More X-Plane 11 aircraft from Just Flight

Robin DR400
PA-28-181 Archer TX/LX
PA-38 Tomahawk
Duchess Model 76
PA-28-181 Archer III
Hawk T1/A Advanced Trainer
C152
PA-28R Turbo Arrow III/IV
Operations Manual

Please note that X-Plane 11 must be correctly installed on your computer prior to the installation and use of this Traffic Global software.

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INTRODUCTION

X-Plane does a remarkable job of simulating the aircraft you fly and the general environment, but the presence and behaviour of other aircraft could certainly stand a little improvement. Traffic Global is here to add that improvement.

Real-world airline schedules have been used to provide a set of realistic flights in and out of most major airports around the world. These are matched with hundreds of lightweight, non-flyable aircraft models to show appropriate airlines operating, while not bogging X-Plane down with unnecessary detail.

The purpose is to make the airport environments feel much busier in a believable way – not recreating the exact location of real-world aircraft in real time, but making airport activity feel both appropriate and engaging.

*Flight routes provided with Traffic Global*
Installation

Windows

To install Traffic Global, simply run the installation program. This will automatically find the location of your X-Plane installation, but you will have the chance to change the location if you wish. It does, however, need to be installed into your X-Plane base directory so please make sure the correct location is used. The base directory is the one containing ‘X-Plane.exe’.

The installer will add all the required aircraft models, the required X-Plane plugin and its necessary data files, and this manual.

Mac

Use the MacOS Finder to open the zip file that you downloaded. This will create two folders called ‘Aircraft’ and ‘Resources’. Drag these into your X-Plane folder; there will already be two folders with the same name. The existing contents of these folders will not be removed.

The plugin is both signed and notarised as required for use on MacOS Catalina.

After installing

Please make sure you update X-Plane to the latest available version, using the ‘X-Plane 11 Installer’. Also, be sure to try the ‘Update Scenery Online’ option; this will often update more files than the normal ‘Update X-Plane’ option does, and having the latest scenery installed will make sure that the airport definitions which are very important to Traffic Global are the best available. This step will not remove any custom scenery.
No additional steps are required. The next time you start X-Plane, simply start a new flight as usual and Traffic Global will appear on the ‘Plugins’ menu once the simulation has fully started.

**Licence keys**

The first time you run X-Plane after installing Traffic Global, you will be asked to enter the licence key you received when you purchased the software. Please copy and paste this key into the licensing dialogue. Traffic Global will then verify the licence with Just Flight’s servers and unlock your installation for you.

You can install this Traffic Global software as often as you like on the same computer system:

1. Click on the ‘Account’ tab on the Just Flight website.
2. Log in to your account.
3. Select the ‘Your Orders’ button.
4. A list of your purchases will appear and you can then download the software you require.

If your licence code is used to activate too many copies of Traffic Global (if you use Traffic Global on several computers, for example, or have reinstalled your operating system) and your activation is refused, please contact Just Flight Support for instructions. A different licence is required for the Windows version and the Mac version of Traffic Global.

**Data Privacy**

Just Flight will store your IP address and an anonymous computer fingerprint with each activation. The email address and licence code you provide will be used to verify that the details you enter match those from the purchase of the product.

**Uninstalling**

**Windows**

To uninstall this product from your system, select the appropriate option for your version of Windows from the Control Panel:

- ‘Add or Remove Programs’ (Windows XP)
- ‘Programs and Features’ (Windows Vista or 7)
- ‘Apps & features’ (Windows 10 or later)

Select ‘Traffic Global for X-Plane’, select the ‘Uninstall’ option and follow the on-screen instructions to uninstall the product.

*Uninstalling or deleting this software in any other way may cause problems when using this product in the future or with your Windows set-up.*

**Mac**

Using the MacOS Finder, remove the following two folders from your X-Plane installation:

- Aircraft/Traffic Global
- Resources/plugins/Traffic Global
Updates and Technical Support

For technical support (in English) please visit the Support pages on the Just Flight website.

As a Just Flight customer, you can obtain free technical support for any Just Flight or Just Trains product.

If an update becomes available for this software, we will post details on the Support page and we will also send a notification email about the update to all buyers who are currently subscribed to our Newsletter and emails.

Regular News

To get all the latest news about Just Flight products, special offers and projects in development, subscribe to our regular emails.

We can assure you that none of your details will ever be sold or passed on to any third party and you can, of course, unsubscribe from this service at any time.

You can also keep up to date with Just Flight via Facebook and Twitter.
To open the Settings window, open the Plugins menu after the simulator has started. Select the ‘Traffic Global’ sub-menu item and then click on the ‘Settings’ menu.

**Traffic Density**
This controls how much traffic is generated, as a percentage. Changes happen in real time; there is no need to restart the simulator.

**Dynamic Density**
When this is switched on, the level of AI traffic will be continually monitored and, if necessary, reduced if your PC’s processor is not able to maintain all the active traffic.

**Sound**
Use this to disable sound if you want to keep the normal X-Plane sounds working, but not the Traffic Global sounds.
**Internal Volume**
Adjusts the level of sound for internal views. External views are always based on the standard X-Plane volume levels.

**Effects**
Most aircraft models will use several particle effects for features such as engine exhaust and touchdown tyre smoke. You can disable these with this control if you wish to do so.

**View Mouse Speed**
Most of the new views added by Traffic Global can be controlled using the mouse. This setting controls the mouse sensitivity when dragging views around.

**Label Size**
Controls the size of the aircraft labels and other overlay text. The text also scales according to X-Plane's own ‘UI Font Size’ setting.

**UDP Port Number**
If you are driving external PCs across a network, you can override the UDP port used for communications. Normally this is not needed. Please make sure that the UDP port matches across all networked PCs if you do change this.

**UDP Multicast**
Normally the network data will be sent individually to each external display PC. You can choose to use Multicast instead, which sends only one copy of the data. This can reduce network traffic if you use more than one external PC, but Multicast may not work depending on your specific network. See the NETWORKED OPERATION section for more information.

**Use TCAS**
Makes a small number (currently 19) of AI aircraft show up on aircraft cockpit radar or external traffic monitoring systems. See the TCAS SET-UP section for more details.

**Collide with User**
If you, the simulator pilot, collide with an AI aircraft, your own aircraft will normally have several types of severe damage applied and the view will switch to an external view showing both you and the aircraft you collided with. If you prefer not to deal with collisions, you can disable this behaviour here.

**Never Steal Parking**
If the only parking left at a given airport is reserved for a specific airline, and a different airline’s aircraft is unable to park because no other parking is available, it will normally be parked in any available spot. If you prefer to reduce the overall traffic levels in favour of having reserved parking used exclusively by the airline which owns it, you can set that here.

**Allow Substitutes**
The traffic database file is based on real-world traffic and includes as many flights as possible. In some cases no exact match exists in the provided models, either for the aircraft type or the airline livery. Traffic Global will substitute the nearest equivalent aircraft but in many cases this will be an unpainted version. If you don’t want to see unpainted aircraft, you can disable them here.
Preferred View
In the Radar, Flight Routes and Departure Board displays, you can click on an aircraft and have the simulator switch to a view that shows that aircraft. This control allows you to choose which view is used by default.

Map Integration
Traffic Global adds two new layers to the standard X-Plane Map and Instructor interfaces, showing the location of parked and active AI. These are unavoidably switched on by default if they are present. If you prefer not to have these layers at all, you can disable them here.

Imperial Units
Some labels and other items show short-range distances. You can choose whether these are shown in feet or metres.
Several new hotkeys have been added for controlling views. These can all be configured in the standard X-Plane keyboard assignments window. Where hotkeys are referenced in this manual, the default value is used.

- Camera centred on an AI aircraft: Ctrl + F2
- Camera following an AI aircraft: Ctrl + F7
- Camera centred on an AI aircraft, looking at the player: Ctrl + F3
- Camera centred on the nearest airport: Ctrl + F6
- Camera centred on the nearest airport, looking at an AI aircraft: Ctrl + F5
- Select the next airport for airport-to-aircraft camera: Page Up
- Select the next runway at the current airport for airport-to-aircraft camera: Shift + Ctrl + Page Up
- Camera centred on the player, looking at an AI aircraft: Ctrl + F4
- Select the previous airport for airport-to-aircraft camera: Page Down
- Select the previous runway at the current airport for airport-to-aircraft camera: Shift + Ctrl + Page Down
- Reset view orientation to default: Home
- Reset stored tower offset: Shift + Home
- Camera centred on one end of a nearby runway, looking at an AI aircraft: Shift + Ctrl + F5

If you are using custom external views, you can select the current aircraft of interest (the one that the view centres on) using a key combination of [Shift]+[Ctrl] and clicking on any AI aircraft with your mouse. The label above the current active aircraft will be shown in slightly larger text.

It is also possible to forcibly remove individual aircraft from the simulator by making them active, either using the click method above or by selecting them from the radar or departure board windows and pressing [Ctrl]+[Delete]. This can be useful if two aircraft are blocking each other and not solving the problem for themselves.
ADVANCED OPTIONS

There are some advanced configuration options which, for now at least, are only accessible by changing files. These are all found in the plugin's main directory under ‘X-Plane/Resources/plugins/Traffic Global’.

config.ini
This is the normal configuration file. All options in here are available in the in-sim Settings window.

ExcludedAirlines.txt
This allows you to block an airline entirely. Each line should have a three-letter ICAO airline code. A list of airline codes is available on Wikipedia.

ExcludedAirports.txt
This allows you to completely ignore an airport. Each line should have a four-letter ICAO airport code. A list of ICAO airport codes is available on Wikipedia.

ViewpointOverrides.csv
This file manages airport tower location overrides and is automatically updated by the sim.

NEW VIEW MODES

Several new views are added by Traffic Global to help you see nearby traffic.

Centre on AI aircraft
This view centres on the selected AI aircraft, with a fixed direction relative to the world.

Following an AI aircraft
This also centres on the selected AI aircraft but is aligned relative to the aircraft, initially following it.

Look from an AI aircraft towards the pilot
Make sure that both the selected AI aircraft and the pilot's aircraft are in view, with the AI aircraft closest to the camera.

Look from the pilot towards an AI aircraft
Make sure that both the selected AI aircraft and the pilot's aircraft are in view, with the pilot's aircraft closest to the camera.
Look from a nearby airport towards an AI aircraft
Using the selected airport’s viewpoint, look directly towards the selected AI aircraft.

Free-view from a nearby airport
Positioned at the selected airport, with no specific target.

Look from one end of a runway of a nearby airport towards an AI aircraft
Using one end of the runway, look directly towards the selected AI.

You can cycle through all nearby aircraft using the standard X-Plane hotkeys Ctrl+[ and Ctrl+], and through nearby airports using Page Up and Page Down. If you are in a runway-end view, you can go to a different runway end using Shift+Ctrl+Page Up or Page Down.

For views which allow it, you can move and rotate the view using the mouse. To rotate, hold down the right mouse button. To move the view’s location, hold the Alt key and the left mouse button. Also, standard X-Plane commands for zoom, move and rotate can be used.

If you are in a view that follows a specific AI aircraft and you select another from the Radar or Departure Board windows, the current view type is not changed. For example, if you are using the tower-to-AI view, selecting a new target aircraft will not change the view to the default AI view.

You can select an AI aircraft to focus on by holding down the Shift and Ctrl keys and clicking anywhere on the main display. The view is not automatically changed, but if you are already watching a specific aircraft, the view will start following the one you click on. If there is any doubt as to which one you chose (the centre of the aircraft is used as the reference point) the nearest is chosen.

When you switch to a runway-end view, if you are already focused on an AI aircraft the first view selected will be the one most appropriate for that aircraft. For example, if the aircraft is on final approach, the first runway-end view chosen will be the closest end of the runway on which the aircraft will land.
NEW DISPLAYS

Three new displays are provided as part of Traffic Global. They can be detached from the normal X-Plane window and exist as independent windows which be positioned on any monitor.

Radar

The Radar display (default hotkey Ctrl+F9) shows a typical radar window, centred on the pilot’s current location, showing all nearby AI aircraft. You can choose whether or not to display aircraft on the ground.

Clicking on a particular aircraft in the Radar display will open the default AI external view, focused on that aircraft. The standard X-Plane [+ and -] zoom keys zoom in and out and the view always centres automatically on the aircraft you are flying. Some additional controls are made visible if you make the Radar window wide enough.
**Flight Schedule**

The Flight Schedule (default hotkey Ctrl+F11) opens a new window showing all flights arriving at and departing from the currently selected airport for the current day. Only airports near the pilot will be available in this window; to review flights at airports further away, reposition your aircraft.

You can cycle between nearby airports using the [ and ] hotkeys.

<table>
<thead>
<tr>
<th>Time</th>
<th>Flight</th>
<th>Airport</th>
<th>Gate</th>
<th>Type ID</th>
<th>Airline</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:11</td>
<td>➘</td>
<td>General Edward Lawrence Logan Intern Term 739 N57350 Delta Air Lines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:15</td>
<td>➘</td>
<td>Newark Liberty Intl Term 752 N44835 United Airlines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:15</td>
<td>➘</td>
<td>McCarran Intl West 73H N35804 American Airlines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:17</td>
<td>➘</td>
<td>BMI Marshall West 739 N43566 Alaska Airlines, Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:20</td>
<td>➘</td>
<td>Washington Dulles Intl Term 739 N85687 United Airlines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:20</td>
<td>➘</td>
<td>John F Kennedy Intl West 332 N26213 Delta Air Lines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:20</td>
<td>➘</td>
<td>Vancouver Intl Term 73G C-GPOK WestJet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:20</td>
<td>➘</td>
<td>Dallas Fort Worth Intl 32B N11475 American Airlines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:20</td>
<td>➘</td>
<td>Atlanta Hartsfield Jackson Term 739 N42413 Delta Air Lines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:20</td>
<td>➘</td>
<td>Washington Dulles Intl 739 N40578 United Airlines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:20</td>
<td>➘</td>
<td>Chicago O Hare Intl Term 73H N44040 American Airlines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:21</td>
<td>➘</td>
<td>San Francisco Intl Term 319 N38175 Allegiant Air</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:24</td>
<td>➘</td>
<td>Provo Municipal Term 739 N61556 United Airlines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:25</td>
<td>➘</td>
<td>Houston George Bush Intl Term 763 N02474 Delta Air Lines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:25</td>
<td>➘</td>
<td>Guangzhou Baiyun Intl Term 722 B-60EE China Southern Airlines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:25</td>
<td>➘</td>
<td>San Francisco Intl Term 739 N11136 Delta Air Lines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:30</td>
<td>➘</td>
<td>Sacramento Intl 73W N07526 Southwest Airlines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:30</td>
<td>➘</td>
<td>Atlanta Hartsfield Jackson Term 319 N80262 Delta Air Lines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:30</td>
<td>➘</td>
<td>Washington Dulles Intl Term 739 N7254 United Airlines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:32</td>
<td>➘</td>
<td>Newark Liberty Intl 752 N30178 United Airlines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:35</td>
<td>➘</td>
<td>Cincinnati Northern Kentucky Intl 739 N71458 Delta Air Lines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:35</td>
<td>➘</td>
<td>Monterey Regl Amer CR7 N77044 United Airlines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:35</td>
<td>➘</td>
<td>Houston George Bush Intl 739 N77568 United Airlines</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The symbol in the first column shows whether the aircraft is arriving (➔) or departing (➔). The second column shows whether the aircraft is near enough to be present in the simulator (✈).
Flight Path View

This view was originally only intended for use during development, but it has been left in the release software in the hope that some people will find it useful. It shows a simple, top-down view of the area around your current location, with basic information about nearby aircraft and airports. Clicking on any of the aircraft (pink dots) will go to a view showing that aircraft. This window can be opened using [Ctrl]+[F1] (Windows) or [Option]+[F1] (Mac).

Some special keys are available for use on this display. Press Home to centre the display on the pilot’s location, or Shift+Home to centre it on any AI aircraft that is currently the focus of the main display. The cursor keys move the display around and the standard X-Plane [+ and -] zoom keys zoom in and out. You can also use the mouse to drag the view, and the mouse wheel to zoom.

As you zoom in closer, airports will show parking slots and, when you are even closer, information about each individual slot. This information can be useful if you want to see why a particular airport does not have as much traffic as you expected, or why a particular parking spot has been used.

The colour of the airport name shows whether an airport is a real X-Plane 11 airport or whether it is an X-Plane 10 airport which has had its taxi routes auto-generated by Traffic Global. Darker names show the X-Plane 10 airports. In the screenshots below, Chicago O’Hare is a genuine X-Plane 11 airport and Schaumburg Rgnl is from X-Plane 10. This directly and strongly affects the quality of the taxi routing – see the TROUBLESHOOTING section for more details.
This view also shows which runway flow is currently active for all nearby airports, if you zoom in. All active runways will be marked with a large arrow and labelled with the types of aircraft that may use that runway. Each airport will also have a small wind direction marker. These have been provided to let you know which runways Traffic Global is using and these should match the runway that is used by X-Plane’s own ATC system.

Please note that Traffic Global uses the weather conditions as reported by X-Plane, and the airport definitions provided by X-Plane, when determining the runways in use. If you are using any kind of real-world input for weather or ATC that does not feed back into X-Plane, then the runways in use may well not match.

### Information Overlay

In addition to the new windows, Traffic Global can also show information about all nearby aircraft on the main simulator display. You can control this with the [Insert] key (Windows) or [Ctrl]+[Help] (Mac), switching between ‘All Aircraft’, ‘Only flying aircraft’ and ‘No overlay’.

There is also an option to show extended information using [Shift]+[Insert] (Windows) or [Shift]+[Ctrl]+[Help] (Mac), which adds basic statistics about frame rates, network traffic and the number of AI aircraft being simulated and displayed.
If you use X-Plane across several computers working together, either flying with friends or using several PCs to drive a single multi-screen cockpit, you need to synchronise the traffic between the different computers. This should normally happen automatically.

Traffic Global detects whether the X-Plane instance it is connected to is working as a master or slave display. The master display will transmit data about traffic to the slave displays using (by default) port 49015.

You can reconfigure this port in Traffic Global's Settings dialogue, making sure that you enter the same number for each X-Plane instance. Do not use a network port number that is already used by X-Plane.

If all your computers are on the same network segment, you are using a cabled network and you have more than two external PCs, you can try to use UDP multicasting. This reduces the amount of network traffic by only sending each update once, instead of once to each slave computer. It may not work, however, depending on exactly how your network is set up. You can always fall back to the standard non-multicast mode.

Note that multicast is extremely unlikely to work across a WiFi connection.

Remote displays will work across both Windows and Mac installations, provided that each client has a valid licence.

At the time of writing (February 2020) there is currently a bug in X-Plane affecting the behaviour of external displays when custom views are used; external displays will not show the correct view. This has been reported and a fix is expected.
Two new map layers, which can be switched on or off, are available on the in-game map. One shows the active AI aircraft – those that are currently in motion – and the other shows those which are currently parked.
TCAS SET-UP

Some aircraft, and some external tools, use the X-Plane ‘multiplayer’ aircraft locations to provide a TCAS (Traffic Collision Avoidance System) feature. Traffic Global does not use multiplayer aircraft at all, so normally these tools will not show the locations of nearby AI aircraft.

You can tell Traffic Global to use the multiplayer aircraft locations for up to 19 nearby aircraft. This limit is imposed by X-Plane itself, which will only allow 20 aircraft to exist at a time. The TCAS option is available in the ‘Settings’ dialogue and does not require X-Plane to be restarted.

There should be no performance penalty for adding this but there will be some additional aircraft displayed on the in-game map and these will have incorrect orientations and labels.

You will also need to use the X-Plane ‘Flight Configuration’ dialogue to manually enable the multiplayer aircraft. To do this, open the Flight Configuration page and click on the ‘AI Aircraft’ button near the top. On the next page, click the ‘Add Aircraft’ button until no more can be added.
THIRD-PARTY SUPPORT

Developers

Some additional resources for developers, particularly airport designers, are available at https://www.jkcc.co.uk/traffic-global/. These documents will change and be added to over time.

Traffic Global works around the normal X-Plane limit of 20 aircraft by using an entirely different mechanism for adding the AI aircraft. This means that the new aircraft will not be visible to standard tools which assume that any additional aircraft are present as ‘multiplayer’ aircraft.

This can be partially solved by using the TCAS work-around described above, but that only works for the 19 aircraft closest to the pilot. To try to help this situation, Traffic Global provides the location and other details of all AI aircraft in a way which other developers can easily use.

Example source code in C++ is provided as part of the installation. It can be found in the Traffic Global directory, called ‘DatarefTest.cpp’. Other languages should be very easily converted.

Airport designers

Traffic Global is designed to use X-Plane’s native airport data for all airport operations. This has the great benefit that there is no complex set-up required for most people; it simply works ‘out of the box’.

There are a few differences in the rules applied by Traffic Global when it comes to traffic flows – that is, deciding which runways are in use at a given time. X-Plane’s documentation states that the first applicable rule is used, but this leads to under-utilisation of runways at larger airports because the rules defined are not perfect. Although runway rules can specify more than one runway, most don’t, even if the airport is capable of having more than one runway in use at a time.

To work around this, Traffic Global interprets the rule sets slightly differently. As with X-Plane, the first applicable flow will be used and the first applicable runway within that flow will be used. In many cases, however, airports with multiple runways are not correctly set up to differentiate between them; for example, an airport with parallel main runways will have no difference in their usage restrictions. By X-Plane’s standard rules, the first of the two runways would always be used. If all other restrictions are identical, Traffic Global will add a new restriction to these runways based on on-course heading, allowing both runways to be used simultaneously.
ADDITIONAL LIVERIES

The traffic database includes some flights for which the exact aircraft/airline livery is not provided, due to time constraints. Traffic Global will normally replace these missing aircraft with generic, unpainted versions to make sure that airports have a good level of active traffic. If you are at an airport which has a large number of unpainted aircraft, you can easily add your own liveries using nothing more than an image editor such as Photoshop or Gimp.

Each time X-Plane starts, a simple report of missing aircraft types called ‘MissingLiveryReport.html’ is created in the Traffic Global home directory. This gives you the code name for each aircraft that Traffic Global has tried to use and been unable to find.

To add a new aircraft type:

1. Copy an existing version of that aircraft, ideally the one called ‘Paintkit’ or with a name beginning with ‘JFAI_’.
2. Rename the .cfg and .OBJ files to match the aircraft code given in MissingLiveryReport.html.
3. Edit the .cfg file, changing ONLY the ‘Airline=’ line to have the correct ICAO code for the airline you are using. ICAO codes are almost always three letters and can be easily found online. Take care to use the ICAO code, not the IATA code, which is usually two letters.
4. Edit the .DDS files using your chosen image editor. You may need to use an image converter first, to convert from DDS to either PNG or JPEG. Many of these are available online, including Laminar Research’s own DDSTool. After you have finished editing, convert the image back to DDS using the DDS5 compression method and with ‘Generate MIP maps’ ticked/selected. X-Plane may crash if it is asked to load an image with no mipmaps.

The next time you load X-Plane, your edited aircraft should be used. Check the contents of the MissingLiveryReport file to see if it is being used. This file is created after the entire scenery database has been loaded and checked, so it may take a little while to be updated. The date stamp on the HTML file will tell you if it has been updated yet.

If you are providing new aircraft, please pay attention to the case of file names since the Mac is case-sensitive.

ADDITIONAL AIRCRAFT

While it is possible to add new aircraft types to Traffic Global, aircraft design is outside the scope of a general user manual! If you are an aircraft designer already, the only thing to note is that the existing aircraft models use the standard X-Plane OBJ format but with custom datarefs for animations. These can easily be found by reading the existing models.
AIRPORT DATA

This is a technical section and absolutely not required reading if you just want to install Traffic Global and get going! You only need to read this if you are interested in making modifications to airports.

Traffic Global uses the existing airport definitions provided by X-Plane. While this may mean that there are differences between what is visible in the simulator versus what you may know of an airport in real life, it means that the traffic you see is consistent with the rest of the simulated world. More importantly, it means you don’t have to learn to use World Editor to alter existing airports or spend a long time defining custom rules for each airport you want to visit.

If you already know how to do these things, that’s great! You can help improve the state of the simulator by making any required changes in WED and uploading your improvements to the official Scenery Gateway. Any improved rules you add will stand a good chance of being made available to all other X-Plane users, whether they use Traffic Global or not.

Each time Traffic Global starts, a file called ‘MissingAirportReport.html’ is created in its base directory. You can check this to see which airports are either entirely missing or unusable.

What’s important?

Traffic Global reads the same apt.dat files that X-Plane uses, reading them in the same order, based on the contents of the scenery_packs.ini file. There is nothing you need to do in order to tell Traffic Global to read your airport – no additional configuration or files. Simply provide X-Plane with a new or changed apt.dat and Traffic Global will see the same changes.

The sections that Traffic Global is interested in mainly show up under ‘Taxi+Flow’:

- Taxi Routes
- Runways
- Start Locations
- ATC flows
- Tower viewpoint

Other important items are under the main airport record:

- Airport ID
- Datum latitude/longitude
- ICAO code

If you have all of these things correct, the airport should function more or less as you expect.

Parking records should have the ‘Ramp Start Type’, ‘Equipment Type’, ‘Size’, ‘Ramp Operation Type’ and any airline-specific reservations set. Taxiway records should likewise have all the data set; it is all used except for the ‘ILS Precision Approach’ data. Please note that Traffic Global may still allocate other airlines’ traffic to reserved parking slots if no open-use slots are available. You can disable this behaviour in Settings.

Support for X-Plane 10 airports

Before X-Plane 11, information about airports was very limited in comparison. In particular, X-Plane 11 airports usually come with the all-important taxi routes defined. Where this doesn’t exist, and for all X-Plane 10 airports, Traffic Global will try to create a taxi network from visual features. This approach very much depends, however, on the quality of the airport. For some airports it will not work at all if visual features have been used inappropriately, especially when the airport designer has used taxiway markings as boundary markings.
Problems?

If you do modify an airport, make sure that you re-export the apt.dat file and that your ‘Export Target’ is set to X-Plane 11.30 or higher; otherwise the detailed parking records (type 1301) are not exported. Remember that Traffic Global reads the apt.dat, not any xxxx.wed.xml files that are used by the editor.

EDITING TRAFFIC

At present there are no supplied tools for modifying the traffic database. It is possible that these may be added in the future if there is sufficient demand. The supplied traffic database is the end result of a complex set of processes which were not considered robust enough for general use.

You can, however, add your own traffic using existing, freely available tools. The traffic database is in the widely known BGL format used by Prepar3D and Flight Simulator X. Traffic Global will read any traffic BGL file that is placed in the Traffic Global base directory. There are also freely available third-party tools for creating and editing BGL traffic files.

If you add your own traffic, remember to add return routes! If you add a single flight which is marked as a weekly flight, for example, an aircraft will exist on the tarmac somewhere for the whole of the rest of the week, occupying a parking slot and potentially erasing hundreds of other flights which now have nowhere to park.

You can generate the required airport and aircraft lists from inside X-Plane, using the ‘Dump Airport List’ menu item.
TROUBLESHOOTING

The installer fails with error code 0x800700e8.

This is caused by anti-virus software being a little too careful for its own good – a very common problem, especially soon after release. Avast and AVG are particularly prone to this. The only solution is to temporarily disable your anti-virus software, install Traffic Global, then immediately re-enable it and run a full scan. The executable file in the package is called ‘win.xpl’ and you can upload this to a site like VirusTotal to do a specific check. Microsoft runtime components are also included. The installer, the runtimes, and the plugin itself are all digitally signed to prevent tampering.

Why does scenery not appear if I watch aircraft in the distance?

X-Plane only loads scenery around the pilot’s aircraft, even if the view is looking some distance away. This means that if, for example, you look at parked aircraft that you can see on the radar at a different airport, there may be no airport buildings or even runways visible. If you are far enough away and high enough above the ground, you may even see parts of the ground surface disappear. Unfortunately there is currently no way of requesting that X-Plane loads scenery at a specific location, nor is it smart enough to automatically load scenery at the camera’s current location.

I have just installed a new scenery package and Traffic Global didn’t use the new airports.

The simple solution is to restart X-Plane. It takes quite some time to read the traffic database, so Traffic Global gets going as soon as it starts, which is almost as soon as X-Plane starts. X-Plane doesn’t add new scenery until much later, so the first time you run it after installing a new package, Traffic Global will already be reading the scenery database before the new package is added.

There’s not enough/too much traffic at my airport.

While the traffic database provided by Traffic Global is 100% based on real flights, it will always be the case that the simulated world differs from the real one. The purpose of Traffic Global is to allow you to enjoy being at active airports rather than to provide a perfect match for today’s real-world departure boards.

There are several reasons for these differences. Converting the real traffic data into a form that the simulator can use is much more complicated than you might expect, and the simulated airports are very often different to their real-world counterparts; in particular, older sim airports can have very little parking available beyond two or three alternative starting locations.
My favourite airport has no parking or very little parking.
The first thing to do is see if a newer version of the airport exists on the X-Plane Scenery Gateway. Many airports uploaded to the Gateway do eventually make it into the simulator but you can get updated versions much sooner if you check for yourself. Also remember to run X-Plane's own scenery updater (see the Installation section).

On Traffic Global’s menu there is a ‘Show Missing Airports’ option. This shows an automatically generated report of which airports Traffic Global is completely unable to use, either because the airport is missing or has no usable runways and/or parking. You can check the Scenery Gateway using the links in the report to see if there is a newer copy that is not yet included in the simulator and download it if one is available. At the time of writing, most airports on this list have only old, 2D versions available on the Scenery Gateway.

Airline X is parking at Terminal 3 but its aircraft don’t do that in real life!
X-Plane is a simulator, not real life! There will always be differences between what you see in the simulated environment and what you see in the real world. Parking is allocated according to a complex set of conditions and these will almost inevitably be different to the rules in effect at the real-world airport equivalent. In some cases aircraft will ‘steal’ reserved parking from another airline if necessary. You can switch this behaviour off in Settings. It could also be that the simulated airport has incorrect, outdated, or no parking reservations assigned.

An aircraft is using a weird taxi route which it would never do in real life!
X-Plane is a simulator, not real life! A real airport has a team of people designing the most efficient taxi routes for any given time of day, weather, traffic load and many other conditions. Traffic Global has a single set of rules, albeit a complex set, to determine taxi routing across every airport in the simulated world. The routes it chooses may well not be the routes that a dedicated team of humans, focused on their own specific airport, would choose.

There are several all-white aircraft in the sim.
The traffic database in Traffic Global includes almost all of the flights recorded in the commercial flight database that was used as a source. In some cases the specific combination of aircraft type and airline isn’t available in the set of aircraft supplied with the software. In these cases, a roughly equivalent aircraft type will be used to make the airports feel as busy as they should be, and these will generally be a generic white paint. You can switch this behaviour off in Settings.

Can I edit the traffic database?
At present there are no tools provided to allow you to edit the supplied traffic database. The database is the end result of a very complicated set of processing steps and making changes to it is likely to do more harm than good. However, the database format is the widely used BGL traffic database shared with Prepar3D and Flight Simulator X so existing, freely available tools can be used to augment or entirely replace the existing traffic database if you wish.

The AI aircraft start disappearing and before long there are none left.
This is caused by the Dynamic Traffic Density settings. In rare cases it may reduce traffic levels when it is not necessary and the cause of this has not yet been found. Simply disable Dynamic Traffic Density to solve the problem.
### CREDITS

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Many thanks to all the testers!

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