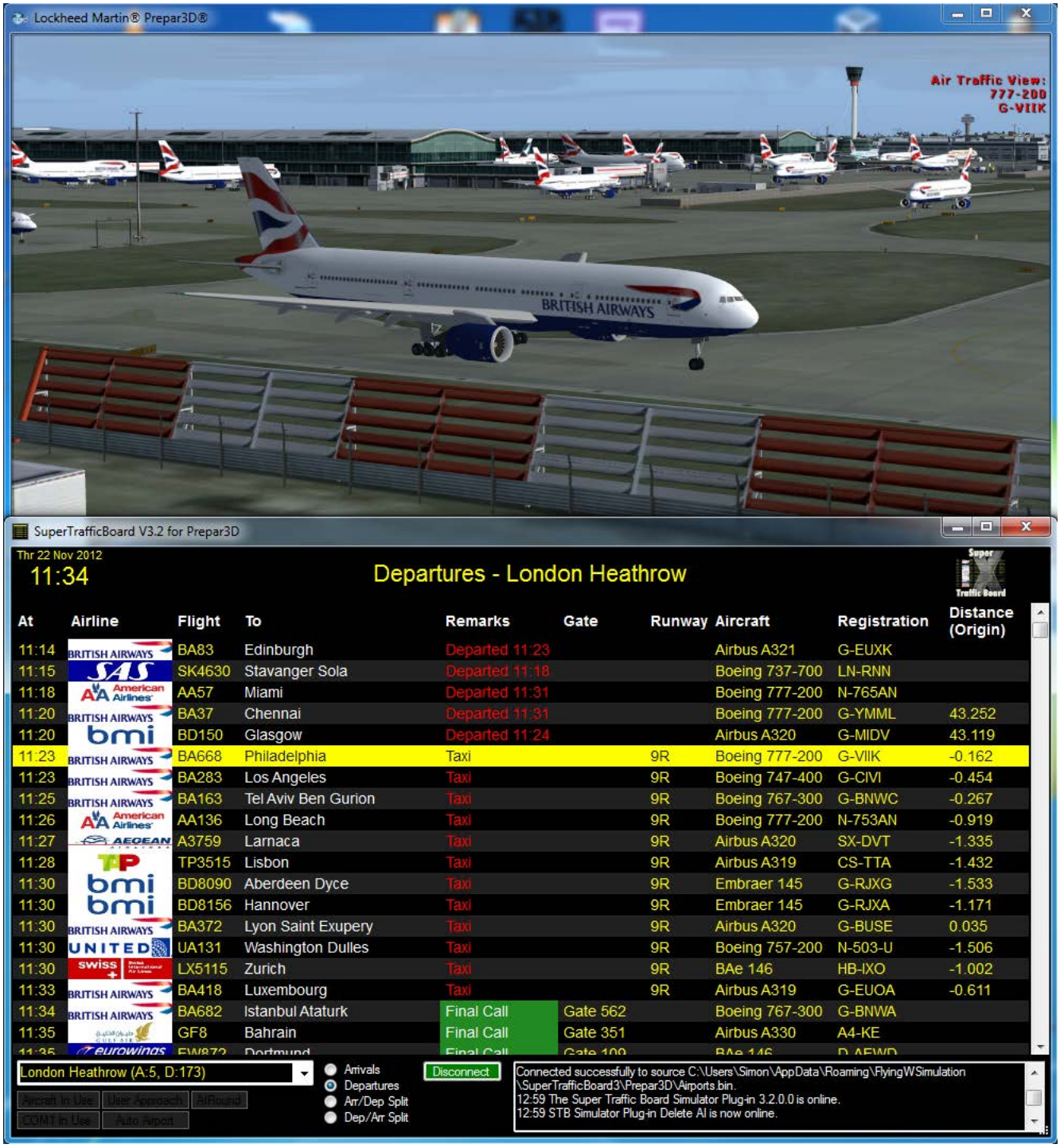
SuperTrafficBoard V3.2



This document is applicable to SuperTrafficBoard Version 3.2 for Lockheed Martin Prepar3D

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Fast Start!

In a hurry? Try one of these:

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- **When Changing the Prepar3D Scenery Library** on page 16;
- **Connecting to Prepar3D** on page 17;
- **Introducing the User Aircraft on the Board** on page 44;
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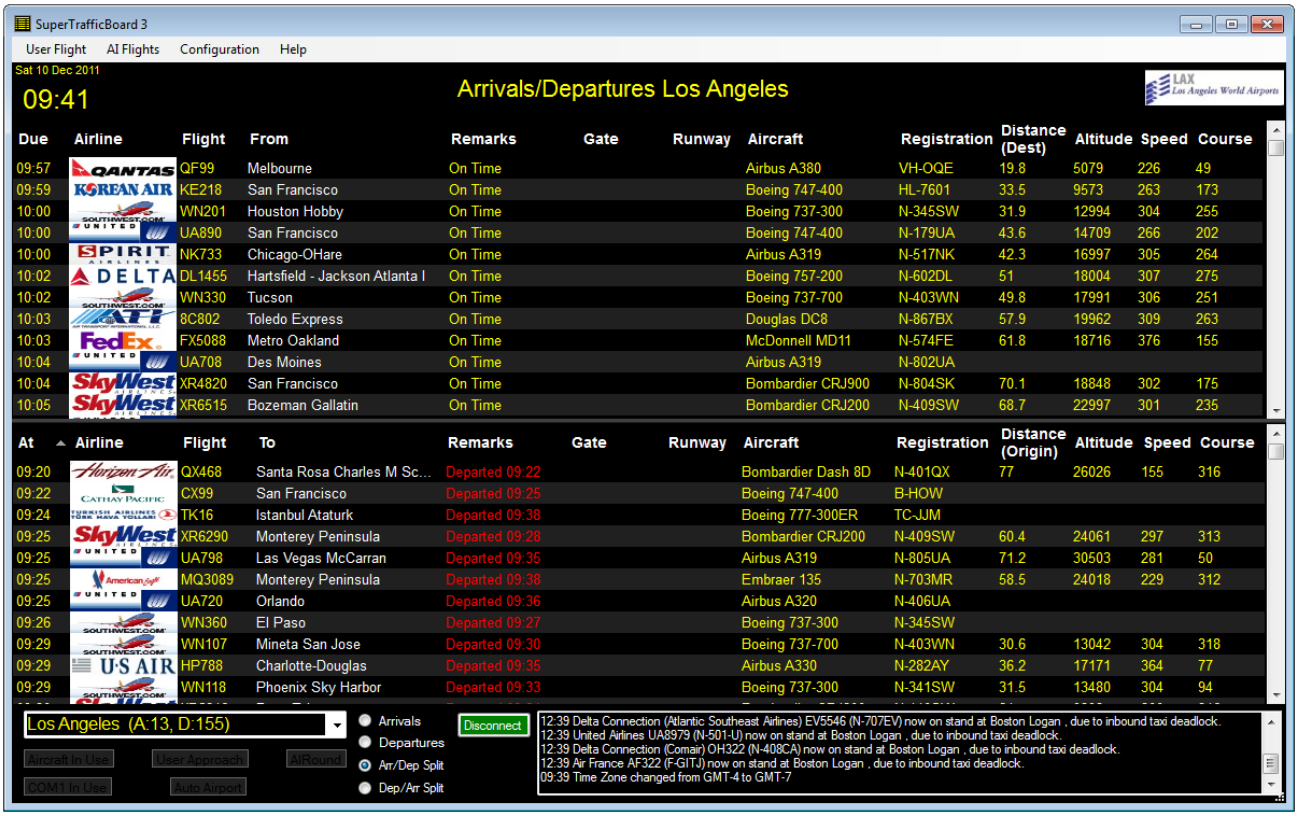
What is SuperTrafficBoard?

Super Traffic Board (STB) is a graphical program for displaying information about and interacting with Prepar3D (P3D) “AI” Traffic.

Airport Arrivals and Departures Information Board

In its simplest form STB is an airport passenger information system, interpreting Prepar3D data into something meaningful to an airline passenger. The presentation style including layout, fonts, colors and logos, may all be customized to make it look more like your favourite airport.



The top part of the board identifies the airport you are looking at and the context of the flight information displayed (e.g. Arrivals, Departures or both). The current date and time[1] is also shown.

The middle section of the board is the flight list, describing the AI aircraft present in P3D, flights completed by them in the past and those due to occur in the future. Your user aircraft may also be listed here. You can interact with flights using a right click.

The bottom part of the board enables you to look at different airports, navigate flight information and understand how STB is automatically interacting with P3D.

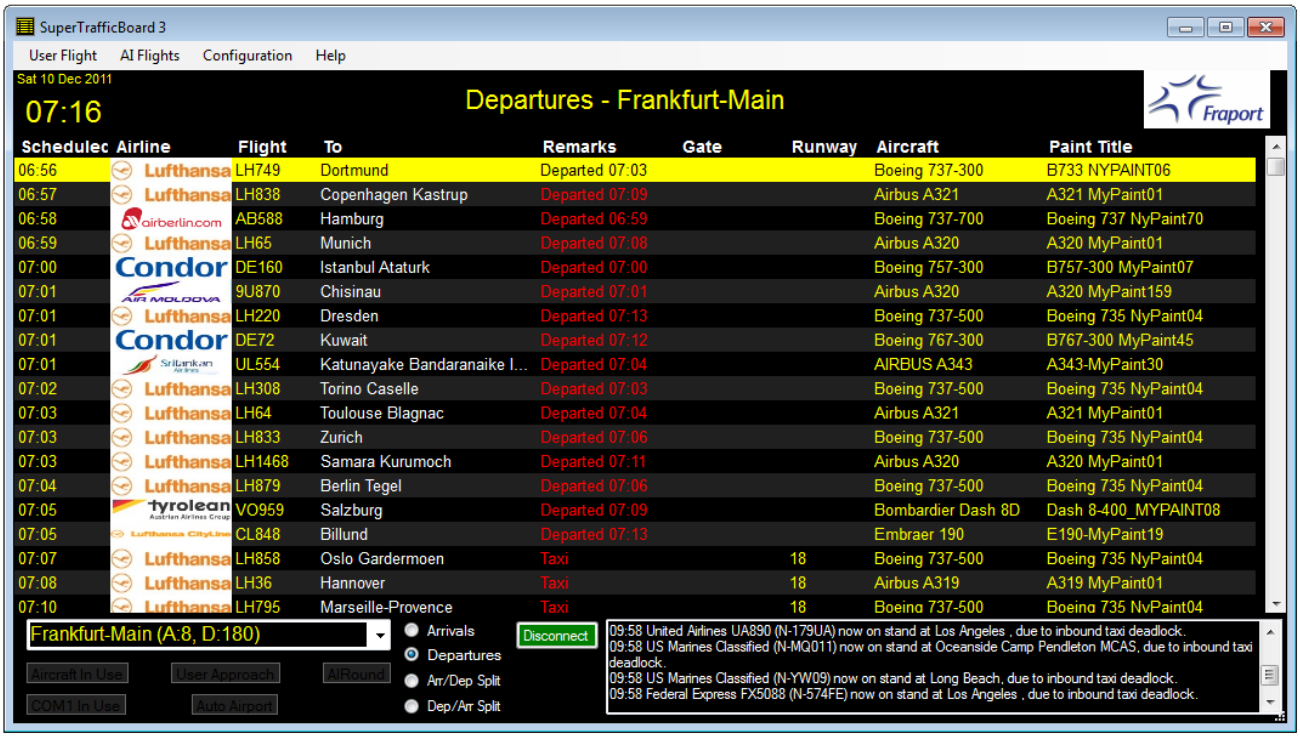
NB. Product screenshots in this user guide include logo representations of real world airline and airports. While logos are included with STB for all of the major AI packages available for P3D, regrettably a collection of airport logos is not available.

[1] The date and time is the “local time” from Prepar3D in a time zone relevant to the location you started your flight at. It may not match the real world time.

Alternative to Traffic Toolbox Explorer

Much more data is available through STB beyond basic airport passenger information, enabling it to be used as an alternative to the Prepar3D Traffic Toolbox Explorer. Advanced features include:

- Interactive commands such as “View AI”, “Follow AI”, “Delete AI”, “Depart Now”, “Approach Now” and “Optimize Traffic”.
- Additional flight data, including the aircraft type and model used, IATA Flight Code, flight numbers for all aircraft, category of flight and physical characteristics including speed, altitude and distance.
- Interpretation for non-passenger flights, including cargo, military and general aviation operations. This provides a meaningful representation of what is happening to all aircraft movements provided by Prepar3D, not just passenger flights.
- See flights for one airport only, or for all airports that have traffic.



The choice between a simple airport information board and more advanced “explorer” is yours to make. All functions and capabilities remain the same; it is simply a case of choosing how much information to display.

AI Packages Supported

STB has been fully tested with and includes configuration files for the following AI packages:

- MyTrafficX (SimMarket and Aerosoft editions);
- ORBX FTX;
- TrafficX and TrafficX 360 (Just Flight);
- World of AI;

Unfortunately we are not able to support the use of Flight1's Ultimate Traffic 2 in Prepar3D at this time.

Terminology

In this guide:

- **Super Traffic Board** is often referred to as **STB.**

- **Lockheed Martin Prepar3D** is often referred to as **P3D.**

- **STB Client** is the Traffic Board application that lists flight. This may be installed on a separate computer to P3D.

- **STB Simulator Plug-in** is a component for P3D that provides a variety of services to the STB client. This is installed on the same computer as P3D. This component was previously known as "STBServer".

- **STB Data Server (STB-DS)** is an independent application that supplies additional data to the STB client, when the STB client and P3D are running on separate computers.

Installing STB on your Prepar3D Computer

This section describes the use of STB on the same computer as P3D. If you wish to run STB and P3D on separate computers (for instance, if you would like to run P3D in full screen and still use STB), please see **Using SuperTrafficBoard on another computer** on page 73.

Prerequisites

STB requires the following software on your computer:

- Microsoft Windows 7 SP1 or later, 32bit or 64bit;
- Microsoft .NET Framework, version 2, 3.5 and 4. These are typically available through "Windows Update" if they are not already installed on your computer, and it is highly recommended to update them to current services levels again using Windows Update.
- Lockheed Martin Prepar3D V1.4

It should be noted that STB may well work with other variations of the above pre-requisites; however technical support is restricted to users of the above environment only.

Other STB Version Already Installed?

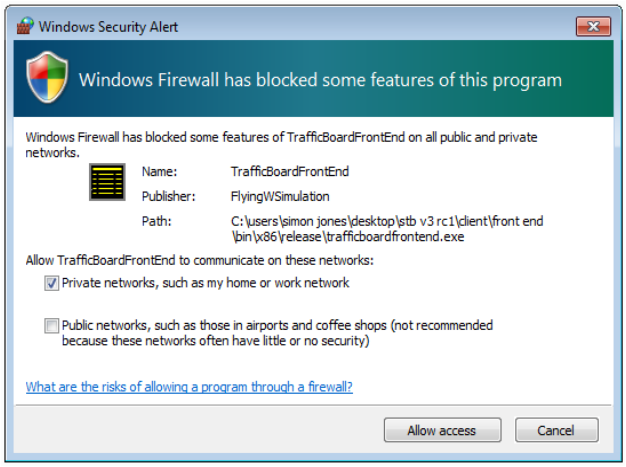
If you already have STB for Microsoft Flight Simulator X installed, you can continue installing the Prepar3D version. While each is separate, you should not try to run both at the same time (and as you cannot run FSX and P3D at the same time, there's really no point!)

Installation

STB is supplied in a standard windows InstallShield package. Double click the installer to run it, and then follow the on-screen instructions. When the installation is complete, STB is automatically started and the "Configuration Wizard" is run. In order to get the most out of STB, work through the configuration wizard to complete your STB setup.

Note: Uninstall instructions may be found in **Appendix H: Uninstalling SuperTrafficBoard** *on page 88.*

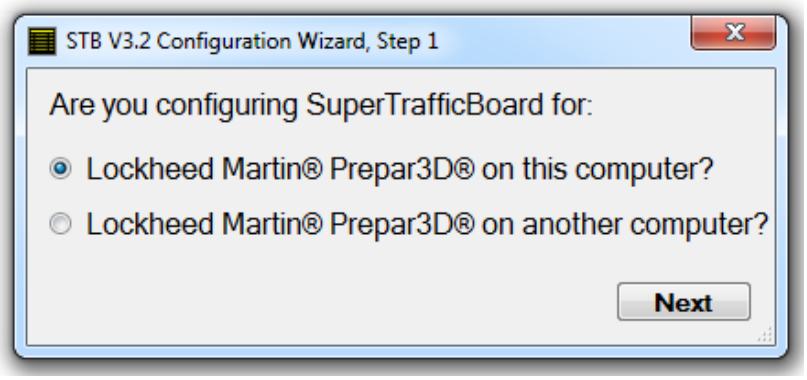
Firewall Message



The first time STB tries to use your network (for example, to check for product updates) you will most likely see a firewall message. Please permit STB access to your private network.

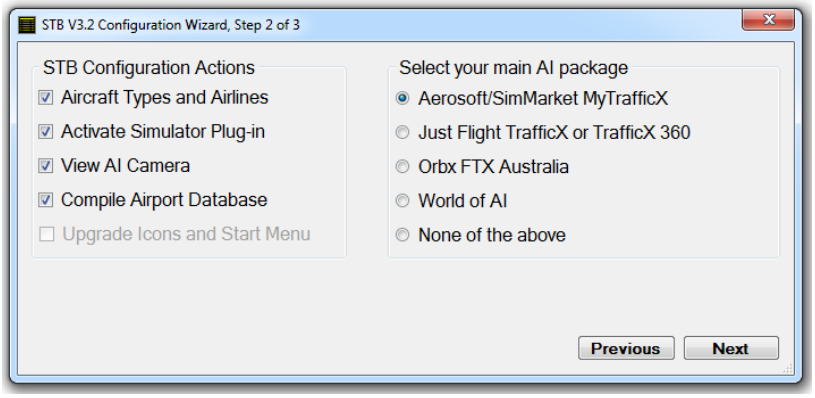
Configuration Wizard

When STB runs on your computer for the first time, the configuration wizard is presented to help you set up STB according to your requirements. In the tutorial, we will assume you are installing STB and P3D on the same computer. If you are not, please see **Using SuperTrafficBoard on another computer** on page 73.

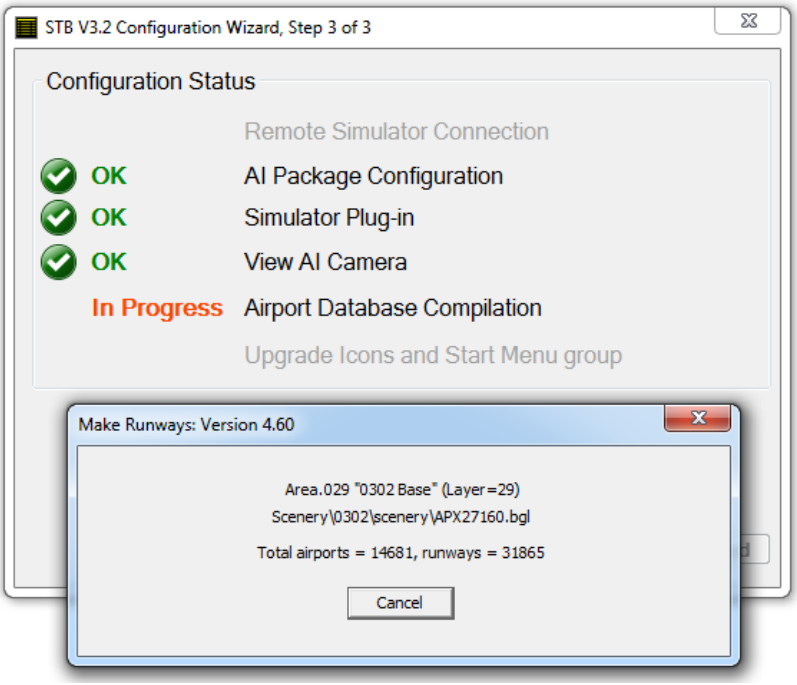


The first step requires you to specify whether you are using STB on the same computer or a separate computer to P3D.

For now we will assume you are installing on the same computer. If you are not, please see **Using SuperTrafficBoard on another computer** on page 73.

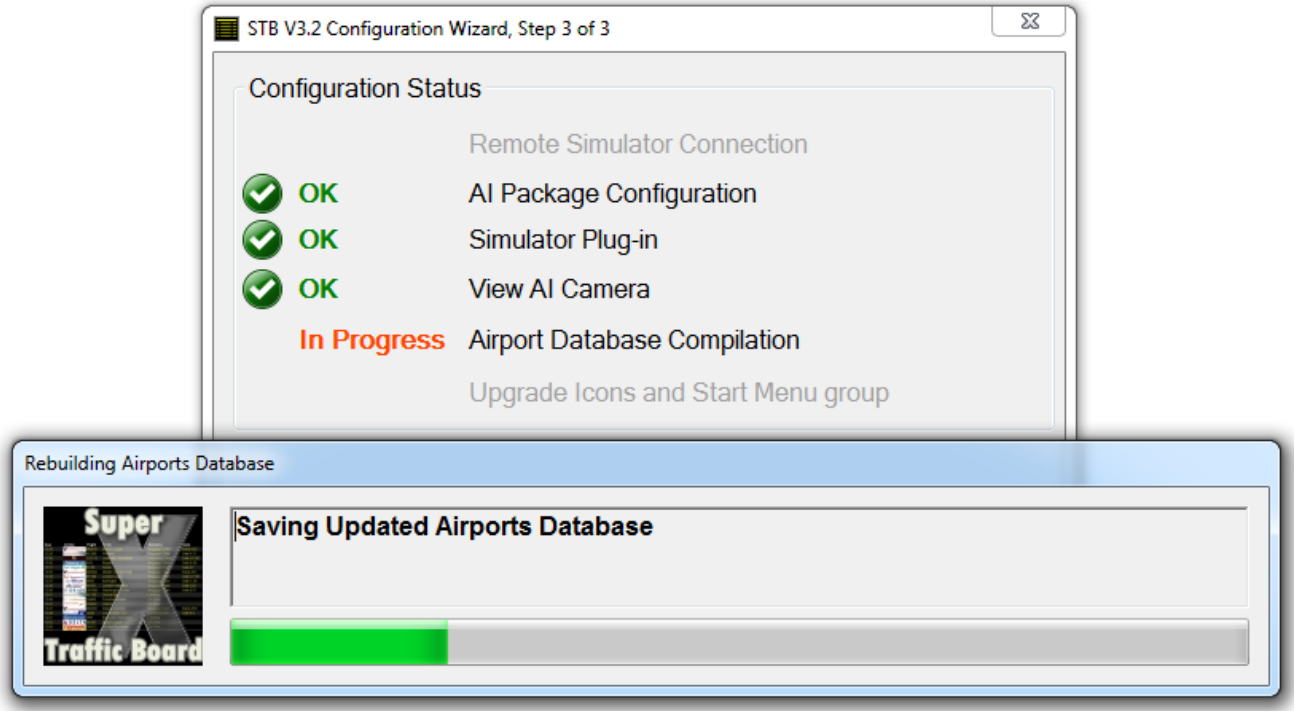


In the second step, you can choose the components to configure. It is recommended to leave the choices on the left hand side at their default values, however you may learn more about then by allowing the mouse to float over each one (presenting "tooltip" or "hover" help. You will need to choose the AI package you are using (or None if your AI package is not listed) on the right hand side.

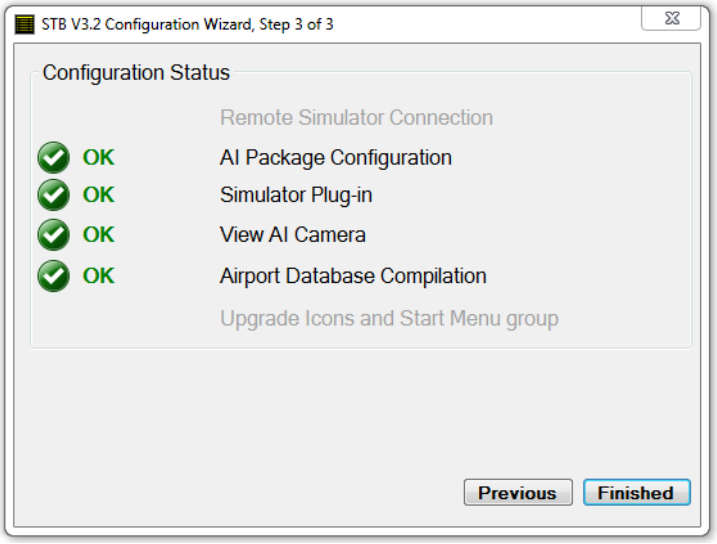


The third step performs the configuration and advises you of progress. In this example we are using STB on the same computer as P3D, so the "Remote Simulator Connection" item is greyed out.

Most actions complete instantly, however "Compiling the Airports Database" may take some time to complete. It is a two-step process; first the "Make Runways" utility is installed and run to extract airport information, as shown in the diagram to the left.



After Make Runways has completed, the airport compiler to extract AI schedule data and assemble all information into a database that STB uses to for a variety of purposes. More information about Make Runways and the Airports Database may be found in the section **When Changing the Prepar3D Scenery Library** on page 16.



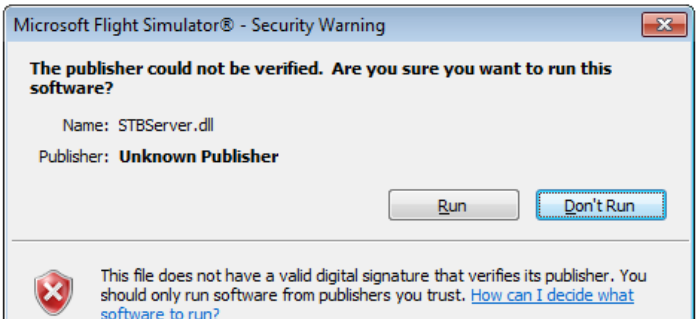
When the airport database compilation has finished, a configuration summary is presented.

After clicking "Finished" the main STB screen is presented, and you may then start P3D and connect STB to it once P3D has loaded a flight. The configuration wizard is not shown again, however you may rerun it at any time by clicking "Reshow Configuration Wizard" from the "Configuration" pull down menu in the action bar.

If an error has occurred in any of the steps, please resolve it before attempting to start P3D. If you are unable to resolve the problem, please contact us for assistance at: http://supertrafficboard.com/Contact.html

Starting Prepar3D for the First Time after Installing STB

After P3D has spent some time in the splash screen, you may see the following security dialogues. The examples shown below are from FSX, however those from Prepar3D are very similar. These ask you to confirm that you are happy for P3D to run the STB Simulator Plug-in, which is also called "STBServer.dll".



In response to the Prepar3D Security Warning, click the "Run" button. You will not see this dialog the next time P3D is started.

In response to the "designate" dialog, shown to the left, click the "Yes" button. . You will not see this dialog the next time P3D is started.

P3D may appear to hang if these dialogs are hidden. If so, clicking the P3D icon typically brings them into focus.

Recommendations for P3D Settings

- Run Prepar3D in windowed mode; full screen mode prevents the STB window from being displayed. If you prefer full screen P3D, consider using STB on a separater networked computer.

- Disable "Pause on task switch" if you are running STB and P3D on the same computer:
  - In P3D, click the "Options" menu, followed by "Settings" and then "General";
  - The P3D settings notebook is displayed. If the general settings are not shown, click "General" from the list of settings on the left hand side;
  - Uncheck "Pause on task switch".

When Changing the Prepar3D Scenery Library

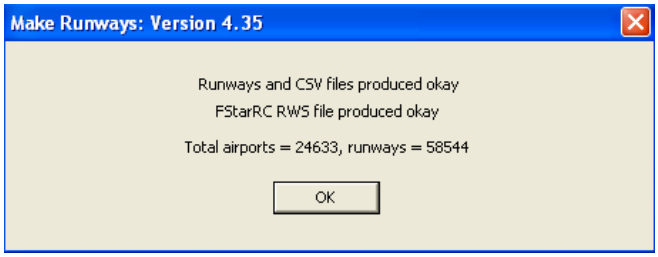
STB uses its own database of airport facilities and schedules. When something in the P3D scenery library changes, it may be necessary to recompile the database:

- When adding, changing or deleting an **airport AFD (AFCAD) file**, or enabling, disabling, adding or removing a scenery library containing AFDs, perform the following actions from the Configuration menu:
    - **Make Runways**
    - **Compile Airports Database**

- When adding, changing or deleting a **traffic scheduling (BGL) file**, or enabling, disabling, adding or removing a scenery library containing traffic schedules, perform the following actions from the Configuration menu:
    - **Compile Airports Database**

- **If in doubt, perform both actions!**

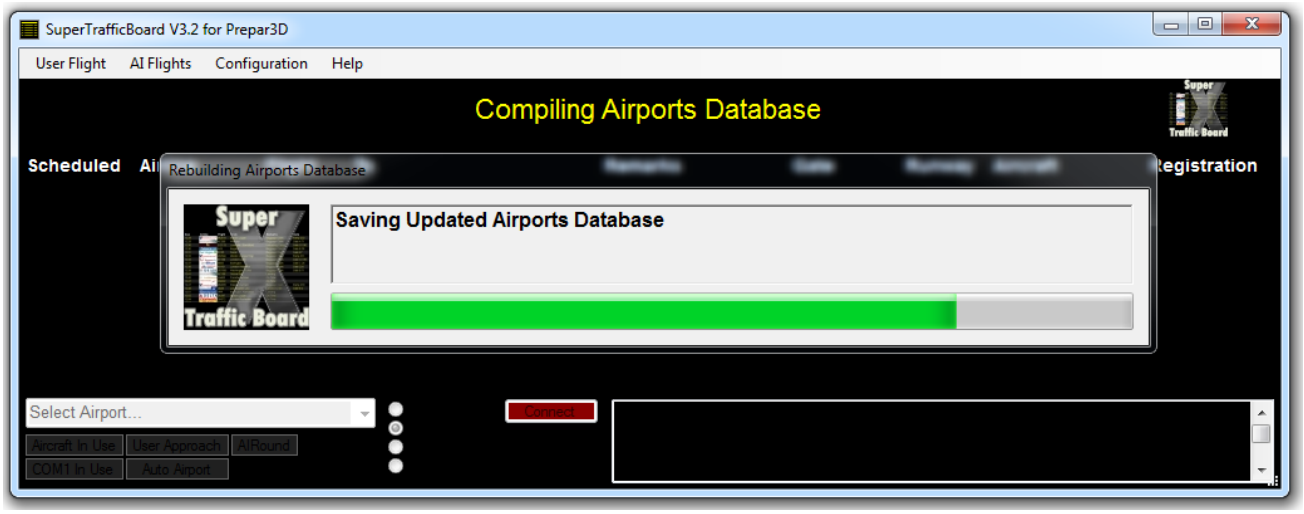
Make Runways



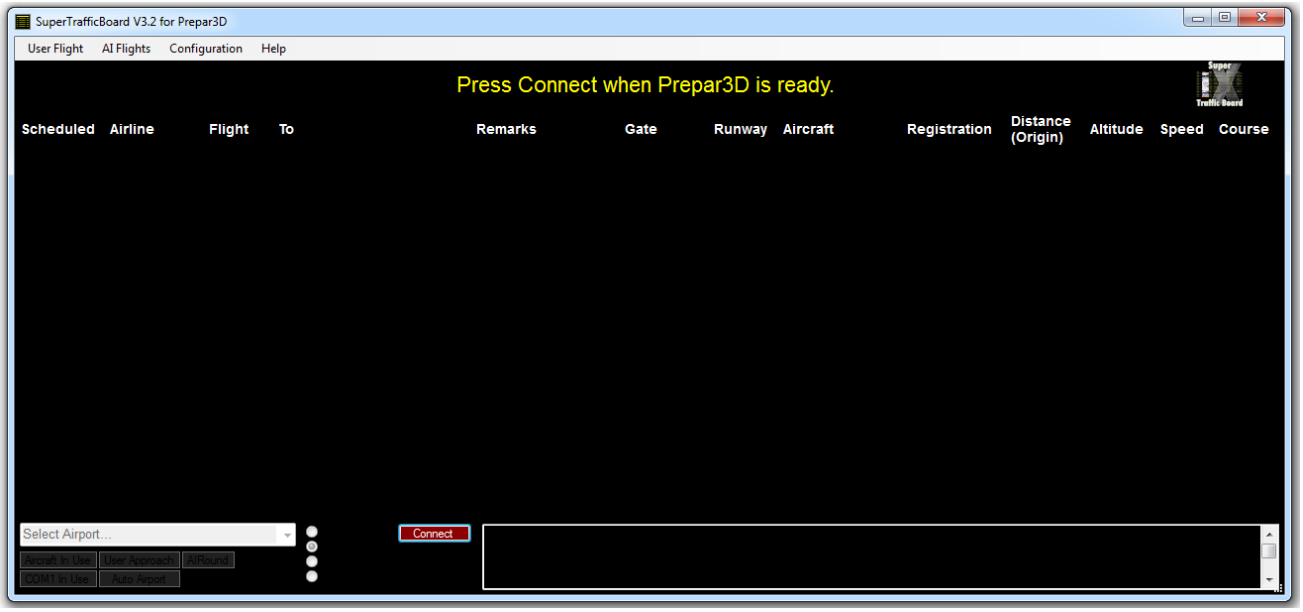
The Make Runways utility scans P3D AFD files for facility, runway and parking information. Due to the size of the P3D Scenery Library, it may take some time to complete. Please wait for the OK button to appear (and click it) before continuing with STB. The utility is started from the **Configuration** menu in the STB menubar, or the **Scenery** tab in STB-DS.

Compile Airport Database

The airport database compiler converts the data collected by Make Runways into a format suitable for use by STB, and adds scheduling data to it from Traffic BGL files found in the P3D scenery library. The Compiler may take some time to complete, during which time you will not be able to connect STB to P3D. The compiler may be started from the **Configuration** menu in the STB menubar, or the **Scenery** tab in STB-DS.



Connecting to Prepar3D



P3D AI flights cannot be displayed until STB is connected to P3D. We recommend the following procedures for the best experience:

- Start a Flight in P3D;
- Click the "Connect to FS" button. While acquiring information about AI traffic for the first time, STB displays a progress bar;
- Select an airport to list flights at. For more information, **Selecting an Airport** on page 18.
- Your flights are listed:

Automatically Connect to Prepar3D

You may configure STB to automatically connect to Prepar3D as soon as STB starts up. This is controlled by the **Automatically Connect to Prepar3D** check box on the *Board Control* tab of the STB Settings Notebook. For help with settings, see **Appendix A: Working with Settings** on page 80.

Selecting an Airport

You may select an airport to display flights for using the "Airport Control" at the bottom left corner of the main STB window. The drop down list (known as the ***"Active Airports"*** list) contains airports according to the following criteria:

- The number of AI aircraft at the airport is greater than the **Airport Movement Threshold** value. This may be configured in the settings notebook (*Board Control* tab) and has a default value of 8. For help with settings, see **Appendix A: Working with Settings** on page 80.

- The airport is within the P3D "Reality Bubble" that defines the area in the P3D world where AI aircraft are being simulated. This requirement may be overridden by checking the "List Airports beyond Reality Bubble" option on the Board Control tab of the Settings Notebook.

Each airport in the list includes a count of the number of AI aircraft currently arriving and departing. These are the actual AI aircraft under simulation; there may be many more flights schedule for which AI aircraft aren't available yet.

To list flights at an airport, simply select an entry in the list and the flight information is updated to reflect your choice. Alternatively, you may type in the ICAO code of any airport directly into the airport control.

In addition to individual airports in the airports list, a special option to view "*All Airports*" is always available. This choice displays all flights at all airports, in other words all AI flights currently under control of Prepar3D.

Auto Selecting the Nearest Active Airport

You may configure STB to automatically select the active airport nearest to the user aircraft:

- If the **Automatically Connect to Prepar3D** option is checked (*Board Control* tab in the Settings Notebook), the nearest airport is selected after the connection to Prepar3D is made. This is only performed once following connection.

- If the **Automatically Select Nearest Active Airport** option is checked (*Board Control* tab in the Settings Notebook), the selected airport is updated automatically every 15 seconds during the users flight with the closest airport to the users aircraft. If the user chooses a different airport manually, that choice may be overwritten while the automatic option is configured.

For help with settings, see **Appendix A: Working with Settings** on page 80.

Note "Auto Select" can also be enabled and disabled by clicking the Auto Select indicator shown below the Airport Selection Control.

Where's my Favourite Airport?

Perhaps the airport you are interested in is not displayed in the airport list, but you know there are flights there? To avoid an overwhelming list of airports with small movement numbers, STB has a threshold below which airports are excluded from the airport selection list.

The **Airport Movement Threshold** control on the *Board Control* tab of the STB Settings Notebook is used to alter the behaviour of the airport list. This value is the total number of movements an airport must have to appear in the list. Reducing the value increases the number of airports available for selection in the list, and setting it to zero results in all airports with at least one movement being included in the list.

For help with settings, see **Appendix A: Working with Settings** on page 80

Keeping the Active Airports List Relevant

The number of airports included in the list rises with the number of AI flights generated by Prepar3D. You may see a situation where a very distant airport has enough flights going to it that it is included in the list, but it does not have any departures since it is outside the Prepar3D reality bubble.

For instance, if you are situated at London Heathrow (EGLL), you may well see large US international airports such as Chicago O'Hare (KORD) have a number of arrivals listed on the basis of departures from UK airports inside the reality bubble, but no departures of its own.

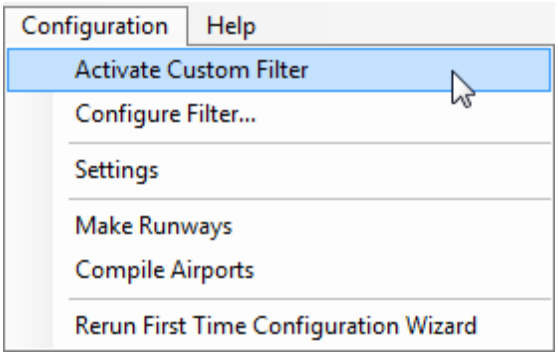
To exclude distant airports from the airport selection list, uncheck the **List Airports beyond Reality Bubble** option in the *Board Control* tab of the STB Settings Notebook. For help with settings, see **Appendix A: Working with Settings** on page 80.

Arrivals, Departures, or Both!

Next to the airport selection control on the board, another control offers the choice between viewing Arrival information, Departure information or both at your chosen airport. Click any of these buttons, and the list of flights changes accordingly. The "Arrival/Departures" and "Departures/Arrivals" choices split the board in two, with one half showing one type of flight and the the second half the other. The first word in the description corresponds to the flights shown in the top section, so choosing "Arrival/Departures" lists arrivals in the top half and departures in the bottom.

The Custom Flight Filter

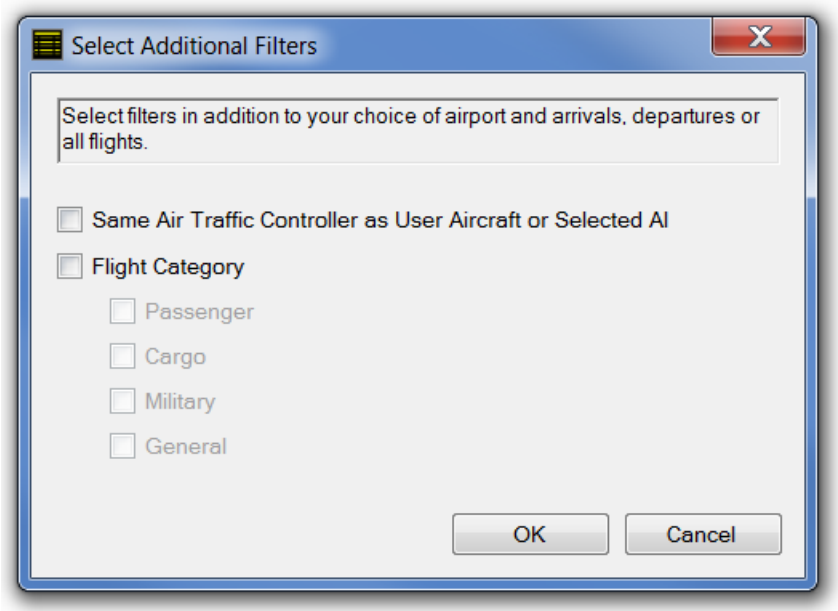
As well as displaying flights in the context of arrivals and departures, you can apply additional filters to further focus the flights displayed on the board. Additional Filters are applied to flights after your choice of airport, and arrivals or departures.



To activate the custom filter, Click "Activate Custom Filter" from the "Configuration" menu in the menu bar.

To configure the filter, click **"Configure Filter"** in the **Configuration Menu** on the menu bar.

Filters are additive; each filter selected is applied in addition to any others that are also active to further focus the flights listed.



Show Flights with the same Air Traffic Controller

This filter displays just those flights that are sharing the same COM1 frequency as the user aircraft, or in other words are sharing the same Air Traffic Controller as the user. When used in conjunction with the "Listen to AI ATC" command, you are shown the flights sharing the same controller as a selected AI aircraft (as listen AI forces the user's COM1 frequency to follow that of the AI aircraft). Any time you hear ATC make a call to an aircraft, you'll easily be able to find out all about it on the board.

To list just those flights sharing the same Air Traffic Controller, check the option "Same Air Traffic Controller as User Aircraft or Selected AI" in the "Select Additional Filters" dialog.

For more information, see **Listen to AI ATC** on page 42.

Show Flights from a Particular Category

This filter displays just those flights associated with a particular category, for instance show just “Passenger” flights.

To list the flights associated with one or more categories, check the “Flight Category” box and select the required categories in the list of choices below it.

Other Methods of Filtering flights

Hiding Departures

After a while, a departing aircraft is so far away from you that Prepar3D will delete it automatically. However, if the aircraft is slow moving, or heading for an airport that is still considered local to you, it may remain on the airport departures board long after it has left.

This effect may be reduced by configuring the board to hide departures that are considered “out of view”. The ***Hide Departures No Longer in View*** check box on the *Data Interpretation* tab of the Settings Notebook switches this function on and off. Associated is the ***Departure In View Period*** control, that configures the amount of time that must elapse following a departure before it is considered to be “out of view” and eligible for hiding.

For help with settings, see **Appendix A: Working with Settings** on page 80.

Showing Today’s Data Only

Some airport information boards around the world only show flight movements for today. Anything that is scheduled for tomorrow does not show up on the board until midnight is crossed. At that point the board flips over to show the next day, and the previous day’s information is no longer visible.

This behaviour may be configured using the **Show Today’s Data Only** check box on the *Data Interpretation* tab of the Settings Notebook. For help with settings, see **Appendix A: Working with Settings** on page 80.

Navigating STB

When there is more data available than can be contained within the STB window, controls within the window may be used for easy navigation around the data.

Scroll Bars

Traditional windows scroll bars, both horizontal and vertical, may be used to navigate flight information on STB. The bars automatically appear or disappear as required, for instance when the window is made larger and the available data no longer fills it.

Paging

Instead of scroll bars, a page of data at a time is displayed.

At the bottom of the screen, the current page and the total number of pages are displayed.

The pages may be navigated using the "previous" and "next" buttons to move up and down a page.

If the window size is changed, the number of pages available is automatically recalculated.

When paging is used, horizontal navigation is not available. If there is more data that can be displayed in the window, the window should be made wider or the number of columns displayed reduced.

Navigation Configuration

The ***Use Scroll Bars*** check box on the *Board Control* tab of the Settings Notebook is used to configure the type of control (described above) to use for navigation. When the box is checked, scroll bars are used; if the box is not checked the paging approach is used. For help with settings, see **Appendix A: Working with Settings** on page 80.

Resizing the Window

The STB window may be resized at any time. When doing so, the scroll position is unchanged, but the amount of data displayed both horizontally and vertically changes automatically. Between sessions, the size and position of the STB window is automatically stored for use next time.

The window is resized by "dragging and dropping" the resize control at the bottom right corner of the window[2].

[2] The STB window has a minimum size; the window cannot be made smaller than this.

Hiding the Menu Bar

The Menu Bar is located at the top of the STB main window and allows various actions to be performed with the User Aircraft, AI Flights, configuration etc. You may temporarily hide the bar (and allow the flight list to take its space) by pressing the **Ctrl key** while STB has the windows focus. To make the bar visible again, simple press Ctrl once more.

Sorting Traffic

The default sort order is by schedule time, with the earliest time value at the top of the board. The sort order is easily changed with a click on any of the column headings. Clicking a heading that already has the sort order reverses the order.

You can easily determine which column is providing the sort order and the direction of that sort by looking in the column headers. The column providing the sort contains a "sort glyph", the direction of which demonstrates the sort order (ascending or descending). It may be necessary to widen the column to show the glyph in some cases.

Sorting by logo

The logo column is special, and is actually sorted by either:

- Where available, the "real world" airline name associated with a flight.
- Otherwise, the ATC call-sign.

When sorting by logo, the order may seem strange when the airline name or call sign are quite different from the representation inside the logo. To help understand the order, it is possible to display the airline and call sign Associated with each flight on STB. The columns containing this information are hidden by default, and may be surfaced using the *Columns* tab of the Settings Notebook. For help with settings, see **Appendix A: Working with Settings** on page 80.

The logo column header is unable to display sort glyphs.

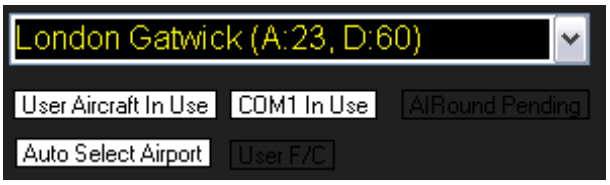
Sorting in the Split Screen

When displaying both arrivals and departures simultaneously, each half of the split screen can be sorted independently. The arrivals can have a different sort order to the departures, and any changes made to the order affect that half of the split only.

Sorting Arrivals and Departures

The sort order for arrivals and departures is remembered across changes in the list of flights displayed (e.g. switching from arrivals to departures, switching from a single list to a split screen), and also when STB is restarted.

Indicators



In order to implement certain functions, STB needs to take control of various aspects of Prepar3D. So you know exactly what is happening, there are a series of indicators underneath the "Select Airport" control.

Normally these indicators are off, but when STB is doing something special with P3D they are lit. You can see a more detailed explanation of what is happening by floating the mouse over an indicator and reading the resulting tooltip, or from the table below.

Indicator	**Role**
User Aircraft In Use	Illuminated when the user aircraft is under direct control of STB, and unavailable for flying by the user. This happens during **Follow AI** and **Shadow AI** commands. Click the indicator to reset (return to base). For more details concerning the Follow AI command, see **Follow** AI on page 35. For more details concerning the Shadow AI command, see **Shadowing AI Aircraft** on page 33.
COM1 In Use	Illuminated when the User Aircraft COM1 Radio is under direct control of STB (for "Listen to AI ATC" command) and unavailable to you. Click the indicator to reset COM1 back to normal. For more details, see **Listen to AI ATC** on page 42.
AIRound Pending	AIRound is not available for Prepar3D at time of writing.
Auto Select Airport	Illuminated when STB is configured to periodically select the active airport closest to the user aircraft. For more details concerning automatically selecting the nearest airport, see **Auto Selecting the Nearest Active Airport** on page 18.
User F/C	Illuminated when the user aircraft is subject to STB Flight Control. When this is active, conflicting AI aircraft encountered during your final approach to your destination are moved out of the way to an arrival stand. For further details, see **User Aircraft** on page 54.

Scheduled Arrival Time

When Prepar3D creates AI aircraft, it estimates the arrival time for flights inbound to an airport. However, the arrival time assumes the aircraft will fly at cruising speed from pushback at the departure airport through to shutdown at the arrival airport. This does not happen in P3D let alone the real world, so arrivals are always late according to the schedule.

To mitigate the estimate, STB may be configured to add an offset to all scheduled arrival times. This can give a much better distribution of arrivals, with some early and some late depending on traffic conditions just like the real world.

This behaviour is configured through the **Arrival Schedule Offset** control on the *"Data Interpretation"* tab of the Settings Notebook. For help with settings, see **Appendix A: Working with Settings** on page 80.

Flight Delays

Just like the real world, some flights do not arrive or depart on time in Prepar3D. STB can detect flights that are late and show them as "delayed".

Delayed Departures

A delayed departure flight occurs when something has not happened when the scheduled departure time occurs. This may include:

- The AI aircraft has failed to leave the gate:
    - The aircraft has not started its departure cycle;
    - The aircraft does not progress beyond pre-flight support;
- An AI aircraft is not available for the flight.

Aircraft in pre-flight support await a visit from the airport ground vehicles, and in particular the fuel truck. If there are insufficient fuel trucks to services the needs of the airport, a backlog of fuelling requests may build up, leading to lengthy delays in flight departures.

STB monitors departure activities, and flights that do not leave on time are shown with a departure remark of "delayed". This can be thought of a real world "mechanical problem" that is preventing the aircraft departing on time.

Aircraft in pre-flight support are monitored separately, to allow time for the airport vehicles to work. However, if the flight has not left the gate by the time the **Delayed Closed Flights After** period has expired (the period starts when the aircraft departure cycle starts), the flight is marked delayed. For help with settings, see **Appendix A: Working with Settings** on page 80.

Once a departure is delayed, STB will attempt to reset it in order that the flight may proceed. See **Rescuing Aircraft Stuck at a Parking Spot** on page 55 for more information.

For more information about future scheduled flights that never see an operating AI aircraft appear, see **Why don't Future Schedule Flights turn into real AI based Flights?** on page 29.

Delayed Arrivals

A delayed arrival flight occurs when:

- An aircraft is ordered to go-around. There is little chance of the aircraft arriving on time after this event.
- The aircraft operating a future flight schedule does not show up in P3D by the time the scheduled arrival time occurs.

Delays due to go-arounds are cleared once the aircraft begins the landing cycle once again, so that the board may accurately reflect what is happening in P3D.

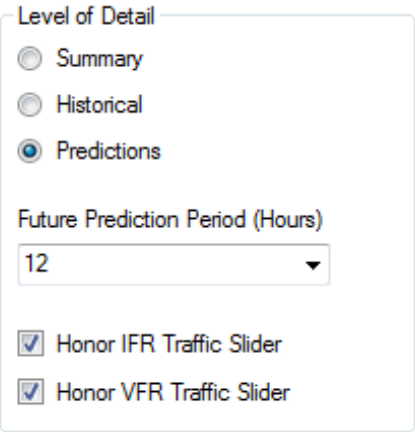
For more information about future scheduled flights that never see an operating AI aircraft appear, see **Why don't Future Schedule Flights turn into real AI based Flights?** on page 29.

Removing Delayed Flights

STB will automatically remove a delayed flight (both in P3D and from the flight listing) after the Remove Delayed and Cancelled Flights After period has expired. The period starts when the flight is reported on the board as delayed, and the length of the period may be set in the Data Interpretation tab of the Settings Notebook. For help with settings, see **Appendix A: Working with Settings** on page 80.

Level of Detail

STB provides 3 levels of flight detail, depending on the experience you would like to have.



The level is set by the **Level of Detail** control on the Data Interpretation tab of the Settings Notebook. Summary, Historical and Predictions Mode are each described below.

For help with settings, see **Appendix A: Working with Settings** on page 80.

Summary Mode

The least detailed option, listing only those flights that are currently occurring through AI aircraft in P3D:

- When P3D creates an AI aircraft, the corresponding flight details are added to the board;
- When P3D deletes an AI aircraft, the flight details are deleted;
- When an arrival flight has finished (parks at the gate), the arrival flight information is deleted and a new onward departure flight is created;
- This mode presents a similar experience to Prepar3D's Traffic Toolbox Explorer;

Historical Mode

Building on Summary Mode, Historical Mode continues to list flights for a period after P3D has deleted the corresponding AI aircraft. This is similar to what you might see on the departures/arrivals board at a real world airport. The main activities of Historical Mode are as follows:

- When P3D creates an AI aircraft, the corresponding flight details are added to the board.
- When P3D deletes an AI aircraft, the flight remains on the board for a period of time. STB interprets the events surrounding the deletion and updates the flight on the board appropriately; see table below. In some cases a deleted AI may reappear, in which case the existing flight on the board is updated with new information.
- When an arriving flight is completed (parks at the gate), the arrival flight ends (and is listed as "Baggage Claim for passenger flights). A new onward departure flight is created, and the AI aircraft is allocated to that departure flight.

There are a number of situations where P3D deletes AI aircraft, including P3D "reality bubble" considerations and deadlocked ground movement resolution. The following table describes the AI events that may occur in P3D and how STB presents those flight details to you in Historical Mode:

Departing AI Event	**STB Action or Departure Remark**
Parked Departure is deleted	Flight details removed from board
Taxing Departure is deleted	Departed At XX:XX
Airborne Departure is deleted	Departed At XX:XX
Arriving AI Event	**STB Action or Arrival Remark**
Airborne Arrival is deleted	Flight Details Removed
Landing Arrival is deleted (due to lack of suitable parking space)	Diverted or Baggage Reclaim[3]
Taxing Arrival is deleted	Diverted
Arrival flight ends at parking.	Baggage Claim. New flight for onward departure

Flights that no longer have a corresponding AI aircraft in P3D remain listed on the board for a configurable period before being removed. See **Terminated Flight Persistence** on page 30 for more details.

STB displays information about AI flights that are active inside Prepar3D. Arrivals can take some time to build up to reasonable levels; therefore at the start-up it is common to see just a few flights on the arrivals screen. As time goes by, this number increases as Prepar3D creates them. Prediction Mode described below can significantly improve the arrivals board.

[3] AI Aircraft deleted during Taxi-In may be recovered by STB, in which case the arrival flight is listed as baggage claim rather than diverted. See *Rescuing Aircraft Stuck During Taxi-In* on page 60 for further information.

Prediction Mode

Building on Historical mode, Prediction Mode lists flights scheduled for the future, before they are created in P3D. As they are created, the scheduled flights listed on the board are updated and become alive with detail from P3D. This will add flights to both the departures and arrivals side of the board that were not seen in previous versions of STB, and has the greatest effect on arrivals (due to the size of the P3D reality bubble limiting the number of arrival flights under simulation).

This capability further extends the operation of STB towards real world airport arrival/departure boards.

The main activities of Prediction Mode are as follows:
Future scheduled flights are displayed, starting from the current time through to the end of the prediction period. The length of the prediction period may be altered, see Configuring Prediction Mode on page 29 for more details. Additional future schedule flights are added as simulator time goes by.

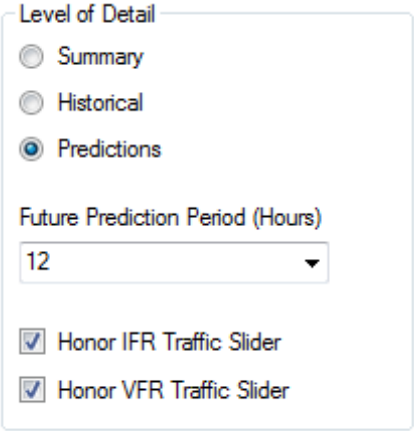
- The P3D and slider values influence the number of future schedule flights shown. When the slider values change, the list of flights is updated automatically.
- When P3D creates an AI aircraft, the future schedule flight already listed on the board is updated with the details.
- When P3D deletes an AI aircraft, the flight remains on the board for a period of time. STB interprets the events surrounding the deletion and updates the flight on the board appropriately; see table below. In some cases a deleted AI may reappear, in which case the existing flight on the board is updated.
- When an arriving flight is completed (parks at the gate), the arrival flight ends (and is listed as "Baggage Claim for passenger flights). A new onward departure flight is created, and the AI aircraft is allocated to that departure flight. That departure flight may already be listed as a future scheduled flight, in which case the existing entry on the departures board is updated.
- When you select a different airport in STB, the board may take a few seconds to update the flights displayed depending on how far into the future flights are predicted and how busy the airport is.

There are a number of situations where P3D deletes AI aircraft, including "reality bubble" considerations and deadlocked ground movements. The following table describes the AI events that may occur in P3D and how STB presents those flight details to you in Prediction Mode:

Departing AI Event	**STB Action or Departure Remark**
Parked Departure is deleted	Flight details removed from board or the flight is relisted as a scheduled flight if it occurs in the future.
Taxing Departure is deleted	Departed At XX:XX
Airborne Departure is deleted	Departed At XX:XX
Arriving AI Event	**STB Action or Departure Remark**
Airborne Arrival is deleted	Flight details removed or the flight is relisted as a scheduled flight if it occurs in the future.
Landing Arrival is deleted (due to lack of suitable parking space)	Diverted
Taxing Arrival is deleted	Diverted or Baggage Reclaim[4]
Arrival flight ends at parking.	Baggage Claim. New flight for onward departure

[4] AI Aircraft deleted during Taxi-In may be recovered by STB, in which case the arrival flight is listed as baggage claim rather than diverted. See *Rescuing Aircraft Stuck During Taxi-In* on page 60 for further information.

Configuring Prediction Mode



You may control how far into the future that scheduled flights are added to the board using the Future Prediction Period control on the Data Interpretation tab of the Settings Notebook. The pull down list offers values in the range of 1 – 18 hours, with 12 being the default.

Note: When a lot of flights are listed on the board, it may take the board a few seconds to update the list when switching between selected airports. If the delay is inconvenient, consider reducing the Future Prediction period value.

The "Honor Traffic Slider" check boxes may be used to override the P3D traffic slider values used when displaying future scheduled flights. One checkbox controls IFR traffic, and the other controls VFR traffic. When checked, the traffic sliders control the number of scheduled flights displayed. When unchecked, the actual slider values are ignored and scheduled flights are listed as if the sliders were set to 100%.

For help with settings, see **Appendix A: Working with Settings** on page 80.

Why don't Future Schedule Flights turn into real AI based Flights?

Not all flights that are listed as future scheduled flights will see their corresponding AI aircraft show up in P3D. There are a number of reasons for this, including:

- An out of date STB Airports Database that no longer reflect the traffic configured in the P3D scenery library;
- Incorrectly configured AI packages (missing texture, invalid entries in the aircraft.cfg, etc);
- Insufficient airport parking spaces;
- The preceding arrival for a future departure flight never shows up, so there is no AI aircraft available for the departure.

Compile the STB airports database following any changes made to AI schedules. This is a straight forward task; see **Compile Airport Database** on page 16 for details.

Terminated Flight Persistence

Terminated flights at one time had a corresponding AI aircraft in P3D, but the AI is no longer available. These may occur when:

- Departures leave the reality bubble;
- Arrivals are diverted;
- Arriving flights are completed, and the associated AI aircraft is reallocated to an onward departure flight;

There's a finite period that such flights remain on the board, just like real world information boards. Four controls on the Data Interpretation tab of the Settings Notebook control when the various types of terminated flights are deleted. Each control defines the number of minutes the flight remains on the board after it has terminated.

Control	**Terminated Flights Affected**
Remove Departed Flights after	Departures that have left the reality bubble;
Remove Parked Arrivals after	Completed arrivals (e.g. Baggage Claim);
Remove Diverted Arrivals after	Diverted Arrivals;
Remove Delayed or Canceled Flights after	Scheduled future flights that never materialise; Departures that have not left the gate on time;

How Distance is Calculated

STB enhances your AI experiences by calculating and reporting the distance between each aircraft and the arrival and departure airports. In STB Version 3, this is extended to include the distance to allocated runways and parking position. The distance value displayed is dependent on the situation of the aircraft, as described below.

Departures

- All distances are calculated in Nautical Miles (nm) and reported in the "Distance (Origin)" column.
- **Parked:** Distances are not reported while the aircraft is at a parking spot.
- **Taxi Out:** The distance is calculated between the aircraft and the start of the allocated runway. It is displayed as a negative number to differentiate it from the value show when the aircraft has departed. As the aircraft gets closer to the runway the distance value moves towards zero, although it may never actually reach zero depending on the exact location of the runway start point. This offers a useful indication of how close to takeoff each aircraft is, but remember aircraft may not take the most direct route to the threshold. Sorting on departure distance gives a rough guide to takeoff order.
- **Departed:** Following takeoff, the distance is measured between the aircraft and the airport centre point. In this context, the "departed" measurement begins with the "take off" state.

Arrivals

- All distances are calculated in Nautical Miles (nm) and reported in the "Distance (Dest)" column.
- **Enroute and Landing**: The distance is calculated between the aircraft and the centre point of the allocated runway. The value "counts down" as the aircraft closes on the runway and is a good indication of who will land next. Depending on the aircraft involved, the count may not reach zero as the aircraft might taxi off of the runway prior to reaching the midpoint.
- **Taxi-In:** The distance is calculated between the aircraft and the allocated parking. It is expressed as a negative number to differentiate it from the values used for approaching aircraft. As the aircraft reaches the parking position, the values closes on zero and ends at around -0.001 when the aircraft stops.
- **Parked:** Distance is not reported while the aircraft is parked.

Precision

The number of decimal places shown in distance values may be configured in the settings notebook:

- Click "Settings" from the "Configuration" menu in the menu bar;
- Select the "Data Interpretation" tab;
- In the common group, see the "Distance Calculation Precision" control. Here you can specify the number of decimal places to display.

Interacting with Traffic

STB has several commands that help you to interact in new ways with AI traffic.

Double Click

Pick a flight and double click it; one of two actions occurs:

- If an AI aircraft is associated with the flight, the View AI command is invoked (see below);
- If the flight is terminated or future scheduled, the Flight Details Dialog is shown describing the current schedule for the selected flight, the previous schedule and the next.

Viewing AI Aircraft

AI Aircraft may be viewed by right clicking a particular flight on STB, and then choosing "View AI" from the context menu. The main Prepar3D window will now switch to a view of the chosen aircraft.

Viewing AI aircraft that are "far-away" from the present view

Sometimes when switching to view an AI aircraft that is far-away from the current object being viewed (AI or user aircraft), blurred scenery or "green soup" at ground level may be seen. Sometimes the green soup obscures the AI aircraft, just leaving the tail fin showing. Other side effects may include misplaced or corrupted autogen and other scenery objects.

This is a result of the simulator having to discard the current scene, and build up a new one based upon the new viewing location. The simulator works hard to catch up, and the scenery problems should resolve themselves within a short time.

Aircraft that cannot be viewed

Certain flights cannot be viewed as an P3D AI aircraft is not associated with it. These include:

1. Terminated flights, where an AI aircraft was associated with the flight but is no longer (e.g. Arrival flights in baggage claim, departure flights left the reality bubble, etc.);
2. Flights scheduled to occur in the future, for which P3D has yet to allocate an AI aircraft.

Help, that's not the AI I selected!

The interface available provide in P3D for View AI has a few problems, and the following may sometimes occur in response to the View AI command:

- The wrong AI is shown, but on the next View AI command the correct one appears. This is due to a "race" condition in P3D where an AI aircraft is being created or deleted at the same time the View AI command is being processed.
- The wrong AI is inconsistently shown. When this occurs the internal AI list in P3D has become inconsistent and STB is unable to select the correct AI. The only way to resolve this is to restart the flight or P3D.

Shadowing AI Aircraft

The shadow AI command places the user aircraft near the center of the selected AI aircraft, and keeps it there. While doing so, the user aircraft is under complete control of STB so any control inputs made are ignored and the user cannot crash with AI or scenery objects. The Prepar3D view is changed (by default) to the AI object (with the user aircraft near the middle).

Why use Shadow AI?

- Certain Prepar3D add-ons only draw scenery objects at the highest level of detail (if they are displayed at all) around the user aircraft. By placing the user aircraft near the middle of the AI aircraft, your scenery is now drawn around the AI at the best available detail level.

- Some advanced camera views are possible in respect of the AI aircraft, albeit with some limitations. See ***"Using the Advanced Camera Views"*** on page 34 for further details.

- Shadow AI may offer a better experience than Follow AI, where occasionally the followed aircraft is deleted (on leaving the reality bubble) before the user aircraft can catch up with it to prevent it. That is unlikely to happen with Shadow AI.

Help! The User Aircraft is sticking out of the AI aircraft!

Yes, an inevitable consequence of putting the user aircraft in the middle of the AI aircraft. However, the Invisible User Aircraft provided by Super Traffic Board may be used to fix this. If you wish to use Shadow AI and the invisible aircraft, simply change your user aircraft to the ***"Flying W Simulation Invisible Aircraft"*** before starting a flight, or at any time during a flight.

The invisible aircraft is not totally invisible but consists of two small triangles. Usually these cannot be seen, but if you zoom in very closely you may see them. They are there to present a sense of orientation that is otherwise hard to discern at extreme zoom levels. While it can be used as such, the invisible aircraft is not intended for piloting!

The Flying-W Invisible Aircraft is installed into P3D using the Deployment Tab in the Settings Notebook. For further details, see **Appendix F: Deploying Additional Features** on page 86.

The Shadow AI Command

Choose a flight from the list, right click, and then choose “Shadow AI” from the list of commands in the context menu. You can shadow another AI aircraft at any time by selecting another flight and repeating the Shadow AI command. When you are finished and wish to return the user aircraft to your original situation, choose the “Return to Base” command from the context menu. For more details, see **Returning to Base** on page 37.

The Shadow AI Command is available for use when:

- The STB Simulator Plugin is deployed on your P3D Computer. Most likely this was performed when you ran STB or STB-DS for the first time, courtesy of the Configuration Wizard. You can verify that or redeploy it through the Deployment Tab in the Settings Notebook. For further details, see **Appendix F: Deploying Additional Features** on page 86.

- Prepar3D crash detection is switched off.

Using the Advanced Camera Views

When using Shadow AI, you have all the camera views available to the user aircraft. You can active the “Top Down”, “Fly By” “Tower” views from the Prepar3D Context menu, but since your user aircraft is at the center of the AI aircraft, it appears as though those views are applied to the AI aircraft. My personal favourite is the “Tower View”, while watching an AI aircraft take off or land. Be sure to pick an airport where buildings do not obscure the camera view from the tower to the runway!

You may notice a few problems with the various camera views available with Shadow AI. Due to the way Prepar3D X works, it is impossible to keep the user aircraft at the exact position relative to the AI aircraft. Most of the time it is fine, but you make see some “camera shake” with the AI aircraft shuddering in the view frame. Here are some tips to minimise the impact:

- Keep your frame rate locked, and ensure your computer is configured to meet the frame rate;

- Choose a low locked frame rate, less than 30 and 20 is even better;

- Shuddering is most noticeable if the scenery area around the aircraft has to be redrawn, particular when first switching to Shadow AI. Shudder is reduced once the scenery is updated;

- Shuddering reduces with zoom out, and is least noticeable in the tower and fly by views;

To get the best out of the advanced views, it is recommended to switch off the automatic “View AI” change that occurs when Shadow AI is selected. This enables you to shadow a series of AI flights from one of the advanced views without having to change the view.

In the Settings Notebook and the Commands tab, you will see a checkbox called “Switch AI View when Shadow AI is selected”. Uncheck this box, and future Shadow AI commands will not cause a View change. You can still issue a View AI command following a Shadow AI command, if you want an external locked spot view of the AI aircraft while shadowing.

Chasing AI Aircraft

The Chase AI Aircraft command moves the user aircraft into the vicinity of the selected AI aircraft, and sets your speed and height to match that of the AI flight. After that, it over to you to start flying! This enables you to fly an "escort mission" with an AI aircraft for example. Chasing is activated by a right click on the desired flight, and then choosing "Chase" from the context menu.

When chasing airborne AI, you must take control of your aircraft immediately to prevent it falling out of the sky. While STB can set your airspeed, it does not know how to set your engine with appropriate thrust. So in addition to controlling your "flight yoke", you must also apply suitable engine power.

It is not recommended to chase AI aircraft on the ground using a fixed wing user aircraft because you will not have enough airspeed to maintain flight. However chasing in a helicopter can be very effective, particularly for parked aircraft.

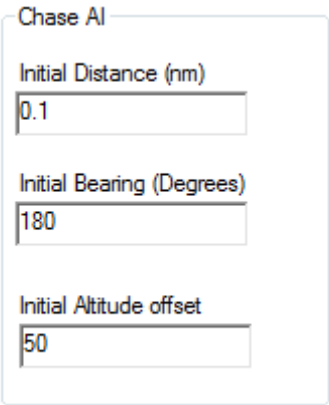
Prepar3D dynamically adds and deletes AI objects according to the position of the user aircraft. Therefore, if you start at a busy airport then chase a distant AI aircraft, Prepar3D may delete a lot of the AI aircraft around your departure point since your position relative to those aircraft has changed. If you return to your original departure point (Return to Base - see below), many of these AI objects are recreated.

For the best chase experience, you may also wish to configure Prepar3D to ignore user aircraft crashes, or chase while having slew active so that crash detection is temporarily suspended.

The Chase AI Command

Choose an AI flight from the list, right click, and then choose "Chase AI" from the list of commands in the context menu. You can chase another AI aircraft at any time by selecting another flight and repeating the Chase AI Command. When you are finished and wish to return to your original position, choose the "Return to Base" command from the context menu. For more details, see **Returning to Base** on page 37.

Configuring Chase AI



You may configure the initial distance, bearing and altitude of your user aircraft relative to the AI aircraft you are chasing using the Commands tab of the STB Settings Notebook.

An initial bearing of 180 degrees puts you behind the AI aircraft you wish to chase.

For help with settings, see **Appendix A: Working with Settings** on page 80.

Follow AI

The follow AI command enables you to follow an AI aircraft using an external view to wherever it travels to in the world. It works by taking control of the user aircraft and constantly moving it in order to keep the AI aircraft inside the P3D "reality bubble". Hence you may watch an aircraft depart an airport and then follow it all the way to its destination and beyond.

The reality bubble is used to optimize Prepar3D performance, so only those objects that might interact with your user aircraft in its current situation are simulated. At the centre of the bubble is your user aircraft. When P3D determines an AI aircraft may enter the bubble (according to its schedule), the aircraft is created by the simulator and may be observed in STB. When it leaves the bubble, the AI aircraft is deleted.

To prevent user aircraft crashes, STB check to see if you have FSD Crash Detection enabled. If you do, the user aircraft is put into slew mode. While following AI, do not disable slew mode.

When you no longer wish to follow AI you can use the "Return to Base" command to go home, and everything is put back the way it was in P3D. Your user aircraft is back in your control again.

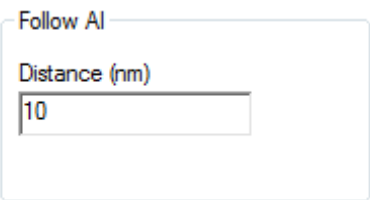
The Follow AI Command

Choose an AI flight from the list, right click, and then choose "Follow AI" from the list of commands in the context menu. You can follow another AI aircraft at any time by selecting another flight and repeating the Follow AI Command. When you are finished and wish to return to your original position, choose the "Return to Base" command from the context menu. For more details, see **Returning to Base** on page 37.

The Follow AI Command is available for use when:

- Prepar3D crash detection is switched off.
- The user aircraft is on the ground.

Configuring Follow AI



In the Settings Notebook on the "Commands" tab, you can configure the distance that the user aircraft will follow behind the selected AI aircraft. The default value is 10nm.

Tuning this value is a balance between keeping the user aircraft out of sight when you are looking at the AI aircraft, and close enough to enable certain functions such as "Listen to AI ATC" for AI aircraft on the ground. If you cannot hear or see the ATC text for ATC communications with an AI aircraft while it is on the ground and you are following it, try reducing the Follow AI Distance to a smaller value, return to base and then Follow AI once more.

For further details, see **Listen to AI ATC** on page 42.

Important Notes about Follow AI

- Do not switch view (except to another AI aircraft) in P3D while following AI.
- As the reality bubble moves with the user aircraft, AI traffic (other than the followed aircraft) will be deleted and created according to your location.

Returning to Base

You can use “Return to Base” when you are finished with Shadow, Chase or Follow AI. Each command performs special actions concerning the user aircraft situation; the *Return* command restores the user aircraft back to its original location and puts everything back to “normal”.

Important Notes about Return to Base

- If you have chased, shadowed or followed for a long period, the return command may make a significant change in the position of your user aircraft. For a while, the scenery around your aircraft may be blurred or appear “corrupted”. P3D works hard to rebuild the scenery, and after a short time the situation will be corrected.

- Similarly, a large change in AI aircraft appearing on STB may occur when you return to base. You may see some or all flights being deleted, then recreated as Prepar3D generates traffic according to your new situation.

Applying Slew to AI Aircraft

Just like your user aircraft, AI aircraft can be placed into slew. This effectively freezes them; they do not move until they are released again.

There is a slew command in the context menu. Depending on the current state of the AI aircraft, it will either be “Slew On” or “Slew Off”.

When the aircraft goes into slew, you will see its speed drop to zero (if airborne or taxiing), and the “FS State” column shows a value of “Slew”. Note the FS State column is not shown on the board by default. You can switch it on through the Columns tab of the Settings Notebook. For help with settings, see **Appendix A: Working with Settings** on page 80.

Important notes about AI Slew

Placing an AI aircraft into slew may have some unexpected side effects:

- A departure runway becomes closed to other departing traffic when:
    - A departing AI aircraft is put into slew mode before the Tower Controller has handed it off to the next ATC Center.
    - An arriving AI aircraft is put into slew mode after is has been given permission to land, and before it has exited the runway.

- Other AI aircraft may fly through and ignore any aircraft that are in slew mode.

Delete AI

The Delete AI command does exactly what you would expect; it deletes the selected AI aircraft. The corresponding flight listed on the board is also affected:

- If the aircraft is an arrival or departure scheduled to occur at a future time at the currently selected airport, the flight is not removed. Instead it is reset and listed as a future schedule flight.
- Otherwise the flight is deleted from the board.

Important Notes about Delete AI:

- If you are shadowing or following an aircraft that you choose to delete, you are automatically "returned to base".

- The deleted aircraft may be recreated if an event occurs that forces Prepar3D to regenerate AI traffic, e.g.
    - Time Acceleration >4x
    - Large movements in the user aircraft position (e.g. slew mode)
    - Changes in situation made through the Prepar3D GUI.

Arrive Now

The Arrive Now command immediately forces an inbound AI aircraft to a parking position. This is useful to resolve approach conflicts due to poor P3D ATC spacing, and unblock taxi-ways at busy airports or those that have less than optimal taxi-way routing. An automated version of this command is available, that constantly monitors approach airspace and taxi-ways around airports and performs the Arrive Now command whenever a conflict occurs.

Arrive Now deletes the chosen AI aircraft and the corresponding flight listed on the board is treated as a completed arrival according to the Detail Mode the board is using. For more information, see **Level of Detail** on page 26. STB looks to provide a replacement aircraft with a departure schedule or may leave the task to a third party, as described below.

STB creates a replacement AI in P3D representing the onward departure, with a schedule corresponding to that the original AI aircraft would have operated. When the departure schedule time occurs, STB loads a flight plan (based on the great circle route), and the aircraft departs.

Consider this command as an alternative to deleting AI aircraft while preserving traffic flows around your airport. It is particularly useful for moving aircraft that are "interfering" with your approach (and maybe you risk going around) or are blocking your taxi to the gate.

Optimize Traffic Volumes

One strategy for improving your simulator performance (sometimes referred to as "frame rate") is to reduce the number of active AI aircraft. This can be achieved by:

- Setting the "Traffic" density sliders in Prepar3D.
- Using the STB Optimize Traffic command.

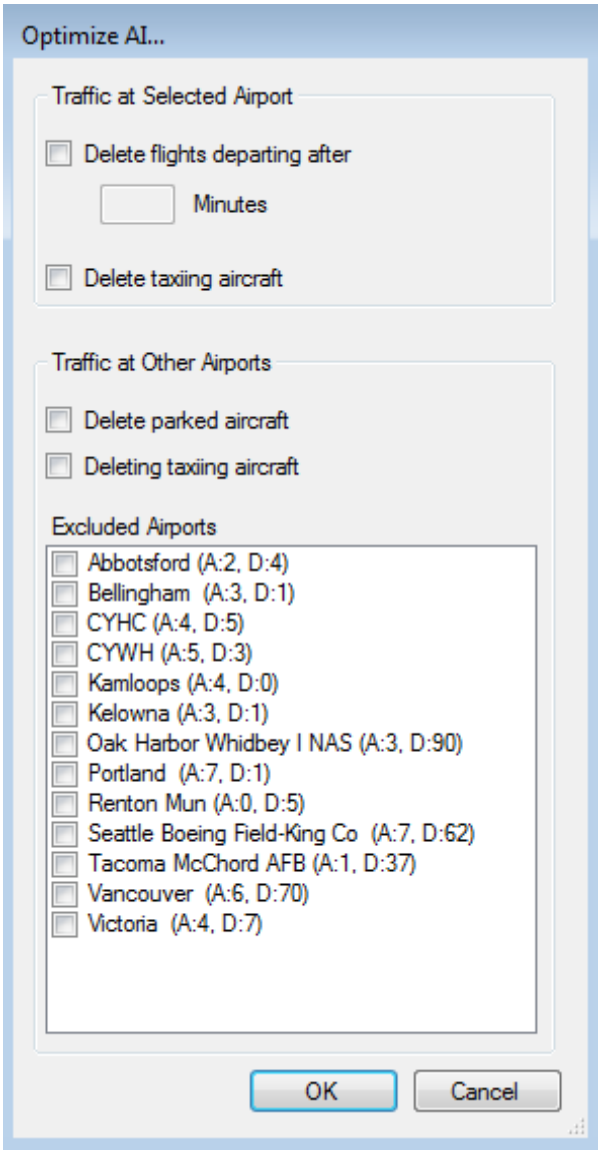
The STB Optimize Traffic Volume commands offer you move flexibility in managing the number of AI aircraft in P3D. For instance, you can optimize by:

- The volume of traffic. At volumes less than 100% AI aircraft are removed at random, so each time the command is used you may see a different group of AI aircraft remaining in P3D;

- By Airport. Adjust traffic volumes at the airport selected on the board and others, and delete aircraft according to their state (e.g. parked, taxi, etc.). This may be used to dynamically adjust performance at busy or complex airports that you are departing from or flying to.

The commands are available in the **AI Flights** pull down menu from the action bar.

By Location



When selecting **"Optimize by Location",** the dialog illustrated on the left is presented for you to specify how you wish to optimize traffic.

Traffic at Selected Airport refers to the traffic that is departing from the airport currently selected in STB. (Note: If "All Airports" is selected, this command is not available.) Traffic arriving at the selected airport is typically small in number, so is not subject to optimization.

Traffic at Other Airports refers to flights arriving at or departing from airports other than the one currently selected on STB. The reality bubble in P3D is larger than FS9, so this may equate to a significant number of AI aircraft. Even AI aircraft that are some distance from the user aircraft place a load on the simulator.

The Excluded Airports list enables you to retain traffic at another airport that would otherwise be deleted by the Optimize command. This is useful if your flight plan takes you to the vicinity of those airports, and you wish to see traffic there.

Note: We do not try to delete airborne AI aircraft, as P3D immediately recreates them.

By Volume

When selecting **"Optimize by Volume",** a simple dialog box (not shown here) is displayed for you to enter a value (0-100%) defining what volume of traffic should be active in Prepar3D. Aircraft are removed at random until the desired volume is achieved.

Depart Now

When parked, AI aircraft may be order to depart immediately using this command rather than waiting for their scheduled departure time to occur. STB creates a flight plan based on the great circle route between departure and destination airport, and loads it to begin the AI departure cycle.

Ordering Future Schedule Flights to Depart

You may also use the Depart Now command on future schedule departure flights, those that are yet to have an AI aircraft associated with them in P3D. As P3D may also create an AI aircraft for the future schedule (e.g. when the preceding arrival flight lands), Depart Now creates a new AI aircraft in P3D and an additional flight on the board. To avoid duplication, the new flight uses the details of the flight selected for Depart Now but with a few modifications:

- The departure time reflects the current simulator time;
- The arrival time is based on the aircraft cruise speed and flight distance;
- The aircraft flies the great circle route to the destination;
- The aircraft registration number and flight number are changed slightly;

AI must be created within the P3D reality bubble, a circle around the user with a radius of about 60nm. STB checks the distance between the user aircraft and the airport at which the AI aircraft is created via the Depart Now command. If the airport is more than 60nm away, the Depart Now option in the context menu is greyed out with a note about the distance between the user aircraft and airport.

If P3D successfully creates the new departure flight, you will see a dialog confirming the details. If something went wrong in P3D (for instance there is a problem with the AI aircraft or texture required), the dialog is not shown. This is a great way of making your departure airport busy with interesting flights when there are few AI aircraft currently at the airport, or you just want to see your favourite AI aircraft in action.

Maximising FPS at Complex Airports

It is also a great way of dealing with performance issues at "intensive" airports. If you're P3D performance is disappointing during departure or approach, try this:

- Set the P3D traffic sliders to 1%. There will be little, if any AI traffic present in P3D.
- Override the P3D traffic slider values in STB. Instead of listing just a few future schedule flights corresponding to 1% traffic, the board will list flights as if 100% traffic is available. You can do this by un-checking the **Honor IFR** and **Honor VFR** traffic slider controls on the Board Control tab of the Settings Notebook. For help with settings, see **Appendix A: Working with Settings** on page 80.
- Choose those flights you wish to see at the airport, and simply "Depart Now" for each one.

Approach Now

Are the skies empty around your destination airport? Is the airport itself empty? Would you like to see your favourite AI aircraft in the sky and inbound to the same airport as you? At complex airports, would you like to limit the number of AI aircraft for the best possible FPS experience? Approach Now can help you do all these things.

With Approach Now, you can select a flight on the Arrivals board and have STB create it in P3D, inbound to the selected airport. There are three options you can use to influence the initial position of the new arrival:

- On the flight plan (great circle route), a certain distance from the arrival airport.
- Relative to a runway at the arrival airport, again a certain distance away.
- Relative to the user aircraft, at a chosen bearing and distance.

As the original AI may already exist, or P3D may separately create the AI aircraft for a future schedule arrival when that schedule is due, Approach Now creates a new AI aircraft in P3D and an additional flight on the board to avoid duplication. To avoid duplication, the new flight uses the details of the flight selected for Approach Now but with a few modifications:

- The arrival time reflects the time the aircraft will take to reach the destination airport;
- The aircraft registration number and flight number are changed;

How to use Approach Now

1. List arrival flights at your airport of choice.
2. Right click a flight, and choose "Approach Now"
3. Choose the initial position of the new arrival flight through the Approach Now dialogue.
4. Click OK. If there is a problem with the initial position, STB will advise you accordingly. Otherwise the dialog closes and sends the Approach Now command to P3D.
5. If P3D successfully creates the new arrival flight, you will see another dialog confirming the details.
6. Sometimes P3D fails to create the flight for reasons better known to itself, in which case the dialog is not seen.

Maximising FPS at Complex Airports

It is also a great way of dealing with performance issues at some airports. If you're FPS is disappointing, try this:

- Set the P3D traffic sliders to 1%. There will be little, if any AI traffic present in P3D.
- Override the P3D traffic slider values in STB. Instead of listing just a few future schedule flights corresponding to 1% traffic, the board will list flights as if 100% traffic is available. You can do this by unchecking the **Honor IFR** and **Honor VFR** traffic slider controls on the Board Control tab of the Settings Notebook. For help with settings, see **Appendix A: Working with Settings** on page 80.
- Choose those flights you wish to arrive at the airport, and simply "Approach Now" for each one. Choose a mixture of flights that will have landed when you get there yourself, and those that will still be on approach.

Usage Notes

- You may use the command multiple times on the same arrival flight if you wish for multiple copies of the same aircraft.
- The command can be used on both materialised flights (having a corresponding AI aircraft in P3D) and future scheduled flights (that do not yet).
- Irrespective of the options chosen, the new AI must be created within 60nm of the user aircraft and at least 15nm outside of the arrival airport. If your chosen settings won't allow this, you will see a message in the Approach Now dialog advising you.
- STB has no influence over P3D concerning the routing the AI will actually take to the airport, nor the runway allocated to it by P3D ATC.
- When the AI lands and parks, it becomes a "Not in Service" flight. See **Error! Reference source not found.** on page **Error! Bookmark not defined.** for more information.

Listen to AI ATC

Ever wanted to listen to the Air Traffic Control communications between an AI aircraft and the Air Traffic Controller? Now you can, using the STB Listen to AI ATC command. When this command is active, STB automatically tunes the user aircraft's COM1 radio to the same frequency that the AI aircraft is using, and follows all frequency changes as the aircraft is handed off across ground, tower and various centers enroute.

Using the Listen to AI ATC Command

The Listen command is available for all flights that have a corresponding AI aircraft in P3D.

To use the command, right click on a valid flight and choose "Listen to AI ATC" from the flight context menu.

After selecting the command, the "COM1 In Use" indicator is lit, to remind you that STB has taken control of the COM1 radio. To recall the identity that you are listening to, float the mouse over the indicator for a tooltip.

To stop listening to AI ATC and reset your COM1 radio back to its original value (automatically), selected either "Reset COM1 Radio" from the flight context menu, or click the "COM1 In Use" indicator.

AI Communications Bubble

Prepar3D implements a Communications Bubble to try to avoid conflicts between different stations that use the same transmission frequency. Due to this you will find:

- You can always hear ATC communications for airborne AI aircraft.

- You may not hear ATC communications for aircraft on the ground unless your user aircraft is very close to them, for instance at the same airport.

If you wish to listen to AI aircraft on the ground and some distance from the user aircraft, consider the **Follow AI** or **Shadow AI** commands in conjunction with Listen to AI ATC. For Follow AI, it may be necessary to reduce the distance between the user aircraft and the followed aircraft. For further details, see **Configuring Follow AI** on page 36.

Lock COM1 Command

While listening to the ATC exchange involving an AI flight through the Listen AI command, you may come across a frequency that you wish to stick to (e.g. tower frequency etc.) rather than following further changes in the frequency the AI flight is using. This is useful when you wish to listen to the communications involving a particular facility (airport, centre, etc), but do not know the frequency it is operating on.

The Lock COM1 command on the flight context menu enables you do to so. After using Listen AI, Lock COM1 becomes available on the menu. Choose it at any time, and your COM1 radio frequency no longer changes to follow that of the AI aircraft you were previously listening to. At any time you can switch back to your starting COM1 frequency (Reset COM1 radio) or to follow the frequency changes of another AI flight (Listen AI).

Important Notes about Listen to AI ATC

- While listening to AI aircraft, don't forget about your own interaction with ATC if you are flying under ATC control. If you listen to someone else for too long, you may miss an important call from the controller and have your flight plan canceled without warning (since you are tuned to another frequency).

- Listen AI is automatically canceled when:
    - The subject aircraft arrives at the destination airport.
    - The subject aircraft is deleted.
    - You change the COM1 frequency of the radio yourself either directly or through an ATC menu.

- AI Aircraft communications are presented both through audio and text if you have the ATC menu open. The ATC menu will offer you a list of local facilities to tune to; however doing so will cancel the Listen command.

- For a great experience, use in conjunction with the custom filter to list just those flights that are sharing the same Air Traffic Controller as the AI aircraft you are listening to. Every time you hear a radio call, you'll be able to easily find the details of the flight involved. For further details on using custom filters, see **Show Flights with the same Air Traffic Controller** on page 20.

Introducing the User Aircraft on the Board

When the user is following a flight plan (either P3D or externally created), the user's aircraft may now take its place amongst its AI friends as a flight listing on both the departures and arrivals boards.

How it works

AI aircraft follow a well-defined "workflow", making it simple to describe their activities on STB. The user aircraft is a little more interesting, as you are at the controls and the "world is your oyster". However If we assume you follow a similar procedure, flying from departure to arrival airport and operating various aircraft systems according to your situation and progress, the user aircraft can be interpreted as if it were AI.

Flight Plans

It all starts with a flight plan. STB needs to know where you are starting from and where you are heading; the flight plan has this information. So for the user aircraft to show up on the board you must define an P3D flight plan, and we assume you will honour it and not fly off somewhere else.

Even if you use a 3rd party planner external to P3D or a Flight Management Computer, STB can still list your flight. Simply configure the departure and arrival airport values manually or create a corresponding native P3D flight plan.

Status

Next STB monitors a number of user aircraft systems in order to understand your situation and intentions, and translate that the flight information on the board. As you make changes to the systems, a change in the way your flight is listed often follows. The following aircraft systems are monitored by STB:

1. Parking Brake;
2. Engines;
3. Avionics Electrical Circuit (via the Avionics master switch or APU/Battery power);
4. Seatbelt sign;
5. Push Back;
6. Landing Lights;
7. Undercarriage position;
8. Flaps position;
9. Main Door;
10. Position relative to departure and arrival airports;

Schedule

What time are you leaving? And arriving at your destination? Unlike the AI aircraft, you don't have a pre-defined scheduled departure time in P3D. After your flight plan is loaded, you may choose to have STB calculate your schedule times (using distance and aircraft performance data) or specify it yourself.

Aircraft Description

Most static values shown on the board come from the aircraft.cfg and can be configured there (including flight number, airline, registration, aircraft make and model). Other values, such as the flight role (Passenger, Cargo, etc.) are configured in STB.

Tutorial

This tutorial describes a "workflow" or set of procedures for flying your aircraft so it is listed on the board as a passenger flight. However, the STB user aircraft facility supports any role (e.g. Cargo, GA, etc.) and this tutorial is easily adapted to another purpose. Many of the steps in this tutorial are standard aircraft operations and may already be familiar to you.

1. Choose a Passenger aircraft with operational undercarriage and flaps, for example the default 737-800.

2. Certain user aircraft do not include the avionics master switch in the 2d/3d cockpit. If you cannot find the switch, assign a keyboard shortcut to it instead.

3. In P3D, configure a flight plan of your choice ensuring you begin at a departure gate (not the runway).

4. Set up your cockpit as if you are "between flights", i.e. you have landed, parked and all your passengers have left:
    a. All engines off (switch on APU to maintain electrical power if you have one!);
    b. Parking brake on;
    c. Main door open;
    d. Avionics off;

5. Click **Configure** from the User Flight menu on the action bar, and configure the following items. Press the OK button when you have finished.
    a. User aircraft role: Passenger;
    b. Departure and arrival times at your discretion;
    c. Ensure "Airports" is set to "P3D Flight Planner";

6. Connect STB to P3D. If STB is already connected, click **Reset State** from the User Flight menu on the action bar.

7. You will find your flight listed at your chosen departure airport (and arrival too). Check it there, and at the departure airport the remarks will be one of "**Go to Gate**", "**Pre-boarding**" or "**Boarding**". You should also find your departure gate is listed.

8. At your discretion, **switch on the Master Avionics**. STB interpret this as you are preparing the aircraft for departure (asking for clearance etc.), so your flight is now listed as FS State "Preflight Support" and remark "**Final Call**".

9. When you are ready, **close the main door**. You are now ready for departure, and your flight is listed with FS State "Startup".

10. **Perform push back, and start your engines while pushing back**. The aircraft FS State cycles through "push back 1" followed by "push back 2", and the departure remark is "**Closed**".

11. As soon as your push back is over, your FS State and departure remarks are changed to "**Taxi**". At this point you may wish to specify your departure runway as described in the "Runways and Parking" section below. Otherwise proceed to the runway threshold and STB will automatically set it when you get there.

12. When you receive permission to enter the active runway from ATC, **switch on your landing lights**. Your departure remark is unchanged; however your FS State changes to “take off 1”.

13. **Perform your take off.** When airborne, your FS State changes to “take off 2” and your departure remark is “**Departed HH:MM**”.

14. When you are safely away from the airport, raise the undercarriage; your FS State changes to “enroute”. Note: If your aircraft has fixed undercarriage, raising the flaps will cause the state change. If you do not have flaps, switching off the landing light will do so.

15. Have an enjoyable cruise! Soon you will be approaching your destination. As you do, ensure to you switch the board to your arrival airports, and display arriving flights. You will find your arrival remark is “**On Time**”.

16. At your discretion, **lower the undercarriage** and your arrival remark is updated to **“Landing”**. Note: If your aircraft has fixed undercarriage, lowering the flaps will cause the state change. If you do not have flaps, switching on the landing light will do so.

17. Check your arrival runway matches that given to you by ATC. If it is incorrect, you may amend it at any time as described in “Runways and Parking”. Otherwise continue the landing procedure and STB will automatically set it when you get there.

18. After touching the runway, your arrival remark changes to “**Landed HH:MM**”.

19. As soon as you join a taxiway, **switch off your landing lights**. Your flight arrival remark is unchanged, but your FS State is “Taxi in”. At this point you may wish to specify your arrival gate as described in the “Runways and Parking” section above, otherwise STB will set it automatically when you shutdown at your gate/parking spot.

20. When you arrive at the gate, ready the aircraft for passenger disembarkation:
    a. Engage the parking brake;
    b. Switch off engines;
    c. Switch off avionics master;
    d. Open the door;

21. Finally your flight displays arrival remark “**Baggage Claim**”, and your journey is at an end. Either enjoy your stopover at this airport or begin preparations for your next flight.

22. When you configure a new flight plan, STB automatically updates the user flight details according to the airports chosen and resets the aircraft state ready for departure. You may also wish to click the ”Configure” action from the “User Flight” pull down menu to perform further configuration for your next flight.

FAQ

1. **The arrival/departure remarks or FS State value for the user aircraft is wrong, or does not appear to be changing. How can I fix it?** This may occur if you perform an action that triggers a "later" FS state than the one you wish to see. For example if you switch on the landing lights right after pushing back, STB thinks you are ready for take-off so skips the "taxi" state. Use the "Reset State" action from the "User Flight" pull down menu to re-evaluate the user aircraft state based on its current situation.

2. **The User Aircraft State is "Unknown", why?** There are some combinations of aircraft system settings that STB can't interpret, because they don't make sense in the flight lifecycle. Set the aircraft to the required state using the tutorial for guidance. Use the **"Reset State"** action from the User Flight menu to re-evaluate the user aircraft state.

3. **How do I make sense of the User Aircraft State?** To see how STB has figured out what the user aircraft is doing, select the "Describe State" action from the "User Flight" pull down menu. For more information, see " **User Flight State Dialog"** on page 52 and "**What is required to achieve a particular state?"** On page 52.

4. Can I set the User Aircraft State to a particular value irrespective of what is happening in P3D? Yes! For more information, see "**Setting the User State Manually"** on page 52.

5. **Is it ok to aircraft states are skipped?** Yes, it's just fine if steps are skipped, for instance you don't use the landing lights during takeoff. STB will work out what has happened, and update the user flight accordingly when the next significant event occurs.

6. **What happens if I want to change my flight plan destination after departure?** No problem! STB automatically detects the flight plan change and updates the board accordingly. Note the flight plan is effectively immediately, irrespective of whether it has been cleared by ATC.

7. **What happens if I cancel my Flight Plan through ATC and decide to fly somewhere else?** STB cannot recognise this automatically, as the loaded flight plan in P3D has not changed. Configure the new destination manually:
    a. Click **Configure** in the User Flight Menu (from the action bar);
    b. In the Airports Group click the **User Specified** radio button;
    c. Enter the ICAO name of the new arrival airport.
    d. You may also change the departure ICAO, to ensure it is different to the arrival ICAO. Don't forget to reset this option to "From P3D Flight Planner" next time you fly with a loaded flight plan.

8. **I joined the party late, and I've already left the gate when I connected STB. What happens on the board?** STB works out your flight state based on your current aircraft situation and lists your flight accordingly.

Runways and Parking

User aircraft "Runway" and "Gate" information are not available from via P3D in the same way as they are for AI:

- The departure parking spot is calculated by finding the gate closest to the user aircraft when it is parked at the departure airport (FS State *"Sleep (Departure)",* through *"Startup*").

- The departure runway is calculated by finding the runway closest to the user aircraft at take off (FS State "*Take Off 1*"). As this happens long after runways are allocated to AI aircraft, you can elect the departure runway in advance using the **Recalculate Runway** command from the **User Aircraft** menu on the action bar any time prior to the aircraft leaving the departure runway:
    - ***"Automatic":*** The runway closest to the user aircraft is found and set as the departure runway.
    - ***"User Specified":*** A list of runways is presented from which the user may choose. Only runways open for takeoff are included.

  By allocating the user runway in advance (e.g. at the start of taxi-out), the departure distance measurements for the user aircraft follow the same pattern as those for AI.

- The arrival runway is calculated by finding the runway closest to the user aircraft when it enters the "landing" phase (typically after lowering the undercarriage). If there are multiple runways open for landing and depending on the arrival route, STB may get this wrong. If you wish to correct this you may use the "**Recalculate Runway"** command from the "User Aircraft" menu on the action bar.
    - **"Automatic":** The runway closest to the user aircraft is found and set as the departure runway.
    - **"User Specified":** A list of runways is presented from which the user may choose. Only runways open for landing are included.

- The arrival parking is calculated by finding the gate closest to the user aircraft when it parks (FS states "*shutdown*" through "*Sleep (Arrival)*"). If you wish to set this yourself, use the **"Recalculate Parking**" command from the **"User Aircraft"** menu on the action bar any time after the aircraft has touched down at the arrival airport.
    - **"Automatic":** The parking closest to the user aircraft is found and set as the arrival gate.
    - **"User Specified":** A list of parking spots is presented from which the user may choose.

Note for the "automatic" option, the runway or parking given to you may be different from that allocated by ATC. The actual values used by ATC are not available to STB directly from P3D.

About Complex and Payware User Aircraft

Some user aircraft have a level of complexity beyond what P3D can model and provide information for STB. One example is the external aircraft lights. P3D has a single system for landing lights, where as some aircraft have multiple systems for "inner" and "outer" lights. This may generate an inconsistent state in P3D, which in turn cannot correctly inform STB of the light state used to generate the user aircraft state.

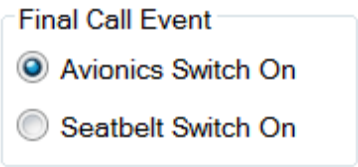
When this happens, you may see your aircraft in *"unknown"* FS State with a blank departure/arrival remark even though everything looks to be correct. If you discover this situation with complex aircraft, try switching all lights off and on a few times, and then switch them to the desired state. Usually this action helps P3D understand what is happening, which in turn can feed the correct value to P3D. After doing this, you may need to click **"Reset State"** in the **"User Aircraft"** action bar menu.

Using the Seat Belt Sign

The seat belt sign may be used as alternative to the master avionics switch as the event that signals the user aircraft is in “Preflight Support State”, presented as “Final Call” for departing aircraft.

For passenger flights, preflight means that all passengers are on board and the aircraft is getting ready to push back. From the point of view of the passenger, the seat belt sign is on and the door is still open for any of those annoying “late passengers” to run and join the flight.

Either the master avionics or the seat belt switch can be used to indicate Final Call. The choice is made in the settings notebook on the “Commands“ Tab. Here you will find the “Final Call Event” radio buttons in the “User Aircraft” group. For help with settings, see “**Appendix A: Working with Settings**” on page 80.



Automated Jetway Docking

At airports that support Jetway Docking, STB can automatically command the jetway to dock and undock with the user aircraft according to its state:

- Undocks when the departing user aircraft is in “startup” state (main door closed);
- Docks when the arriving user aircraft is in “shutdown” state (parking brake applied);

Prior to connecting STB to P3D, it is recommended to have the Jetway in the correct position according to where you are in your flight. If you parked and plan to depart, the Jetway should be docked first. As STB can only “toggle” the Jetway, it is important for the jetway to have an appropriate initial status.

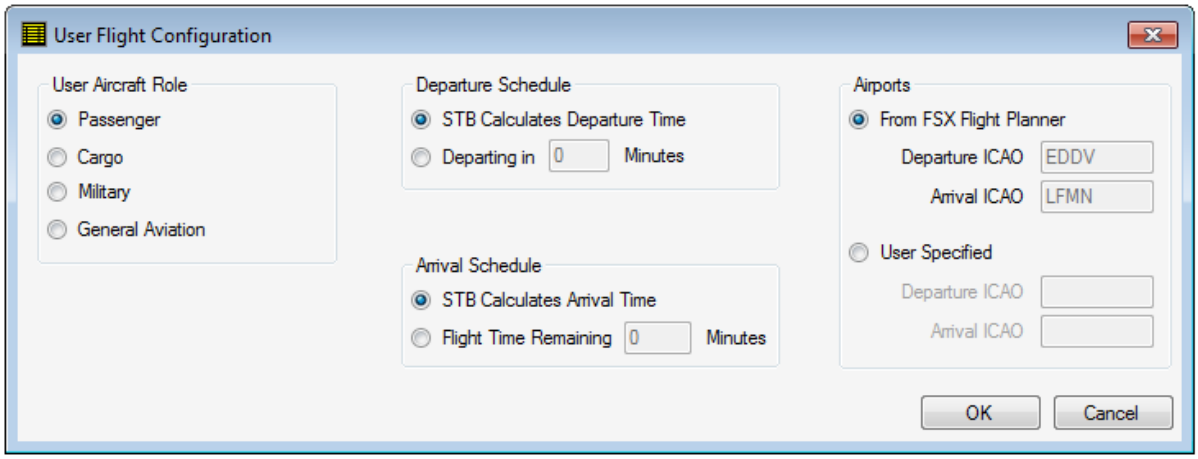
The user aircraft most have a suitable exit defined in its aircraft.cfg file for jetways to function. Automatic docking is not available with Aerosoft AES enabled airports.

Automatic docking is configured in the Settings Notebook on the “Commands” tab. Here you will find the User Aircraft group containing the Jetway control.

For help with settings, see “**Appendix A: Working with Settings**” on page 80.

Configuring the User Flight Listing

You may configure various aspects of the user flight by clicking the **Configure** in the User Flight pull down Menu (from the action bar):



Flight Role

The Flight Role determines how the user's flight is shown on the board in terms of status remarks. For more information on the roles available, see **Flight Categorization** on page 57.

Departure Schedule

STB can automatically calculate your scheduled departure time, or you may specify it manually. Remember that schedules are always estimates, and things don't always run to plan in the P3D world!

- To have STB calculate the departure time, click the "**STB Calculates Departure Time**" radio button.
  - If you are still at the gate, your departure time is 10 minutes from now (P3D Time).
  - If you have left, your departure time is set in the past based on the distance from your departure airport, your aircrafts cruise speed and a factor to cover taxi and climb out time.
- To set the departure time yourself, select the "**Departing In**" radio button. Specify either a positive or negative number of minutes relative to "now" in P3D time.

Arrival Schedule

STB can automatically calculate your scheduled arrival time, or you may specify it manually. Remember that schedules are always estimates, and things don't always run to plan in the P3D world!

- To have STB calculate the arrival time, click the "**STB Calculates Arrival Time**" radio button.
  - If you are airborne, the time is based on your distance from the destination, your aircrafts cruise speed and a factor approach procedures and taxi-in. The latter is obtained from the "Arrival Schedule Offset on the Data Interpretation tab of the STB Settings Notebook.
  - If you are on the ground, we assume you are at the departure airport. The calculation above is used, with an additional factor for taxi-out and departure procedures.
- To set the arrival time yourself, select the "**Flight Time Remaining**" radio button. Specify either a positive number of minutes you estimate your flight will take starting from your current situation.

Airports

The choice of arrival and departures airports may either be read from the P3D flight planner, or entered manually if the flight planner is not used.

From P3D Flight Planner

Whenever there is a change in the airports named in the P3D flight plan, the change is automatically communicated to STB and the arrival and departure flight listings updated. For your information, the names of the airports in the flight plan are shown in the User Flight Configuration Dialog.

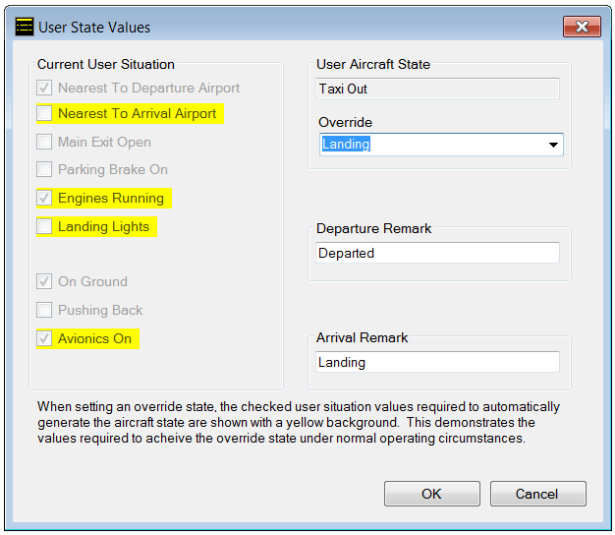
User Specified

If you are not using the P3D flight planner, you may manually specify the ICAO codes for the arrival and departure airports. Note this option and the airport values entered are remembered between P3D sessions, so this is the first place to check if the airports associated with the user's flight are incorrect on STB.

Airline, Callsign and Flight Number

These values are all set in the aircraft.cfg file relevant to the user's aircraft choice.

Using the User Flight State Dialog



The" User State Values" dialog describes the current state of various aircraft systems and situations, and how they determine the FS State and arrival/departure remarks shown on the board for the user aircraft.

The "Current User Situation" area on the left is greyed out as the values cannot be changed. The values do not update in real time, if something changes about your aircraft you'll need to close and reopen the dialog to see it.

The yellow highlights indicate the systems and situations needed to achieve a particular override state. More on this below.

Setting the User State Manually

The user's state and arrival/departure remarks can be changed by selecting a new value in the "Override" control. After choosing an override value, the new departure and arrival remarks are shown in the dialog. If you are happy with state and remarks click OK and they are applied to your flight on the board.

What is required to achieve a particular state?

When choosing an Override state, the user aircraft systems and situation that need to be in "checked" state are to achieve the state automatically are highlighted in yellow. Checked state usually means that system and condition is true, i.e. "main exit IS open" is checked when the main exit door is open. This is an easy way to learn how to configure the aircraft to achieve each state without the need to set it manually. You may also use this to determine why the user aircraft is not in the state you expect it to be, and by selecting that state in the override control you can verify your aircraft against what is required in yellow (each yellow highlight requires a checked box to achieve the override state, and no other boxes must be checked).

Flight Control: Helping Prepar3D at Busy Airports

Flight Control is an automated STB feature that constantly monitors what is happening in Prepar3D, with the specific aim of keeping airports running as smoothly as possible. Where possible, Flight Control intervenes in the normal operations of the simulator to prevent problems with AI traffic such as:

- Minimum separation violations between flights during final approach and landing
- Intelligent handling of multiple go-around situations
- Releasing aircraft that have become stuck at a parking position
- Rescuing aircraft that are deleted by P3D to relieve taxiway congestion.

Minimum Separation between Flights

Prepar3D creates flights on a direct path from one airport to another. This means aircraft approach the destination airport from many directions at once, rather than following each other in a queue within an "air corridor". As aircraft arrive, P3D Air Traffic Control guides them to landing without any consideration to airspace separation. These two factors may lead to overcrowded skies with many go-arounds and deleted flights at busy airports.

STB Flight Control monitors flights during final approach. At a certain distance before landing, all aircraft are checked to see if they breech minimum separation rules with other aircraft. When a breech occurs, the aircraft is forced to "Arrive Now" by deleting it and recreating it at a parking position with an onward departure schedule:

- For **STB operated flights**, the aircraft is deleted. STB flights are in addition to those created by P3D to provide specific capabilities requested by end user commands, including:
    - Arrive Now onward Departure Flights;
    - Depart Now and Approach Now AI flights created from future schedule flights.

  STB flights do not have onward departure schedules following arrival, so there is little purpose in recreating them during an "Arrive Now" operation.

- All **other flights**, the aircraft is deleted and recreated at an airport gate as an "STB operated flight". When the schedule departure time occurs, STB instructs the aircraft to begin the departure procedure.

Airspace separation management is configured on the Board Control tab of the Settings Notebook:

- **Enforce Separation** check box, enables airspace management.
- **Minimum Separation** value is the minimum distance that must exist between flights on final approach and landing. Lowering this value reduces the number of flights that are moved to the stand, but may increase the number of go-arounds due to a runway was not cleared in time.
- **Approach Conflict Decision Point** value is the distance from the destination airport at which minimum separation violations are resolved.

For help with settings, see **Appendix A: Working with Settings** on page 80.

There may be occasions where airspace separation management is unable to detect violations. For instance, when two arriving aircraft are in extremely close proximity travelling at different speeds. If the timing is right, one aircraft overtakes the other and each time STB checked the separation it did not find another flight in front of each aircraft.

User Aircraft

The user aircraft may also benefit from STB flight control. During final approach, a check is made every minute for airspace conflicts between the user aircraft and other AI aircraft. If a conflict is detected, the AI aircraft is forced to "Arrive Now" as described above. This action should reduce the likelihood of the user aircraft being ordered to go-around, while preserving AI aircraft arrivals at the airport.

A user airspace conflict occurs when:

- The "Enforce Separation" checkbox is checked, as described above;

- The user has loaded a flight plan, and is within 10nm of the destination airport defined by the flight plan;

- An AI aircraft is:
    - Flying a similar course to the user aircraft;
    - Either directly in front or behind the user aircraft (within a given tolerance);
    - Closer to the user than the **Minimum Separation** defined in the settings described above;

Handling Go-Arounds

Go-arounds may still occur despite STB flight control intervention, for instance an aircraft does not clear the runway in a timely fashion or when an aircraft makes a decent that is too aggressive to safely land. After several go-arounds, P3D deletes the affected aircraft to keep the simulator optimised. STB Flight Control circumvents this by forcing the aircraft to "Arrive Now" when it is asked to go around a second time.

The go-around management performed by Flight Control is automatically enabled whenever airspace separation management is active, as described above.

Rescuing Aircraft Stuck During Taxi-In

P3D deletes aircraft that have failed to move in a given period while taxiing to a parking position. At busy airports with high traffic densities, and particularly where traffic has to cross active runways, this can be a frequent event.

STB Flight Control monitors taxiing aircraft and attempts to recover those that are deleted while travelling to a parking position. The outcome is dependent on the AI operating the flight, as described in **Minimum Separation between Flights** on page 53.

Taxi-In Management is enabled by the "Recover Deleted Arrivals" checkbox in the Board Control tab of the settings notebook. Deleted aircraft are recovered by moving them to a new parking position.

For help with settings, see **Appendix A: Working with Settings** on page 80.

Rescuing Aircraft Stuck at a Parking Spot

Occasionally aircraft become stuck at a parking position, in pre-flight or post-flight support. This is more likely to happen when airport vehicles are enabled in Prepar3D.

The reasons are not all understood, but may include airport design problems, problems with airport vehicles unable to approach the aircraft and other unknown reasons internal to Prepar3D.

STB Flight Control monitors parked aircraft, and attempts to restart them if they fail to progress beyond pre and post flight support. Should the rescue fail, the aircraft is deleted to release the parking space for use by other aircraft.

Parked aircraft monitoring is configured by the **Recover Stuck Aircraft** checkbox in the "Board Control" tab of the Settings Notebook.

For help with settings, see **Appendix A: Working with Settings** on page 80.

Procedure for Stuck Departures

- When the aircraft fails to depart in a timely fashion, it is marked as delayed. For further information on delays, see **Delayed Departures** on page 25.

- 15 minutes after a flight is declared delayed, STB considers it stuck and attempts to rescue it. This is performed by sending a "Slew On" followed by a "Slew Off" command to the aircraft. In many cases this is sufficient to reactivate the aircraft stuck in pre-flight support.

- If after another 30 minutes the aircraft has not left its parking position, it is deleted.

Procedure for Stuck Arrivals

- When an aircraft approaches its parking position but does not shutdown within the delay period, the aircraft is considered stuck. The delay period is the same as that when considering if departures are delayed. For more information, see **Delayed Arrivals** on page 26.

- STB attempts to rescue the stuck aircraft. This is performed by sending a "Slew On" followed by a "Slew Off" command to the aircraft. In many cases this is sufficient to reactivate the aircraft stuck in post-flight support.

- If after another 30 minutes the aircraft has not shutdown down it is deleted (if "Taxi-In Management" is enabled, the aircraft is moved to another gate and shutdown automatically). For further information on Taxi-In Management, see **Rescuing Aircraft Stuck During Taxi-In** on page 54.

Benefits of Flight Control

The Flight Control facility aims to:

- Help Prepar3D keep airports running as smoothly as possible;
- Avoid situations where the number of aircraft at an airport becomes depleted due to the steps Prepar3D takes to optimise the simulation and prevent “deadlocks”;

Normally an arriving aircraft becomes a scheduled departure after parking and shutdown. However, it cannot become a departure if it failed to land or taxi in because P3D deleted it. Without Flight Control, you may observe the active traffic at your airports reduces over time and never recovers.

Forcing aircraft to “Arrive Now” preserves the airport departure schedule by helping to ensure arrivals actually “land” and become departures.

Hang on; I am still seeing a reduction in departures!

Even with STB Flight Control watching your aircraft, you may still sometimes notice your departures are still diminishing. Some possible causes of this are:

- At a given time of day, the overall flight schedule has aircraft departing more often than “replacements” are arriving. This is a natural phenomenon, and it is likely at some other time the ratio will be reversed.
- There are insufficient gates of a particular type to support an aircraft being moved to a parking position.

Duplicate Flights

During normal operations, P3D does not create AI aircraft on the ground unless there is a traffic reset event (such as user aircraft location change, time of day change, etc..).

STB operated flights are created as part of the “Arrive Now” operation to represent a scheduled departure flight due to occur at a later time. At some time after the scheduled departure time; P3D may create an airbourne duplicate of the STB operated flight as it does not realise STB has already created the flight.

When a duplicate occurs, the STB operated flight is modified to look a little different to the one created by P3D. The aircraft registration and flight number are both changed, so the duplication is a little less noticeable.

Effect of Time Acceleration and Slew

Use of Prepar3D's "fast forward" controls may affect what you see on STB.

Time Acceleration

For time acceleration up to a value of "4x", P3D continues to operate AI traffic. However, depending on system load, some events in the life cycle of an AI object may be skipped. This may result in some inaccuracies on the board. A reduced rate of arrivals at airports may also be observed.

When time acceleration of greater than 4x is used, P3D deletes all AI objects until acceleration is reduced below 4x. Depending on your circumstances, you may see a different set of AI objects recreated when time acceleration is reduced.

The STB clock is updated every minute (of P3D time) for time acceleration up to 4x. For values greater than 4x, the clock is updated every two minutes or more.

Location Slew

AI objects are added and removed as the position of the user aircraft changes. When location slewing, AI objects may come and go quickly, depending on your velocity. This may lead to rapidly changing and unrepresentative data appearing on STB.

Flight Categorization

All flights are categorized by callsign as described in the table below. The choice of category affects the aircrafts behaviour on the board, and is configured through the Airlines Configuration Table. For information see **Airlines Configuration Table** on page 68. A unique set of arrival and departure remarks are available for each category, to provide a realistic representation for each flight no matter what its role is in P3D. The effect on the presentation of flight numbers is described below.

Category	**Flight Number representation**
Passenger	Where available, the IATA code associated with the airline is added to the flight number received from P3D. Passenger flights are shown on STB much as you would expect in the real world, and the status "remarks" you will see should sound familiar.
Cargo	Where available, the IATA code associated with the airline is added to the flight number received from P3D. Arrival and Departure information is cast into a cargo operations context, meaning the status remarks reflect what is happening from the point of view of cargo.
Military	Flight numbers for military aircraft are secret, and are displayed as "Classified" (meaning restricted). Arrival and departure information is also cast into a military context. Rather than seeing "wait in lounge" etc, you will see data with a more "mission" oriented interpretation.
General Aviation	GA aircraft do not have flight numbers, and are treated in a similar fashion to Military and Cargo aircraft but with a GA interpretation. Occasionally large passenger aircraft operate as GA flights.

You may filter the flights displayed on the board according to the flight category, for instance just listing passenger flights. For further details, see **Show Flights from a Particular Category** on page 21.

Customizing the appearance of SuperTrafficBoard

The appearance of STB and listed flights may be customised using the STB Settings Notebook.

Flight Display Columns

The horizontal sort order, width and visibility of columns displayed on STB can all be changed using standard windows controls:

- The sort order may be changed by picking up the column heading with a left mouse click, dragging it by keeping the button pressed, and dropping it into a new position on the board;

- The width of the column is changed by selecting the edge of a column heading, and dragging to a smaller or larger size;

- Columns may be added and removed using the context menu. Right click anywhere on a column and a context menu appears. Choose ***"Hide Column"*** to make the column disappear. Choose ***"Reset Columns"*** to bring back all columns that are hidden;

- The sort order, width and column visibility are controlled independently for arrival and departure flights. When you make changes to any of these for one group of flights, the other is unaffected.

Column visibility may also be configured through the Columns tab in the Settings Notebook. For help with settings, see **Appendix A: Working with Settings** on page 80.

Changes made to columns are automatically stored when you save you settings through the Settings Notebook.

Fonts and Colors

You may change the fonts used for text and the foreground and background colors using the ***Fonts Tab and the Colors Tab*** in the Settings Notebook:

- Fonts are changed through a Windows font dialogue. While the size of the display area for the *Board Heading* is fixed, the board will automatically size itself around the font metrics of the *Board Column* Heading and *Flight Data* (rows) fonts;
- Colors are chosen through a Windows color dialogue;

Two background colors are available for *Flight Data* rows. This allows the "stripe" effect, which may make the board more readable. The stripe effect can be disabled by setting both colors to the same value.

Auto Layout

When Auto Layout is enabled, the various user interface controls in the main STB window and sized and positioned to provide the best possible experience:

- Controls are sized so that the contained text does not overrun the bounds of the control.
- Controls are positioned to reduce margins between controls to the minimum.
- The layout is performed whenever the font used for a control is changed.

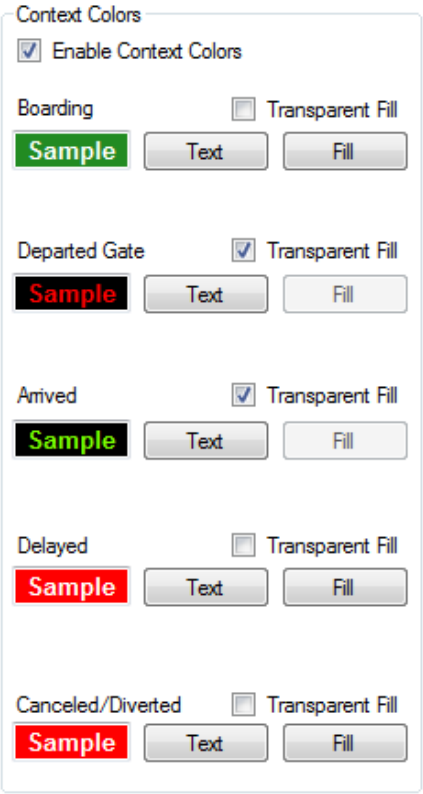
Auto Layout is enabled and disabled on the Board Control tab of the Settings Notebook.

Context Sensitive Colors

Scheduled	Airline	Flight	To	Remarks	Gate
11:44	bmi	BD423	Edinburgh	Departed 11:46	
11:45	BRITISH AIRWAYS	BA177	Denver	Departed 11:51	
11:45	BRITISH AIRWAYS	BA980	Hamburg	Departed 11:48	
11:50	Aer Lingus	EI172	Dublin	Taxi	
11:56	THAI	TG911	Bangkok Survarnabhumi	Taxi	
11:58	BRITISH AIRWAYS	BA3865	Bucharest Henri Coanda	Delayed	Gate 523
11:59	BRITISH AIRWAYS	BA295	Chicago-OHare	Boarding	Gate 535
11:59	brussels airlines	SN2092	Brussels National	Wait In Lounge	
12:02	swiss	LX358	Geneva	Wait In Lounge	
12:04	BRITISH AIRWAYS	BA562	Milan Linate	Wait In Lounge	
12:06	BRITISH AIRWAYS	BA283	Los Angeles	Boarding	Gate 538
12:07	BRITISH AIRWAYS	BA9037	Frankfurt-Main	Boarding	Gate 552

The arrival and departure remark columns provide a summary of the status of both the user and AI aircraft as they occur in P3D. You may alter both the foreground and background colors of the remark columns for a number of significant states:

- Boarding;
- Departed from Gate;
- Arrived;
- Delayed;
- Canceled or Diverted;



The colors are set using the "Context Colors" group on the ***Presentation Tab*** in the Settings Notebook:

- **Enable Context Colors** switches the facility off and on. When Enable is unchecked, the default colors are used.

- You may choose both a foreground and fill (background) colors. Click the respective button and the standard Windows color picker dialog is displayed.

- **Transparent Fill** allows you to use the default board color as background (when checked) or your particular choice of color (unchecked) as specified through clicking the **Fill** button.

- A sample is provided, showing you how your choice foreground and fill colors will look on the board.

When you have finished making changes, click **Save** if you wish to keep your choices for next time followed by **OK**.

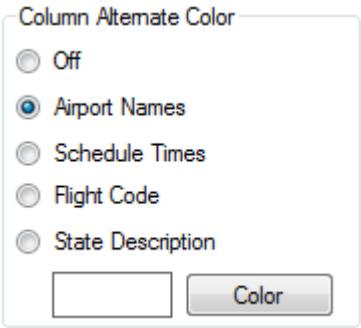
For help with settings, see **Appendix A: Working with Settings** on page 80.

Alternative Column Color

Due	Airline	Flight	From	Remarks
12:13	Lufthansa	LH793	Hamburg	On Time
12:14	CZECH AIRLINES	OK658	Prague Ruzyne	On Time
12:16	IBERIA	IB3174	Gran Canaria	On Time
12:18	Lufthansa	LH737	Berlin Tegel	On Time
12:18	Lufthansa	LH841	Cologne-Bonn	On Time
12:19	BRITISH AIRWAYS	BA3551	Nice-Cote dAzur	On Time
12:20	SN Brussels Airlines	SN34	Brussels National	On Time

You may highlight an individual column by changing its color as shown above. You may choose from:

- Airport Names;
- Schedule Times;
- Flight Code;
- State Description (Arrival and Departure Remarks);
- Off (Default colors are used);



The Column Alternative Color Group on the Presentation Tab of the Settings Notebook is used to select both the column and colour of the data show within it.

When you have finished making changes, click **Save** if you wish to keep your choices for next time followed by **OK**.

For help with settings, see **Appendix A: Working with Settings** on page 80.

Upper Case Text

Some Traffic Boards in the real world display text in upper case, particularly those used before the digital era requiring mechanical parts to display letters. You can recreate this effect in STB by converting all text to upper case automatically.

The “Upper Case Text” check box on the Board Control tab in the Settings Notebook controls this behaviour. When the box is checked, all text is converted to upper case.

Language

STB supports National Language Translation, and the following languages may be used:

- US English;
- UK English;
- Swedish (Partial Translation);

You may change the active language using the **Language** control on the Board Control tab of the Settings Notebook. When a new language is selected, it is applied to the settings notebook window immediately. For the language to be active in the main STB window, it must still be applied by clicking the "OK" button in the Settings Notebook.

For help with settings, see **Appendix A: Working with Settings** on page 80.

Logos

The dimensions of airline logos cannot be modified using standard windows drag techniques on the column, however they can be modified through the Logo tab in the Settings Notebook.

When the logo size is changed, the flight data row size and the width of the logos column is automatically changed to match**. Please note that logos are scaled to fit into the given dimensions.** If the logos are down-scaled, the loss in quality is usually quite minimal, however when up-scaling they may become blurry.

After changing the logo dimensions, it is necessary to disconnect from P3D and reconnect afterwards for the changes to take effect. For help with settings, see **Appendix A: Working with Settings** on page 80. For information on acquiring and adding logos to STB, see **Creating Logos** on page 71.

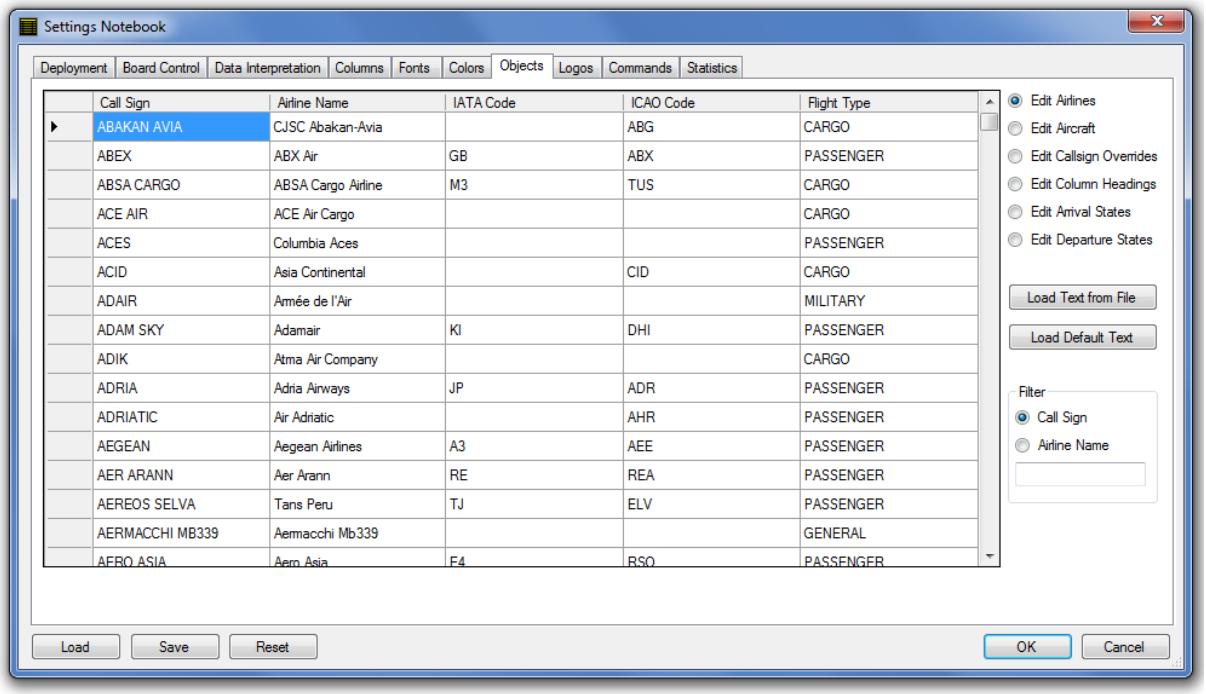
Using the Table Editor

STB stores the following user configurable data in a tabular form:

- Column Headings;
- Arrival and Departure States (remarks);
- Aircraft Configuration;
- Airline Configuration;
- Callsign Overrides;

The contents of each table may be changed using the table editor found in the **Object** tab of the Settings Notebook. The look and feel of the editor is similar to an Excel style spreadsheet. You can switch between each table category using the radio buttons on the right hand size of the window, and after switching any changes you have made to each table are remembered.

For help with settings, see **Appendix A: Working with Settings** on page 80.



Filtering

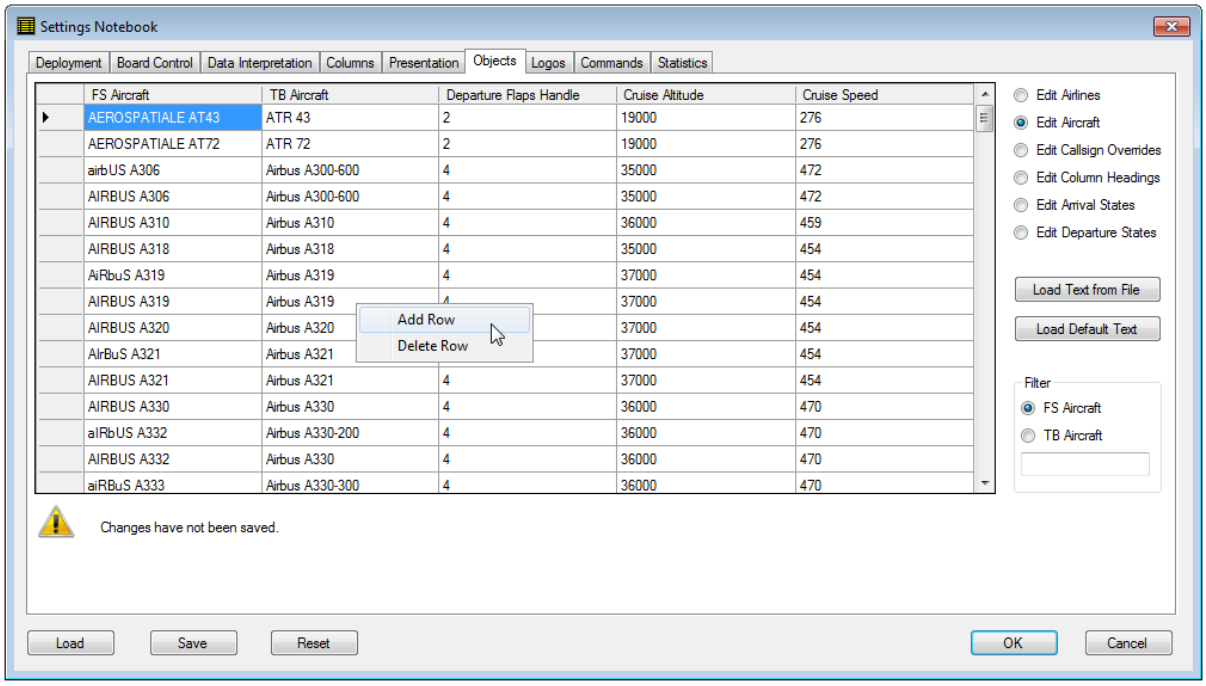
When there are many rows on display, the filter is a great way of finding a group of rows or one row in particular of interest. For example the “Airlines” table has options to filter on the “Call Sign” or “Airline Name” value. With the Call Sign option selected, start typing the name of a call sign you are interested in. With every letter you type, the rows presented in the table are reduced to match what you have typed. The more you type in, the more focused will be the table. The filter is always assumed to be applied to the start of the text in the selected column, so for instance a filter value of “speed” will match all airlines whose call sign begins with “speed”.

To reset the filter, simply type in a new value and the table is automatically updated. To see all rows in a table again, clear the value from the filter.

The filter is available for the Airline and Aircraft tables.

Adding New Rows

New rows can be added to the Airlines and Aircraft tables by right clicking anywhere on the table and then choose “Add Row” from the context menu. This takes you to the bottom of the table where a new empty row is ready to be filled in (marked by the “*” character).



In the new row select each column in turn starting with the first, and simply type an appropriate value in each column. You can use the tab key to move between columns. If you wish to cancel the addition of a new row, press the Escape key (Esc).

Deleting Rows

Rows can be removed from the Airlines and Aircraft tables by right clicking anywhere on the appropriate row and then choosing “Delete” from the context menu.

Changing Existing Values

To change a value in a table cell, select the cell with a mouse left click and then type in the new value. Press “enter” when you have finished typing to commit the changes to the cell. If you don’t want to keep the change, press the escape key to cancel it.

Restoring Default Values

There are two options for restoring default values to tables, discarding any changes you have made (including those saved in a previous session):

- **Load Default Text** button: Resets the contents of a selected table to default values;
- **Reset** button: Resets the contents of all tables (and all other STB settings;

If you wish to keep the default settings permanently, you must press the “Save” button. To apply the default settings back to STB, press the “OK” button.

Loading Saved Values

To load saved settings from disk discarding any changes you have made, press the “Load” button. All tables are reloaded from saved settings, irrespective of whichever is currently selected.

Loading a Community File

From time to time, files may become available on community websites offering you new data that may be loaded into STB. To load a community file, first ensure the appropriate category is selected using the radio buttons. Then press the **Load Text from File** button, and use the file selection dialogue to navigate to the location of the community file.

Note that the community file is a complete replacement for the content of a table, and any changes you may have previously made are discarded.

When you are finished

- Press the **Save** button to make a permanent copy of your table changes (and any other settings changes) on disk.

- Press the **OK** button to send your changes back to STB. Note: unless you have used the “Save” button as well, your changes will be discarded when you close STB.

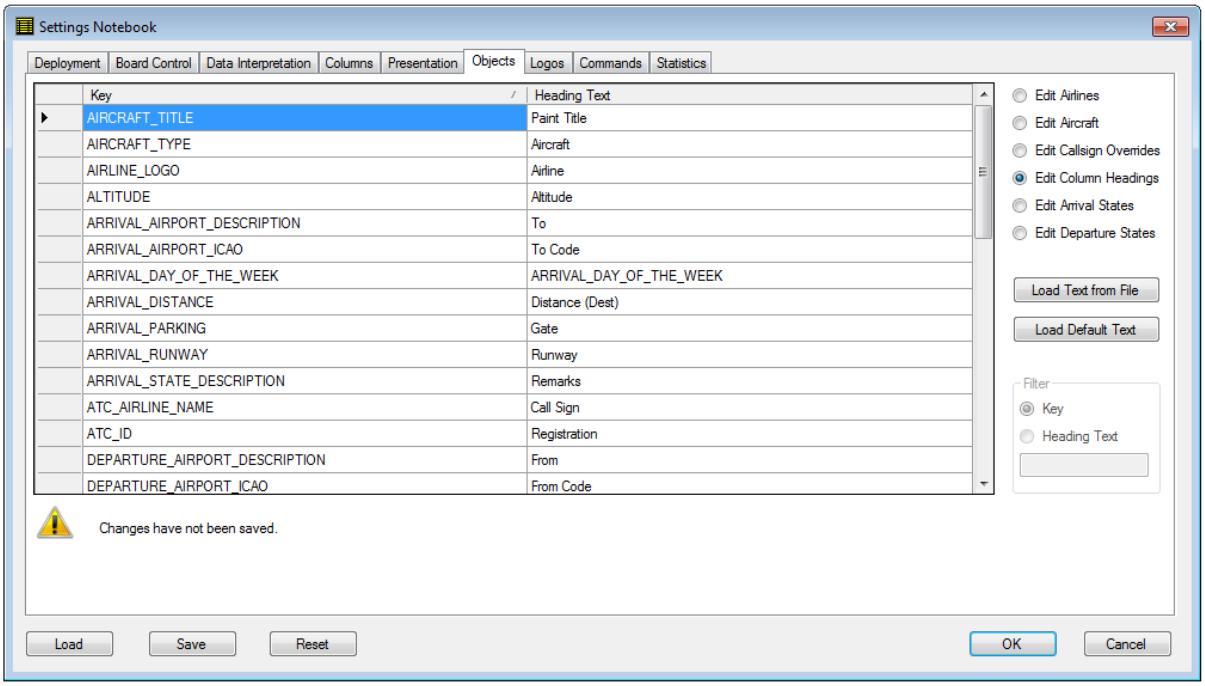
- Press the **Cancel** button to discard changes. Note: If you have already saved your changes, those changes are loaded next time you use STB.

Column Headings Table

STB displays flight information in tabular form, using several columns each with a column heading at the top describing the role of the column.

The column heading names may be configured through the “Object” tab in the settings notebook. With the “Objects” tab open, select the “Edit Column Headings” radio button to display the column heading values in the table editor show below.

See **Using the Table Editor** on page 62 for general information.



Notes

- The “Key” column describes the role of each STB Column.
  - The entries in the Key column cannot be changed.
  - Rows where the Key and Heading Text columns contain the same value are the used for internal purposes. Do not change these rows.
  - Rows where the key contains the term “EVERYTHING” refers to columns that are only displayed when the “ALL Airports” option is selected in STB (in the airport selection control).

- The “Heading Text” column contains the text to display at the top of the column on the board, describing the information the column contains.

- You cannot add or delete rows, simply change the value of the Heading Text column as required.

- If you change language, you will be asked if you wish to keep your current heading values, or load the values associated with the new language.

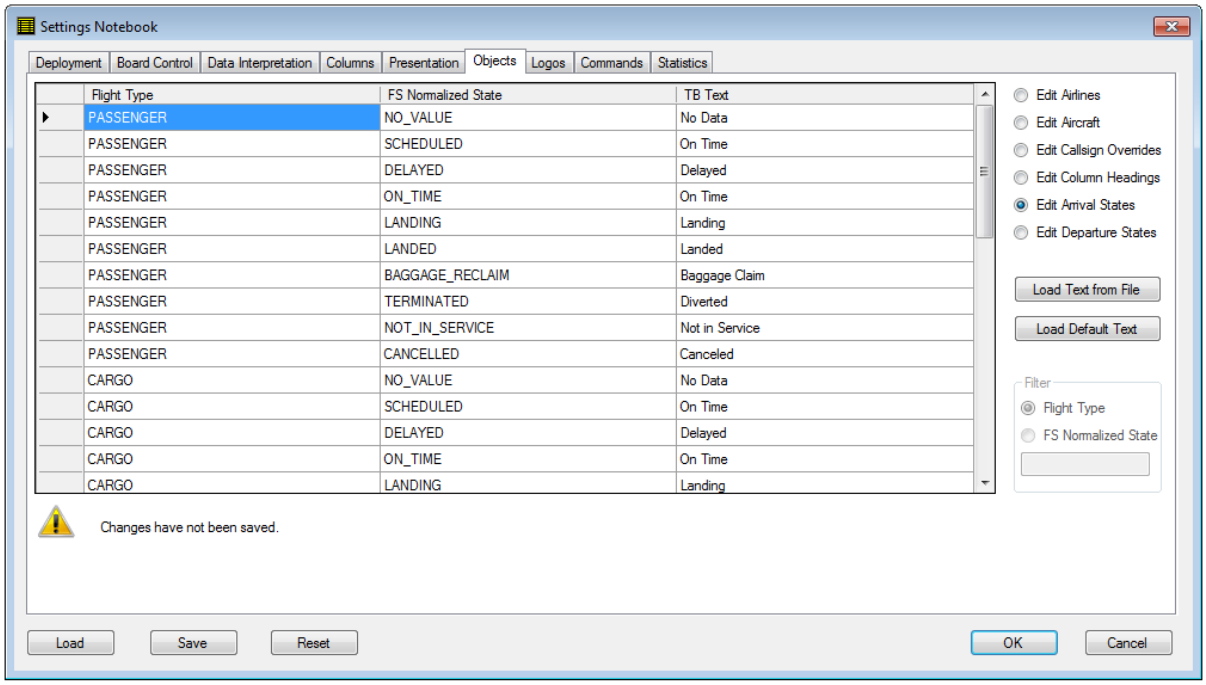
Arrival and Departure States (Remarks) Table

STB uses information from Prepar3D to describe the condition of every flight. This includes a "departure state", (state relative to the airport the flight is leaving from, such as "boarding", "final call", "taxi", etc), and an arrival state (relative to the airport the flight is travelling to, such as "on time", "landed", "baggage reclaim" etc.). The states are shown in the flight "**Remarks**" column, and vary depending on whether Arrivals or Departures are being displayed and the operational category of the flight.

Prepar3D notifies STB every time the state of an aircraft changes. STB groups the FS state values together into meaningful groups represented by an STB state keyword. For example, FS states "Clearance," "Push Back 1", and "Push Back 2" are all grouped into normalized departure remark of "Closed". This normalized value is translated into a text value shown on the board.

The arrival and departure state text is configured through the "Objects" tab in the settings notebook. Select either the "Edit Arrival States" or "Edit Departure States" radio button to display the state values in the table editor show below.

See **Using the Table Editor** on page 62 for general information.



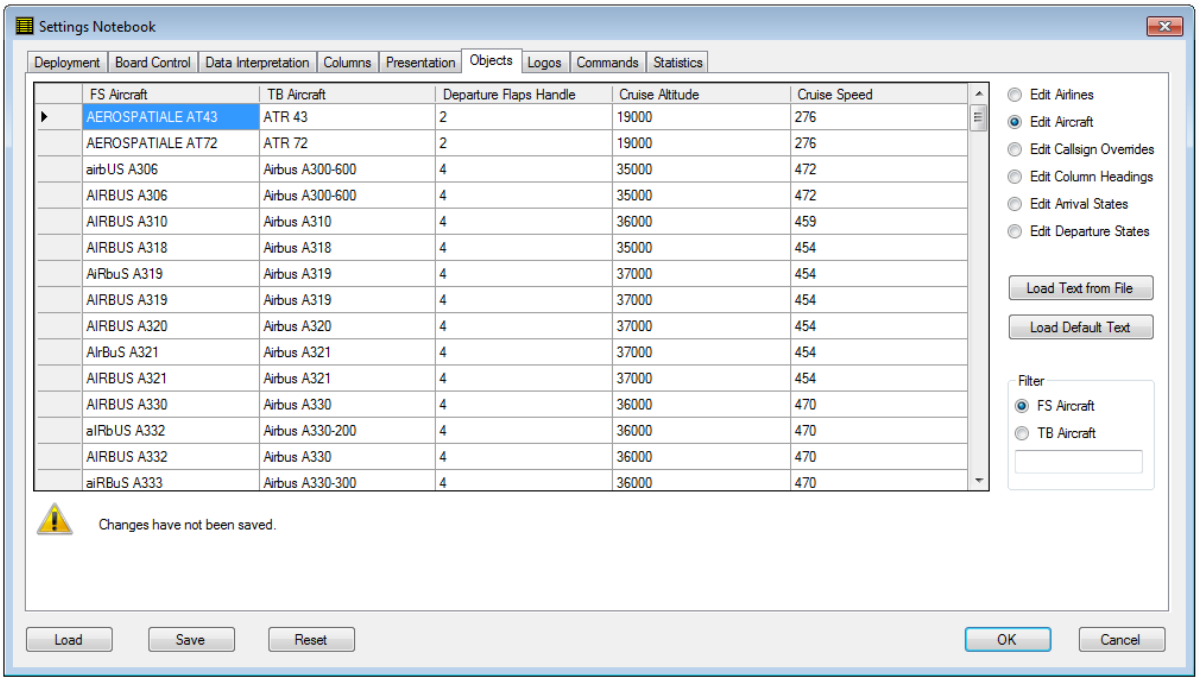
Notes

- The columns in the configuration table are:
  - **"Flight Type"** describes the flight category a state value is applied to. For further information on flight types, see "
  - Flight Categorization" on page 57. The entries in this column cannot be changed.
  - **"FS Normalized State"** reflects a group of Prepar3D states that all refer to the same or similar aircraft condition. The entries in this column cannot be changed.
  - **"TB Text"** is the text to display when an aircraft is in the state identified by the Flight Type and FS Normalized State values.
- If you change language, you will be asked if you wish to keep your current heading values, or load the values associated with the new language.
- You cannot add or delete rows, simply change the value in the TB Text column as required.

Aircraft Configuration Table

Aircraft names and operational characteristics may be configured through the “Objects” tab in the settings notebook. With the “Objects” tab open, select the “Edit Aircraft” radio button to display the aircraft configuration in the table editor show below. See **Using the Table Editor** on page 62 for general information.

The STB configuration wizard automatically loads the aircraft configuration table based on the chosen AI package. For more details, see **Configuration Wizard** on page 13.



FS Aircraft	TB Aircraft	Departure Flaps Handle	Cruise Altitude	Cruise Speed
AEROSPATIALE AT43	ATR 43	2	19000	276
AEROSPATIALE AT72	ATR 72	2	19000	276
airbUS A306	Airbus A300-600	4	35000	472
AIRBUS A306	Airbus A300-600	4	35000	472
AIRBUS A310	Airbus A310	4	36000	459
AIRBUS A318	Airbus A318	4	35000	454
AiRbuS A319	Airbus A319	4	37000	454
AIRBUS A319	Airbus A319	4	37000	454
AIRBUS A320	Airbus A320	4	37000	454
AIrBuS A321	Airbus A321	4	37000	454
AIRBUS A321	Airbus A321	4	37000	454
AIRBUS A330	Airbus A330	4	36000	470
aIRbUS A332	Airbus A330-200	4	36000	470
AIRBUS A332	Airbus A330	4	36000	470
aiRBuS A333	Airbus A330-300	4	36000	470

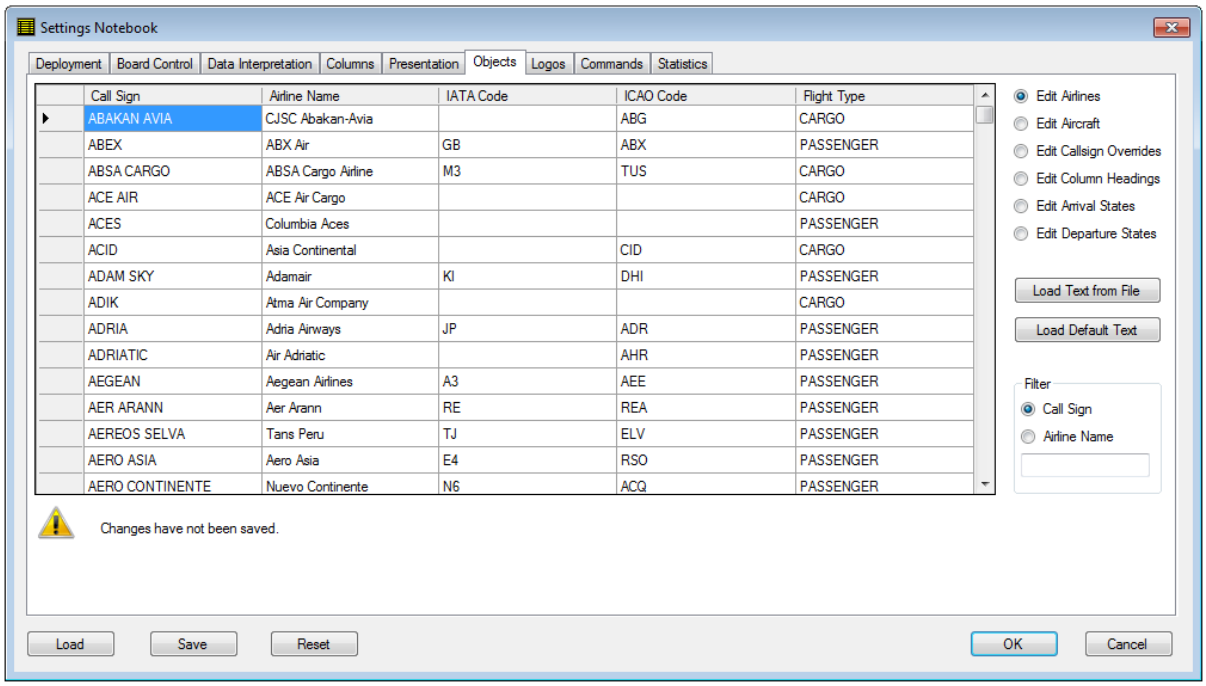
Notes

- The columns in the configuration table are:
    - **FS Aircraft** uniquely identifies the aircraft as Prepar3D knows it. This value is derived by combining the aircraft name and model values from the aircraft.cfg file.
    - **TB Aircraft** defines the value presented on the board when the corresponding FS Aircraft is used for a flight. You can change this value to change the names of aircraft on the board.
    - **Departure Flaps Handle** enables you to specify what flaps deployment a departing aircraft should use for taxi-out and takeoff. The range of values varies by aircraft capability.
    - **Cruise Altitude** is used for flight plans dynamically created for aircraft that are “moved to the stand” by STB Flight Control, and in response to “Depart Now” commands.
    - **Cruise Speed** is used when the user aircraft is listed on the board.
- Rows may be added and deleted as required. FS aircraft that do not have a configuration in the table use default values.

Airlines Configuration Table

Airline (and other aircraft operators) names, IATA codes and the airline/operator role may all be configured. With the "Objects" tab of the settings notebook open, select the "Edit Airlines" radio button to display airline configuration data in the table editor show below. See **Using the Table Editor** on page 62 for general information.

The STB configuration wizard automatically loads the airline configuration table based on the chosen AI package. For more details, see **Configuration Wizard** on page 13.



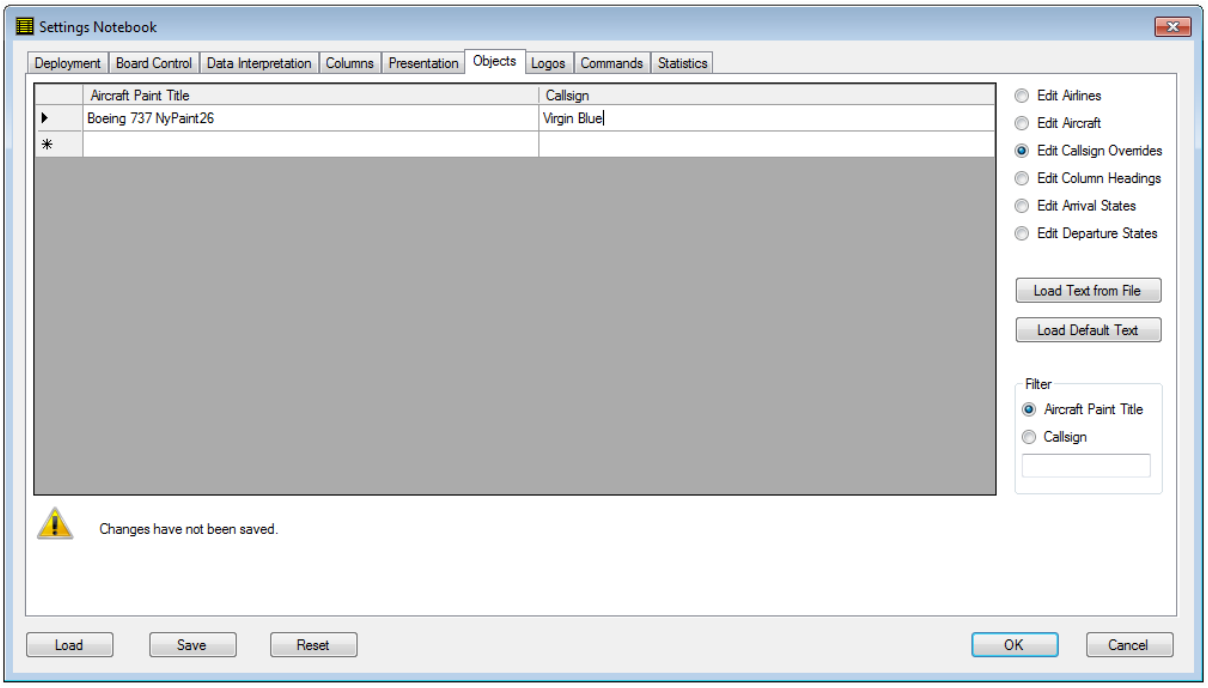
Call Sign	Airline Name	IATA Code	ICAO Code	Flight Type
ABAKAN AVIA	CJSC Abakan-Avia		ABG	CARGO
ABEX	ABX Air	GB	ABX	PASSENGER
ABSA CARGO	ABSA Cargo Airline	M3	TUS	CARGO
ACE AIR	ACE Air Cargo			CARGO
ACES	Columbia Aces			PASSENGER
ACID	Asia Continental		CID	CARGO
ADAM SKY	Adamair	KI	DHI	PASSENGER
ADIK	Atma Air Company			CARGO
ADRIA	Adria Airways	JP	ADR	PASSENGER
ADRIATIC	Air Adriatic		AHR	PASSENGER
AEGEAN	Aegean Airlines	A3	AEE	PASSENGER
AER ARANN	Aer Arann	RE	REA	PASSENGER
AEREOS SELVA	Tans Peru	TJ	ELV	PASSENGER
AERO ASIA	Aero Asia	E4	RSO	PASSENGER
AERO CONTINENTE	Nuevo Continente	N6	ACQ	PASSENGER

Notes

- The columns in the configuration table are:
  - **"Call Sign"** uniquely identifies the airline/aircraft operator. FS uses call sign information configured in the aircraft.cfg file. ***STB always converts call signs to upper case.***
  - **"Airline Name"** is the "Real World" airline/operator name.
  - **"IATA"** code is added to flight numbers associated with passenger airlines.
  - **"ICAO"** is reserved for future use.
  - **"Flight Type"** identifies the role of the airline/operator. For more information concerning Flight Type, see "
  - Flight Categorization" on page 57.
- Rows may be added and deleted as required. Aircraft operators that do not have a configuration in the table use default values.

Overriding Airline Callsigns and Airline Configurations

In some situations, the airline callsign is not enough to uniquely identify an airline. In other words, some callsigns are shared by multiple airlines. A good example seen in certain AI packages is the callsign “virgin”, shared by Virgin Atlantic in Europe and Virgin Blue in Australia.



To offer flexibility you may override the callsign for certain aircraft paints. Let us take the example of the Virgin Blue airline. Instead of using the default callsign virgin (which we’ll leave for Virgin Atlantic), we want to use the callsign Virgin Blue.

This is achieved by configuring all aircraft paint titles associated with the Virgin Blue Airline to use callsign Virgin Blue. For example, if aircraft paint title “B737Paint12” is in Virgin Blue colours, we add it to the callsign overrides table as shown above.

The simplest way of finding the required aircraft paints is to switch on the “aircraft title” column, and use the View AI command to locate the relevant aircraft.

Once the Virgin Blue callsign is established, it can be configured as a separate airline using the “Edit Airlines button”. This enables the correct logo and IATA codes to be used for Virgin Blue flights.

See **Using the Table Editor** on page 62 for general information.

Sample Files

Pre-configured sample files for a number of AI packages are included, that you may load using the “Load Text from File” button. The sample files are located in:

<STB Installation Folder>*Samples*

Where <STB Installation Folder> is the windows folder in which you installed STB. For assistance in locating this folder, please see **SuperTrafficBoard Installation Folder** on page 82.

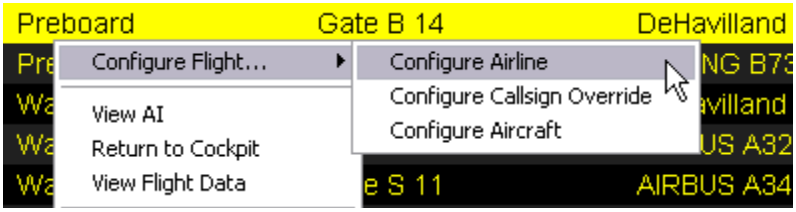
Each file is just a sample, meaning it may not provide complete coverage of all airlines in your particular AI package. After loading the file, you are free to make any amendments to it using the table editor as you see fit. Comments, corrections and additions concerning the content of these files are most welcome. Please suggest changes on the product support forum.

The following files are available. If your favourite AI package is missing from this list, please contact us on the product support forum and we will endeavour to provide one.

AI Package	Sample File Provided
AU Traffic (ORBX)	Aircraft_ORBX.txt Airlines_ORBX.txt
MyTrafficX (Aerosoft)	Aircraft_MyTrafficX_2010.txt Airlines_MyTrafficX_2010.txt
MyTrafficX (SimMarket)	Aircraft_MyTrafficX_Pro.txt Airlines_MyTrafficX_Pro.txt
TrafficX (Just Flight)	Aircraft_JFTrafficX.txt Airlines_JFTrafficX.txt
World of AI	Aircraft_WOAI.txt Airlines_WOAI.txt

The Fast Way to do it

If you wish to edit the configuration of a flight listed on the board, there is a faster way then going through the Settings Notebook. Right click the flight to bring up the context menu, and then choose the aspect of the flight you wish to configure.



Whichever you choose, the settings notebook is opened automatically at the objects page, with the appropriate radio button already selected for you.

If the Airline/Aircraft/Callsign Override already exists, the corresponding row in the configuration table is automatically selected.

If the object does not exist STB tells you, scrolls to the bottom of the list, and automatically creates a new row for you to complete. Note that you must double click a cell in the new row in order to add information to it.

Every other aspect of working with object tables is as described previously; the context menu simply gives you a more direct way of configuring objects.

Note that configuration changes made to the selected flight are also applied to other flights that share the same characteristics (e.g. same airline, aircraft, etc.).

Creating Logos

Airline logos for the major AI packages available for P3D are included with STB. As differences exist between the packages, it is important to select the correct set of logos that correspond to your package. The choice is made in either:

- The STB Configuration Wizard;
- Logos tab of the Settings Notebook.

If you come across an airline that does not have a logo, you may create your own as described below.

Supported Image Formats

STB supports image files in the following formats for use as logos:

1. JPEG (.jpg)
2. Windows Bitmap (.bmp)
3. Graphics Interchange Format (.gif)
4. Portable Network Graphics (.png)

Airline Logos

STB automatically scales images for airline logos according to size of their display area, while maintaining the original aspect ratio of the image. When you acquire images for use with STB, it is recommended to obtain an image size equivalent to the largest size you may ever wish to display. Images generally look good when they are scaled down to occupy a smaller size; however up-scaling from smaller to a larger size quickly degrades the image quality.

The default display area STB uses for airline logos is 100 horizontal pixels by 20 vertical pixels (landscape format). These values may be changed on the "logos" tab of the STB Settings notebook. For help with settings, see **Appendix A: Working with Settings** on page 80.

The file name of the logo must match the call sign (ATC_AIRLINE) of the airline that it represents. For example, "British Airways" flights may require a logo called "SPEEDBIRD.jpg".

Airport Logos

Airport logos are handled slightly differently. The logos are not up-scaled to fit their defined display area if they are smaller than the display area. Instead, the size of the display area is reduced to fit the logo, while preserving the original aspect ratio. This approach makes more space available for displaying flight information on STB.

If the image is larger than the maximum size of the display area, it is downscaled for best fit while preserving the original aspect ratio.

The file name of the logo must match the ICAO code of the airport that it represents. For example, London Heathrow Airport requires a logo called "EGLL.jpg".

The maximum size of the airport logos may be set on the Logos Tab of the Settings Notebook.

Storing Images

Logos may be stored in the following locations, for use by STB:

- <STB Installation Folder>/Logos/Airline (airline logos only)
- <STB Installation Folder>/Logos/Airport (airport logos only)
- User Logo Path, a folder of your choice. The path value that may be set on the "Logos" tab of the STB Settings Notebook.

For help with settings, see **Appendix A: Working with Settings** on page 80. For help locating the STB Installation Folder, see **SuperTrafficBoard Installation Folder** on page 82.

After making a change to the user logo path or adding new logos, it is recommended to disconnect from and reconnect STB to Prepar3D in order to activate the changes.

Using SuperTrafficBoard on another computer

STB may be used on another computer that is network connected to your main P3D computer. A typical example is a laptop running STB, connected to a home PC running P3D using a wireless network. In this scenario, the computer running STB is known as the "Client Computer", since it is separate to the P3D Computer.

Using STB on a client computer has a number of advantages, including:

1. STB does not take up valuable "viewing space" on your Prepar3D Screen.
2. All functions, including View AI, remain available.
3. Prepar3D can run full screen.

Overview of Tasks

Additional configuration is required on both computers. The following instructions assume that both computers can already "talk" to each other across a network, and refer to the **"STB Client" computer** and **"P3D" computer** as separate units.

On the P3D Computer:

- Download and Install SuperTrafficBoard Data Server, STB-DS;
- Run the STB-DS configuration wizard, that configures P3D for network communications;

On the STB Client

- Install the Prepar3D SDK. This provides the communication infrastructure for STB to talk to P3D across a network;
- Install STB;
- Run the STB configuration wizard and specify a remote connection to P3D running on another computer;

Installing the SuperTrafficBoard Data Server

The STB Data Server (STB-DS) supplies the following information to STB on the client computer:

- Airport facility data including parking, runway and AI schedules;
- Commands such as View AI, Depart Now and Approach Now.

FSX Version of STB-DS Already Installed?

No problem, you can have both the FSX and P3D versions installed at the same time. Don't try running them at the same time however, as they cannot both be active. If you follow the recommendation of starting STB-DS automatically with P3D this should not be a problem, as you cannot have FSX and P3D running at the same time on the same computer either!

Installation Instructions

1. On your P3D computer, download STB-DS from: www.supertrafficboard.com/downloads/stbds3.zip

2. Unpack stbds.exe from the zip file and run it to install STB-DS. Follow the instructions given by the installer.

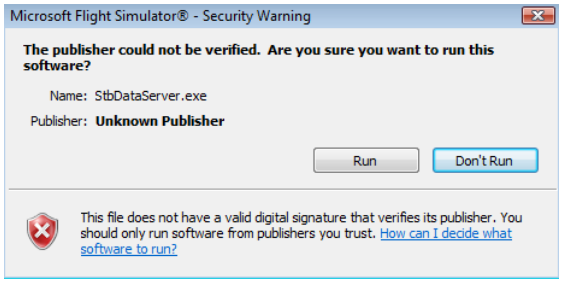
3. The configuration wizard starts automatically after the installation is complete. If it does not, you may request it by clicking "Reshow Configuration Wizard" on the main STB-DS window.

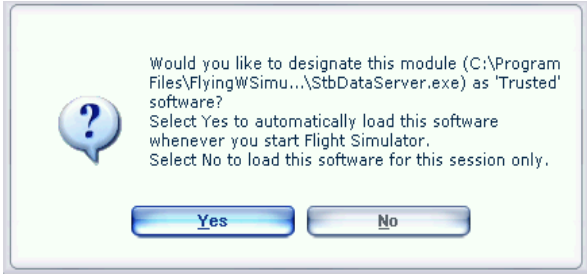
4. Work through the wizard. There are two steps, a configuration options window and a status window. Use the default configuration actions presented. Tooltips are available that describe each action, simply allow the mouse to float over a particular item. The outcome of each configuration action is reported in the second step.

5. You may also see a firewall warning. Please allow STB-DS to use your **private** network. It is not recommended to allow access to a public network such as the internet.

6. Start or restart P3D.

7. After a little while, P3D asks you to authorise STB-DS through the following dialogs. Click “Run” in response to the first dialog, and “Yes” to the second. The examples shown below are from FSX, however those from Prepar3D are very similar. This is a one-time action. You may also see an additional set of dialogs asking you to authorize STBServer.dll, the STB Simulator Plug-in. P3D may also trigger a firewall warning; please permit it to use your **private** network. It is not recommended to allow access to a public network such as the internet.





STB-DS may be started as a minimized application, if you want to see the window you’ll need to click it from the taskbar. Closing P3D automatically closes STB-DS.

Installing the Lockheed Martin Prepar3D SDK on the STB (Client) Computer

The SDK is required to provide the communications infrastructure for STB to talk to P3D over a network. You can download the SDK from:

http://www.prepar3d.com/downloads/

At time of writing, the latest version available is 1.4.4747.0:
http://www.prepar3d.com/downloads/?did=22

An installation guide is provided with the SDK, please refer to the guide for details on installing the SDK.

Installing SuperTrafficBoard on the STB (Client) Computer

Note: The license you purchased for STB allows you to install it both on the P3D computer and on a separate client computer if you wish to. On the client computer:

1. Run the STB installer.

2. The configuration wizard will start automatically one the installer is complete. If it does not, click "Reshow Configuration Wizard" from the "Configuration" pull down menu in the STB menubar.

3. In step 1 of the wizard, select "Lockheed Martin Prepar3D on another Computer". If you have already used this computer as a SimConnect client, this choice is already selected.

4. If you have already used this computer as a SimConnect client, the name of the P3D computer is already filled in. Continue on to the next step. Otherwise in wizard step 2 enter the name of the P3D computer (or IP address). This was provided to you when you ran the STB-DS configuration wizard on the P3D computer.

5. Work through the remainder of the wizard. For additional information, see **Configuration Wizard** on page 13.

6. After reaching the main STB window, you'll need to restart STB to complete the configuration.

Success?

Create a flight on your P3D computer and start STB on your STB client computer. When the flight has finished loading, click the Connect button. The connection takes place in two parts:

1. P3D;
2. STB Data Server;

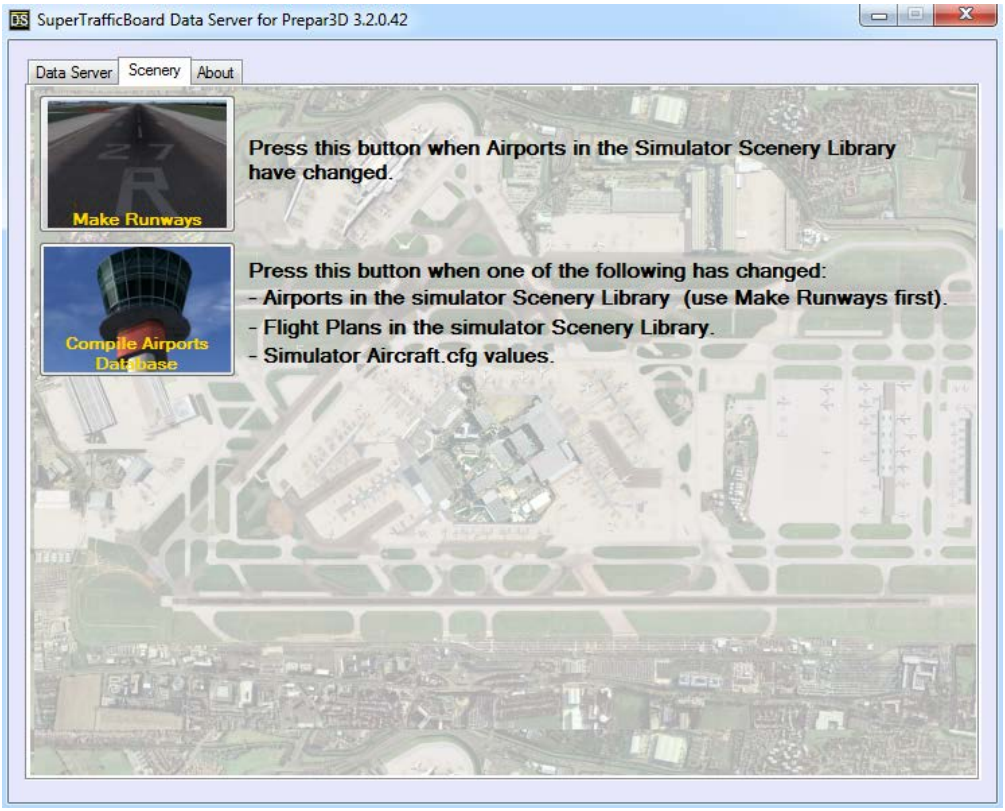
A separate message in the message box describes each connection outcome and the result. Below is an example when connection is successful. At this point the Connection button turns green and flight data starts loading. Note it takes longer to obtain the list of flights from P3D when using STB on a separate computer due to network lag.

```
Connecting to Prepar3D, please wait.
Connected successfully to Lockheed Martin® Prepar3D® 1.4.4747.0
Connecting to Remote STB Data Source.
Connected successfully to STB-DS Server Version 3.2.0.43
```

STB-DS Usage Notes

- Flights are a little slower to load into the STB display when using STB-DS, especially the initial list immediately following connection to P3D;

- When the P3D Scenery Library changes, it may be necessary to perform the"Make Runways" action, the "Compile Airports Database" action or both. The actions are available on the **Scenery** tab. For more information, see **When Changing the Prepar3D Scenery Library** on page 16.
    - While either action is running under STB-DS, you will not be able to connect STB to P3D.
    - If STB is connected when you begin, it will be automatically disconnected.



Advanced Topics

Most users do not need to be concerned with this section. However it may be of assistance if you need to **deal with STB, SimConnect and TCP/IP Ports. In a nutshell, the port identifies which application a message** sent on the network is intended for. There are 3 ports relating to STB:

- The simconnect port, which STB specifies 2024 as a default;
- The STB-DS port, 32123;

You'd only need to concern yourself with ports is when some other application is trying to use one of the above, which may prevent STB from working correctly.

Which TCP Port to Choose?

For further guidance on determining available network ports, perform an internet search using the term "free TCP ports". Sometimes setting values by "trial and error" is the most effective method.

Configuring SimConnect Server Ports

The Simconnect Server configuration file (simconnect.xml) is found in the P3D Application Data Folder. For assistance in locating the folder, see **Prepar3D X Application Data Folder** on page 82.

The settings group (there may be several) in the file used by STB and SimConnect will look similar to the following:

```
<Protocol>IPv4</Protocol>
<Address>192.168.1.2</Address> or <Address>MyP3DPC</Address>
<Port>2024</Port>
```

The port value may be changed as you see fit, but will need to match the corresponding configuration on the SimConnect client (see next topic for details). After making changes to the simconnect.xml file, restart P3D.

Configuring SimConnect Client Ports

The SimConnect client configuration file (simconnect.cfg) is found in the "My Documents" folder on your STB computer. There is just a single group of settings in this file, and it will look like the following.

After copying the sample file to MyDocuments, edit it and ensure it contains the following lines:

```
[SimConnect]
Protocol=<Internet Connection Protocol>
Address=<Name or IP Address of your Prepar3D Computer>
Port=2024
MaxReceiveSize=4096
DisableNagle=0
```

"Port" is the TCP Port used for SimConnect communications. This value must be the same on both the STB Client and P3D Computers (simconnect.xml, see previous topic). After making changes to this file, restart STB.

Configuring STB-DS Ports

Both the STB and STB-DS require matching values for “STB Data Server port”.

P3D Computer:

The STB-DS port value can be set in the STB-DS main window:

- Remember STB-DS may be running minimized; look in the task bar if you do not see it’
- Configuration section;
- The port number is set in the “STB Data Server Port” control;

After changing the value and clicking the “Apply” button, the STB-DS configurations are updated with the new port value. To complete the configuration, you will need to stop and restart STB-DS.

STB Computer:

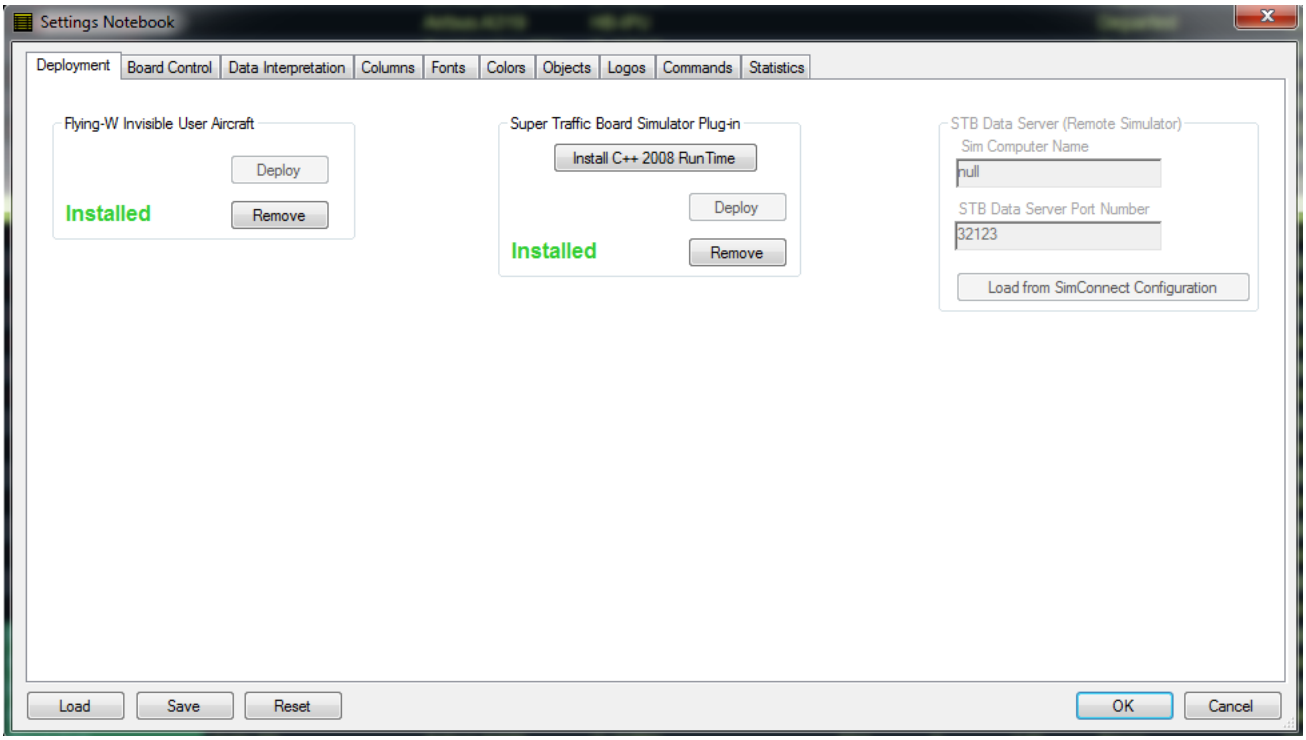
The STB-DS port value can be set in the STB Settings Notebook:

- Deployment Tab;
- STB Data Server (Remote Simulator) Section;
- The port number is set in the “STB Data Server Port” control;

After changing the value and clicking either the “Save” or “OK” button, the STB configurations is updated with the new port value. To complete the configuration, you will need to stop and restart both STB.

Appendix A: Working with Settings

STB is highly customizable through a dedicated settings notebook. You can access the notebook at any time by clicking the **Settings** command from the Configuration pull-down menu in the action bar.



Information in the Settings Notebook is organized into tabs:

- **Deployment** is used to activate additional STB components. Some of these components are deployed automatically by the Configuration Wizard. For further information, see **Configuration Wizard** on page 13 and **Appendix F: Deploying Additional Features** on page 86.

- **Board Control** configures STB window's behaviour, language translation, keystroke forwarding from Prepar3D, automated recovery of traffic congestion problems and airports;

- **"Data Interpretation"** configures the way Prepar3D data is interpreted and presented;

- **"Columns"** configures the choice of flight information columns displayed on the board;

- **"Fonts" and "Colors"** configures the look and feel of flight information displayed on the board;

- **"Objects"** configures the content of various object categories such as aircraft, airlines, board column headings and flight status remarks;

- **"Logos"** configures the AI package for the STB supplied airline logos, how images are displayed, and how new ones can be added;

- **"Commands"** configures how various STB and Prepar3D commands work;

- **"Statistics"** describes the version of STB and Prepar3D communications interface, plus "activity" counts from Prepar3D;

After changes are made in the settings notebook, they are activated by clicking the *"**OK**"* button. Alternatively, changes are discarded by clicking the ***"Cancel"*** button.

Settings are permanently stored on disk by clicking the ***"Save"*** button. That includes all changes you have made in the settings notebook, whether they have been activated or not.

When STB is started, saved settings are automatically loaded. They may be manually loaded at any time by clicking the ***"Load"*** button, which replaces any changes made in the settings notebook. The loaded settings must be activated by clicking the OK button.

The *"**Reset**"* button is used to restore default settings. The restored settings replace any changes you have made on the notebook, and must be activated by clicking OK[5].

[5] Restored defaults are not automatically saved. If you are happy with them, you must save them if you want to use them next time.

Appendix B: Locating Folders

SuperTrafficBoard Installation Folder

When you installed STB you were offered the option of specifying the installation path to use. If you choose to ignore this and use the default installation, you will find STB in:

- Windows 32 bit: C:\Program Files\FlyingWSimulation\SuperTrafficBoard V3.2 P3D
- Windows 64 bit: C:\Program Files (x86)\FlyingWSimulation\SuperTrafficBoard V3.2 P3D

SuperTrafficBoard Application Data Folder

1. On the windows task bar, click the start button.
2. Click “Run…”
3. Type **%appdata%** and then click OK
4. The Application Data Folder is opened for you in a new window
5. Find the “FlyingWSimulation” folder in this window and double click to open it.
6. Find the “SuperTrafficBoard3“ folder, and double click to open it
7. Find the P3D folder, and double click to open it.
8. You now have the STB application data folder open in a window.

Prepar3D X Application Data Folder

- On the windows task bar, click the start button.
- Click “Run…”
- Type **%appdata%** and then click OK
- The Application Data Folder is opened for you in a new window
- Find the Lockheed Martin folder in this window and double click to open it.
- Find the Prepar3D folder, and double click to open it
- You now have the P3D application data folder open in a window.

Appendix C: Troubleshooting

Creating a trace file

A trace is very helpful for the STB support team to analyze any problems you may experience. Tracing may have a slight performance impact; you should only configure it when requested.

Enabling Trace

Tracing is configured in the TrafficBoard.ini file, located in the STB application data folder. For assistance in locating the folder, please refer to **SuperTrafficBoard Application Data Folder** on page 82.

This file does not exist unless you create it; for convenience a sample TrafficBoard.ini file is included in the "***Samples***" subfolder of the STB installation folder that you may copy. For assistance in locating the installation folder, see **SuperTrafficBoard Installation Folder** on page 82.

The following settings are required for tracing:

[Trace]
True | False

[Trace Flush]
True | False

For Example:

```
[Trace]
True

[Trace Flush]
False
```

The ***[Trace]*** section switches the STB trace on.

[Trace Flush] is useful when investigating hang conditions in STB, and a value of "True" forces trace data to be written to the file immediately, rather than cached in memory for a period by the operating system. If STB hangs in the latter scenario, cached trace information may be lost.

After making changes to TrafficBoard.ini, STB must be closed and restarted for the changes to become active.

Locating the Trace Output

The trace is written to **TrafficBoardFrontEnd.trace.txt** in the STB Application Data Folder.

Disabling a Trace

To disable tracing, remove the [Trace] and [Trace Flush] entries in your TrafficBoard.ini file, or set their values to "False". Restart STB to complete the changes.

Appendix D: Frequently Asked Questions

What do I do about the loss of Prepar3D sound when STB is the active window? This should never happen, but if it does check the Prepar3D Settings:

- In P3D, click the "Options" menu, followed by "Settings" and then "Sound".
- The P3D settings window is displayed. If the sounds settings are not shown, click "Sound" in the list of settings on the left hand side.
- Ensure "Mute on Lost Focus" is unchecked.

Why do some aircraft never push back from the gate? Due to various reasons associated with both the "seen" and "unseen" inner workings of P3D airport scenery design, occasionally a few AI aircraft are "forgotten" by Air Traffic Control. STB can be configured to mark these as "delayed" departures, and to try rescuing them. See **Rescuing Aircraft Stuck at a Parking Spot** on page 55.

Why does View AI sometimes seem to "freeze" after showing the chosen aircraft? View AI allows you to look at any AI aircraft, including those at a distance from your current (user aircraft) location. The further away you wish to look, the harder the P3D engine has to work to render the view, including the aircraft itself, sky and ground. Sometimes it may take several seconds for the simulator to "catch up" and completely render the new scene. While this is occurring, aircraft can sometimes disappear below a "green soup" or blurred ground textures, but this typically clears after a short delay.

Is there a limit to the number of active aircraft that STB can track in Prepar3D? Yes. Prepar3D limits support to 1000 active AI aircraft. If your traffic density is more than that, the aircraft are still shown STB but the status will be fixed at "No Data".

When I try to "View AI", I get a random aircraft or a view of my user aircraft. This suggests a problem with either your Prepar3D Camera Configuration or STB settings. Check your configuration using the *Camera Advisor*, available on the "View/Chase AI" tab in the STB settings notebook.

STB does not start, or displays an error message when starting and then quits. What should I do? Check that you have met the .net framework pre-requisite. See **Prerequisites** on page 11. If you are running STB and P3D on separate computers, check the Prepar3D SDK is installed on the STB computer.

I have the "Show Today's Data Only" option enabled. However, STB still shows flights for yesterday or tomorrow when I select "All Airports". Why? The "All Airports" takes precedence over "Show Today's Data Only", and therefore all data is shown for all airports.

Sometimes when I move down to the last page, some flights from the previous page are still shown. When there are just a small number of flights on the last page, STB scrolls down by less than a page of data to keep the last displayed page full.

I've selected Listen to AI ATC, but I can't hear anything! There are (at least) two possible causes:

- The user aircraft is in slew mode that disables sound.
- You are too far away from the selected AI aircraft when it is on the ground. Use Follow or Shadow AI to automatically move the user aircraft closer.

I've started P3D after installing STB, but it P3D is not responding. Check whether any P3D dialogues are available that requires a response from you before continuing. Sometimes P3D dialogues are minimized on opening, and you need to restore them from the Windows Taskbar. After installing STB and running the Configuration Wizard, you will most likely see P3D dialogs requesting permission to run STBServer.dll. See Starting Prepar3D for the First Time after Installing STB on page 15.

Appendix E: Windows “Classic” Desktop Theme

Uses of the Windows Classic theme may notice that the buttons on the STB window cannot be seen. This appears to be a “feature” of the .net framework, where the buttons use the same color as the board background and are hence “hidden”. The following workaround may be of assistance, allowing you to manually specify the color to use for buttons.

- Locate your STB application data folder. Instructions on how to find the folder may be found in **SuperTrafficBoard Application Data Folder** on page 82.
- If you do not already have one, create a TrafficBoard.ini file in this location.
- Add the following section to the TrafficBoard.ini file:

```
[Buttons]
UseVisualStyleBackColor=false
BackColor=128,128,128
```

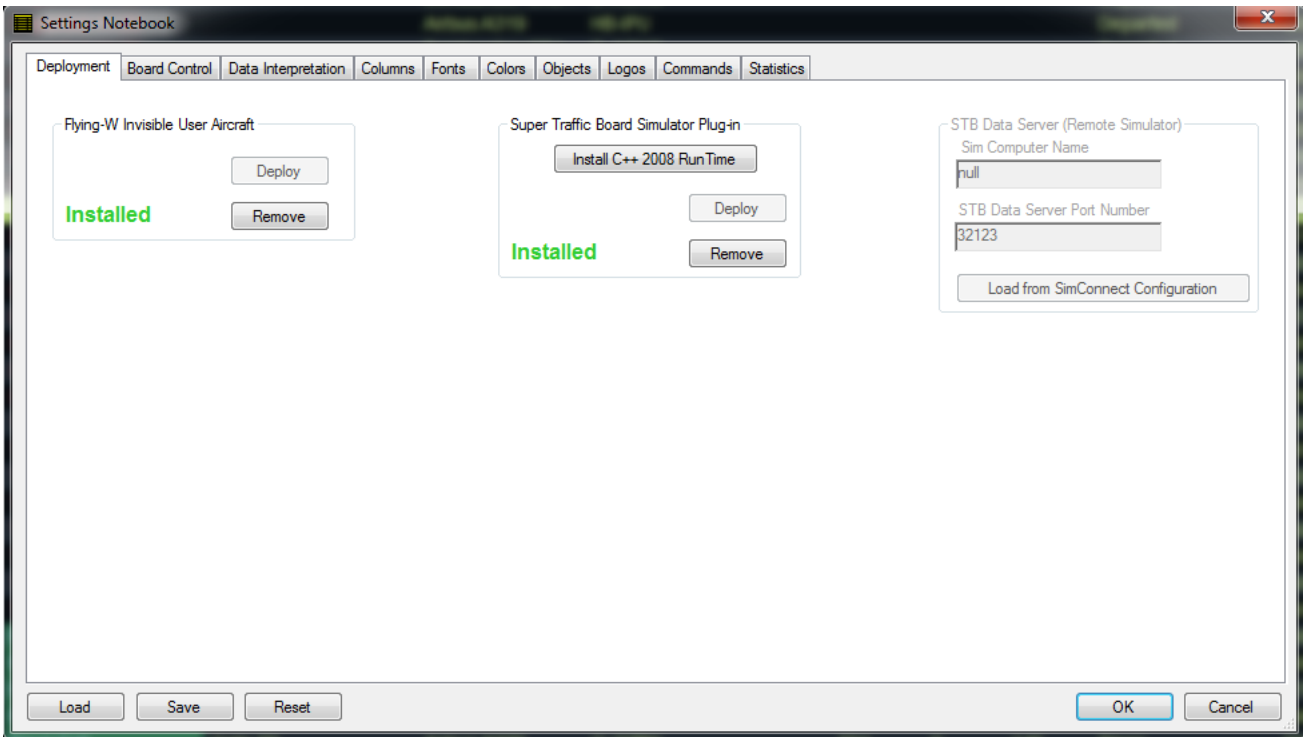
The “BackColor” setting values are the intensities of each primary color component in the order red, green, blue. A value of 0-255 may be specified for each. A value of 128,128,128 gives a mid grey.

Appendix F: Deploying Additional Features

The Configuration Wizard automatically configures all features with the exception of the Flying-W Invisible User Aircraft. You can manually deploy or remove each feature through the Deployment Tab in the STB Settings Notebook:

- **Invisible User Aircraft**, a useful aid while observing AI aircraft;
- **STB Simulator Plug-in**, enabling the "Shadow AI", Delete AI and future schedule flight listings;

To install or remove any of these features, consider the following guidelines:



- Each feature has its own group in the deployment tab. If Prepar3D cannot be found or there are problems with the simulator configuration, one or more boxes may be inactive (greyed-out) and a message is shown. Please contact us if you are unable to resolve this.

- For the Invisible User Aircraft and the STB Simulator Plug-in features, the deployment status is listed as either "Installed" or "Not Installed". To deploy the feature when it is "Not Installed", click the appropriate **Deploy button**. The feature is updated and changes to "Installed" status.

- The STB Simulator Plug-in requires the Microsoft C++ 2008 Runtime software to be installed. If you do not already have it, click the install button and follow the on-screen instructions.

Appendix G: Compatibility with Other Products

Unless otherwise noted here, all other Prepar3D add-ons are expected to be compatible with STB. Please check www.supertrafficboard.com for the very latest information if you are having problems.

AISmooth

AISmooth has a facility for monitoring the user aircraft, and pushing other AI aircraft in the vicinity of the user aircraft out of the way. This is done to avoid landing conflicts between the user aircraft and AI aircraft.

When the STB commands are used that change the position of the user aircraft dynamically (e.g. Shadow AI, Follow AI and Chase AI), this can confuse AISmooth. Noted behaviour includes the AI aircraft subject to the command entering a limited slew state where it no longer changes altitude above a certain minimum.

If you experience this problem, the user aircraft management in AISmooth can be temporarily disabled through AISmooth application settings.

Appendix H: Uninstalling SuperTrafficBoard

- Remove the following features through the Deployment Tab in the STB Settings Notebook:
    - Flying-W Invisible User Aircraft;

  For assistance, see **Appendix F: Deploying Additional Features** on page 86.

- Uninstall the product using the "SuperTrafficBoard Uninstall" Command in the Start Menu (SuperTrafficBoard group). Perform any additional instructions requested by the uninstall program.

- Sometimes files are left behind by the uninstall process. You may need to delete the folder where you originally installed STB.

Appendix I: Acknowledgements

The Make Runways utility is included with STB by kind permission of Pete Dowson.