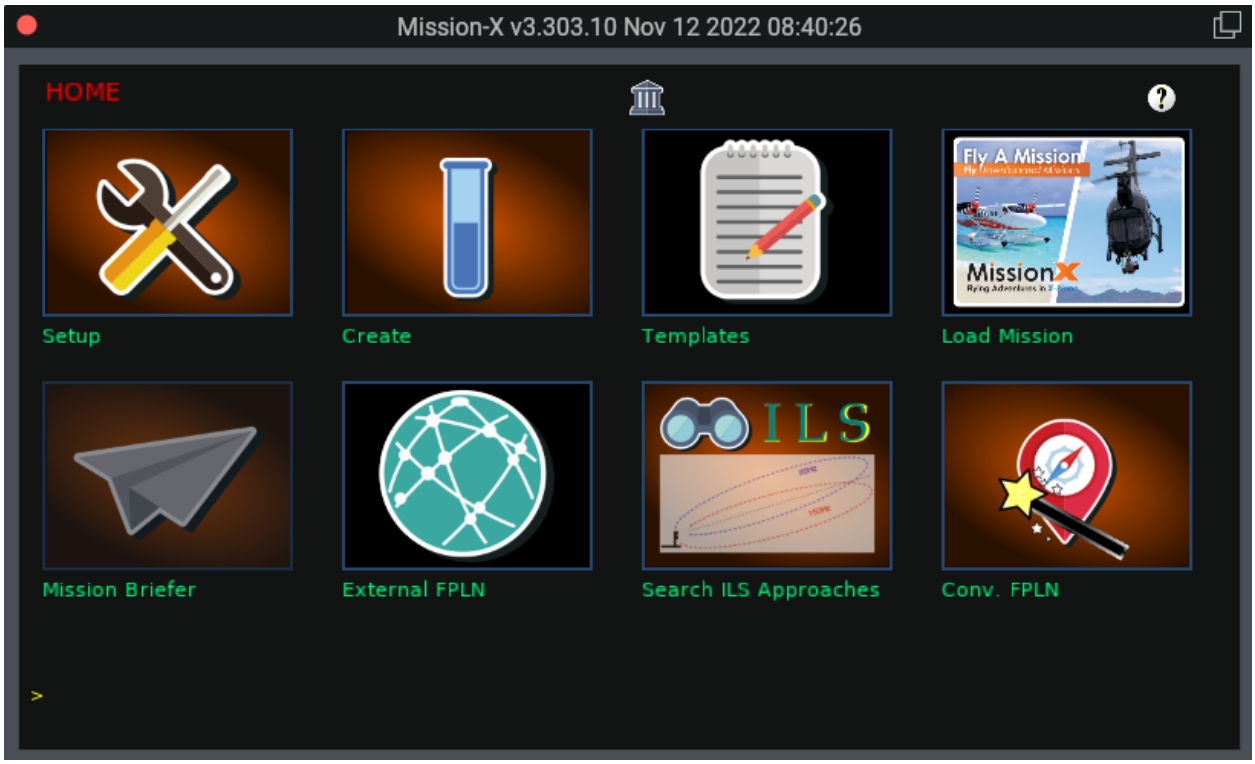
Here is an example of scenery folders.

5. Plugin Main Screens

Most of the interaction with the plugin will be done from the main plugin screen or the “home screen”.

Home Screen

First page would be the “***Home Screen***”, where you can pick an action to do (just like in a tablet).



Load Mission

1. ***Mission thumbnails:*** provided by the designer. Click on an image to see the mission information.

2. ***Random Mission Thumbnail:*** If you generate a random mission, you will be able to fly the latest one using this option.

3. ***Scroll***: Allow you to scroll down and navigate between missions.

4. ***Home button:*** Return to the Home screen.

5. ***Mission briefing:*** Once you pick a thumbnail you should see the briefing of the mission.

6. ***Load Savepoint:*** If you saved a checkpoint you can load it now to continue from it. Make sure to use the same plane as when you created the checkpoint.

7. ***Load Mission file:*** Load and start the mission from the beginning.

8. ***Message Text:*** Plugin Informational text.

Start Button

The ***start*** button will be available only after loading the mission or the last savepoint.

Flight Leg Information

Available only when the mission is active.

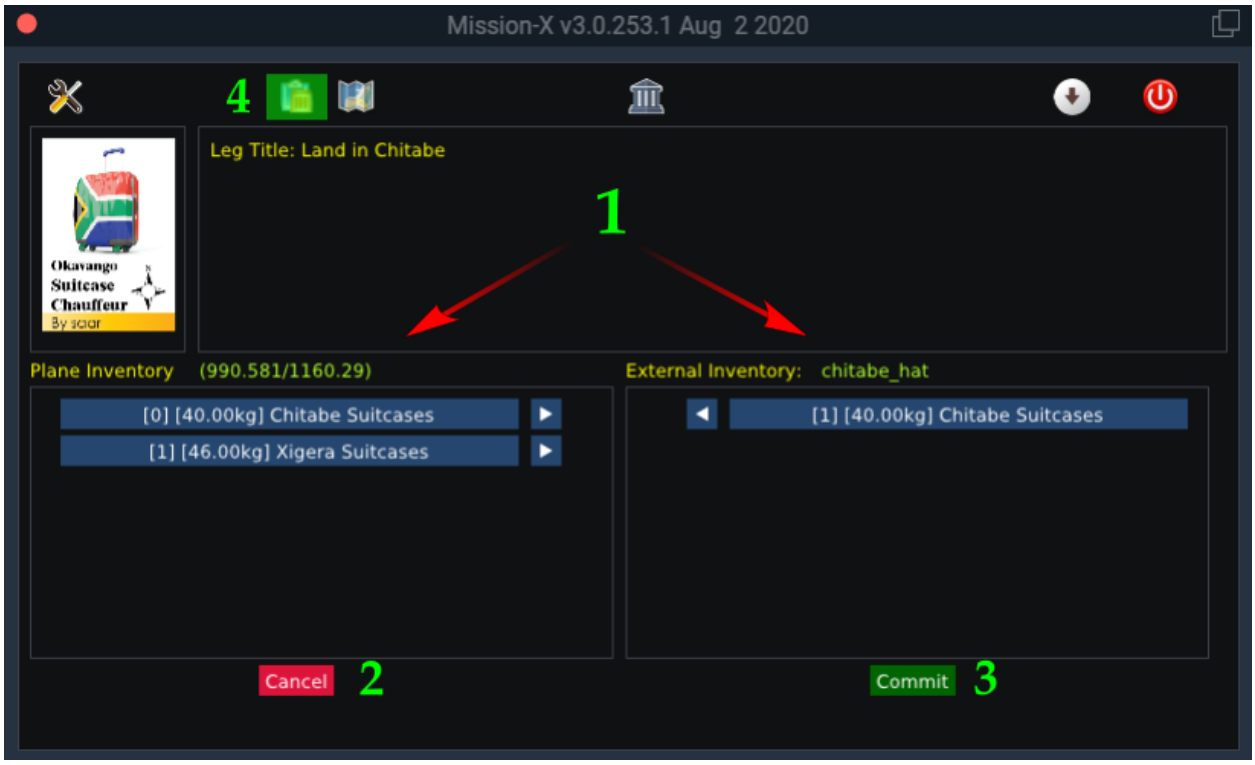
1. Display the ***flight leg title***.
2. Display the *flight leg description*.
3. **Quit mission button:** It ***will*** ask you if you are sure though.
4. ***Create a savepoint***: It is better to create a savepoint when on ground and load it with the same plane.
5. Display ***visual flight leg information***, this includes a static *map* or any Image the designer added (if mission has one). Will be hidden if there are none.
6. Display ***Inventory interface***.

In VR the layout is similar but organized a little different to make all information handy from one location.

Map Layer

1. ***Display area*** of the images that are part of this flight leg - maps, drawing, text etc...
   A flight leg can have zero or few informational images.
2. ***Navigation Buttons:*** You will see navigation buttons to switch between images if there is more than one informational image.
3. ***Toggle map:*** click this icon to display/hide the map layer.

Inventory Screen



The inventory screen displays the items for each storage.

1. ***Display content of the plane and external inventory*** (if any). On the left side is the plane's inventory and on the right side is the external inventory list.
   When there is no external inventory you won't be able to move anything to the right side.
   You use the "▶" buttons to move items between inventories.
2. ***Cancel transaction:*** reset inventories state. Screen will be dismissed.
3. ***Commit the transaction***: plugin will save the changes and keep items in their new storage "location".
4. ***Toggle inventory button***. Show/Hide inventory. There is a similar button on the MXPAD toolbar window.

6. MX-Pad

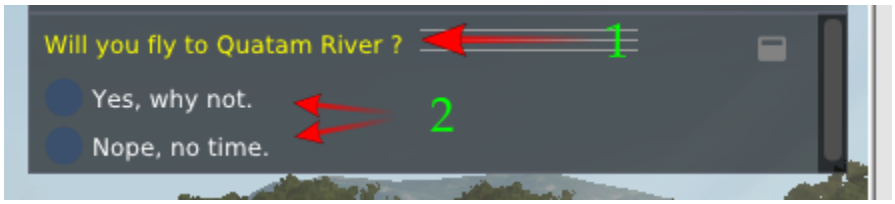
The small window on the right side of the screen (if you don't move it), is the communication interface with the simmer, and it also:

1. Display last messages.
2. Has a small toolbar at the upper part so you can quickly access inventory/information.

The MX-Pad is still a work in progress but let's take a look at its main components:

1. Main MX-Pad message log.
2. Quick Button to open inventory.
3. Quick Button to open the informational screen(maps and other images).
4. Auto hide MX-Pad. When active the MX-Pad will be hidden once there is no message being broadcasted. It will display MX-Pad at the next message or when entering an inventory area.
   If you manually hide/display MX-Pad then it will disable it automatically and you will have to re-enable it.
5. Pop-out/In window.

Choice Selection - Interactive Options

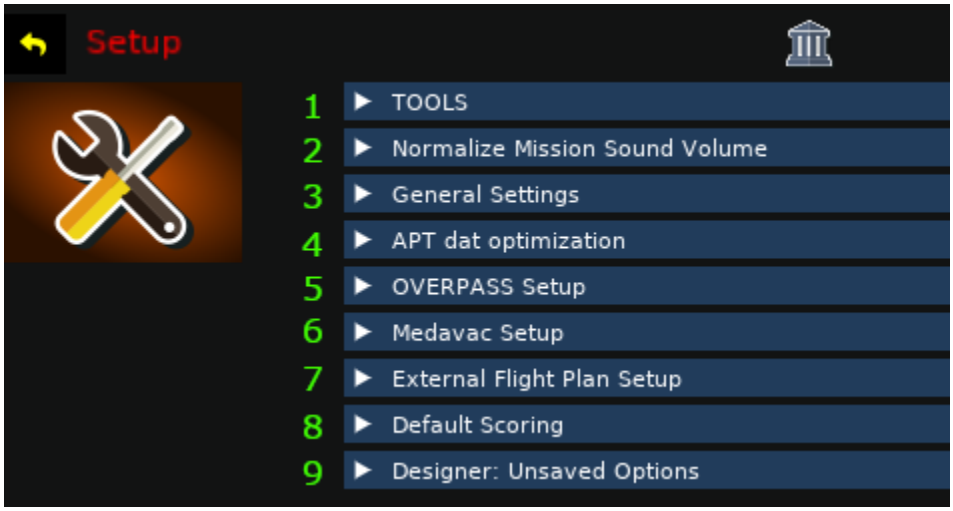


As of version v3.0.231.1, the MX-PAD is no longer handling choices, instead it is handled by a dedicated window when in 2D or in the Briefer window in VR mode.
The choice window is simplified to a ***title (1)*** and ***options (2)*** to pick from.
When you hover with the mouse above an option it will be highlighted.

Currently you can only pick options using your mouse or VR controllers (depending on the mode you are flying - 2D or VR).

7. Setup Screen

The setup screen allows you to set up global and specific settings that will affect custom missions or random missions.



1. **Tools:** Has 2 options in it:
   The first is to create an XP FPLN from GPS, this can then be loaded to a flight computer.
   The second is mainly for template builders (check Appendix A in Designer Guide).
2. **Normalize Mission Sound Volume:** Allow you to set a lower/higher gain to the sound played by the plugin (not x-plane)
3. **General Settings:** This is the main setup section you might want to check first. You can define: Font size, If to reveal all GPS waypoints at the start of the mission or not, toggle target markers.
4. **Apt.Dat optimization -** When generating a mission, the plugin can use information from apt.dat files to place your plane in better plausible locations. To do that it needs to collect information to query during mission build.
5. **Overpass Settings -** Define custom overpass URL.
6. **[Medevac] Target markers near target (not shown in screen shot) -** A target marker is generated for each random generated target location. In some cases you don't want the markers to appear directly above the target, but near it, so you should search for it.

7. **External Flight Plane Setup:** Override “fpln_folders.ini” locations, and write all fpln files to X-Plane “FMS plans” folder. In most cases this should be unchecked.
8. **Default Scoring**: You can define your own default scoring for your flights. This will only take effect if the mission file does not already have a scoring information.
9. **Designer - Unsaved Options:** As the name implies, this is a specific option for designers to assist in testing their mission configuration and override a few automated behaviors of the plugin.

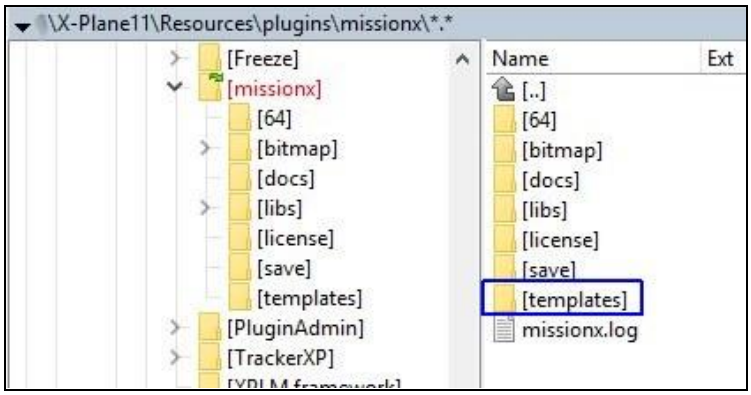
8. Generating Random Missions

Mission-X has a Mission generator that can be setup by the user or from pre-defined rules. In order for it to work we will need to "setup" the random package..

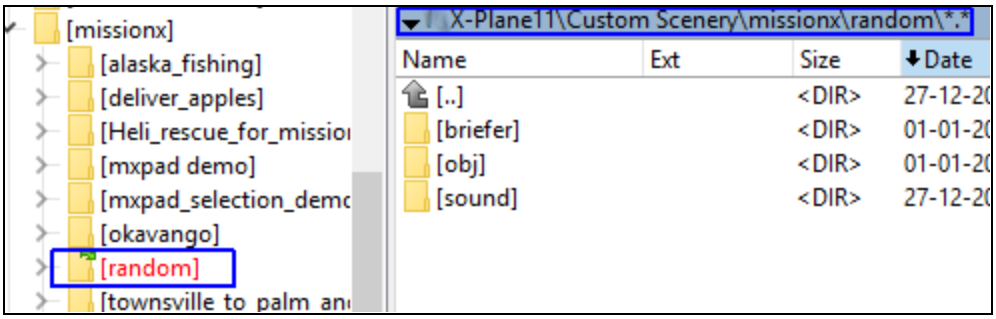
How to set it up

For Random Mission Generator to work correctly we need two things:

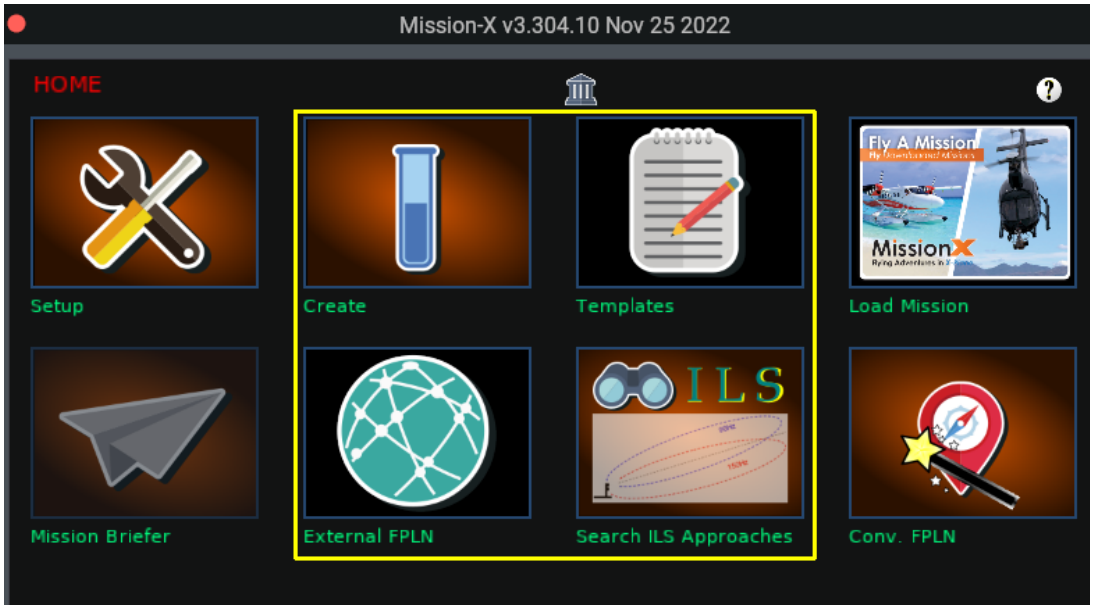
1. Latest version of Mission-X that includes the "templates" folder.



2. The "Random Mission Pack" which should be downloaded from "snagar development site" or "X-Plane org" and placed it in the "Custom Scenery" folder, like any other mission pack in: "{XP}/Custom Scenery/missionx" folder.



Once these two folders are set, you should be able to open the "**Mission Generator**" screen and generate random missions.

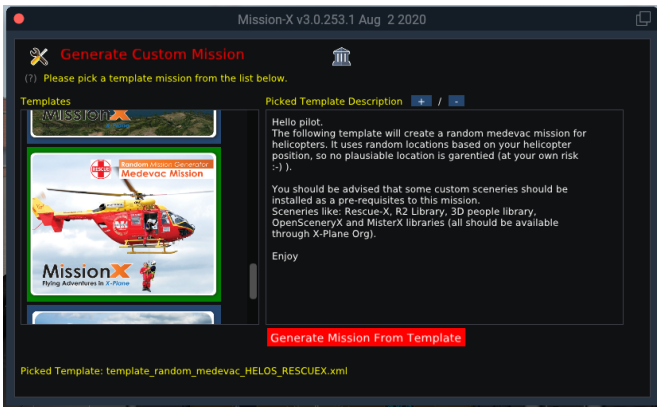


The main screens that let you generate missions are:"Create", "Template", "External FPLN" and "Search ILS Approaches" screens.

The "Conv FPLN" also created a mission file but its main purpose is to convert a flight plan from LittleNavMap format and generate a basic mission file that you might enhance later on.
See "Convert LittleNavMap FPLN" topic for more information.

Templates Screen

The “Template” screen will list custom template files that were provided with the plugin or created by a designer (Custom template package or custom template you added to the template folder).



1. Pick a template (press its image).
2. Press the “[generate]” button to generate a mission …

3. Press the [start mission] Button to start the mission.

Tip:

You can see the flight plan waypoints at the bottom of the screen and decide if you want to commit to that mission or generate a new one instead.

User create random mission screen

Another option to create a random mission is by using the “create random mission” screen.

Here is the main screen layout:

You need to define the type of mission, plane, expected distance and the number of flight legs. You can also define the date and time rules or in some cases define if to use the “osmweb” for more accurate road locations.

Once you finish configuring the mission rules, press the: [Generate Mission] button.
If you want a random date each time a mission is being generated, you can “check” the checkbox next to the [Generate Mission] button, but it depends on the “rules” you provided.

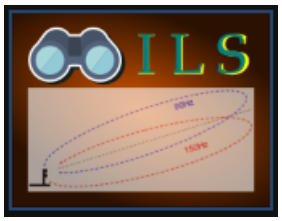
If a random mission has been created then you can press the **[>> start mission <<]** button.

In most cases after generating a mission you should see the last Flight Plan in green at the bottom part of the screen and decide if to commit to it or regenerate a new one instead.

Another way to run the last generated random mission is to open the "*Mission Picker*" screen, and find the "Last Generated Mission" image and pick it, just like any other mission pack.

Please remember that every time you would like to fly a different generated mission, you will have to regenerate a mission using the [Generate Mission] button.

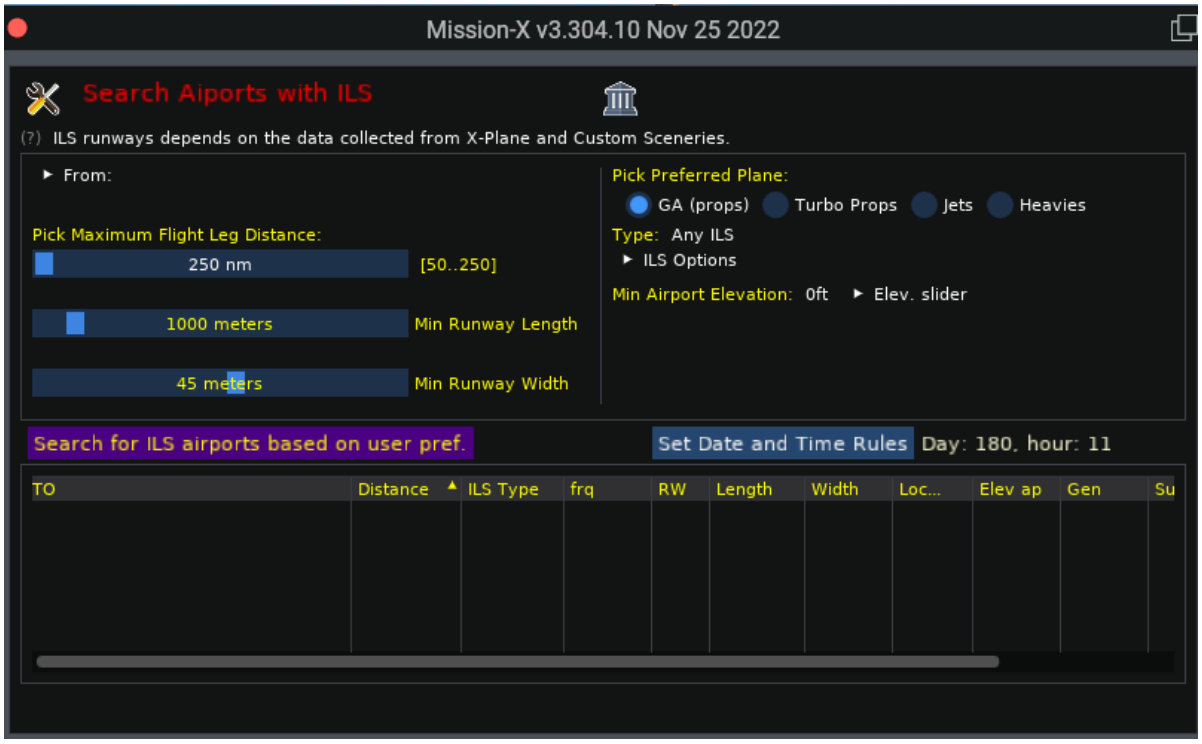
ILS Search Screen



The sole purpose of this screen is to let you practice the ILS approach by searching airports around you that have Localizer support.
You can define the distance, type of localizer and other search attributes to filter out and focus results on the type you are interested in.

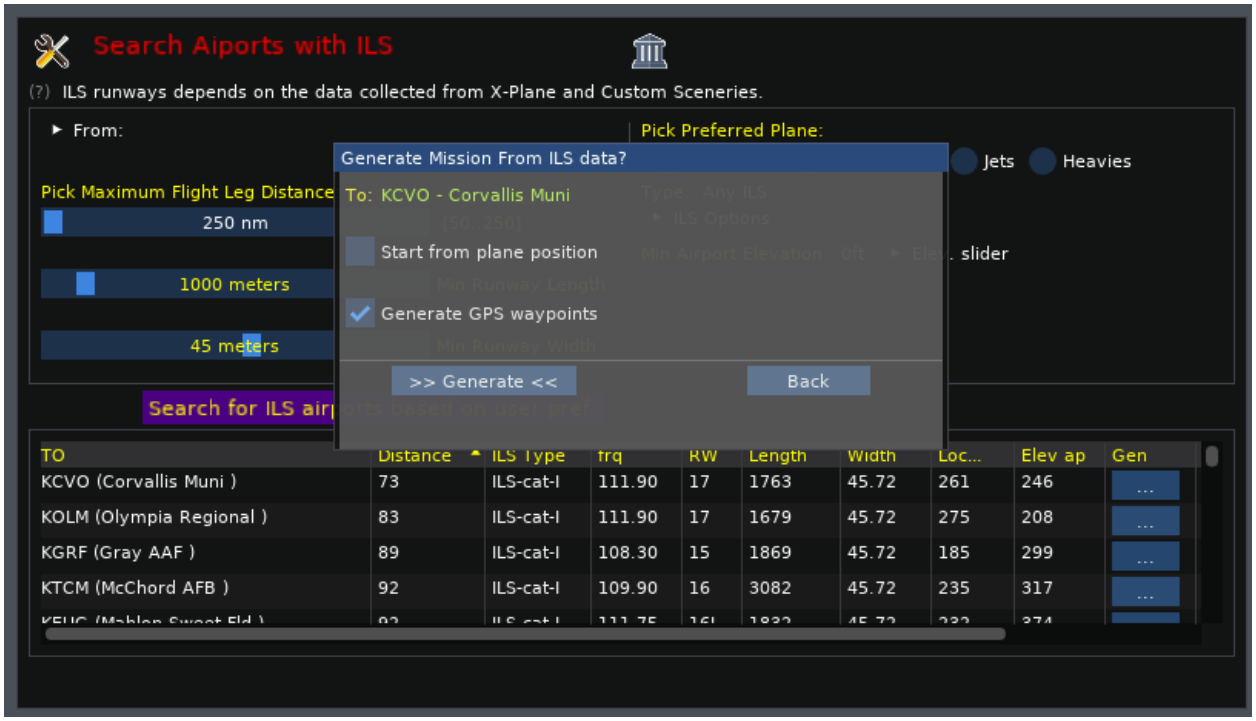
This screen needs the scenery airport information which is automatically read on the first time you install the plugin or manually executed from the "*setup*" screen.

Fill in the search options:



You can also set the "Date/Time rules" to generate random date/time for your mission.

Once settings are done you can press the [Search ILS airports] button to fetch the airports information:



Pick the airport + runway you would like to fly to, and press the detail button "[...]" to generate the mission.

Once the random mission has been created you can press the **[>> start mission <<]** button.

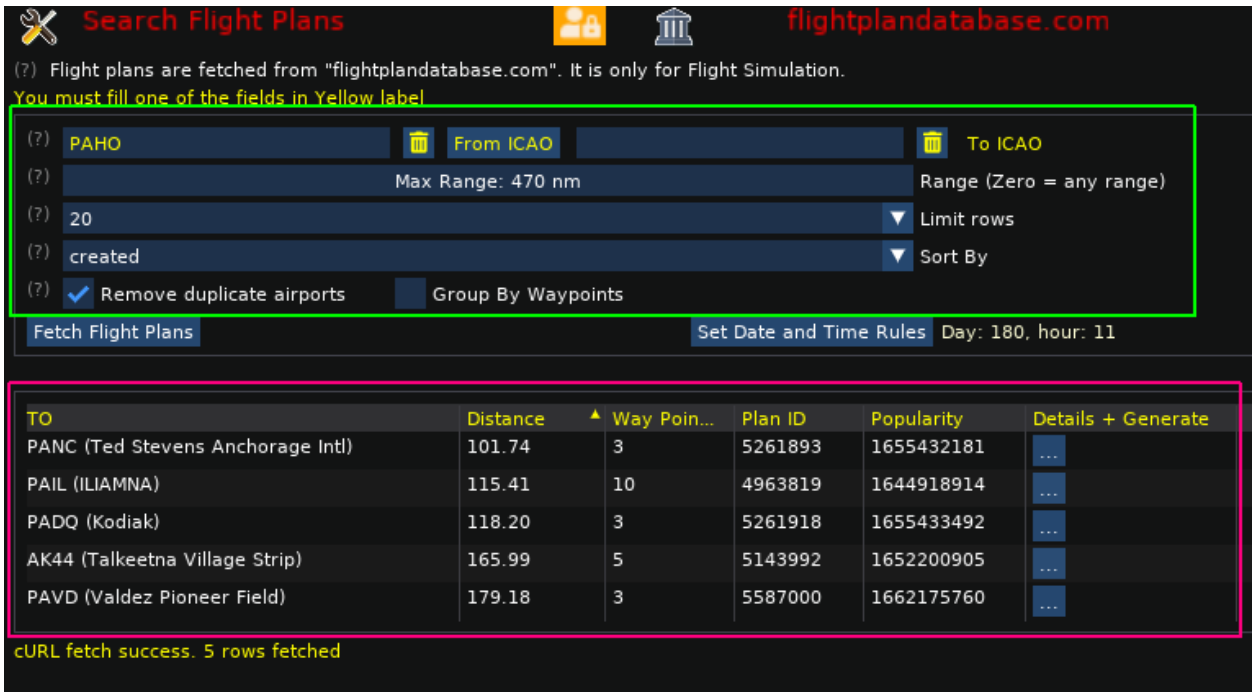
Please be advised that the mission that is being created only holds information regarding start and end locations, the preparations and execution of the flight (like FMS, plates, radio etc) are up to the pilot in command.

External Flight Plan screen

The external Flight Plan screen is based on the "flightplandatabase.com" site.

The idea is to fetch user defined or real world flight plans between different airports, another benefit is the ability to generate a new flight plan route on the site and then fetch it and build the mission flight plan based on it.

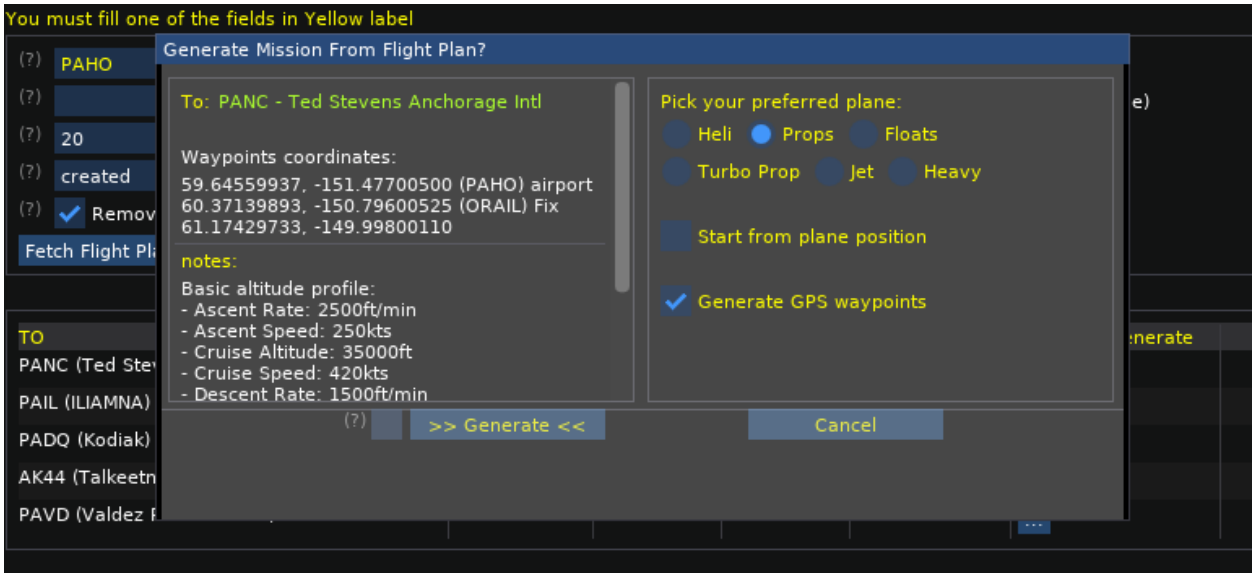
The generated mission will only hold one flight leg, but it can have many waypoints in it.



The screen is divided into two parts:
The upper part defines the filtering rules of the flight plan you wish to fetch (green square). Define the "FROM" or "TO" locations, the requested max distance (Zero means any distance), the number of rows to fetch and other filtering to minimize duplication of results.

The bottom part holds the results.

Pick the airport you would like to fly and press the detail button ([...]) to display the “details” of the flight plan and then decide if to “[>> generate <<]” the mission or not.



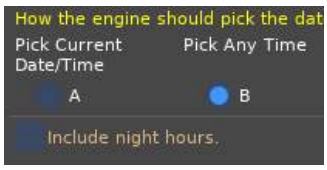
Tip:

The orange button at the top of the main screen () allows you to enter the authorization key from your “flightplandatabase.com” account.
The main benefit is that you won’t be restricted to only 100 requests per hour, although for casual usage you won’t feel the difference.

Few words regarding “Date and Time Rules” Screen

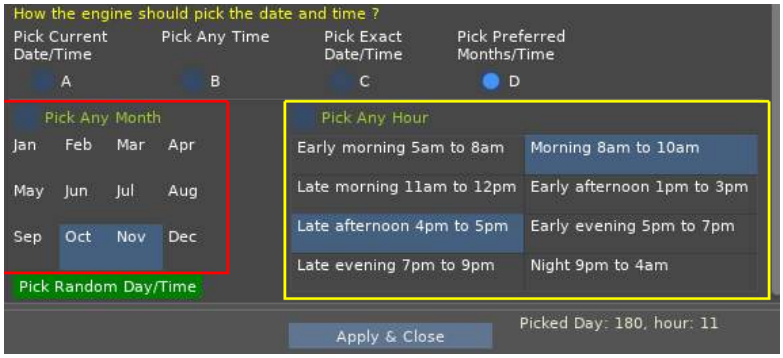
You can define four types of date/time rules.

A. Pick the current date and time
B. Pick any time, default is without night hours but you can also add them.



C. Pick Exact Date and time (so there is no randomness here)

D. Pick between months of year and part of the day to fly in:



You start by picking the Month (red square) then pick the preferred part of the day (yellow square) and then you click the [Pick Random Day/Time] button to actually make the pick.

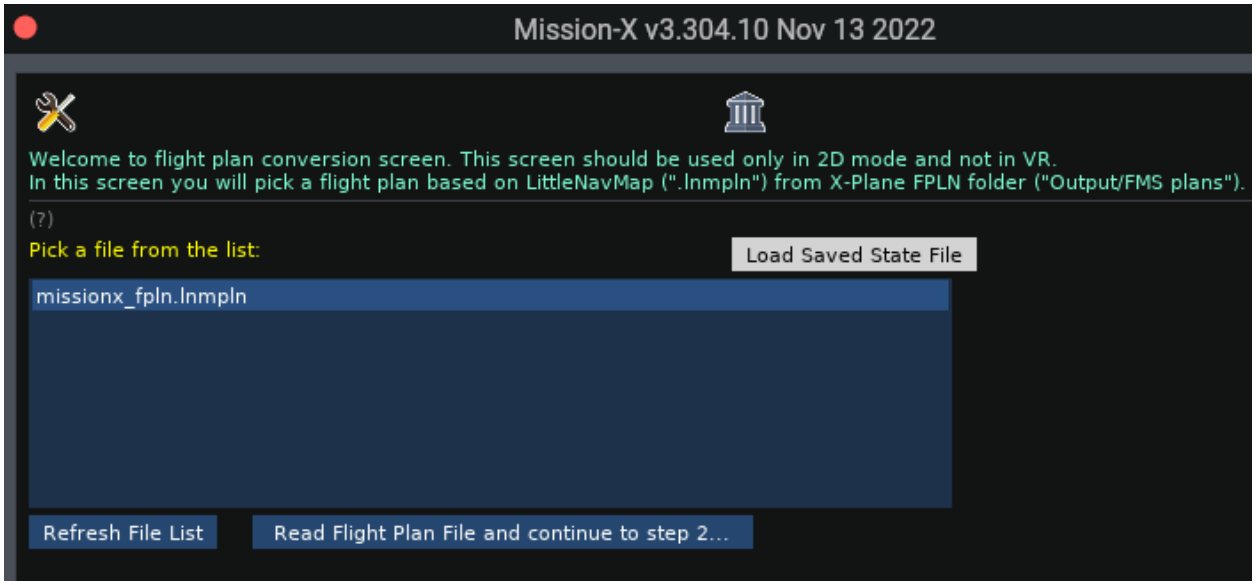
You should see the picked date next to the [Apply & Close] button

9. Convert LittleNavMap FPLN to a mission file

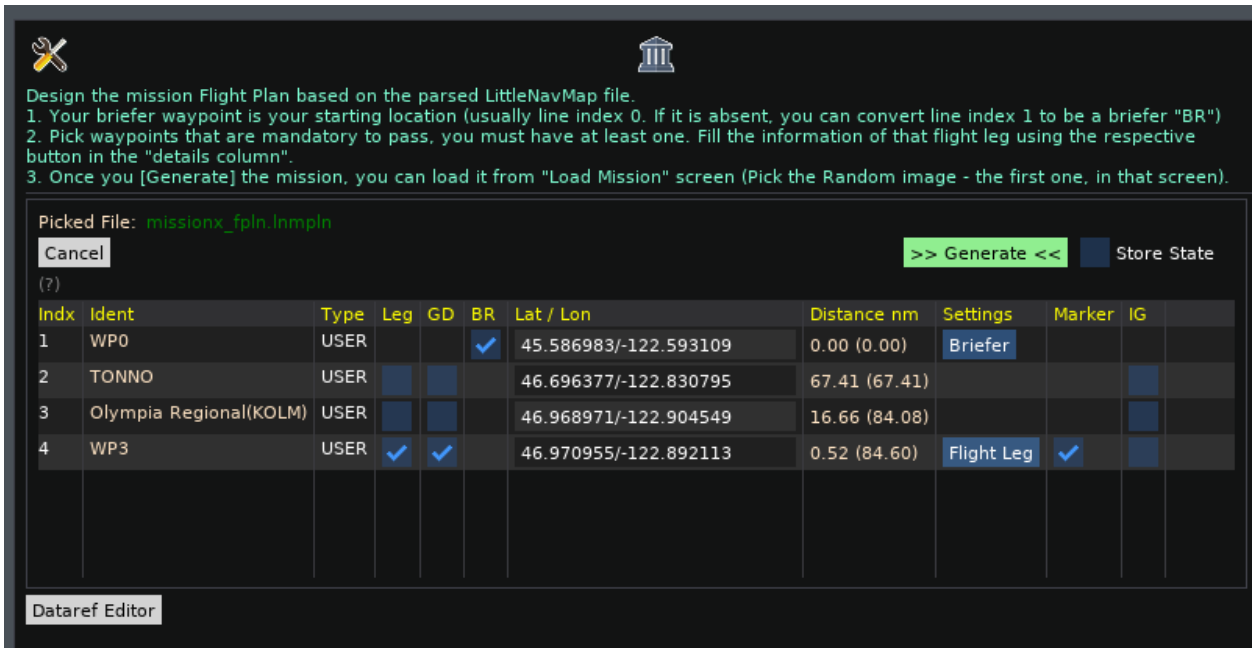
To those who want to create a mission but need some UI assistance to make it simpler, I have written a small screen that will allow you to convert a LittleNavMap flight plan file to a Mission-X file in the hope users will create their own missions and hopefully share them with the community.

This is not the same as a GUI editor, instead you pick from a list of waypoints and you decide which to make mandatory ones and which are optional and which to ignore.
You can also enter rules to the Briefer screen and for each waypoint you can add event triggers for special messages or as a base for scripts (script editor is not supported, you need to generate the mission file and then modify it). Here are some screenshots:

Load “LittleNavMap” flight plan file to edit:



Main Waypoint list to define the flight plan:



For each Flight Leg or Briefer you can open a sub window to fill in information.

For more information read the "Convert LittleNavMap Flight Plan to Mission-X.pdf" document in the "doc" folder of the plugin.

For any questions, issues or suggestions, please contact me at:
"snsgar.dev@protonmail.com"
Enjoy

10. Known Issues

- Savepoints known issues:
    - It is best to take a savepoint while on the ground (you can also do the same during flight).
    - When using 3rd party planes, we might not save all plane information. In the latest builds, the plugin does save custom ".acf" and ".obj" *DataRefs* but it might not be perfect (less safe). Try it first before flying a full mission.

I hope this user guide will assist you during your first steps with Mission-X v3.x.x

Cheers

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