A GUIDE TO
YOUR BRAND NEW
FLIGHT SIMULATOR

S-XGSB

SoFly

INTRODUCTION

GUIDING YOU TO HAVE THE BEST FLIGHT SIM EXPERIENCE

WELCOME TO THE WORLD OF FLIGHT SIMULATION.

This is a brave new world you've embarked on and we would like to thank you for choosing our guide to help you on your quest to having the best experience possible in this virtual new world.

When Microsoft first announced that a brand new flight simulator would be coming, simmers and gamers alike were incredbily excited. The visuals of the new simulator were simply breathtaking and demonstrated a true next-generation flight simulator.
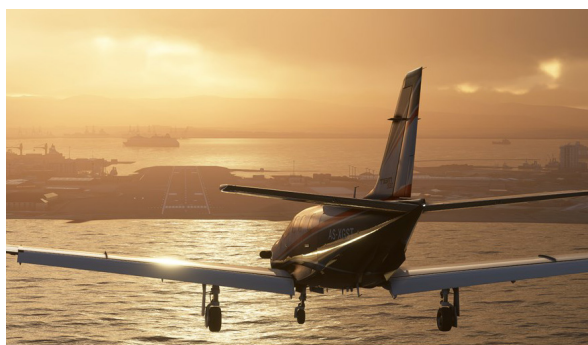
For years, the world has awaited for the revival of such an established franchise, which is why it is so exciting to finally be able to take to the skies once again.

That said, we also know that there are plenty of challenges and that it is sometimes overwhelming. When the whole world can be your oyster, knowing where to start is a daunting task.

This guide has been carefully crafted to help anyone and everyone looking to get started with flight simulation. Focusing on the latest release in the long-established Microsoft series, we want this to be a trusty companion as you get to grips with the new sim.

Whether you're a cadet putting on the uniform for the first time or an experienced captain who has been in flight simulation since the start, we hope this guide helps you get the most from your flight simulation.

The SoFly Team

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EASILY FIND WHAT YOU'RE LOOKING FOR

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LOOKING TO PRINT?

After hearing your feedback, you can now print this guide at your leisure.

Use this password to unlock: **CONCORDE**

Airports and Cities

Training

Beyond The Lessons

Constantly Evolving Guide

Expect to see new content added to the guide over time to continue expanding your knowledge and experience in the new flight simulator.

HISTORY OF
FLIGHT SIMULATION

Flight Simulation began way back in the year that saw Concorde take her maiden commercial flight, Nasa unveils the first Space Shuttle - Enterprise and Jimmy Carter win the Presidential Election - 1976.

What began as a project between two roommates at the University of Illinois, Bruce Artwick and Stu Moment, initially created a set of articles about a 3D computer graphics program that Artwick had published in a magazine. After much interest from the subscribers of the magazine who wanted to buy the program, the duo set about founding the Sublogic Corporation.

The company began to sell early flight simulators to computer platforms including the Intel 8080, Altair 8800 and IMSAI 8080. In 1979 the company, founded by Artwick and Moment, released FS1 to the Apple II computer and the TRS-80 which followed in 1980.

Around 1981-82 Microsoft began to express an interest in obtaining a license from Sublogic Corporation. In 1982 Flight Simulator 1.0 was released, and has evolved to become the series we know today.

Before we go into great detail about how to get the most out of your new flight simulator, let's take a look at the rich history behind the franchise and how it has evolved over the years to become one of the most prolific and iconic series of all-time.

Flight Simulator 1.0 (1982)

Released in 1982 for IBM computers, this version featured improved graphics, variable weather, time, and a coordinate system which remained in place untill version 5. Microsoft claimed in advertising that if flying your IBM PC got anymore realistic, you would need a license.

Flight Simulator 2.0 (1984)

Released in 1984 for IBM computers. The simulator itself remained relatively unchanged,

but small adjustments were made such as joystick and mouse input, improvements in graphics which would support RGB monitors and later LCD displays. Microsoft also took the opportunity to expand their limited scenery coverage to include the whole of the United States, however airports remained limited to what was included in the initial release.

Flight Simulator 3.0 (1988)

Flight Simulator 3.0 is where Microsoft really began to expand their product horizons, additional aircraft; a Learjet 25, Cessna Skylane and Sopwith Camel were added as well as allowing the user, for the first time, to display multiple windows and camera angles, not too dissimilar to what we currently use i.e. top-down, spot, locked spot, tower.

Flight Simulator 4.0 (1989)

In this version, Microsoft brought several improvements including improved aircraft models and the ability to set pre-recorded paths that air and ground traffic would follow - the building blocks for AI traffic. In addition

to this, with the popularity of the simulator came the increased series of add-on products that were produced for FS4, which notably included the ability for users to create their own aircraft which could then be uploaded to 3rd party websites and similarly downloaded and installed from - The equivalent of the Avsim and Simviation forums.

Flight Simulator 5.0 (1993)

This was the first version to use textured components in the simulator which truly changed the dynamic of the simulator adding an extra dimension of realism. Unfortunately, with this leap in technology came a trade-off which meant that all pre-existing addon scenery and aircraft were obsolete. Aside from this, several improvements were made to the way both the weather system and AI worked. This was also the version that replaced the previously used scenery files into BGLs that we know today.

Flight Simulator for Windows 95 (1996)

With the release of this version of Flight Simulator, Microsoft opted to change from using numerical version release to advertise the release of the new operating system. New features included an additional aircraft (EXTRA 300) and enhanced three-dimensional detailing which made geographical locations more identifiable.

Flight Simulator 98 (1997)

This version featured a Bell 206BIII JetRanger helicopter and a revised Cessna 182 with updated flight models and graphical changes as well as a Learjet 45. Amongst other changes, Microsoft improved the user interface for adding additional aircraft and scenery, generally streamlining the process. New to this version was the inclusion of 45 detailed cities and an increase in the modelled airport count to around 3000, up from 300 in earlier releases. Support was also included for the Microsoft Sidewinder pro force joystick which allowed the user to receive some sensory input. Finally, with the advancements in technology, this version was the first to take advantage of 3D graphics cards through DirectX technology enhancing the experience for the user by the implementation of more dynamic weather effects and camera viewpoints.

Flight Simulator 2000 (1999)
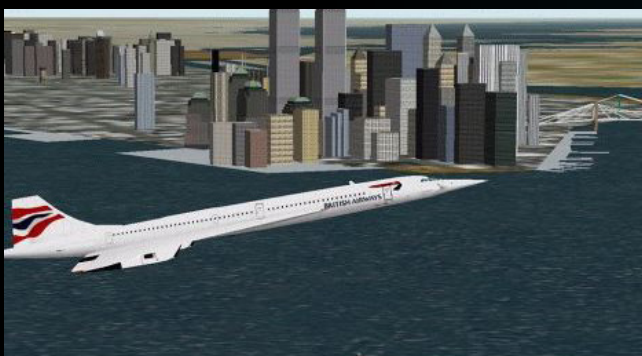
This release is significant in the sense that this was the first version in which Microsoft offered two versions of the product, a standard version and a professional version which featured additional aircraft. The product also featured improved graphics making use of new hardware and the introduction of 3D elevations which meant the scenery elevations could be adjusted. Advanced navigation in the way of GPS was added and AI was enhanced so that AI traffic would stop to avoid collisions during ground movements. Other new features included precipitation and the ability to download real-world weather. New aircraft to the franchise included Concord and the Boeing 777. Microsoft also added an additional 17,000 new airports, this enabled them to claim that virtually every documented airport and navigation aid was included in their simulation. Microsoft Flight simulator 2000 would be the last in the series to support Windows 95 and Windows NT 4.0 operating systems.

Flight Simulator 2002 (2001)

In comparison to its predecessors, FS2002 offered superior performance and included several visual features including custom viewpoints that gave you the perspective of the pilots in the cockpit, inertia effects and the ability to limit your framerate which allowed you to reduce the stutter effect we often see users in the current day expressing frustration at.

Flight Simulator 2004: A Century of Flight (2003)

Known to many as FS9 or FS2004, this release celebrated significant milestones in the history of aviation and was released to commemorate the 100th anniversary of the Wright Brothers first flight. Included in the release were several historic aircraft such as the Wright Flyer, Ford Tri-Motor and the Douglas DC3 to name a few.

This version also featured an improved weather engine that provided three-dimensional clouds, and localised weather conditions based upon an actual reporting station. Other improved features included more variety in the autogen, enhanced ATC communications and better modelled interactive virtual cockpits.

Flight Simulator X (2006)

Abbreviated as FSX, this release featured less aircraft than its previous version, however, aircraft that were included tended to be new to the franchise, notably the Airbus A321, Maule Orion and CRJ700. Other notable features included improved multiplayer support which allowed two users to fly a single aircraft and for a user to simulate the role of ATC through the Deluxe and Gold Editions which were released later. An expansion pack called 'Acceleration' was originally released in 2007 and added new aircraft, missions and other quality of life improvements. In 2014, Dovetail Games announced a licensing agreement which allowed them to distribute the simulator on Steam. Named Flight Simulator X: Steam Edition, this version featured the Gold Edition of the original simulator release and also the aforementioned Acceleration expansion pack.

Microsoft Flight Simulator (2020)

The latest Flight Simulator is also the most technologically advanced version of the simulator to date. Using data, tools and technology previously unseen by any flight simulator in the past, Microsoft hope to provide the most authentic simulator experience possible. With the largest range of aircraft, hand-crafted airports and most advanced weather system available, simmers will get to explore the world in a way never before seen. This is a true generational leap in software to provide the ultimate flight sim experience.

THE
TECHNOLOGY

Before we can dive into everything the simulator has to offer, we must first understand the technology driving the simulator.


The World Full of Data

The world in this new era of flight simulation is primarily built on real-world data. Taking data feeds, imagery and information from around the world; this is a dynamic and ever-changing environment.

As a result, flight simulation has never looked so realistic, nor has it ever represented the world as we know it so accurately. The technology that the development teams have included with the new simulator offer breathtaking new views of the world and give us the chance to explore many of the key cities in ways that have never been possible until now.

Bing Maps

The world's foundation primarily comes from Bing Maps. By using over 2 petabytes of data from Bing Maps, the new simulator can seamlessly stream data directly into the simulator to provide a more realistic take on the world. No home computer could handle all of that data, so the developers have found innovative ways to stream that data into your simulator via online networks.
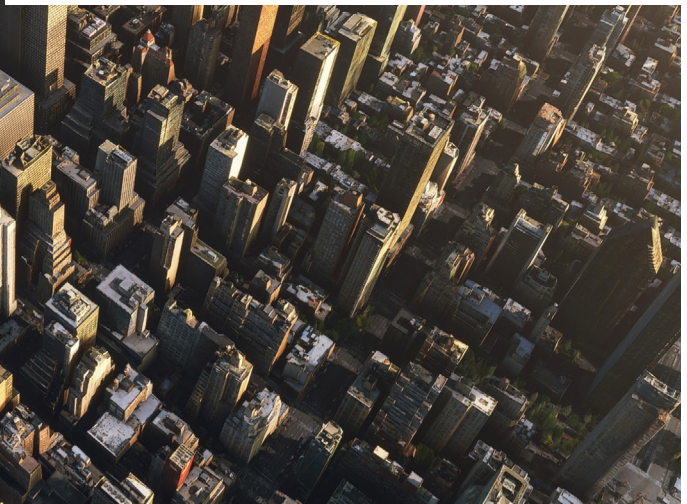
The Power of Azure

Being a Microsoft product, the new simulator takes full advantage of their Azure infrastrucutre. Simply put, Azure is a powerful cloud network that can stream data around the world in seconds, provide powerful AI capabilities and support a large number of connections at any one time.

The developers take full advantage of this technology for multiple simulator related functions. With streaming the aerial imagery from Bing Maps and generating millions of buildings, trees and other vegetation so that it all looks realistic, the power of Azure brings flight simulation to the next-generation. Buildings which are procedurally generated are the correct height, width and have textures to match the region they are placed in. This applies to millions of cities in the world, but there are 400 cities which offer something even more unique and advanced. These cities are built in the simulator using photogrammetry data.

Lifelike Cities

Whilst the AI can build great looking cities based on hundreds of data points, some cities look even more realistic thanks to advanced photogrammetry data. This is when an area has 3D data for systems to understand elements such as structual height and exact geo-location.

Photogrammetry will provide you with the most lifelike experience in cities that feature this technology. Over 400 cities have photogrammetry data including New York, San Francisco, Las Vegas and Seattle. These cities do require an internet connection, but you can save photogrammetry data if you want to fly offline.

Data Sources

To really bring the world alive, the new simulator utilises data sources from a variety of partners. These data sources help to enhance the simulation experience. Using FlightAware, the new simulator can inject real-time traffic so your virtual skies look and feel alive.

Advanced live weather is provided by Metroblue, bringing the environment to life. Cloud formations, preciptiation, storms, wind, air pressure and more are all sourced using satellite data.

One final data source that you may find interesting is the inclusion of real-world navigation data. Provided by NAVBLUE, every 28-days, new AIRAC data (Aeronautical Information Regulation And Control) will automatically be added to the simulator. This means you will always fly with up-to-date data based on real-world charts. Nav Adis and data such VORs, NDBs, Waypoints and SID/STAR data will be accurately updated for the whole world automatically. This is great for when you start planning those cross-country flights or take on the challenge of a long-haul flight.

The Environment

Whilst the focus may be on flying, the new simulator feels alive thanks to the immersive environment. Lighting, weather and sound all provide you with a breathtaking experience anywhere in the world.

The dynamic soundscape will enable you to hear the busy roads at international airports or listen to the waves crashing on the shore at many of the exciting coastal areas.

Certain parts of the world also feature animals giving you even more reason to explore unspoiled wildlife rich areas.

However you choose to experience this new world, we can't wait to see you in the skies.

PC SPECIFICATIONS

You may already have the simulator downloaded and installed, but understanding the PC specifications is an important part of getting the most out of your simulator.

The new simulator has a minimum, recommended and an ideal scenario. The more powerful your computer set-up, the better in-simulator texture, resolution and performance you will have.

Quite often you will hear the term "FPS" (Frames Per Second) and this is an important factor for any flight sim user. We'll discuss how to get the best performance from your set-up in a later chapter. For now, the following information is the official PC specifications for the new flight simulator.

CPU? GPU? What does it all mean?

Your CPU is your Central Processing Unit, which is essentially responsible for processing and executing instructions within your computer. The Graphics Processing Unit looks after the output to your screen. RAM stands for Random-Access memory and enables your PC to store data and access it quickly whilst also removing what it doesn't need. This is different from memory such as your hard disk space (HDD/SSD) as that stores long-term data (such as the simulator).

When it comes to bandwidth, in this instance, this is the download speed you are achieving with your internet service provider. This is required to access the data from the Azure Cloud or other services used by Microsoft in the new flight simulator. You can search for 'Internet Speed Test' on Google and run a quick test to know what speed you are getting.

MINIMUM	RECOMMENDED	IDEAL
This is the absoloute minimum spec required to run the flight simulator. Expect low-quality textures and modelling, a lower frame rate at a lower resolution. The GPU and CPU will hold you back significantly.	The recommended specifications will put you in a 'medium' setting in the simulator. The simulator will run at a decent frame rate on a 1080p resolution; a perfect balance between cost and performance.	The ideal specifications Microsoft has recommended will put you into the 'ultra' settings in the simulator. This will allow you to immerse yourself in a smooth 4K visual experience .
CPU: Ryzen 3 1200/Intel i5-4460	**CPU:** Ryzen 5 1500K/Intel i5-8400	**CPU:** Ryzen 7 Pro 2700X/Intel i7-5800X
GPU: Radeon RX 570/NVIDIA GTX 770	**GPU:** Radeon RX 590/NVIDIA GTX 970	**GPU:** Radeon VII/NVIDIA RTX 2080
VRAM: 2GB	**VRAM:** 4GB	**VRAM:** 8GB
RAM: 8GB	**RAM:** 16GB	**RAM:** 32GB
HDD: 150 GB	**HDD:** 150 GB	**HDD:** 150 GB SSD
OS: Windows 10 Nov 2019 update	**OS:** Windows 10 Nov 2019 update	**OS:** Windows 10 Nov 2019 update
Bandwidth: 5 Mbps	**Bandwidth:** 20 Mbps	**Bandwidth:** 50 Mbps

EDITIONS

UNDERSTANDING THE DIFFERENCE BETWEEN EDITIONS

Upon release, the new flight simulator comes in various editions. All of the editions include the entire world, over 37,000 airports, dynamic weather, live multiplayer and navigation database sets.

The primary differences will be with the number of included hand-crafted airports and the included aircraft.

> **Did you know?** You can upgrade your digital edition any time via the in-sim MarketPlace.

STANDARD

20 Aircraft

30 Hand-Crafted Airports

Aircraft	Airports
Airbus A320neo	Orlando Int'l (KMCO)
Boeing 747-8i	JFK Airport (KJFK)
Cessna 172 (G1000)	Lukla Airport (VNLK)
EXTRA 330	Haneda Int'l (RJTT)
...More on Page 58.	**...More on Page 70.**
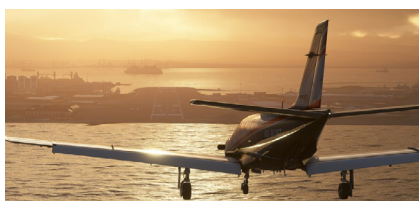
DELUXE

25 Aircraft

35 Hand-Crafted Airports

Aircraft	Airports
Diamond DA40 TDI	Amsterdam (EHAM)
Diamond DV20	Cape Town (FACT)
Baron G58	Cairo Airport (HECA)
C152 Aerobat	Chicago Int'l (KORD)
C172 Skyhawk	Madrid Int'l (LEMD)
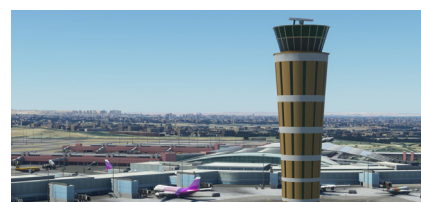
PREMIUM DELUXE

30 Aircraft

40 Hand-Crafted Airports

Aircraft	Airports
Boeing 787-10	Frankfurt (EDDF)
Cirrus SR22	Heathrow (EGLL)
Pipistrel SW121	Denver Int'l (KDEN)
Citation Longitude	San Fran Int'l (KSFO)
Zlin Shock Ultra	Dubai Int'l (OMDB)
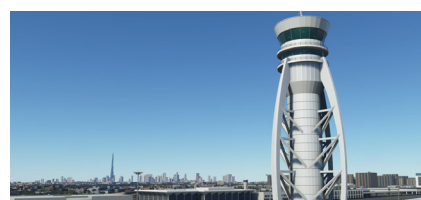
Overview

Below is a quick overview of all of the hardware confirmed to be compatible with the new flight simulator.

Honeycomb Aeronautical

Alpha Flight Controls

Logitech

Extreme 3D Pro Joystick

Flight Rudder Pedals

Flight Throttle Quadrant

Flight Yoke System

X52

X56 H.O.T.A.S

Microsoft

Xbox Controller

Xbox Adaptive Controller

Thrustmaster

TCA Sidestick Airbus Edition

HOTAS Warthog

F/A-18 Grip

Pendular Rudder

MFD Cougar

T.16000M FCS Flight Pack

T.Flight Stick X

T.Flight Hotas 4

T.Flight Hotas One

T.Flight Hotas X

Virtual-Fly

Ruddo+

Yoko+

TQ3

TQ6

V3rnio TPM

COMPATIBLE HARDWARE

Having the right hardware for your simulator is a vital step to having the best experience possible. With the new flight simulator, you will immediately have access to plenty of hardware all compatible with the simulator.

What's great is that anything you see in these pages is plug and play. What we mean by that is you can simply hook up your device and the controls will be automatically pre-configured for each of the standard controls within the simulator. No need to mess around with controls, but also know that each control can be adjusted for maximum flexibility.

Go and see Christ the Redeemer in Rio, Brazil

YOKES / STICKS

Honeycomb Aeronautical - Alpha Flight Controls

This ergonomically designed yoke and panel brings a streamlined and modern aesthetic to your setup, all whilst maintaining the traditional style and functionality of desktop panels we've seen before.

Honeycomb also expects to release complementary hardware providing a total solution for your simming needs.

Logitech - Extreme 3D Pro Joystick

A popular choice for those starting out with flight simulation, this affordable joystick features twist axis and a basic throttle mounted on its sturdy weighted base, as well as 12 configurable hard key buttons, an 8-way hat switch and a trigger. The Logitech 3D Pro bridges the gap between affordability and quality, whilst providing all the functionality you need.

Logitech - Flight Yoke

The last in the 'Flight' series, this desk mounted yoke features all the buttons you need and is designed to complement the Flight Series so you'll find a consistent look and feel throughout this range just as you would inside a real aircraft. A great feature of the yoke is that if your PC is running out of available USB ports, the yoke base has an integrated USB hub to allow for the integration of additional Logitech hardware.

Logitech - X52 HOTAS / X52 Pro HOTAS

The X52 is a HOTAS (Hand ON Throttle and Stick) package that, as you would expect consists of a Joystick and throttle unit. The X52 is the most affordable in the X series and whilst its design is firmly rooted and inspired by the controls of a fighter jet, it features a spaceship style aesthetic. The joystick itself incorporates a twist axis rudder, 3 hat switches and an LCD display.

The X52 Pro also features the use of part metal components offering an additional finish to the product.

Thrustmaster - TCA Sidestick Airbus Edition

The TCA Sidestick Airbus Edition is the first in a series of products targeted at Airbus operators. It features the distinctive shape and look of its iconic real-life counterpart and operates as you would expect with a sliding throttle located on the base. The TCA Sidestick is fully ambidextrous and features four modular parts for full control. The controller also has a twist axis which can be used as a tiller (additional flight control) or alternatively, it can be kept locked.

Thrustmaster - F/A-18 Grip

Available as an add on product the F/A-18C Hornet grip is crafted to replicate the flight stick found in the real F/A-18C Hornet aircraft and is officially licensed by Boeing. The stick is fully compatible with Thrustmaster's Warthog and features 19 buttons and a 2-step trigger system. With plenty of buttons and configuration options, this is a great stick with a nice metalic feeling.

Thrustmaster - T.Flight Stick X

The T.Flight Stick X is a more basic piece of hardware in comparison to its cousins. Whilst retaining common features such as programmable buttons and axis, the T.Flight Stick X features a small throttle lever similar to the Logitech 3D Pro. The controller is also compatible with both PC and PS3.

Thrustmaster - HOTAS Warthog (stick and throttle

Produced under license from the U.S Air Force, the HOTAS Warthog is a replica of the flight controls used in the A-10C attack aircraft. Weighing in at a combined weight of more than 14lbs, the Warthog casts an imposing shadow on its rivals. Of course, the quality is also reflected in the price with a vast majority of its components made of metal.

YOKES / STICKS CONTINUED

Thrustmaster - T-Flight HOTAS One / X

Designed more for the gamer, the T.Flight Hotas One is compatible with both PC and Xbox One. The product features a joystick, rudder control and throttle and allows the user to decide how they want to set out their 'flight deck'. On the throttle, there is a small lever that pivots in either direction, simulating the movement of rudder pedals. The joystick also features a trigger switch as well as a small hat switch.

Thrustmaster - T.16000M FCS Flight Pack

The sidestick features the precision enhancing H.E.A.R.T technology as is standard with most Thrustmaster products. The T.16000M also shares some commonality with the TCA Sidestick in the way that it caters to both left and right-handed users with modular parts. A throttle is also located on the base of the Sidestick and the pack also features the TWCS throttle and the TFRP pedals for the all-in-one flight sim set-up.

Virtual-Fly - Yoko+

The Virtual Fly Yoko+, much like their other products, looks like it has just been pulled out of an aircraft. Whilst the actual unit lacks any kind of adornment, the attention to detail in the control column and yoke handle itself is exquisite. With all buttons and switches in the right place, the yoke looks incredibly organic. This product features an 8-way hat switch and 6 programmable buttons. An incredible looking piece of kit!

RUDDER PEDALS

Logitech - **Flight Rudder Pedals**

Taking your experience to the next level, rudder pedals greatly enhance your immersion and give you unrivalled control & precision. As is commonplace with Logitech, the brand has found the balance between price and quality. These rudder pedals feature adjustable foot pedals, tension dial and toe brakes.

Thrustmaster - **Pendular Rudder**

These Pendular Rudder pedals differ from traditional pedals in the sense that they operate on a unique suspended mechanism instead of being mounted on top of a base. The precision the pedals offer means that you can make minor adjustments very easily thanks to the smooth fluid motion the pedals provide. The pedals have five adjustable positions ranging from 35 to 75 degrees giving you flexibility for comfort.

Virtual-Fly - **Ruddo+**

Despite looking rather primitive in its design, the Ruddo+ pedals boast several features including Hall Effect Magnetic Sensors and solid steel parts that are designed for long-lasting performance. Additionally, according to Virtual Fly, the pedals are equipped with pressure sensors that calculate the force excreted by each foot to simulate the minimum effort excreted in the real aircraft.

THROTTLES (STANDALONE)

Logitech - Flight Throttle Quadrant

The Flight Throttle Quadrant is designed to complement the Flight series however can be used in conjunction with any other hardware setups. The equipment features an interchangeable series of heads providing simmers the ability to add multi-engine throttles, mixture and prop pitch levers as well as flap and gear levers making it a truly versatile piece of kit.

Virtual-Fly - TQ3 / TQ6

The TQ3 looks like its been pulled straight from an aircraft for parts. With its solid construction using metal components, and actual soft detents which feature a reverse area, feather zone and cut off zone, you'll be able to simulate any number of single engine GA aircraft.

The TQ6 is prepared for multi engine piston, turboprops and turbo-fan aircraft. Utilising Hall Effect Magnetic Sensors, the user can achieve precision movements. Constructed out of metal, this component looks incredibly lifelike and offers a lifetime guarantee.

Virtual-Fly - V3rnio TPM

The V3rnio TPM is said to be the only 100% TPM (Throttle, Propeller, Mixture) designed from scratch in the flight simulation market. The use of Hall effect sensors is used throughout their product range, and here is no different, ensuring the power is precisely where you need it, when you need it.

Brooklyn Bridge in New York, United States

GAME CONTROLLERS

Microsoft - Xbox Controller

Available in wired and wireless, the iconic controller comes with a 3.5mm stereo headset jack and Bluetooth technology to allow you to play all your favourite games on the Xbox One or Windows 10 PC.

Microsoft - Xbox Adaptive Controller

Designed primarily to meet the needs of gamers with limited mobility, the Xbox adaptive controller is a unified hub for devices that help make gaming more accessible. The Adaptive controller provides a platform from which users can connect external devices such as switches, buttons, mounts and joysticks to create a controller experience that is unique to them. In the touching words of Microsoft: 'When everyone plays, we all win!'.

The iconic Sydney Opera House in Sydney, Australia

Tokyo Skytree in Tokyo, Japan

GETTING SET-UP

If this is your first time running the new simulator, you will have to go through various set-up pages. This will help you initially configure your simulator based on your system specifications and your own preferences.

Clear Some Space

Once you have downloaded your brand new copy from the store, you will need to make sure that you have enough room on your hard drive to install the simulator; you will need up to 125GB available. If the default drive does not have room, you can navigate to another drive which has the required space.

Give It Some Time

The installation of the flight simulator will take some time, so now is a great time to read through other parts of this guide.

Setting Up Your Experience

After installation is complete, the simulator will guide you through your settings choices. These settings will be determined, based on your hardware set-up, however, you can configure them to your personal preference.

You can change settings at any time. Details on the options available can be found on page 38.

Step 1 - Graphics Settings

You can configure your graphics settings ranging from Low to Ultra. These settings will automatically default to what the simulator thinks will give you the best performance. Have a look at our recommendations on PC specifications for a better understanding of which setting will be best for you.

You can click on 'Customise' to change some of the finer details. More on this on page 38.
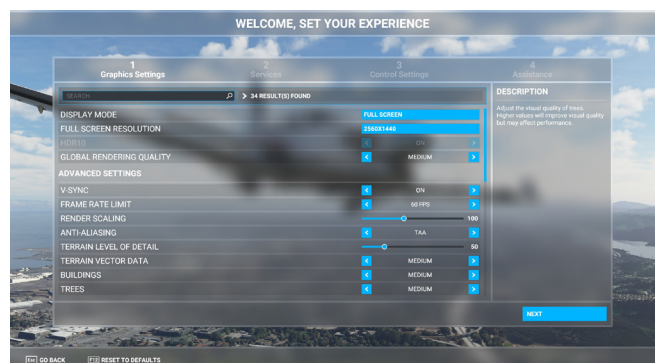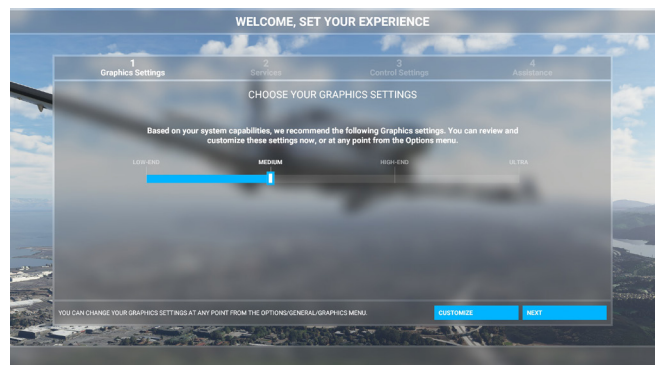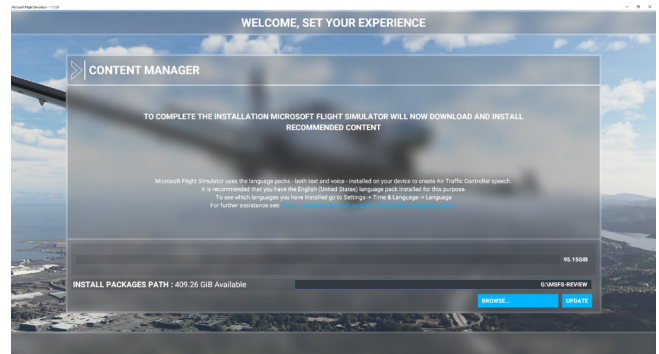
Step 2 - Services

As the simulator relies heavily on online data sources, you'll have the option to configure it during the set-up. The recommended configuration is to switch 'Satellite Data Streaming' on, however, you can turn it off if you have low internet connectivity.

If you switch 'Satellite Data Streaming' on, a pop-up will appear asking if you have any data constraints. This option is useful if you have limitations on your connectivity (such as a data cap) or if you want to limit the amount of data streamed to your device.
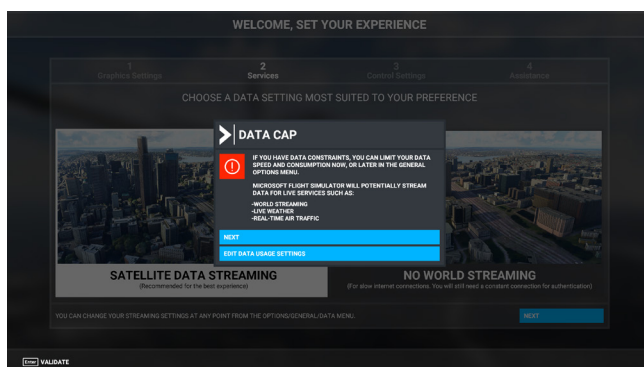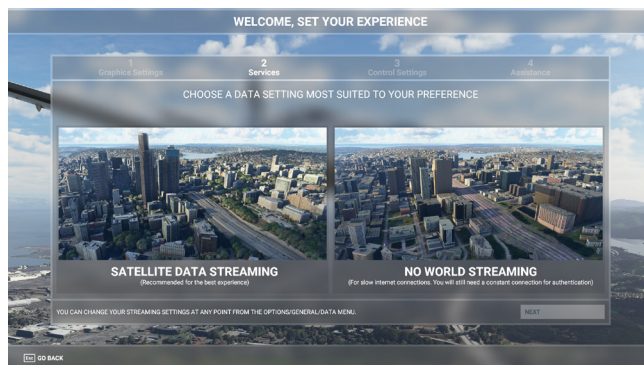
Step 3 - Control Settings

Your simulator will automatically detect any of the officially supported controllers that you have plugged into your PC at this time. If you click on 'Customize', you are able to adjust the controller options to suit your needs. When you're happy with the options you have selected, click on next to continue.
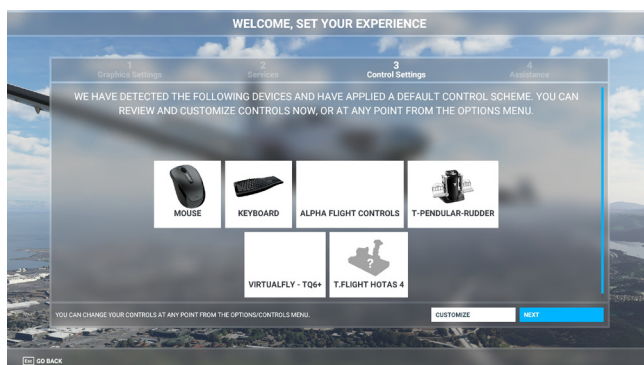
Step 4 - Assistance

Finally, you can now change your flight simulation assistance settings. If you're a newcomer, then 'Easy' will set you up with the support you need, whilst experienced simmers may want to start with 'True to Life'.

In the assistance menu there are six settings that you can control. If you click on each heading, you are able to alter more detailed options within that section.

With that complete, the simulator will now load up and you'll be taken to the main menu.
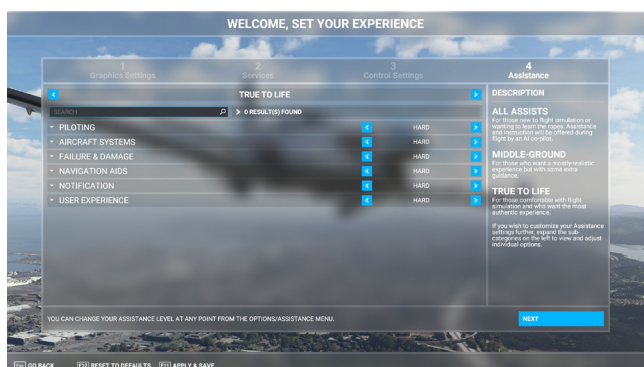
Top Tip: Read our blog post on how to get better download speeds when installing the new flight simulator.
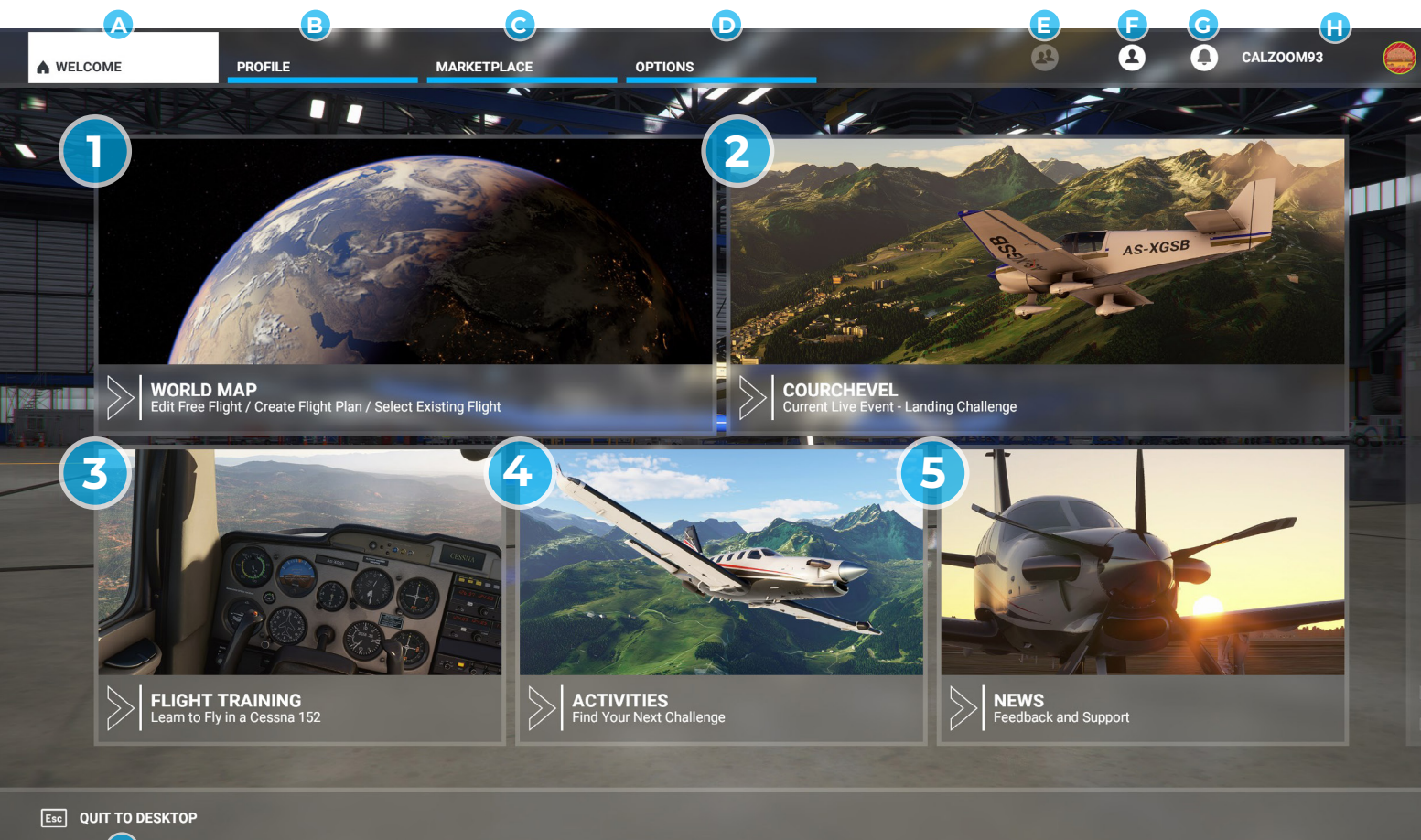
CLICK HERE TO READ IT ONLINE >>

NEW v1.10

WELCOME TO YOUR NEW WORLD

HELPING YOU UNDERSTAND EACH SECTION OF THE NEW SIMULATOR.

Now you have the right hardware, PC equipment and know the differences between simulator versions, it's time to step in. We'll take you through all the menus and help you navigate your way through the simulator.

MAIN MENU

1 - WORLD MAP

This is where you will spend most of your time, finding new places to explore.

2 - LIVE EVENTS

Live events will be regularly updated by Microsoft to incorporate new challenges.

3 - FLIGHT TRAINING

A series of training scenarios designed to help newcomers get to grips with the new sim.

4 - ACTIVITIES

Find a new landing challenge or bush trail to explore within the world of flight sim.

5 - NEWS

The lastest news by Microsoft about upcoming updates, services and how to give feedback.

ICONS

A - Main Menu
B - Profile
C - Marketplace
D - Options
E - Online Groups
F - Friends
G - Notifications
H - User Profile
I - Quit to Desktop

Checking Your Version Number

Clicking on your User Profile (H) will show you your username and the version of the simulator you are using.
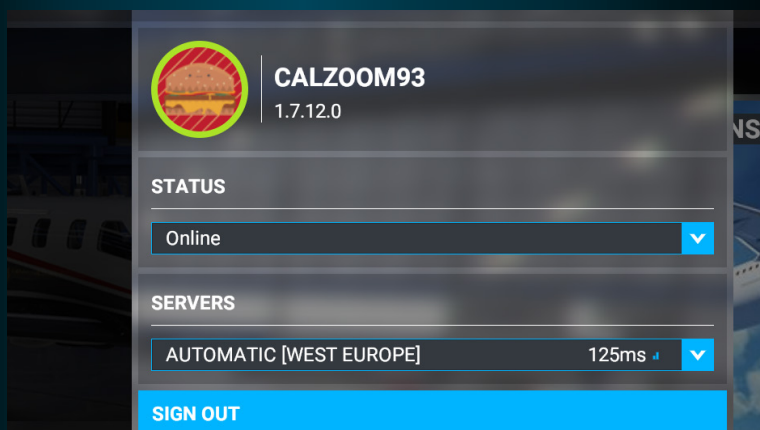
IN-DEPTH

We will cover each menu option in detail over the next few pages. Some highlights include:

Profile (B)

In your profile, you will have access to your Pilot Profile, your Hangar, and Logbook. In addition, you will be able to manage your third-party add-on content through the 'Content Manager'. Find out more on page 36.
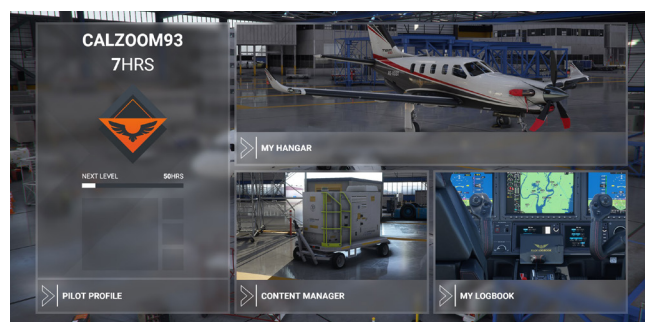
Marketplace (C)

The Marketplace (C) is where you will be able to download, purchase and update content from selected third-party vendors. You can find out more about the role of a third-party vendor on page 118. You will be able to manage your third-party content without accessing the store through your 'Content Manager' within your Profile (B).
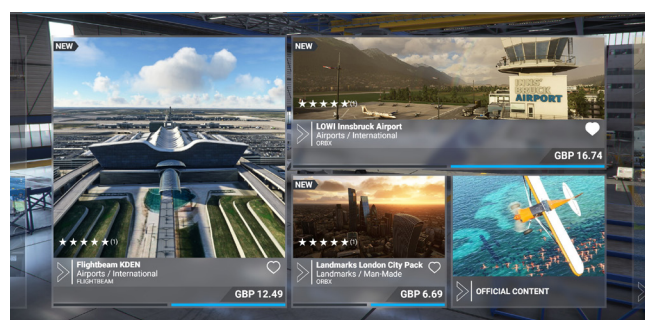
Options (D)

The options available to you are incredibly vast and offer simmers a huge number of possibilities to make the sim your own. We will talk more about options when we look at how to fine-tune performance for your simulator. You will be able to read more about that on page 38.

1 - WORLD MAP

The World Map is where you will spend a good portion of your time. It's important you understand how the map functions, the options available to you and how you can plan your first flight.

Some terms...

ICAO - 4 letter code designating aerodromes around the world. Not all airports have one.

IATA - 3 character code for airports around the world.

1 - AIRCRAFT SELECTION

Clicking here will allow you to select an aircraft from your aircraft hangar.

2 - FROM SELECTION

Select a departure airport from over 37,000 airports with an ICAO or IATA code or by airport name / city.

3 - TO SELECTION

Select an arrival airport from over 37,000 airports with an ICAO or IATA code or by airport name / city.

Textron Aviation Cessna 208 B Grand C...

1

FROM

SELECT DEPARTURE AIRPORT

RUNWAY

2

Search

7

5

08:54 (09:54 UTC)

4 - FLIGHT CONDITIONS

Select whether you have multiplayer, live weather or pre-set arrangements.

5 - TIME OF DAY

Select the time of day with the slider. Watch as the Earth moves in time with the slider to show you what sort of light you will have.

6 - FLY NOW

When you're ready to fly, the yellow button will light up and you can get ready to jump into your flight.

7 - Search Bar

Search almost **anything** with this search bar, inlcuding landmarks, locations and even coordinates.

Airports - You can search ICAO/IATA codes or airport names.

Cities and Landmarks - Any landmarks included in the simulator can be searched.

Coordinates - Type in decimal codes and this will add a custom location on the map for you. We have included many examples throughout this guide.

TO

FLIGHT CONDITIONS

3

SELECT ARRIVAL AIRPORT

RUNWAY

4

6

486 NM

✈ FLY
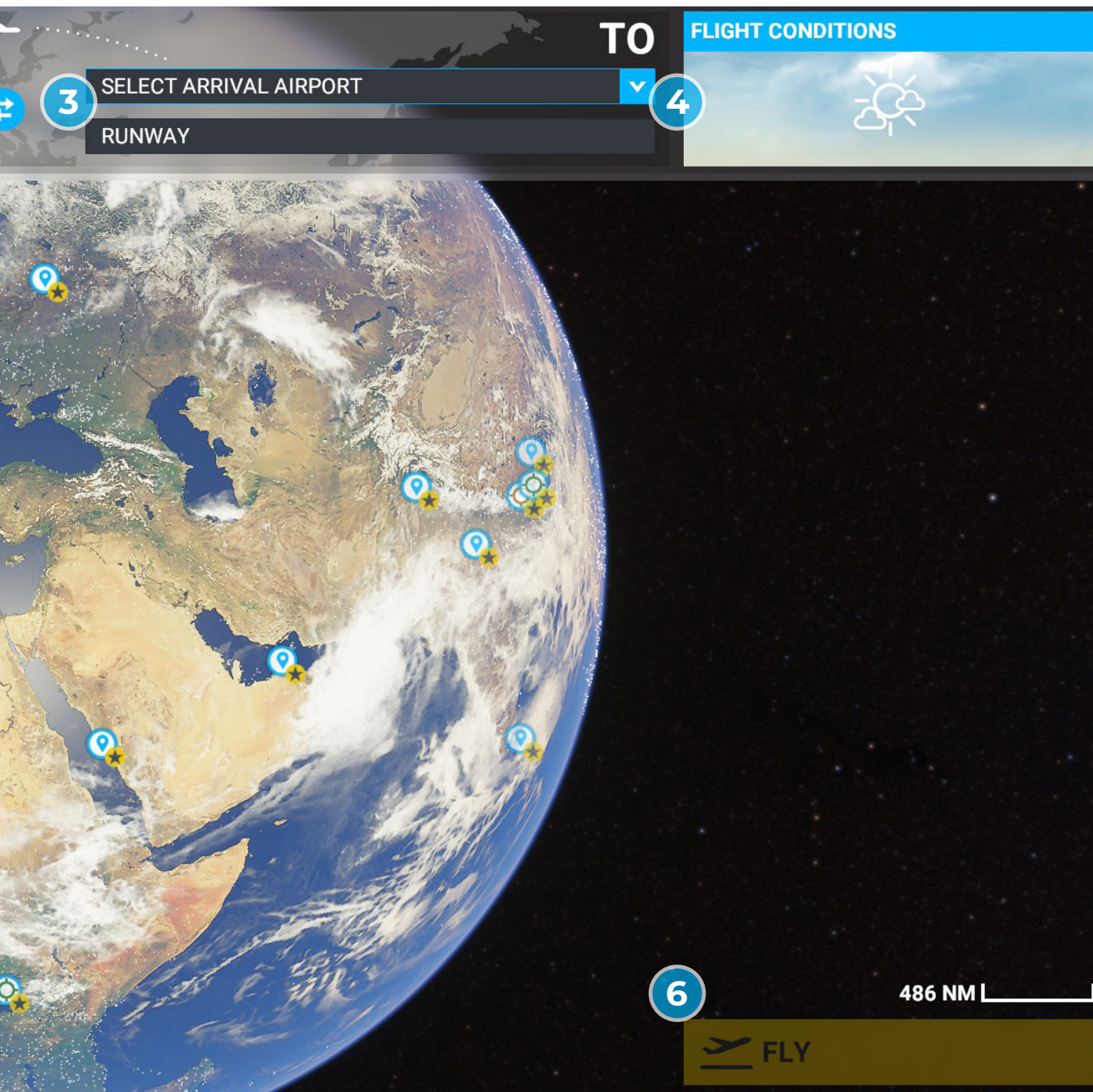
WORLD MAP - SETTING UP A FLIGHT

Early Morning In Aspen

Let us set-up a flight from Aspen-Pitkin Country Airport in a Cessna 172 (with maximum fuel for a long trip) with weather pre-set: 'Broken Clouds'.

Aircraft Selection and Fueling

From the main menu selection, let's click on the aircraft icon. This will bring up your hangar full of aircraft. Either search for 'Cessna 172' or select it from the menu.

On the left-hand side, a range of options are available to choose from. Select Weight and Balance and a new menu will appear.
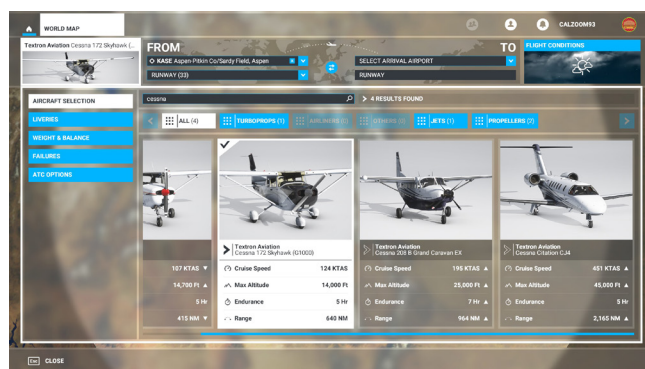
In the fuel section, simply drag the sliders to the right side to fill up your tanks. Let's set it to 75%.

You can also set up your ATC options and program failures if you so choose (but if you're a newcomer, let's avoid this for now!)

Airport Selection

Now we need to select Aspen-Pitkin Country Airport (KASE). Once you have made your selection for the aircraft, click on 'close' and you will head back to the world map. In the From Selection (2), search either the airport name, IATA or ICAO code.

Once you have found it, click it and it will highlight the region and set it as your departure. You will get a brief overview of the weather and a default runway will be selected.
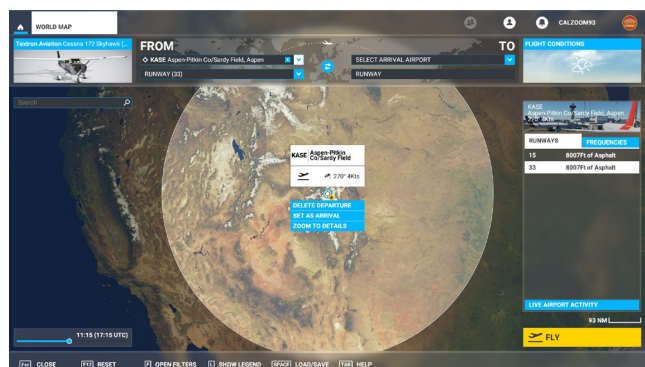
Choosing our Weather

With our airport and aircraft ready, we need to set some pre-defined weather. Upon your initial start, you will have the time, date and online traffic all set to live. This means you will have online traffic and current real-world conditions. However, for this example, let's change this to fly offline (we don't want to get interrupted by others for now) and also change our weather.
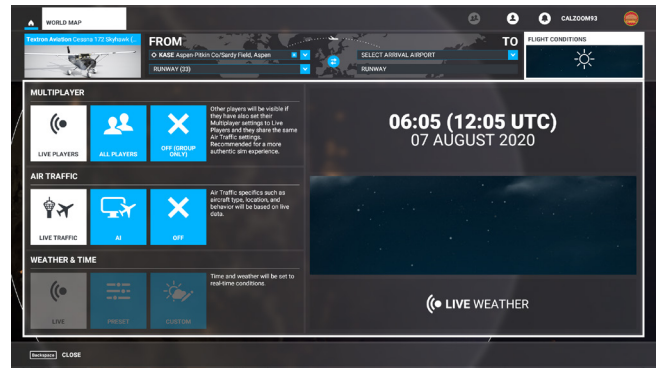
Select 'Off' for Multiplayer and this will enable us to select the Weather and Time.

Here we can choose to use "Live" weather, "Preset" weather or "Custom" weather. Since we are going to use a pre-set, simply select that option.
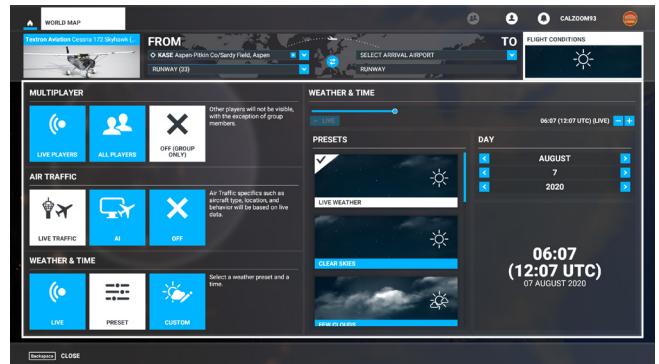
You will now see a range of options to pick from. Select 'Broken Clouds' and also ensure you pick a time that is daylight.

Finally, let's set up a custom way point towards the city. In the Search Bar (7), type in the following coordinates and click "add arrival":

39.186940, -106.816208

Now we're all set up! Click on the yellow "Fly" button and let's load up our Cessna with fuel at Aspen ready for an early morning flight.
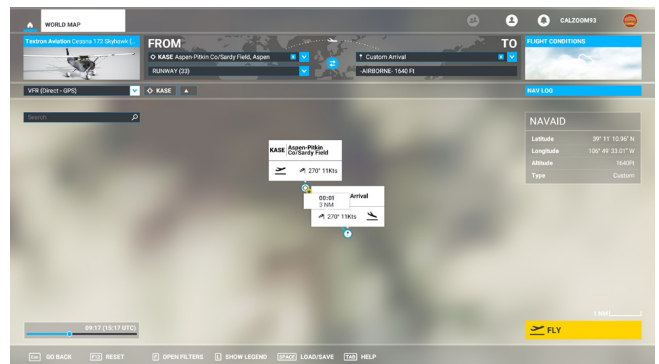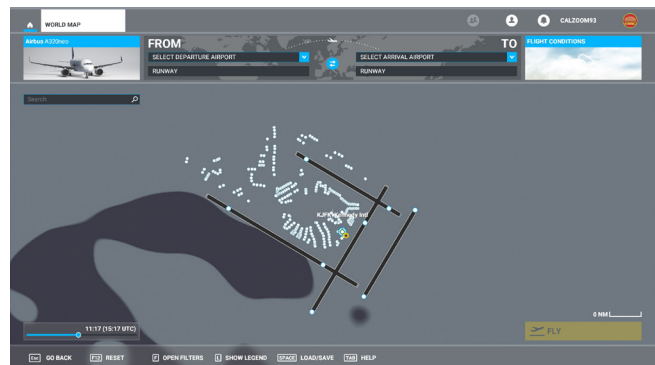
WORLD MAP - OTHER FEATURES

Selecting a Runway / Gate

After you have chosen an airport for departure, you can select the runway or gate you wish to depart from.

Clicking on "Zoom to Details" will zoom the map right in and you can select from any number of gates or either end of the runways at the airport.


See Runway and Frequency Info

Once you have selected an airport, a new menu section will open on the right-hand side. The two tabs will show you either runway or ATC frequency information.

See LIVE Air Traffic at Each Airport

Under the runway and frequency chart is another button reading "Live Airport Activity". Clicking that will show you all real-world departure and arrival traffic to that specific airport.

Clicking on a flight will then give you the option to import the flight plan from the same data pilots use.
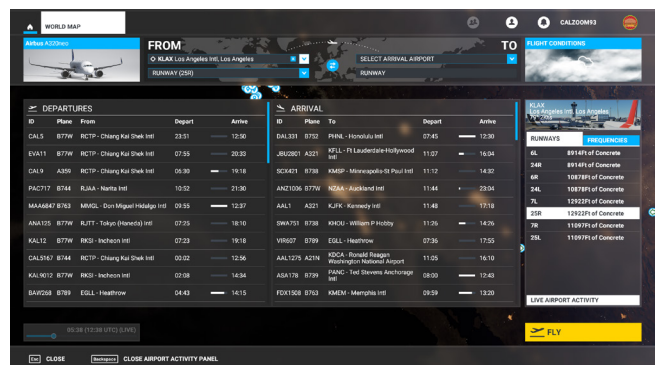
Few things to watch out for:

1) Ensure you have "Live Traffic" selected from the Flight Conditions (4) section.

2) Under the Aircraft Selection (1) box, ensure you have "High-Altitude airways" selected to ensure you have waypoints and airways represented.
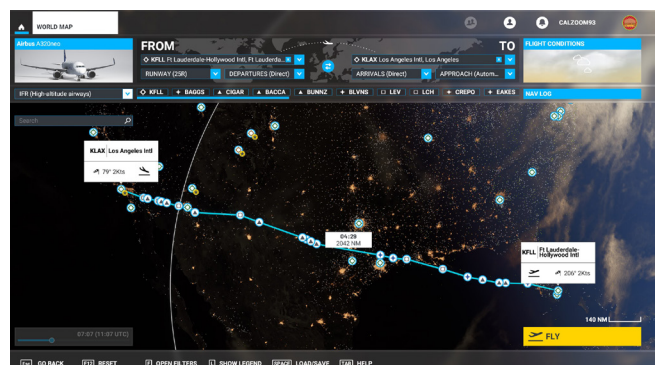
Import Flight Plans

If you have used a previous version of Flight Simulator in the past, you will be able to import both **Flight files (.flt)** and **Flight plan (.pln)** files. These may have been produced by other software or systems, but importing them will automatically generate airports and way points for your pre-made route.

Pressing the 'Space' bar whilst on the World Map will bring up this option.

Simply select your file and it will then load the content directly into your simulator.
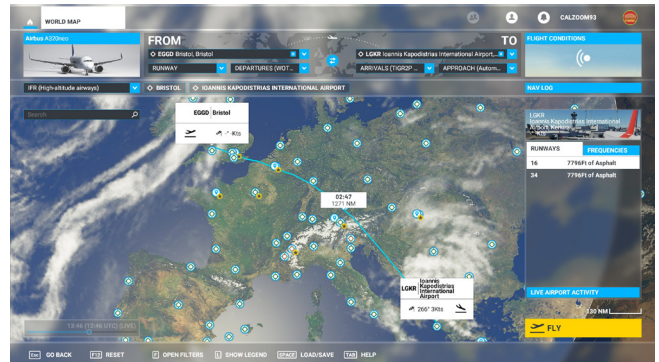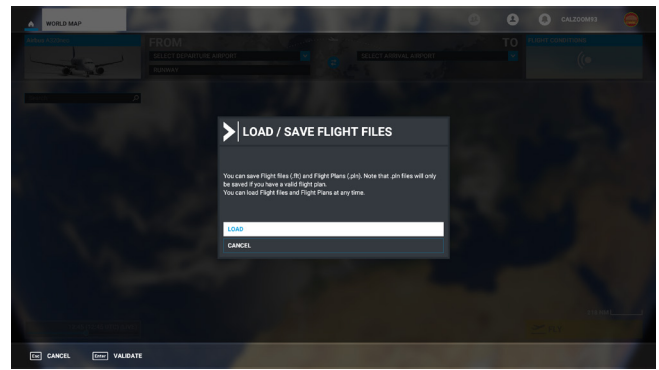
Head to a Landmark / Point of Interest

If you're looking for a particular landmark or area of interest, using the search bar (7) can make it super easy. Simply start searching and if it exists in the simulator, you will be able to start from 1,600ft above the landmark. This makes it nice and easy to explore without having to worry about guessing where to head after take off from a nearby airport (that should be your ultimate goal!)
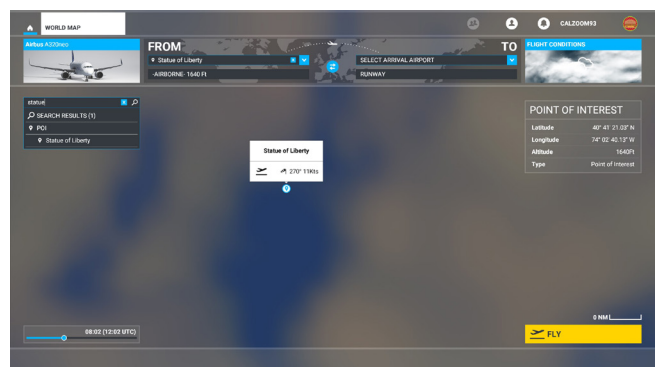
To help, we have dropped a few "Navigation" marks throughout this guide to give you some inspiration on where to fly. Use this search bar when entering the coordinates.

Your Map; Your Way

With the filter section (F Key), you can change how your map looks. Turn off/on airports, adjust the style of the map and even adjust what weather is displayed around the world.

There are plenty of options to choose to customise the map your way and change it at any time.
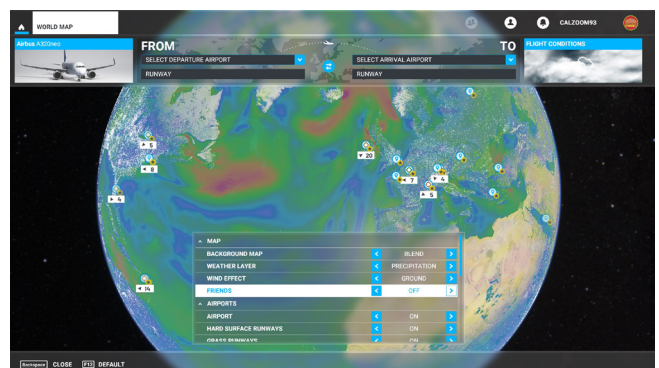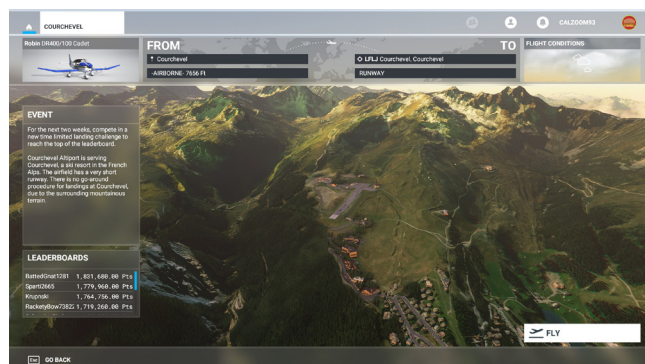
2 - LIVE CHALLENGES

Starting the Event

From the main menu, select the correct title. You will get a short brief explaining the event details with a live leaderboard highlighting the top scoring users so far.

You won't be able to adjust any conditions so once you're ready, jump in with the "Fly" button.

Tips and Info

During the loading process, a few tips will be displayed to help you with the challenge.


Your Score and Feedback

Once you have landed, you will be given a score which is dependant on your level of success.

Finally a logbook entry will be added to your profile and you can see a preview of it again. From here, you can head back to the main menu, restart the challenge or take on the next flight.

Just note that if you 'restart' the challenge, your score will not count for the leaderboard.

New events and challenges will be added frequntly by the development team.
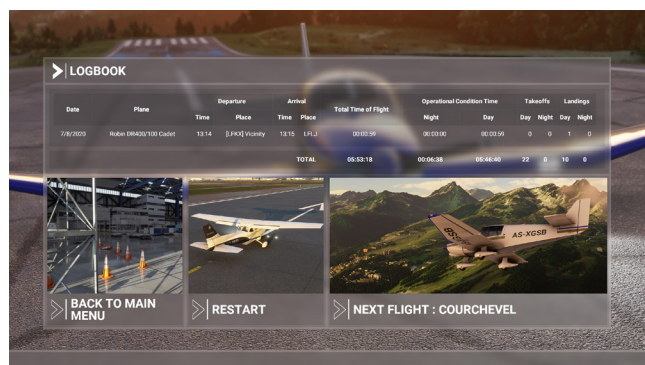
3 - FLIGHT TRAINING

Whether you're a newcomer or an experienced simmer, taking part in the 2 hour training session beforehand to get started is a good idea.

Not only will it help you to familiarise yourself with the camera and controls, it will aid your comfortability with the flight physics, weather and understanding your system's performance.

Later in this guide you'll find a full walk-through of the tutorial flights to help you get the most from it. For now, here's a brief rundown of each of the lessons included with the simulator. A full walkthrough starts on page 105.

1 - Basic Controls

Get familiar with your controls and the simulator.

2 - Attitudes and Instruments

Understanding the fundamentals of flight management.

3 - Take-off and Level Flight

Get yourself in the air and stay there keeping an eye on your speed.

4 - Landing

Now we're up, we need to come down. Learn how to put this into practice.

5 - Traffic Pattern

Complete a full flight from take off to landing whilst navigating the airport.
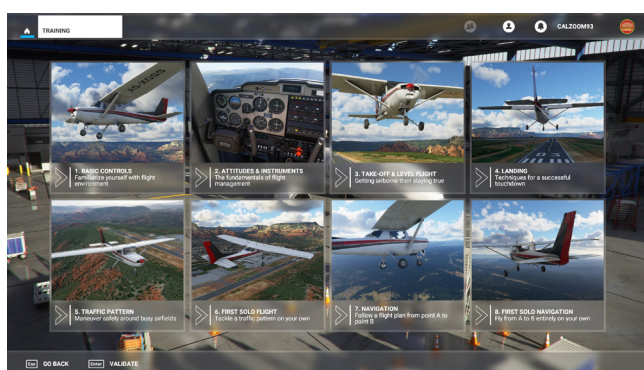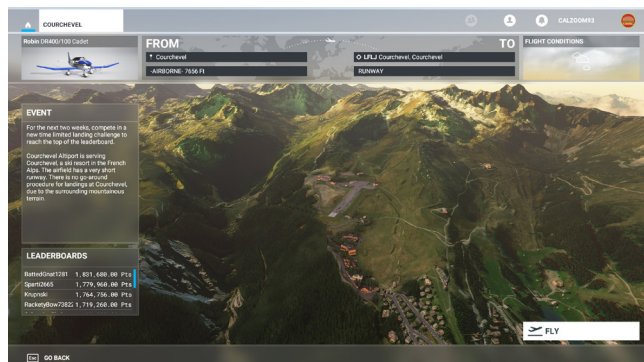
6 - First Solo Flight

Complete your first flight completely on your own with no instructor guiding you.

7 - Navigation

Following a flight plan from A to B between two airports using visual clues to help you.

8 - First Solo Navigation

Return from your first trip completely on your own using visual references to guide you.

4 - ACTIVITIES

Choose Your Activity

Whether you fancy taking on some of the most challenging landings in the world or taking it easy with some exploration flying, the pre-set activities will help you find inspiration.

Landing Challenges

24 landing challenges are already available with the new simulator upon release and they will take you around the world and test even the best pilots.

### Famous

You will likely know of some of these airport names already and now is your chance to try landing at them in a variety of aircraft.

Epic

Some of the world's most dangerous airports are featured under this category.

Strong Wind

If tough approaches weren't bad enough, mix in some strong wind and you have a really hard day. Consider this the expert level for flight simulation.
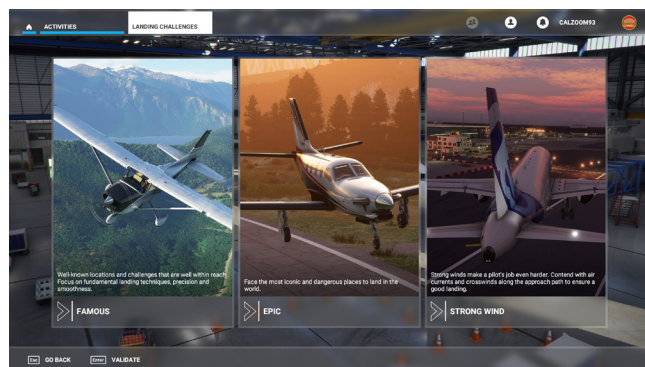
Bush Trips

These trips have been designed to take you cross country in a slow, charming and relaxing way. In the release build of the new simulator, there are three iconic routes to choose from.

Each trip will give you a full navigation log and routing to follow so you can focus purely on flying the aircraft and seeing the sights below.

These are trips I highly recommend you grab a friend for so that you can experience this together. You can read all about how to get started with multiplayer on page 116.

1 - Breckenridge to Mariposa Yosemite

A nine and a half hour journey across the west-coast of the US seeing a huge number of beautiful sceneries down below from your Zlin Savage Cub.

2 - Rijeka to Santorini

It will take you nearly 8 hours to complete this tour of old world mythology. Explore southern Europe from your new Cessna 172 with 16 stops in total.

3 - Los Cerros to Cochrane

Whilst it may be the shortest of the trips included, seeing the Land of Fire and stunning glaciers in South America is truly a wonderful way to explore the simulator.
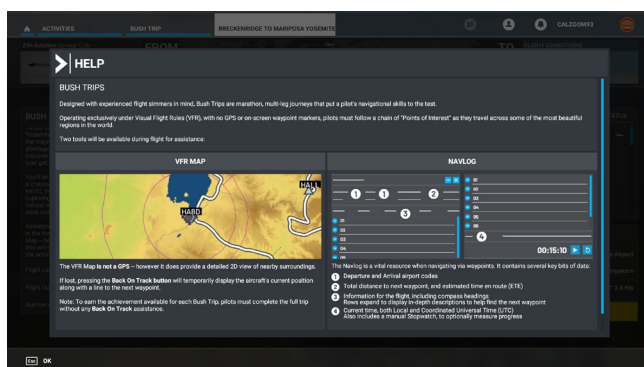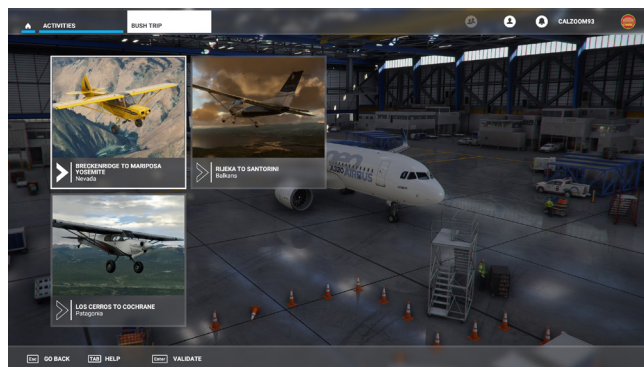
TOP TIP

To make the most of the views or even step away for a few minutes, enable the AI to take control. It will help you to take everything in, especially during the longer routes.

YOUR
PROFILE

All Your Content In One Place

Continuing with our run through of the user interface for the all-new flight simulator, the "Profile" section is somewhere you will visit often to manage your simulator.

My Hangar

Your hangar is personal to you. All aircraft are available from the start, but if you buy third-party content, or new aircraft are added, then you can find out more information in the hangar on your profile.

Find out about stats, background and history on each aircraft and cycle through each of them in a power-down state both from an external and internal view.

We have compiled a detailed breakdown of each of the included aircraft. Go to page 58.

Content Manager

When you buy an add-on from the built-in store, it will be added to your Content Manager. Here you can remove products and see which ones you have installed.

You can also view which version you're using and any other dependancies it relies on to function within the simulator.

My Logbook

Each time you perform a flight, the simulator will automatically capture that in a logbook showcasing your departure and arrival info, flight time and also your operational condition time. Clicking a flight will enable you to do the same flight again.
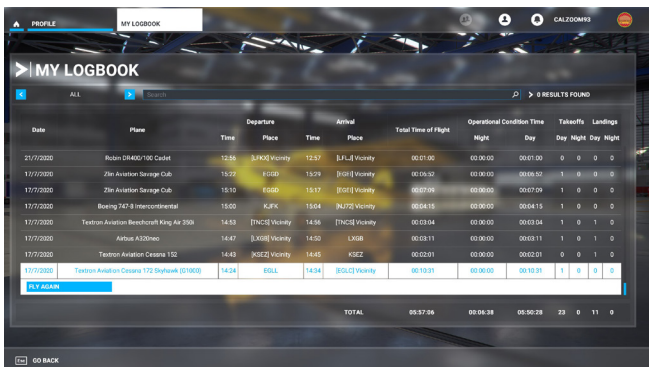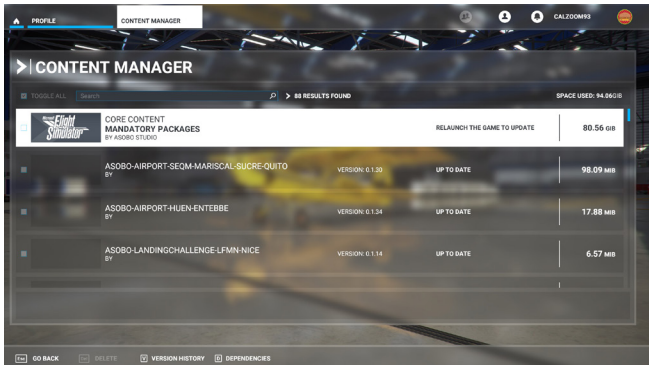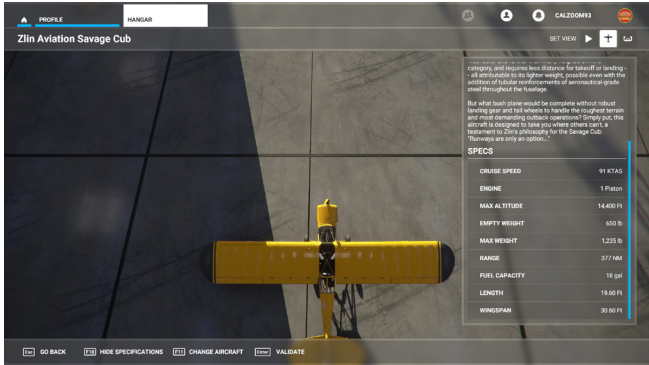
What Is the Marketplace?

The built-in Marketplace is a centralised hub to download and install content from both Microsoft and Third-Party content creators. Some examples of Third-Party content could be new airports, aircraft or missions and tools to help you get the best experience.

## Why Do I need Third-Party Add-ons?

Whilst the new simulator includes a huge range of content to see and explore, Third-Party developers enhance the experience further by making very feature rich and hand-crafted products. On page 118, we'll show you how some products enhance the simulator even beyond the included hand-crafted airports.

Using The Marketplace

Using the tab on the home menu to access the Marketplace, you will be shown some of the latest content available. Clicking 'Official Content' will show you a range of products which can be sorted, filtered and even added to your own wishlist.

Third-party content can also be controlled here, along with adding, updating and buying new products.

Each dedicated page will give you a detailed rundown of the included features, customer reviews, videos and screenshots of the product in question. Developers will update their products all the time so be sure to continuously check out what is available.

THE
MARKETPLACE
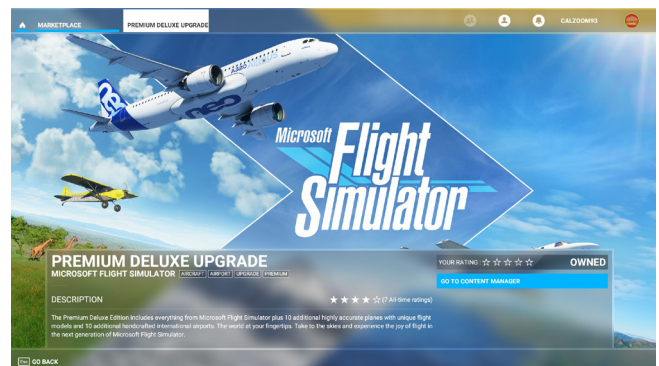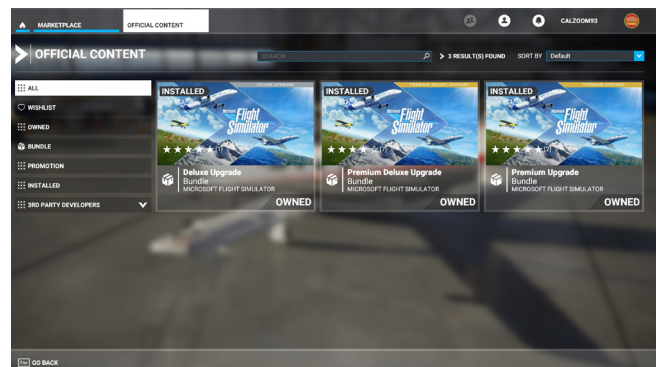
OPTIONS AND MENUS
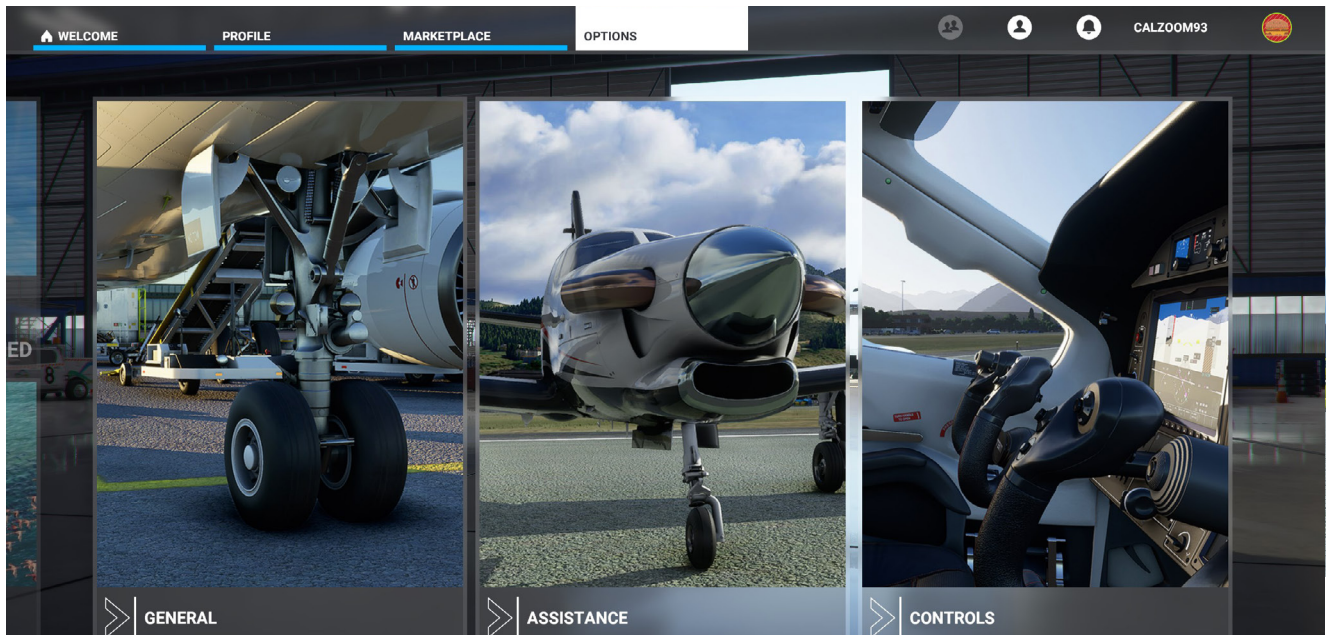


Complete Control of Your Sim

The new flight simulator has a huge number of options available to allow you to have the best experience possible. From changing your camera controls and assigning commands to adjusting screen resolution and texture quality, the options menu will give you the ability to have complete control of your sim.

Over the next few pages, we'll dive into these options and how you can control them for the best simulator experience.

You can access your menu options from the main menu or by pressing the ESC key when in the simulator.

General Options Overview

- Graphics
- Camera
- Sound
- Traffic
- Data
- Flight Model
- Misc
- Accessibility
- Developers
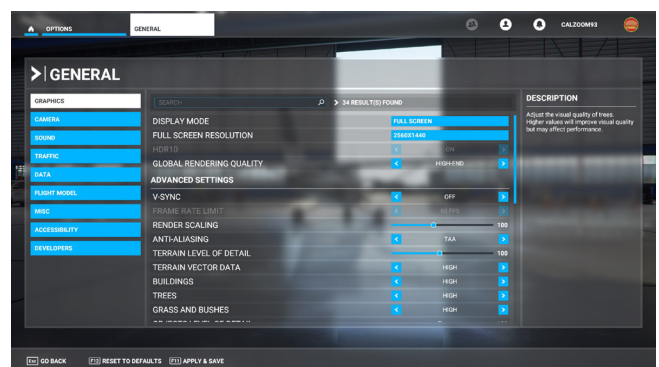
GRAPHICS

Within this section, you are able to customise the graphical experience within the simulator.

Recommended Settings

Based on the many hours of testing, we feel that the "High Settings" provide the best balance between performance and visual quality. Of course, your performance will vary depending on the hardware. That said, there are plenty of options you can adjust that will help you get the best performance within the simulator. Let's go through some of the key settings which could make your simulator even more smooth during flight.

Full Screen Resolution

By default, this will match your monitor settings. So whether you're running a 4K display or a 1080p monitor, your settings will automatically default to match. However, if you're seeing poor performance, then reducing your resolution may help resolve some of that.

Anti-Aliasing

Try to experiment between changing these settings to see how it impacts your performance. FXAA provides the fastest performance at a visual cost, whereas TAA gives you the smooth image with a performance impact.

Terrain Level of Detail

Adjusts the visual quality of the terrain. Lowering this will give you better performance at the expense of the clarity of textures.

Buildings / Trees / Grass & Bushes

If you know you're going to fly high in the sky, you may want to reduce these settings slightly to improve performance. It will effect the quality of the procedurally-generated buildings and vegetation.

Shadow Maps

If shadowing isn't of huge importance to you, changing the resolution to a lower value can improve performance of the simulator.
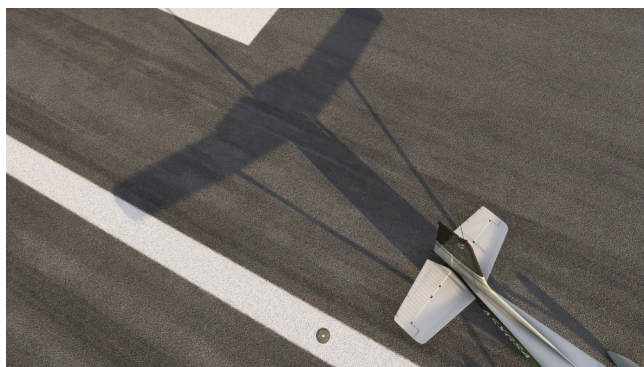
DATA AND INTERNET

Data plays a huge role in the new simulator. You can adjust your data settings via the options menu depending on your internet connection and settings. We'll break down each option and show you how it impacts the simulator.

Online Functionality - Overall online features can be switched on or off.
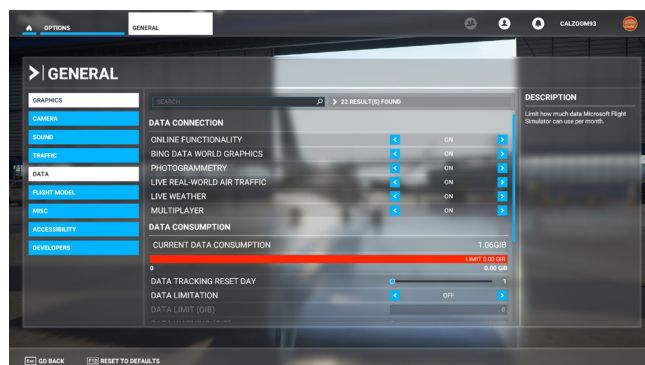
Bing Data World Graphics - This is the aerial imagery streamed into your simulator via the cloud. Can be switch on or off.

Photogrammetry - This is for cities such as Seattle with 3D building data. Can be switched on or off.
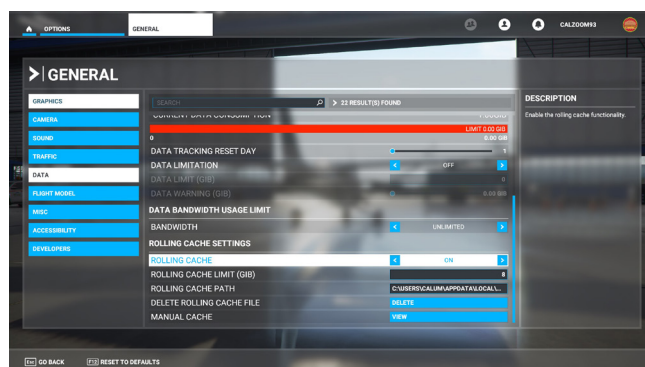
Live Real-World Air Traffic - You can switch on/off live air traffic services or stick to the built-in AI.

Live Weather - Switch on or off live weather services and use the built-in default pre-sets.

Multiplayer - The ability to connect to online multiplayer sessions or see other users in the vacinity.

Data Consumption

You are able to track and limit your data consumption based on your online functionality options. You can set data limitations, remove them or simply see what your current consumption is.

If you have specific bandwidth caps or need to limit the bandwidth, you are able to do this here.

Finally, the Rolling Cache Settings enable you to start grabbing specific regions and places to download and use in an offline environment with high quality resolution and data.

ABOVE: Seattle with no data being streamed to the sim.

BELOW: Seattle with complete photogrammetry data and vector data streamed to the sim.

Manual Cache

If you're unable to have an always online connection, you will be able to download specific areas and zones. From the Data Consumption section of the settings menu, click on Manual Cache and wait whilst the map screen loads.

Step 1 - Once it has loaded, you will need to tell the simulator how the cache size you are willing to make. Click on modify cache to then save this.

Step 2 - You now need to select 'Cache New Region' which will enable you to start selecting the area or region you wish to have in detail offline. You can use the search bar to help you find specific areas, cities, airports or points of interest.

Step 3 - With that now complete, you can start the download process. It will take a few moments to do so.

Once that is finished, you will now have access to a downloaded region complete with building data, aerial imagery and any photogrammetry data included in that specific region.

You are able to delete the region afterwards if you so wish.

As you can see, an area around JFK Airport and New York took up 492MB of data.
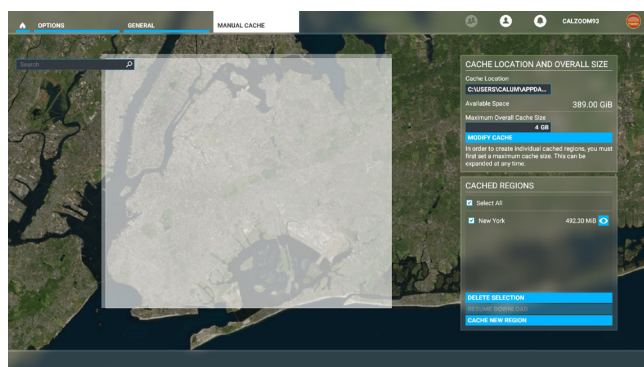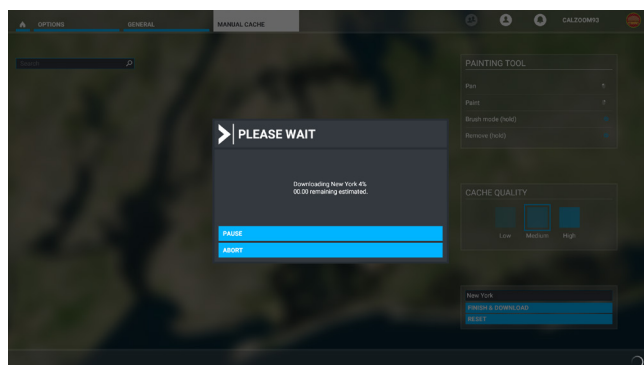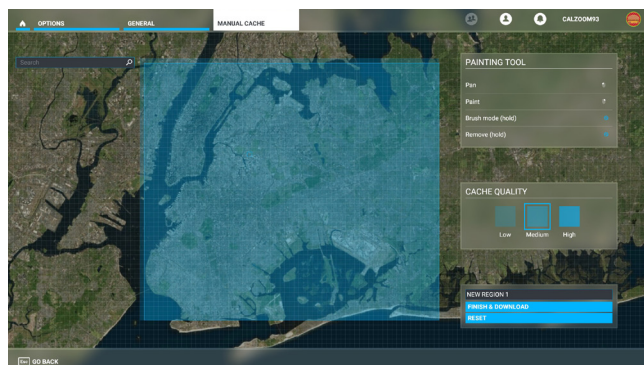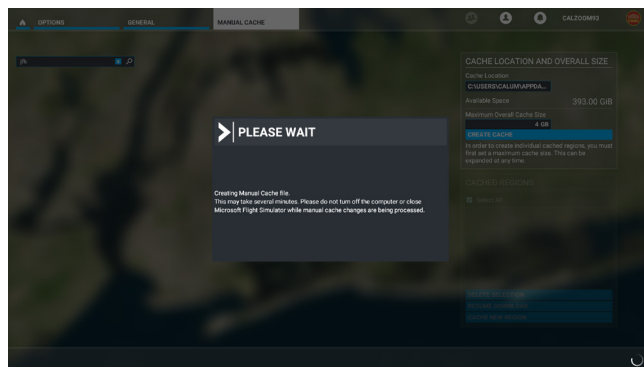
ASSISTANCE

Throughout this guide, we have been giving you detailed information on how to take advantage of the numerous assistance modes available within the simulator.

Whether you are an experienced pilot or a newcomer, there are plenty of options for you to adjust to your liking.

You can adjust the options to any of the included pre-sets, or customise the settings and adjust each one individually. Here's an overview on what is on offer.

Piloting

You can adjust elements like the assisted checklist, the yoke, and support for assisted take off and landings.

Aircraft Systems

Here you can adjust features such as the automixture, unlimited fuel and aircraft lights.

Failiure and Damage

No, you won't see your aircraft burst into flames, but you can control crash detection. If this is on, stressing your engines to their limits or flying into a building will be recognised as a crash. You can turn this off if you want a worry-free flight experience. You can also control the effect icing conditions have on your aircraft, this means when ice builds up, you can either let it have an impact on your aircraft's performance or only allow it to be visual.

Navigation Aids

Whilst experts may switch these off, newcomers will be able to enjoy having the option to turn on the taxi ribbon (to follow the correct route), a landing path, city markers (to go exploring) and even points of interest.

Notification

Flying tips, objectives and other software tips that would pop up during the flight to help you with your flying experience can be turned on or off.
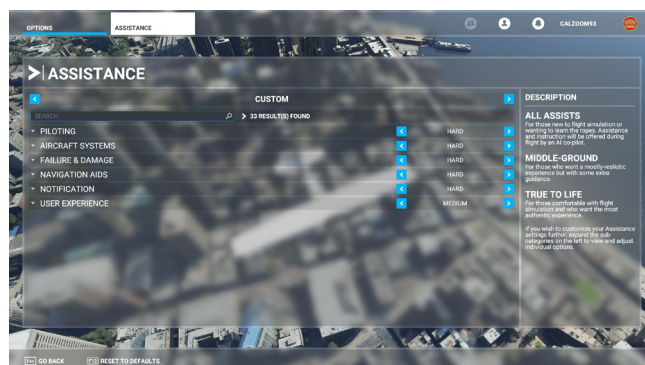
User Experience

The final option is all about your experience with the simulator. You can adjust the ATC UI apperance, the checklist UI appearance and even whether the VFR or NAV log displays are present when you start a flight.
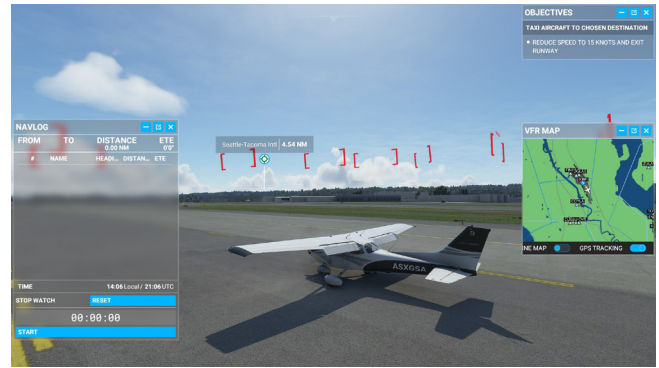
The Taj Mahal can be seen within the simulator. Find it in your simulator now!

CONTROLS

If you have any of the hardware compatible (mentioned earlier in this guide), then you are able to simply plug in the controller and the simulator will automatically set up those controls. However, for those wanting to have a bit more flexibility over the controls, you are able to adjust each value to your liking.

Open the control menu option and your control options (those in use) will display.

A - Control Menu

See the full list of controls you currently have plugged into the PC along with adjusting the profiles you wish to use (custom or default).

B - Search

You can search controls either by name, input type, or filter it based on variables such as: essential controls, controls already assigned, and all control options.

C - Control Names

The control names for all types of controls.

D - Control Details

A detailed overview of what the control is.
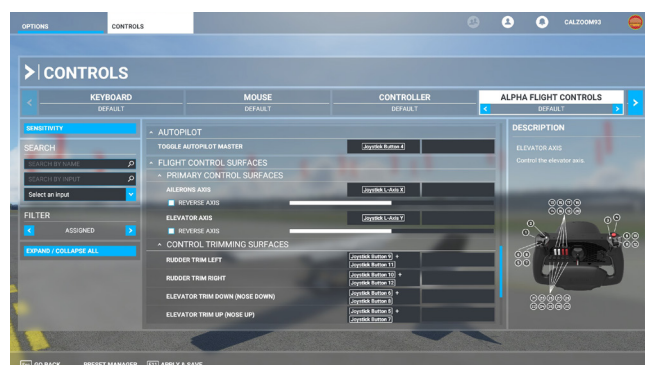
TOP TIP

You can adjust numerous axis for controls such as elevators and the like. You can then test the movement range by looking at the slider in the control menu.

To Change a Control Is Easy

From within the Controls menu, you are able to adjust any control with the input controllers you have plugged in. Changing a control is easy.

First, select the input controller you are wishing to adjust. In this case, it's the keyboard. We are going to change the 'Parking Brake' control.

Step 1 - Navigate to the Keyboard input section from the Control Menu (A).

Step 2 - Using the search bar (B), let's type in "parking" to bring up the control input we want.

Step 3 - We can see a key is already assigned, but we want to change it. We'll click in the box with the current key assignment (C).

Step 4 - Now we can change the key either by clicking in the top box or by selecting an input from the drop down menu. We recommend that you press the key you wish to avoid confusion. Now click on 'validate'.

Step 5 - You will be asked to now give this new control profile a name. Type in the name you wish it to be displayed as and click OK.

You have now changed your control input with a new profile. You can adjust your profie anytime by clicking the options under the Control Menu (A).
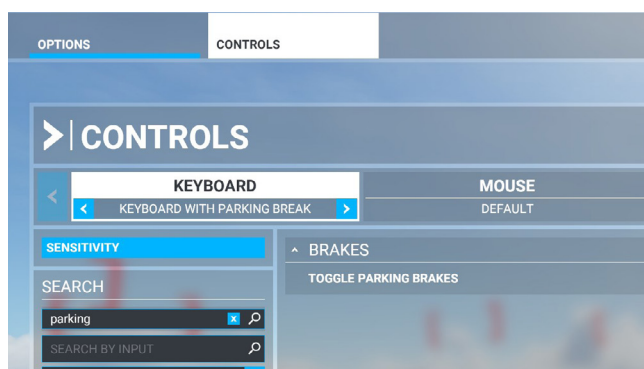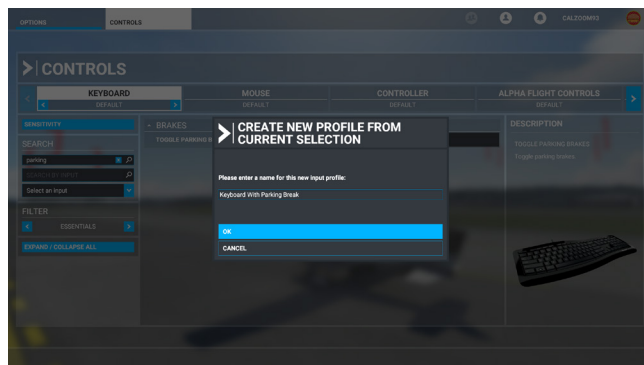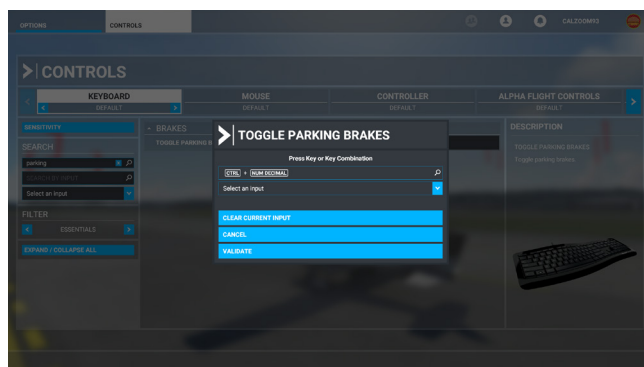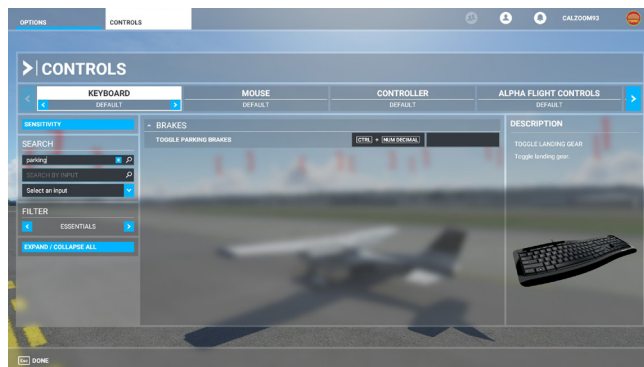
AIR TRAFFIC CONTROL

CAMERA CONTROLS

CHECKLIST SYSTEM

CONTROL OVERVIEW

CO-PILOT CONTROLS (AI)

WEIGHT AND BALANCE

IN-SIM OPTIONS AND MENU

Once you are in the simulator, you will have the ability to change numerous settings and view other tools to help you on your flight. In this section of the guide, we'll go through various tools to help you get the most from your simulator.

IN-DEPTH

NAVLOG

OBJECTIVES

TRAVEL TO

VFR MAP

WEATHER AND TIME OF DAY

CUSTOMISE TOOLBAR

Weather and Time

Change the weather on-the-fly from the sim. You can choose to use pre-set weather, specify certain conditions or use live weather. You can also adjust the time of day to get the lighting just right.

Weight and Balance

Running low on fuel? Find you're flying too heavy? Adjust all of that within the simulator. Be careful though as adjusting them may have adverse effects on your aircraft.

Customise Toolbar

Toggle on/off any of the menu options above to have your own custom experience. Note that in some challenges/ missions you are unable to change some of these options.

DID YOU KNOW?

Clicking on the "Pop-out" icon for each menu option will open it into a separate window outside of the simulator. This means you can drag it to a second screen or similar for your convenience.

ATC MENU OPTIONS AND SUPPORT

Aviate, Navigate, Communicate

Three words you will hear often on your journey to learning aviation and flight simulation.

Communicating with Air Traffic Control (ATC) is an important part of the flying experience. We will cover in-depth communication skills in the future, but for now, let us take a look at how ATC works within the world of flight simulation.

In our example, we are going to be in the Zlin Savage Cub at Bristol Airport, UK (EGGD). Set the weather and time to how you wish (we recommend day-time for this).

Bringing Up the Menu

When you first start up your flight (on the runway), one of your first tasks will be to communicate with ATC about your intentions. For this simple exercise, we are going to simply take off and complete a circuit with a full stop landing.

To bring up the menu, click the ATC button from the in-sim navigation section.
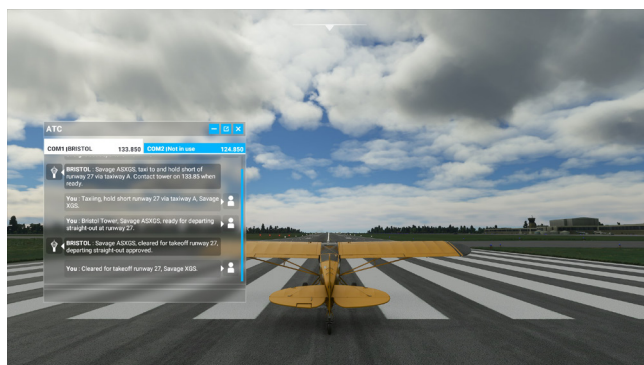
You will see there has already been some prior communication between you and the tower. For now, we will just take off and fly straight. One you are in the air continue for 5 miles and climb to 2,500ft.

You will soon get a radio transmission from ATC telling you that you are leaving the airspace and that you should change frequency.
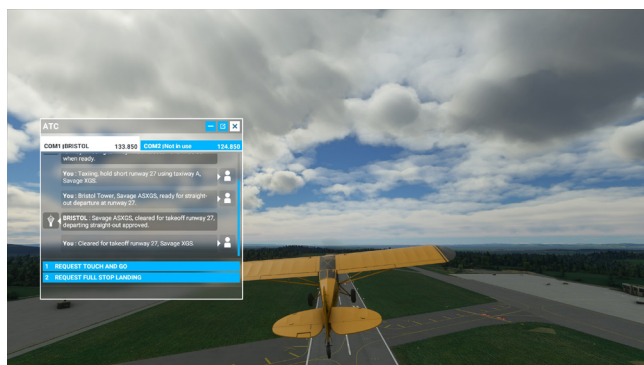
Acknowledging Instructions and Changing Frequencey

When an instruction comes through from ATC, you must then follow it up with an acknowledgment. This is usually a read-back of the instruction given, followed by your call-sign. Luckily for us in the simulator, we only have to press a few buttons to initiate this, real pilots don't have this luxury. Hit the corresponding key to acknowledge the change.
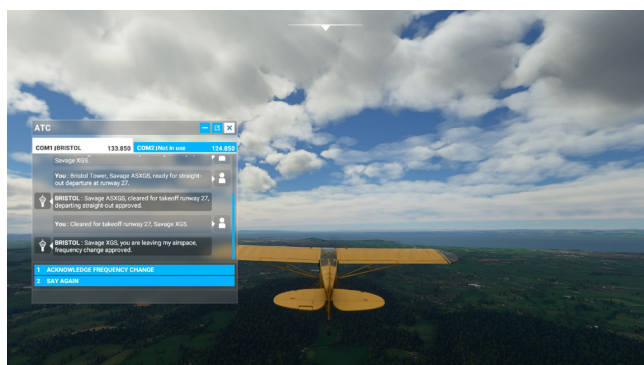
Communicating Instructions

Now you have acknowledged your instructions, you need to act on it. Again, the simulator makes this process easy be simply assigning a key to the action. Press the corresponding key to tune Bristol Approach and request flight following.

You can also manually tune the radios yourself from within the cockpit.

Afterwards, you will recieve some instructions to follow, including a squawk code. This code is your unique identifier for the area you're flying in.

Being Situationally Aware

If you're flying with live traffic or online with friends, you may hear other traffic communicating with ATC. This can be overwhelming. Keep your eyes peeled and you may also be told to tell ATC if you're able to see the other traffic.

Once you're comfortable, start flying a left-hand circuit being aware of nearby traffic. You can learn more about circuits in our training walkthrough on page 109.

Requesting Full Stop Landing

Right now, we're able to fly around freely without too many restrictions on where we can go. However, before we land, we need to request this from ATC. Bring up your ATC menu and select "Nearest Airport List".

As we are landing at Bristol, we need to select it from the list. Of course, if you decide to head somewhere else, choose that airport instead. Now you will need to tune Bristol Tower. Use the selection menu to assist if you're uncomfortable with the radios at this point.

Several new options will appear. As you can probably guess, you need to select "Request Full Stop Landing". ATC will then give you further instructions which you will need to acknowledge. They will also provide you with the latest weather.

Continue your approach nto Bristol.
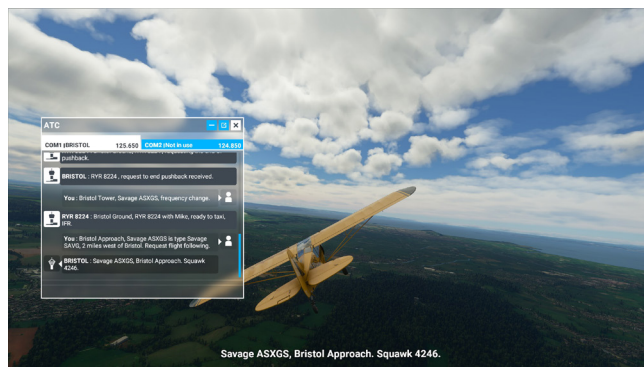
Touching Down and Taxi to Gate

You should now have been given the instruction to be able to land at Bristol Airport. You will need to acknowledge this instruction before you can then land.

After you have landed, Bristol Tower will hand you off to Bristol Ground. Select this frequency from the menu option and you will tune and contact the new controller. Once you have cleaned up your aircraft (flaps retracted for example), you should then request taxi to a gate. ATC will then assign you a stand along with instructions on which taxiways to follow. Don't fret too much for now on this as we'll cover that type of detail in later guides. For now, it's about getting comfortable with using the built-in ATC.

Once you've parked up, you're free to either head back into the skies on a different route or complete the circuit again.

This Is the Start

Air Traffic Control is a hugely complex subject which requires extensive knowledge and time to fully embrace.

The built-in tools within the simulator will enable you to familiarise yourself with some of the instructions you may hear if you fly with online networks such as VATSIM, IVAO and PilotEdge. You can read a bit more about them in our resources chapter on page 120.
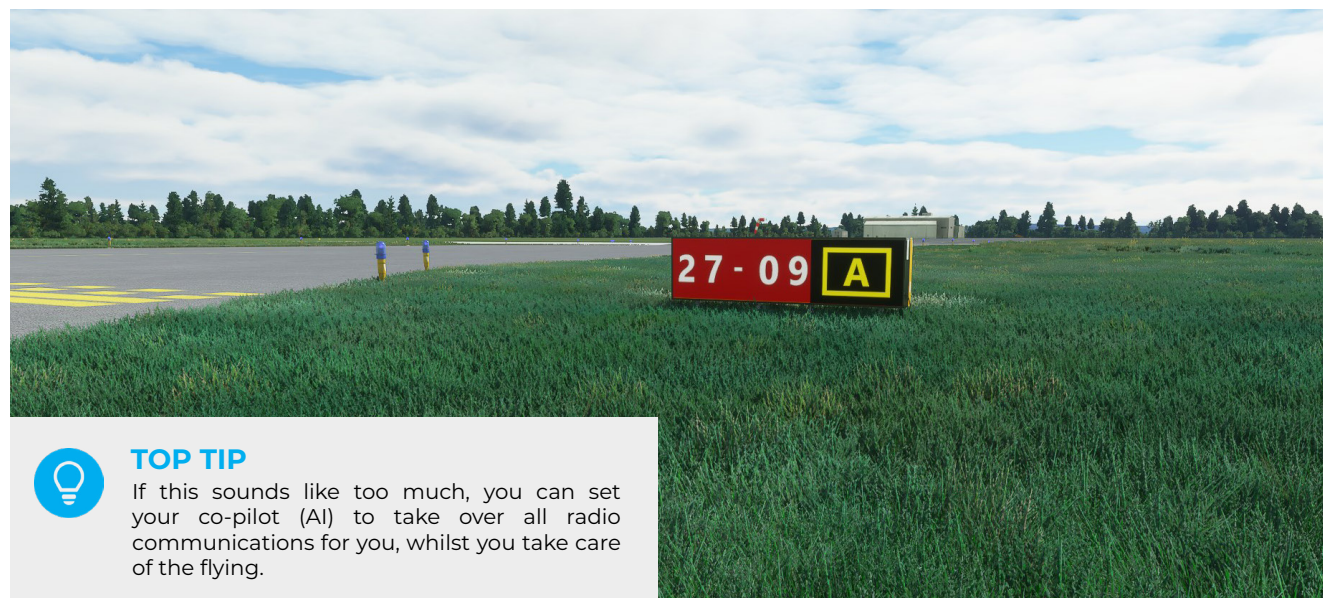
TOP TIP

If this sounds like too much, you can set your co-pilot (AI) to take over all radio communications for you, whilst you take care of the flying.

CAMERA CONTROLS

Getting The Best View

The simulator is incredibly visual, so having a grasp of the camera controls is vital to ensure the best possible experience. Over the next few pages, we'll go over each of the various camera control options, how you can set up pre-set cameras and much more.

Starting With the Basics in the Cockpit

Let's load up any aircraft at any airport.

Before we load up the camera menu, let's go through some basic controls. It's worth noting that in the first tutorial lesson built into the simulator, you will go over some of these. If you haven't done that yet, here's an overview of the default controls.

FILTER			ASSIGNED		ZOOM COCKPIT VIEW
Search by name		<	SEARCH BY NAME	>	

^ CAMERA

^ COCKPIT CAMERA

TOGGLE COCKPIT FOCUS MODE	🖱	
COCKPIT LOOK DOWN (LOCKABLE)	Axis Y+	
COCKPIT LOOK LEFT (LOCKABLE)	Axis X-	
COCKPIT LOOK RIGHT (LOCKABLE)	Axis X+	
COCKPIT LOOK UP (LOCKABLE)	Axis Y-	
TOGGLE COCKPIT FREELOOK	Mid-Click	
TOGGLE COCKPIT VIEW FREELOOK (HOLD)	🖱	
UNZOOM COCKPIT VIEW	Mouse Wheel Down	
ZOOM COCKPIT VIEW	Mouse Wheel Up	

VIBRATIONS			OFF		**DESCRIPTION**
FILTER			ASSIGNED		TRANSLATE COCKPIT VIEW LEFT
Search by name		<	SEARCH BY NAME	>	

INCREASE COCKPIT VIEW HEIGHT	ALT+UP	
TRANSLATE COCKPIT VIEW BACKWARD	DOWN	
TRANSLATE COCKPIT VIEW FORWARD	UP	
TRANSLATE COCKPIT VIEW LEFT	LEFT	
TRANSLATE COCKPIT VIEW RIGHT	RIGHT	
COCKPIT LOOK DOWN	SHIFT+DOWN	
COCKPIT LOOK LEFT	SHIFT+LEFT	
COCKPIT LOOK RIGHT	SHIFT+RIGHT	
COCKPIT LOOK UP	SHIFT+UP	
COCKPIT QUICKVIEW UP	CTRL+UP	
COCKPIT QUICKVIEW REAR	CTRL+DOWN	
COCKPIT QUICKVIEW RIGHT	CTRL+RIGHT	

Understanding What It Means

With an overview of the basic camera controls from within the **cockpit**, let's now go over what it means for you as a simmer and some of the helpful functionality built-in.

SPACE BAR

Pressing the space bar will give you instant access to the UPPER VIEW within the cockpit. This is helpful when you want to have better visibility over the cockpit instruments.

MIDDLE MOUSE BUTTON

This will enable the FREELOOK functionality. With the middle mouse button pushed in, you will be able to freely look around the cockpit.

If your mouse has scroll functionality with the middle mouse button, then you will also be able to zoom your viewpoint in/out.

ARROW KEYS

Using any of the arrow keys on your keyboard will enable you to move freely around the cockpit.

It's worth noting that holding the ALT key will enable you to move up and down vertically.

CTRL + SPACE

If you need to RESET your view, simply holding these keys down will put you back to the default cockpit view for that aircraft.

END

Switching views can be done with the END key. Now, let's do that and see our aircraft from the outside.

External View

Now we're in external view, we can start to maniuplate the camera to start capturing some stunning cinematic shots during our flight. Of course, the focus is on flying the actual aircraft, but it's always fun to see the view from outside. Let's discuss some of the options available.

MIDDLE MOUSE BUTTON

This will enable the FREELOOK functionality. With the middle mouse button pushed in, you will be able to freely look around the aircraft from a fixed position. Simply drag the mouse and watch your camera move. Right clicking will achieve the same thing.

CTRL + SPACE

This key combination will reset your view point back to the original set-up.


WHAT DOES IT ALL MEAN?

At this point, you will have likely seen the overlay in the external view. Whilst these are covered in more detail in the tutorial flights, let's highlight them with an overview right now so you can start to familiarise yourself with them.

TOP TIP

You can hide the overlay in the settings menu. Head to **GENERAL / CAMERA** and change the setting 'Instrument Heads-Up Display (HUD)' to off.
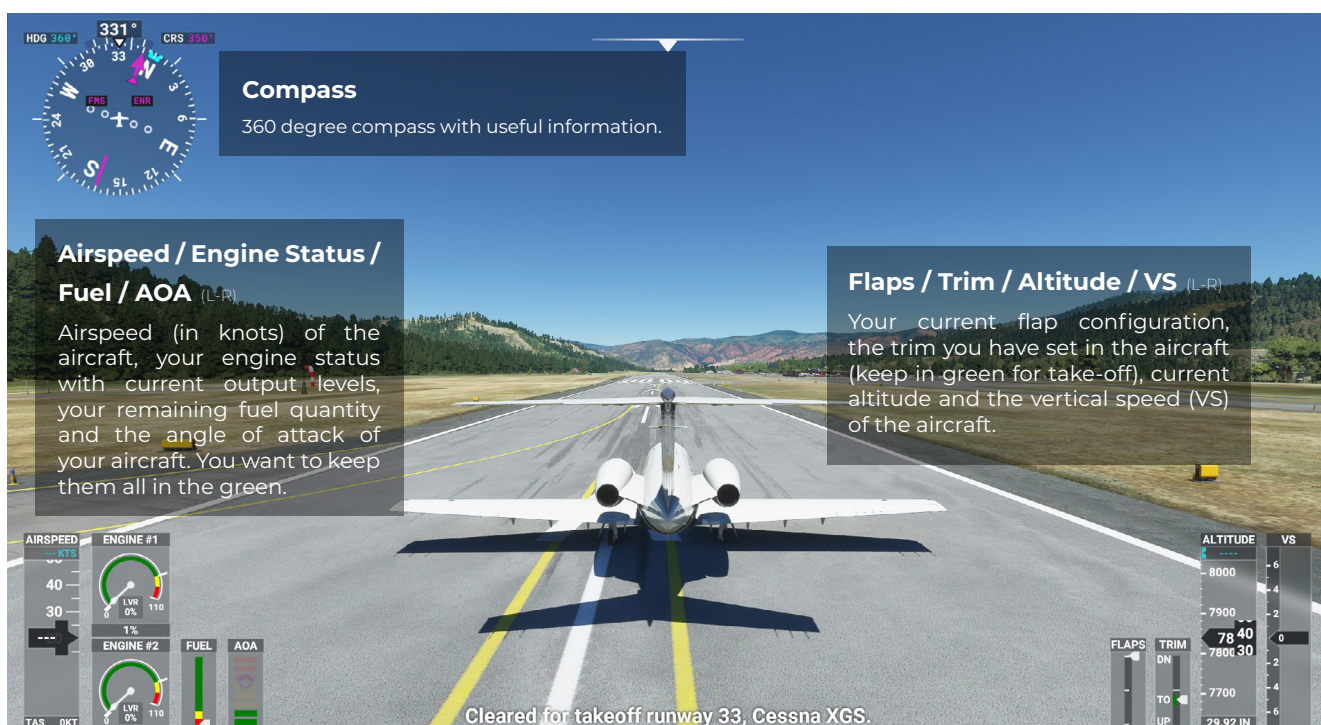
Compass

360 degree compass with useful information.

Airspeed / Engine Status / Fuel / AOA (L-R)

Airspeed (in knots) of the aircraft, your engine status with current output levels, your remaining fuel quantity and the angle of attack of your aircraft. You want to keep them all in the green.

Flaps / Trim / Altitude / VS (L-R)

Your current flap configuration, the trim you have set in the aircraft (keep in green for take-off), current altitude and the vertical speed (VS) of the aircraft.

Exploring All Camera Settings

Now that we have a basic understanding of the controls within the simulator, let's have a look at some of the more advanced options available.

Open up the Camera Menu from the selection icon at the top of the screen to bring up the camera controls and options.

From this menu, we can configure options such as the cockpit view, the external view and something called showcase.

Now some of these controls are actually just button presses for some of the shortcut keys we learned on the previous few pages. However, you are also able to adjust them on the fly via this menu to help you with your flying. For example, you can adjust things such as the zoom level, the freelock speed and also the momentum.

Quick Camera Selection Views

With us having now understood some of the included options, we can set up views using the quick camera selection mode. With the camera menu still available, you can click on the drop down menu for the pilot, instrument and also quickview. This will cycle between pre-set views for the aircraft for those specific areas.

This is particularly helpful when you need to jump from view to view to see a specific set of instruments.

Q

Pressing the Q button will enable you to cycle through the quickview selection in fast succession.

Showcase Mode

This mode will enable you to create unique views and some extremely cinematic views.

Drone Follow and Lock Mode

This option will either have your camera (aka drone) follow the aircraft or stay in a lock position - unless you move the camera.

Drone Focus Mode

This will give you some control over the depth of field. You can either have it in manual mode to change the blurriness or have it in auto mode to add some visual flare.
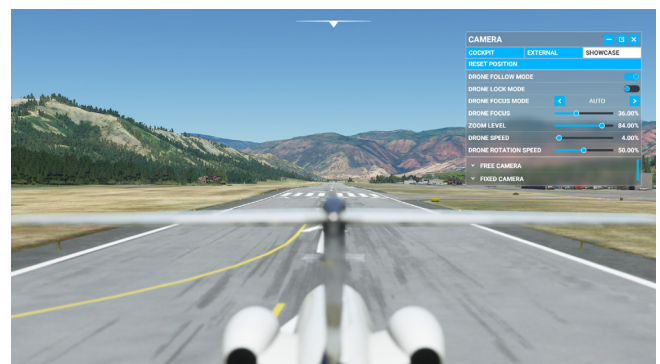

Zoom Level

Adjust the zoom level of your drone. This should be set between 50% - 60%.

Drone Speed and Rotation Speed

These options allow you to move the drone at your own speed. The drone can be moved in a 3D space or moved on its axis to pan the camera around aircraft or scenery.

TOP TIP

For the best results, use a game controller and be sure to disable any of the flight controls with it. This is the best method to pan your camera around the aircraft.

INTEGRATED CHECKLIST

Why Pilots Use Checklists

Pilots in the real world use checklists to ensure that no steps are missed. As with anything, doing something too many times can lead to complacency, so having checklists in place helps to mitigate this risk.

Not only does a checklist help an experienced pilot complete tasks in the correct order each time, it helps newcomers to better understand aircraft.

The integrated checklist within the flight simulator will help newcomers and experienced simmers learn the included planes and ensure that they do things correctly each and every time.

How the System Works

In the options menu, open up the Checklist menu. You will see a list of phases of flight - everything from preflight to securing the aircraft after you have finished.

The integrated checklist system will help guide you through each checklist item with an option to zoom into the corresponding area of the cockpit. The switch, button or lever that you need to use in order to action the checklist item will be highlighted.

Load Up a Quick Flight To Test

We're going to load up the Cessna 172 at Innsbruck Airport (LOWI/INN). The aircraft will load up in a powered state, but let us turn everything off so we can start from the very beginning.

We won't go through each of the checklist items, but we'll go through how the system works to give you the perfect base to then find out more for yourself.

Once you're ready, open the checklist menu, click on "Preflight Inspection - Cockpit" to bring up the list of items.

Reading Through the Checklist

Now we are ready to start going through each of the check list items.

Let's take a look at the formatting of the integrated checklist options.

A - Checklist Name (and Menu Icon)

Click between menu items to navigate between them.

B - Checklist Items

This is a list of checklist items within your selected checklist.

C - Checklist Action

This is the action you need to take to complete the checklist item.

D - Automatic View

For some items within the cockpit, you can view the component within the aircraft you will need to interact with to complete the checklist action. It will highlight blue and the camera will automatically pan to that selected button, switch or panel.

E - Manual Complete Action

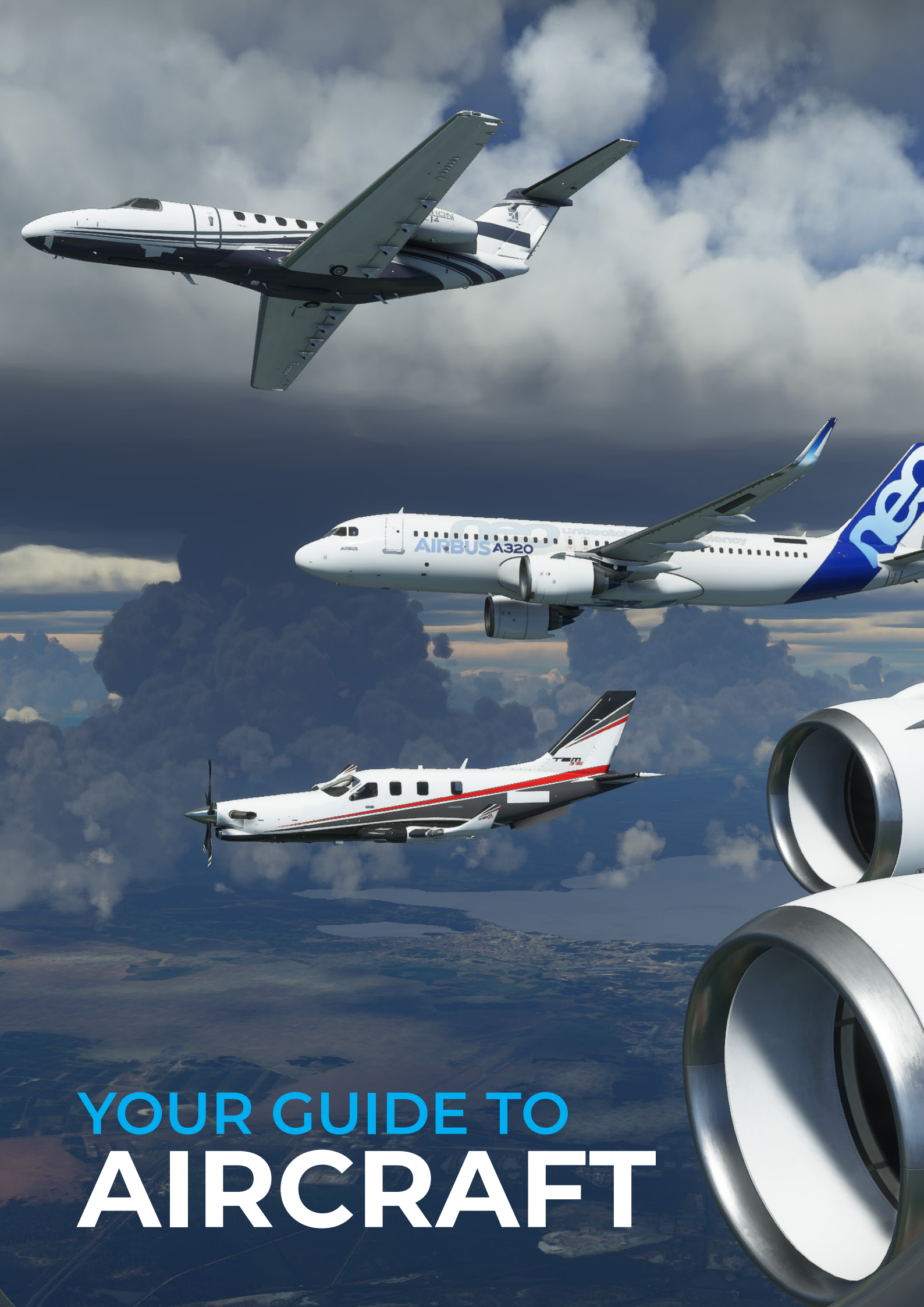Once you have completed a checklist action, you can click tick to move on to the next item.

F - Further Details

See some more detailed information on the checklist item itself and some spcific instructions you may need to complete in order to complete it.

YOUR GUIDE TO
AIRCRAFT

STEP INTO THE COCKPIT

The new flight simulator features a comprehensive range of aircraft for you to explore the world in. From the small propeller aircraft to the larger jets, each aircraft is unique and carries a range of characteristics that will give you plenty to learn and discover in the simulator.

Over the next few pages, we will give you an overview of each aircraft included across all simulator editions. The editions are Standard, Premium and Premium Deluxe.

Standard

20 Aircraft + 30 Hand-crafted airports

Premium

25 Aircraft + 35 Hand-crafted airports

Premium Deluxe

30 Aircraft + 40 Hand-crafted airports

Whichever aircraft you choose to fly, be sure to consider using the assistance features if it is your first time. They will be incredibly helpful as you get used to the new shiny cockpit.

Debunking Some Terms

Max Take-Off Weight
The maximum weight the aircraft is certified to take off at. This includes all fuel, passengers, baggage and the weight of the plane itself.

Maximum Passengers
The maximum number of passengers the aircraft can hold and is certified to fly with.

Max Altitude
Max altitude does not mean you can climb straight to this altitude, it is the certified max for the aircraft type. Weather, aircraft weight and direction of flight have an impact on which altitude you should cruise at.

Range
The maximum range the aircraft can fly with a maximum Zero Fuel Weight (ZFW). The ZFW is calculated based on the load of passengers, cargo, baggage and any other supplimentary onboard facilities such as water or catering.

Cruise Speed
The cruise speed is measured in Knots True Airspeed (KTAS) or KM/H. The cruise speed recommended for individual aircraft is what you should be aiming for in order to achieve maximum efficiency.

First Flew
The approximate date the aircraft first flew. This will help you determine the possible functionality, features and avionics of the aircraft.

PROPELLERS

Standard
Pitts Special S2S

A fun lightweight aerobatic aircraft that has been in production since 1944. Due to its flexibility, and common usage, it's still in production today. It can reach speeds of up to 278 km/h making it super fast in all scenarios.

Facts and Figures

Max Take-Off Weight
737kg

Maximum Passengers
1

Max Altitude
15,000ft

Range
298nm

Cruise Speed
150 KTAS / 278 km/h

First Flew
September 1944

Did you know?

In 1972 the US aerobatics team won the world championship flying only Pitts biplanes.

Premium Deluxe
Cirrus SR22

This single engine aircraft is made from composite material making it incredibly lightweight and fast. With a cruise speed of 150 knots and an impressive range with a decent capacity, this is a very fun and diverse aircraft. Perfect for quick scenic tours.

Facts and Figures

Max Take-Off Weight
1,633kg

Maximum Passengers
3

Max Altitude
17,500ft

Range
800nm

Cruise Speed
150 KTAS / 278 km/h

First Flew
November 2000

Did you know?

The SR22 is equipped with CAPS - Cirrus Airframe Parachute System, the design was the first of its kind to be certified by the FAA.

Standard
Cubcrafters XCub

The X Cub is an evolution of the iconic PA-18 SuperCub. Longer range and higher speed means more flexibility to the already go-anywhere aircraft. The X Cub is quickly becoming a favourite among backcountry pilots as they travel the virtual world.

Facts and Figures

Max Take-Off Weight
1,043kg

Maximum Passengers
2

Max Altitude
14,000ft

Range
695nm

Cruise Speed
126 KTAS / 233 km/h

First Flew
5th June 2016

Did you know?

The XCub is 50 percent faster than a stock Super Cub.

Premium

Diamond DA40 TDI

High ratio wings, reliability, and an unrivalled safety record. The DA40 is a perfect addition to the hangar for all those looking for a modern GA experience. The TDI edition features a diesel engine.

Facts and Figures

Max Take-Off Weight
1,310kg

Maximum Passengers
3

Max Altitude
16,400ft

Range
940nm

Cruise Speed
125 KTAS / 230 km/h

First Flew
June 18th 2003

Did you know?

The TDI model of the Diamond DA40 is not certified to fly in the United States in the real-world.

Standard

Diamond DA40NG

High ratio wings, reliability, and an unrivalled safety record. The DA40 is a perfect addition to the hangar for all those looking for a modern GA experience. The modern design means it looks extremely elegant in the skies as you soar the mountains.

Facts and Figures

Max Take-Off Weight
1,310kg

Maximum Passengers
3

Max Altitude
16,400ft

Range
940nm

Cruise Speed
125 KTAS / 230 km/h

First Flew
5th November 1997

Did you know?

The DA40NG is a popular choice amongst flight schools and is used to train both defence and commercial pilots.

Standard

Diamond DA62

The Diamond DA62 is the perfect solution to a twin-engine GA requirement. This is a solid stepping stone to any GA simmer looking to step into larger birds. Featuring more modern avionics, it is easier to take in the stunning vistas.

Facts and Figures

Max Take-Off Weight
2,300kg

Maximum Passengers
6

Max Altitude
20,000ft

Range
1,283nm

Cruise Speed
171 KTAS / 317 km/h

First Flew
3rd April 2012

Did you know?

The DA62 fills the gap between high performance single pistons and entry level turboprops.

Diamond DV20

Premium

Built in Austria as a lightweight general aviation aircraft, the DV20 allows for quick learning which makes it perfect for flying schools. The success of the Diamond DV20 saw further developments of the type also included with the new flight simulator.

Facts and Figures

Max Take-Off Weight
750kg

Maximum Passengers
1

Max Altitude
13,120ft

Range
630nm

Cruise Speed
110 KTAS / 233 km/h

First Flew
June 1991

Did you know?

The DV20 is only known by this name in Austria. It is known more commonly around the world as the DA20 Katana.

Extra 330LT

Standard

The EXTRA EA-300 is seen commonly at numerous airshows around the world. With a light-weight aircraft, you will be able to perform a varied range of stunts at high speeds like never before.

Facts and Figures

Max Take-Off Weight
870 to 950kg

Maximum Passengers
1

Max Altitude
10,000ft

Range
600nm

Cruise Speed
150 KTAS / 278 km/h

First Flew
May 1988

Did you know?

The 330LT is a two seat, aerobatic tourer capable of a maximum speed of 205 KTAS but features a reduced roll rate in comparison to its fully aerobatic counterparts.

Flight Design CTLS

Standard

Over 350 Flight Design CT aircraft have been produced and the Light Sport version has improvements in various areas of design. These include a revised fuel system, upgraded landing gear and improved aerodynamics. Commonly used for training.

Facts and Figures

Max Take-Off Weight
600kg

Maximum Passengers
1

Max Altitude
15,000ft

Range
780nm

Cruise Speed
120 KTAS / 222 km/h

First Flew
March 1996

Did you know?

Despite its small size the Flight Design CTLS can fly from London to Frankfurt.

ICON A5

Standard

A lightweight, amphibious aircraft. You will be able to land on both land and water with this versatile aircraft. This plane is purely designed for fun and with the fantastic water dynamics already demonstrated by Microsoft, this kite should be a hit.

Facts and Figures

Max Take-Off Weight
686kg

Maximum Passengers
1

Max Altitude
15,000ft

Range
427nm

Cruise Speed
85 KTAS / 158 km/h

First Flew
15 July 2008

Did you know?

The A5 features a unique Angle of Attack indicator that simplifies flying and instantly informs the pilot how much more is possible to ask of the aircraft.

JMB Aircraft VL-3

Standard

This ultralight aircraft is also the world's fastest. You can cruise along at 241 km/h with you and one other passenger. With a decent range, the ultra light aircraft can take you on a range of exciting journeys through rainforests, deserts and beyond.

Facts and Figures

Max Take-Off Weight
600kg

Maximum Passengers
1

Max Altitude
13,000ft

Range
690nm

Cruise Speed
130 KTAS / 241 km/h

First Flew
28th April 2010

Did you know?

The aircraft itself weighs just 290KG.

Pipistrel Virus SW121

Premium Deluxe

The aircraft is the most advanced and affordable 2 seater aircraft that is certified by EASA to help train student pilots. It features dual glass displays, airbrakes and can also tow gliders if required. This is a fun and fast aircraft for those bush trips.

Facts and Figures

Max Take-Off Weight
760kg

Maximum Passengers
1

Max Altitude
16,000ft

Range
642nm

Cruise Speed
90 KTAS / 166 km/h

First Flew
10th August 1999

Did you know?

Over 1000 of these aircraft have been produced since 1999.

Robin CAP 10

Standard

This is one for the thrill-seekers. The Robin CAP 10 is an aerobatic aircraft produced until 2007. You and one other passenger can perform exciting maneuvers over your favourite cities at immense speeds. Take a spin in this varied aircraft.

Facts and Figures

Max Take-Off Weight
760kg

Maximum Passengers
1

Max Altitude
16,000ft

Range
650nm

Cruise Speed
135 KTAS / 250 km/h

First Flew
August 1968

Did you know?

The CAP 10 is a two-seater aerobatic aircraft constructed primarily out of wood with the later versions featuring the use of Carbon Fibre.

Robin DR400

Standard

Another option popular with private pilots, the DR400 has carved itself a nice little reputation due to its 'cranked wing' design and wooden frame making it easy to fly. The Robin DR400 is used often as an initial training plane, so it's great if you're new.

Facts and Figures

Max Take-Off Weight
1,100kg

Maximum Passengers
3-4

Max Altitude
14,000ft

Range
550nm

Cruise Speed
115 KTAS / 213 km/h

First Flew
February 1972

Did you know?

The aircraft owes its relativly high performance to the pronounced washout in the outer panels of the wing. Since they have a lower angle of attack to the airflow than the centre section, they create less drag in cruise flight.

Baron G58

Premium

This twin-engine propeller aircraft has a huge range and can carry 5 people at a decent speed. With nearly 2,000 made, the aircraft remains popular today with production still ongoing. The G58 features glass cockpit displays to help pilots.

Facts and Figures

Max Take-Off Weight
2,495kg

Maximum Passengers
5

Max Altitude
20,688ft

Range
1,480nm

Cruise Speed
202 KTAS / 374 km/h

First Flew
23rd June 1969

Did you know?

The G58 Baron lineage can be traced back to 1961 where it was popular with the United States Army. The G58 was introduced in 2005 and features the Garmin 1000 glass cockpit.

Bonanza G36

Standard

Introduced in 1945, the six-seater has been in production longer than any other aircraft in history. With this long record under its belt, the aircraft has seen use in civil and military roles. This is a great aircraft to fly if you're looking to land at remote strips.

Facts and Figures

Max Take-Off Weight
1,656kg

Maximum Passengers
5

Max Altitude
18,500ft

Range
920nm

Cruise Speed
176 KTAS / 326 km/h

First Flew
December 1945

Did you know?

The bonanza lineage is traceable all the way to back 1945 with the G36 (2006-Present) featuring a glass cockpit update.

Cessna 152

Standard

The Cessna 152 has, sadly, not seen the same success and longevity as it's older brother. With production ending in the mid 80's, it still sees use today as a trainer and personal aircraft. It's slow speed and high-wing make it a great aircraft for touring.

Facts and Figures

Max Take-Off Weight
758kg

Maximum Passengers
1

Max Altitude
14,700ft

Range
415nm

Cruise Speed
107 KTAS / 198 km/h

First Flew
January 1977

Did you know?

Despite ending production in 1985, the 152 is still in regular use with flight training schools.

Cessna 152 Aerobat

Premium

The Cessna 152 has, sadly, not seen the same success and longevity as it's older brother. With production ending in the mid 80's, it still sees use today as a trainer and personal aircraft. This particular variant has been designed specifically to perform exciting aerobatics.

Facts and Figures

Max Take-Off Weight
758kg

Maximum Passengers
1

Max Altitude
14,700ft

Range
415nm

Cruise Speed
107 KTAS / 198 km/h

First Flew
January 1977

Did you know?

The aerobatic version of the Cessna 152 has several modifications including: skylights, jettisonable doors, four-point harnesses and removable seat cushions to allow the wearing of parachutes.

PROPELLERS CONT...

Cessna 172 Skyhawk

Premium

This household name is the best selling aircraft ever. The numbers speak for themselves and it's no surprise that Microsoft has chosen to include the 172 in the new simulator. This version features the standard analogue gauges.

Facts and Figures

Max Take-Off Weight
1,157kg

Maximum Passengers
3

Max Altitude
14,000ft

Range
640nm

Cruise Speed
124 KTAS / 230 km/h

First Flew
12 June 1955

Did you know?

The 172 is the most successful mass-produced light aircraft in history.

Cessna 172 Skyhawk

G1000 Display

Standard

This household name is the best selling aircraft ever. The numbers speak for themselves and it's no surprise that Microsoft has chosen to include the 172 in the new simulator. Complete with the G1000 Avionics suite, you'll love this beautiful plane.

Facts and Figures

Max Take-Off Weight
1,157kg

Maximum Passengers
3

Max Altitude
14,000ft

Range
640nm

Cruise Speed
124 KTAS / 230 km/h

First Flew
12 June 1955

Did you know?

The 172 is the most successful mass-produced light aircraft in history. This version features the Garmin 1000 avionics suite.

Zlin Savage Cub

Standard

This aircraft is great for bush flying around the world. Jumping in, you will have a different perspective on the world until your aircraft has enough speed to bring the nose down a little. Sturdy gear and a short take off mean you can go anywhere in the world.

Facts and Figures

Max Take-Off Weight
560kg

Maximum Passengers
1

Max Altitude
14,400ft

Range
377nm

Cruise Speed
91 KTAS / 169 km/h

First Flew
July 2005

Did you know?

In the real-world, the Savage Cub can be configured for bush flying operation in less than three hours.

JETS

Zlin Shock Ultra

Premium Deluxe

The Zlin Shock Ultra is the lightest aircraft ever made by the company. The lightweight design and other design improvements mean you can truly explore anywhere in the world without limitation. See the sights very low and slow to take in scenic views.

Facts and Figures

Max Take-Off Weight
600kg

Maximum Passengers
1

Max Altitude
15,750ft

Range
323nm

Cruise Speed
78 KTAS / 145 km/h

First Flew
October 2018

Did you know?

The Shock Ultra is an ultralight weight version of the Savage Cub, featuring hyper STOL abilities which means it's able to become airborne well below 50 km/h.

Cessna Citation CJ4

Standard

Travel in style with this private jet aircraft. Designed to fly fast, high and comfortable, the Cessna Citation CJ4 is a remarkable aircraft that comes packed with great features that make it a joy to fly.

Facts and Figures

Max Take-Off Weight
7,761kg

Maximum Passengers
10

Max Altitude
45,000ft

Range
2,165nm

Cruise Speed
451 KTAS / Mach 0.77

First Flew
29th April 1991

Did you know?

The CJ4 can be comfortably flown and is certified for single pilot operation.

Citation Longitude

Premium Deluxe

This long-range business jet made its first flight in October 2016 and continues to impress to this day. The comfort, range and payload have been praised by pilots and passengers. It is the newest aircraft type in the sim, only reaching certification in 2019.

Facts and Figures

Max Take-Off Weight
17,917kg

Maximum Passengers
12

Max Altitude
45,000ft

Range
3,500nm

Cruise Speed
483 KTAS / Mach 0.79

First Flew
8 October 2016

Did you know?

In 2018 the corporate jet sales and charter company NetJets placed an order for 175 super-midsize Cessna Longitudes.

AIRLINERS

Airbus A320Neo

The latest from Toulouse, the A320 Neo is the latest addition to the A320 family with new and improved engines and sharklets as standard. Using modern Fly-By-Wire technology, this is the perfect aircraft to start your jet flying experience.

Facts and Figures

Max Take-Off Weight
79,000kg

Maximum Passengers
195

Max Altitude
39,800ft

Range
3,500nm

Cruise Speed
455 KTAS / Mach 0.78

First Flew
25th September 2014

Flying Tips

According to a survey undertaken by FPG Amentum in 2018, the NEO equipped A320s are 11-12% more fuel efficient than their original counterparts.

Boeing 747-8i

The queen of the skies has risen to aviation immortality and is, quite possibly, the most recognizable aircraft in the world. The 747-8i (intercontinental) is the most recent passenger variant in this line-up and sees service with a number of operators.

Facts and Figures

Max Take-Off Weight
447,400kg

Maximum Passengers
605

Max Altitude
43,100ft

Range
8,000nm

Cruise Speed
493 KTAS / Mach 0.86

First Flew
8th February 2010

Flying Tips

Powered by four GEnx-2B 787 Technology engines, the 747-8 can travel the length of three FIFA football pitches in one second.

Boeing 787-10

Boeing's latest long-haul jet is its most fuel efficient, quietest and most comfortable experience yet. It features advanced fly-by-wire, state of the art displays and other pilot-favourites to keep you occupied during the long hauls flown by the 787-10.

Facts and Figures

Max Take-Off Weight
254,000kg

Maximum Passengers
440

Max Altitude
41,100ft

Range
6,430nm

Cruise Speed
490 KTAS / Mach 0.85

First Flew
8 October 2016

Flying Tips

The 787 series is the worlds first commercial airliner to use composite materials as the primary material in the airframe.

TURBOPROPS

TBM 930

Standard

The TBM 930 is an upgraded TBM 900 with a Garmin G3000 touchscreen avionics suite. While the TBM sees most of its use in private and charter environments, the French Government also uses the TBM because of the versatility the aircraft offers.

Facts and Figures

Max Take-Off Weight
3,354kg

Maximum Passengers
6

Max Altitude
31,000ft

Range
1,730nm

Cruise Speed
330 KTAS / 611 km/h

First Flew
19th April 2016

Flying Tips

In the real-world, it would cost you over $4 million USD to purchase the TBM 930.

King Air 350i

Standard

The Beechcraft King Air 350i was originally produced in 2008 as an upgraded version of the original 300 series. The new edition of this twin-prop aircraft reduces noise levels and improves passenger comfort. The perfect aircraft for short-haul regional jumps.

Facts and Figures

Max Take-Off Weight
6,804kg

Maximum Passengers
9

Max Altitude
35,000ft

Range
1,806nm

Cruise Speed
312 KTAS / 578 km/h

First Flew
7th October 2008

Flying Tips

Since deliveries began in December 2009, 440 350i have been delivered to customers all around the world.

208B Grand Caravan

Standard

The Textron Aviation Cessna 208B Grand Caravan EX is another 'do-anything' aircraft. Whether you enjoy regional charter hops or bush flying in the Okavango Delta, this plane could prove to be your primary work-horse.

Facts and Figures

Max Take-Off Weight
3,629kg

Maximum Passengers
11

Max Altitude
25,000ft

Range
964nm

Cruise Speed
195 KTAS / 361 km/h

First Flew
9th December 1982

Flying Tips

The C208B was originally certified as a two-seater cargo aircraft before eventually being certified as an 11 seat passenger aircraft in 1989.

YOUR GUIDE TO
AIRPORTS

EXPLORE THE WORLD

The world is an expansive and exciting place to see. Beyond the technology, atmosphere and environment mentioned earlier in this guide, the airports are where you will likely spend most of your time.

Whilst all 37,000 airports are included with the simulator (all editions), between 30-40 hand-crafted airports have also been included, all of which provide a lot more detail and accuracy in comparison to the others.

In this guide, we have taken you to all of the hand-crafted airports included in the Standard Edition, to give you a detailed look at each of them. We have also highlighted some key information that will prove to be helpful to know.

Since this guide can be put onto your tablet, it's a great companion tool to help you learn about suggested routes, runway lengths and much more.

We imagine that most of you will try out your local airport first, but be sure to give those a little more unknown and unique a go too as they can be both fun and challenging.

Some Key Information

ILS Approach

Also known as an autoland, the instrument landing system is used by pilots primarily in low-visibility conditions as the radio waves guide the aircraft automatically to the runway. ILS capability is mostly found in jet aircraft.

Visual Approach

This means the pilot will use visual clues outside and their own judgement to approach the runway and land, without any instrument aids.

Runway Designations

This is the number of the runway itself. The number represents the heading direction the runway is facing using the first two digits. E.g. a runway facing south heading 182, would be known as runway 18. Sometimes there is a left, central or right runway, which is given a letter assignment afterwards. E.g. 18L, 18C or 18R.

Airport Elevation

The elevation of the highest point of any runway at an airport above the mean sea level. The higher it is, the thinner the air is so you may need to watch your airspeed.

Frequent Visitors

In this guide, frequent visitors highlights key, or frequent airlines that visit the airport to help inspire you with ideas on flights to simulate.

Suggested Routes

In this guide, suggested routes are there to help you plan flights between the hand-crafted airports featured in their respective simulator editions.

Note: Only the 30 'Standard Edition' airports feature in v1.0 of this guide. The remaining 10 will be included in a free update coming soon after release.

EUROPE

Exploring all corners of Europe will give you a taste of all kinds of exciting envrionments. Some of these airports are also some of the most challenging in the world.

KEY CITIES

With numerous countries in Europe, there are a range of key cities included with the simulator that are all unique and exciting in their own way. All worth exploring.

- Berlin
- London
- Madrid
- Barcelona
- Frankfurt

- Stockholm
- Edinburgh
- Lisbon
- Rome
- Pisa

Included In Standard

Included In Deluxe

Included In Premium Deluxe
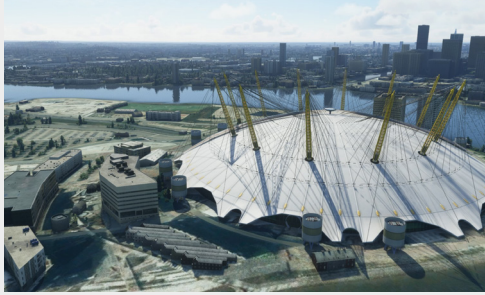
London (City)

The iconic city and capital of the United Kingdom, London is known for its historic buildings and sweeping river banks. Explore iconic landmarks such as the Houses of Parliament, Big Ben and the London Eye.

Paris Charles de Gaulle Airport

Charles de Gaulle is the second busiest airport in Europe after Heathrow and handles approximately 498,175 aircraft movements every year.

Innsbruck Airport

Renowned for its scenic, meticulously planned approaches through the Austrian Alps leave many in wonderment. Explore this exciting and thrilling airport in the simulator.

Rome (City)

The ancient city of Rome is renowned for its captivating history and is home to some of the most magnificent structures. Soar above the most famous building of the Roman Empire; The Colosseum.

Barcelona (City)

The striking scenic views this Mediterranean City has to offer are sure to keep you going back. Across the stunning skyline, you'll find everything from glistening waters along the coastline to the impressive Gothic Barcelona Cathedral.

PARIS CHARLES DE GAULLE

INTERNATIONAL AIRPORT

BRIEF BIO

Charles de Gaulle is the second busiest airport in Europe after Heathrow and handles approximately 498,175 aircraft movements every year. Located just 25km north east of Paris, it is the main hub for national carrier Air France. Currently CDG offers direct flights to the most countries in the world and serves the most diverse range of airlines. Taxi past Concorde (F-BVFF) as you head towards the distinctive spindle shaped Terminal 1.

> The city of Paris is just a stone throw away from Charles De Gaulle and is incredibly beautiful on approach. Be sure to take the time to fly over it.

World Map: 28.416467, -81.581182

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Cristiano Ronaldo Madeira (LPMA), Innsbruck (LOWI), Los Angeles (KLAX) John F. Kennedy (KJFK), Orlando International (KMCO), Haneda (RJTT)

Deluxe - Amsterdam Schiphol (EHAM), Cairo (HECA), Cape Town (FACT), Chicago O'Hare (KORD) Madrid-Barajas (LEMD)

Premium - Denver (KDEN), Dubai (OMDB), Frankfurt Main (EDDF), Heathrow (EGLL), San Francisco (KSFO)

INSPIRE ME

Key Information

Airport elevation: 392ft

Runway designations:
08R/26L - 8,858ft x 197ft
08L/26R - 13,589ft x 148ft
09R/27L - 13,780ft x 148ft
09L/27R - 8,858ft x 197ft

Approach types:
ILS, RNP, RNAV

Donegal Airport

EIDL / CFN

REGIONAL // IRELAND

Located on the picturesque north western coast of Ireland, just off Carrickfinn beach, Donegal Airport serves the local community with links to Dublin and Glasgow. Natural resources in the area mean that a lot of energy companies with offshore installations are based here and frequent helicopter flights serve their employees.

Airport elevation: 30ft
Runway designations: 03/21 - 4908ft x 98ft
Approach types: Visual, NDB, LOC

CHALLENGE YOURSELF
Being sat along the coast means you often get strong winds sweeping over the runway.

Courchevel Altiport

LFLJ / CVF

AIR FIELD // FRANCE

Perhaps one of the most famous airports in the world, Courchevel is most known for its 18.6% gradient slope and hair raising short runway. With no go around procedure there is clearly no margin for error so you must utilise all your skills to master this difficult approach. Best of luck!

Airport elevation: 6,583ft
Runway designations: 04/22 - 1,762ft
Approach types: Visual (No go-around procedure)

TOP TIP
Don't be intimidated by the gradient and use it to help you slow down/speed up.
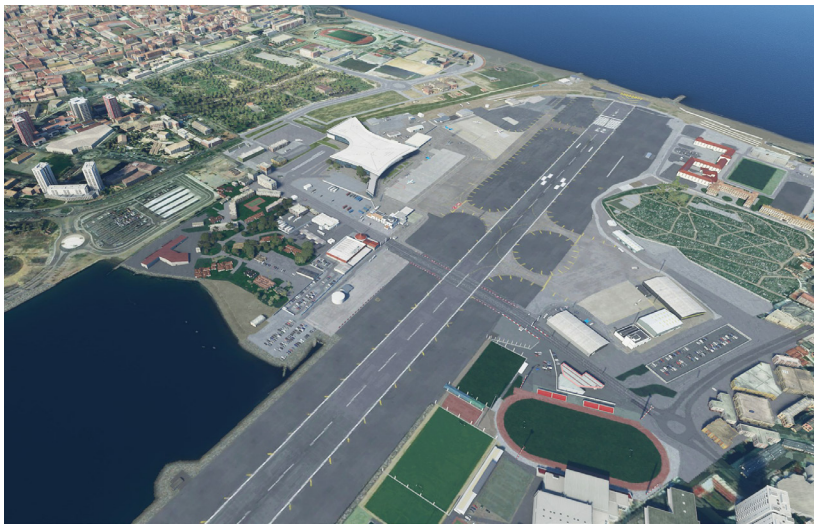
Gibraltar Airport

LXGB / GIB

REGIONAL // UK / SPAIN

Located at the pinch point between Europe and North Africa, Gibraltar originally served as a Ministry of Defence installation known as RAF Gibraltar. In later years, the runway remained the property of the MOD whilst the terminal facilities were civilian operated. It still remains this way today.

Airport elevation: 12ft
Runway designations: 09/27 - 5830ft x 148ft
Approach types: Visual, RNAV (RNP), SRA

GO AND SEE
The Rock of Gibraltar is home to natural beauty which provides a compelling reason to visit.

Madeira Airport

LPMA / FNC

REGIONAL // PORTUGAL

With a perilous circling approach and the fact the airport is partially built on stilts, Funchal features a challenging approach on the best of days. Coupled with a veil of low cloud and whipping Atlantic winds it's sure to really test your airmanship.

Airport elevation: 191ft
Runway designations: 05/23 - 9,124ft x 148ft
Approach types: Visual, RNP, VOR

TOP TIP
Configure your aircraft for landing with at least 30 miles left so have time to focus on flying.

INNSBRUCK

AIRPORT

BRIEF BIO

Renowned for its scenic, meticulously planned approaches through the Austrian Alps leave many in wonderment.

The airport is known for being a particularly challenging one for its restrictive nature. The mountainous valley that the airport sits in is prone to strong winds and currents with the mountains working in the winds favour intensifying the challenge for the pilots.

> Tucked within the Swiss Alps, Innsbruck is surrounded by huge mountains, but the cute town is distinctive as you fly over it on approach.

World Map: 47.257235, 11.437152

Key Information

Airport elevation: 1,907ft

Runway designations:

08/26 - 6,562ft x 148ft

The airport also features parallel glider strips north of the field.

Approach types:

RNP, LOC, Visual

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Cristiano Ronaldo Madeira (LPMA), Paris Charles de Gaulle (LFPG)

Deluxe - Madrid-Barajas (LEMD)

Premium - Madrid-Barajas (LEMD), Frankfurt Main (EDDF), Heathrow (EGLL)

INSPIRE ME
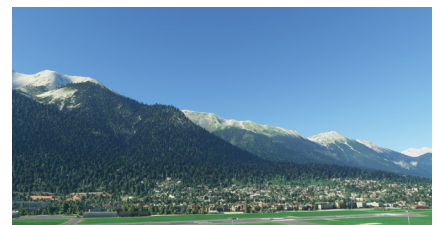
LONDON HEATHROW

AIRPORT

BRIEF BIO

Originally called London Airport until 1966, Heathrow is the busiest airport in Europe by passenger traffic. Serving the surrounding area and the City of London, Heathrow is one of six airports that encompass the city. It is both a popular entry and departure point for international travellers and cargo services for the United Kingdom.

With its stunning views of the nation's capital on westerly approaches to the 'string of pearls' that illuminate the night sky, Heathrow carries a certain romanticism both in and out of the sim.

Key Information

Airport elevation: 83ft

Runway designations:
09L/27R - 12,802ft x 164ft
09L/27L - 12,008ft x 164ft

Approach types:
ILS, LOC, RNAV (GNSS)

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Innsbruck (LOWI), John F. Kennedy (KJFK), Entebbe (HUEN), Los Angeles (KLAX), Paris Charles de Gaulle (LFPG), Mariscal Sucre International (SEQM), Rio de Janeiro (SBGL)

Deluxe - Amsterdam Schiphol (EHAM), Cairo International (HECA), Cape Town (FACT), Chicago O'Hare (KORD), Madrid-Barajas (LEMD)

Premium - Dubai International (OMDB), Frankfurt Main (EDDF), San Francisco (KSFO)

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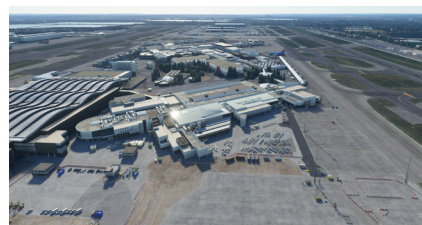
FRANKFURT MAIN

INTERNATIONAL AIRPORT

BRIEF BIO

Frankfurt am Main Airport, not to be confused with Frankfurt Hahn, is located 13km south west of Frankfurt. Frankfurt is one of the worlds leading financial centres and is the home of many financial institutions.

It comes as no surprise that connections spread far across the globe like an intricate spider's web. Frankfurt Main is also a significant cargo hub handling 2,231,348 metric tonnes of loaded and unloaded freight serving a plethora of cargo handlers.

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Los Angeles (KLAX), John F. Kennedy (KJFK), Orlando International (KMCO), Paris Charles de Gaulle (LFPG), Seattle-Tacoma (KSEA), Innsbruck (LOWI), Cristiano Ronaldo Madeira (LPMA)

Deluxe - Amsterdam Schiphol (EHAM), Cairo International (HECA), Chicago O'Hare (KORD), Cape Town (FACT)

Premium - Denver Airport (KDEN) Dubai International (OMDB), Heathrow (EGLL), San Francisco (KSFO)

Key Information

Airport elevation: 83ft

Runway designations:
07L/25R -   9,186ft x 148ft
07C/25C - 13,123ft x 197ft
07R/25L - 13,123ft x 148ft
18/36 - 13,123ft x 148ft

Approach types:
ILS, LOC, RNAV (GPS), GLS, VOR

INSPIRE ME

AMSTERDAM

AIRPORT

BRIEF BIO

Amsterdam Schiphol is one of Europe's busiest and most important airports. With flights to all corners of the world, it's a popular transit hub for the tens of millions of passengers and cargo that pass through its doors each year. Around 70+ airlines operate through Schiphol regularly.

Preferential Runway System: From 22:30-0630LT RWYs 04/22, 09/27, 18L & 36C are not available for departures. Assignment of RWYs in use is based on preferential runway system dictated by ATC.

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Los Angeles (KLAX), Cristiano Ronaldo Madeira (LPMA), Donegal Airport (EIDL), John F. Kennedy (KJFK), Mariscal Sucre International (SEQM)

Deluxe - Cairo International (HECA), Cape Town (FACT), Chicago O'Hare (KORD), Madrid-Barajas (LEMD)

Premium - Denver (KDEN), Dubai International (OMDB), Frankfurt Main (EDDF), Heathrow (EGLL), San Francisco (KSFO)

INSPIRE ME

Key Information

Airport elevation: 3ft

Runway designations:
18R/36L -   12,467ft x 197ft
18C/36C -   10,827ft x 148ft
18L/36R -   11,155ft x 148ft
04/22 -   6,627ft x 148ft
06/24 -   11,283ft x 148ft
09/27 -   11,329ft x 148ft

Approach types:
ILS, LOC, RNAV (GNSS)

MADRID–BARAJA

INTERNATIONAL AIRPORT

BRIEF BIO

Commonly known as Madrid-Barajas, it is Europe's sixth busiest airport, in terms of physical size, it is the second largest behind Paris Charles de Gaulle. Serving 61.8 million passengers in 2019 Barajas is a bustling hub for several airlines and a vital connection point for those travelling further afield.

Key Information

Airport elevation: 1,998ft

Runway designations:
18R/36L - 13,711ft x 197ft
18L/36R - 11,483ft x 197ft
14R32L - 13,084ft x 197ft
14L/32R - 11,483ft x 197ft

Approach types:
ILS, LOC, RNAV (GPS), GLS, VOR

INSPIRE ME

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Innsbruck (LOWI), John F. Kennedy (KJFK), Entebbe (HUEN), Los Angeles (KLAX), Paris Charles de Gaulle (LFPG), Mariscal Sucre International (SEQM)

Deluxe - Seattle-Tacoma (KSEA), Amsterdam Schiphol (EHAM), Cairo International (HECA), Chicago O'Hare (KORD)

Premium - Dubai International (OMDB), Frankfurt Main (EDDF), Heathrow (EGLL), San Francisco (KSFO)

NORTH AMERICA

North America provides a scenic and inspirational place for any pilot to visit. Here's an overview of the included hand-crafted airports.

KEY CITIES

From the west coast to the east, there are numerous cities to explore. From the towering skyscrapers of New York to the cultural city of New Orleans.

- Los Angeles
- New York City
- Miami
- Chicago
- Las Vegas

- Orlando
- San Francisco
- Denver
- New Orleans
- Memphis

Included In Standard

Included In Deluxe

Included In Premium Deluxe

Orlando International Airport

Initially McCoy Air Force Base, hence the IATA MCO, the airport became Orlando International in 1975 to serve the greater area of Orlando.

Los Angeles Airport

Los Angeles International is the largest and busiest airport on the west coast of the United States, serving as a major gateway to the west coast and a connection point for millions.

John F. Kennedy Airport

Originally built to relieve some of the pressure from LaGuardia Field, the airport was renamed in honour of President John F. Kennedy in 1963 and is now one of the busiest in the world.

Telluride Regional Airport

Situated high on the slopes of the Sneffels Range; an area of the San Juan Mountains, Telluride Regional is the highest commercial airport in North America.

Stewart Aerodrome

Stewart Aerodrome is located at the head of the Portland Canal near the Alaskan pan handle and sits adjacent to the small town of Stewart.

ORLANDO

INTERNATIONAL AIRPORT

BRIEF BIO

Initially McCoy Air Force Base, hence the IATA MCO, the airport became Orlando International in 1975 to serve the greater area of Orlando. Now it's very much the gateway to Walt Disney World and the heart of Florida. It should come as no surprise that most of its international travel is made up of leisure operators such as Virgin Atlantic, Norwegian, Sunwing and British Airways.

> After take off, head west and you'll eventually stumble upon Walt Disney World. See how many parks and attractions you can spot from the air.

World Map: 28.416467, -81.581182

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Aspen-Pitkin (KASE), Los Angeles (KLAX), John F. Kennedy (KJFK), Paris Charles de Gaulle (LFPG), Seattle-Tacoma (KSEA)

Deluxe - Telluride Regional (KTEX), Sedona (KSEZ), Rio de Janeiro (SBGL), Amsterdam Schiphol (EHAM), Cairo (HECA), Chicago O'Hare (KORD), Madrid-Barajas (LEMD)

Premium - Heathrow (EGLL), San Francisco (KSFO), Frankfurt Main (EDDF), Denver International (KDEN), Dubai (OMDB)

INSPIRE ME

Key Information

Airport elevation: 96ft

Runway designations:
18R/36L - 12,004ft x 200ft
18L/36R - 12,005ft x 200ft
17R/35L - 10,000ft x 150ft
17L/35R - 9,001ft x 150ft

Approach types:
ILS, RNAV (GPS), VOR

Aspen-Pitkin County Airport

KASE / ASE

REGIONAL // UNITED STAES

Nestled in the Sawatch Range of the Rocky Mountains, Aspen-Pitkin County Airport is infamous for its challenging terrain, harsh weather conditions and its heavy restrictions, but for most it's the gateway to winter sports.

Airport elevation: 7,837ft
Runway designations: 15/33 - 8,006ft x 98ft
Approach types: Visual, LOC, RNAV (GPS), VOR

GO AND SEE
The Mount of the Holy Cross stands at over 14,000ft and provides breathtaking views.

Nanwalek Airport

KEB

AIR FIELD // UNITED STAES

Nanwalek, formerly English Bay, is situated in the Cook Inlet and has a lone gravel runway perched on tidal flats. This airport features a difficult approach with terrain just 0.21nm from the end of runway 01 and the village of Nanwalek to the north off runway 19. Not for the faint hearted.

Airport elevation: 27ft
Runway designations: 01/19 - 850ft
Approach types: Visual, LOC, RNAV (GPS), VOR

CHALLENGE YOURSELF
Set the weather to be wet and windy. The low-visibility and cross wind will test your ability.

Sedona Airport

KSEZ / SDX

REGIONAL // UNITED STAES

Built in the heart of cowboy country in 1955 as merely a dusty red airstrip atop a mesa overlooking the city below, the airport has grown to become a popular tourist hotspot. The airport facilitates the arrival and deapature of small business jets and attracts many leisure flyers.

Airport elevation: 4,830ft
Runway designations: 03/21 - 5,132ft x 100ft
Approach types: GPS, Visual

GO AND SEE
Village of Oak Creek sits just south of the airport with great views of the mountains.

Telluride Airport

KTEX / TEX

AIR FIELD // UNITED STAES

Situated high on the slopes of the Sneffels Range; an area of the San Juan Mountains, Telluride Regional is the highest commercial airport in North America with an elevation above sea level of 9,070ft. Telluride is popular for its stunning vistas making it a hit for those seeking picturesque shots.

Airport elevation: 9,070ft
Runway designations: 09/27 - 7,111ft x 100ft
Approach types: LOC, RNAV (GPS)

QUICK TIP
Your engine's performance will be impacted by the high altitude so bear that in mind.

JOHN F KENNEDY

INTERNATIONAL AIRPORT

BRIEF BIO

Located on the north-eastern shores of Jamaica bay, Idlewild Airport was originally built to relieve some of the pressure from LaGuardia Field. In 1963 upon recommendation of the then Mayor Robert F. Wagner Jr, the airport was renamed in honour of the late President John F. Kennedy.

JFK Airport is now ranked as the busiest international passenger gateway into North America.

New York is one of 400 photogrammetry cities in the new flight simulator. You can see sights such as Central Park or the Empire State Building in high detail.

World Map: 40.749172, -73.985364

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Los Angeles (KLAX), Paris Charles de Gaulle (LFPG), Seattle-Tacoma (KSEA), Telluride (KTEX), Haneda (RJTT)

Deluxe - Amsterdam Schiphol (EHAM), Cairo (HECA), Cape Town (FACT), Madrid-Barajas (LEMD), Chicago O'Hare (KORD)

Premium - Denver (KDEN), Dubai (OMDB), Frankfurt Main (EDDF), Heathrow (EGLL), San Francisco (KSFO)

INSPIRE ME

Key Information

Airport elevation: 13ft

Runway designations:
13L/31R - 10,000ft x 200ft
13R/31L - 14,511ft x 200ft
22R/4L - 12,079ft x 200ft
22L/4R - 8,400ft x 200ft

Approach types:
ILS, RNAV (GPS & RNP), VOR, and Visual
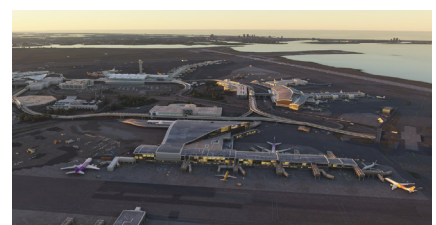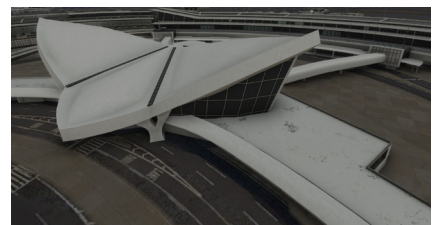
LOS ANGELES

INTERNATIONAL AIRPORT

BRIEF BIO

Los Angeles International is the largest and busiest airport on the west coast of the United States, serving as a major gateway to the west coast and a connection point for the millions of connecting passengers and cargo that pass through its doors. LAX World Airport truly is a behemoth, offering ultimate versatility with an almost endless résumé of serving airlines and operators.

Go and find the famous Hollywood Sign on Mount Lee. The iconic structure overlooks the bustling city. The large lettering makes it easy to spot.

World Map: 34.135323, -118.321033

Key Information

Airport elevation: 128ft

Runway designations:
06L/24R - 8,926ft x 150ft
06R/24L - 10,885ft x 150ft
07L/25R - 12,923ft x 150ft
07R/25L - 11,095ft x 200ft

Approach types:
ILS, RNAV (GPS & RNP), LOC

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Aspen-Pitkin (KASE), Entebbe International (HUEN), John F Kennedy International (KJFK), Orlando International (KMCO), Paris Charles de Gaulle (LFPG)

Deluxe - Haneda (RJTT), Toncontin (MHTG), Amsterdam Schiphol (EHAM), Cairo International (HECA), Madrid-Barajas (LEMD), Chicago O'Hare (KORD)

Premium - Dubai (OMDB), Frankfurt (EDDF), Heathrow (EGLL), San Francisco (KSFO)

INSPIRE ME

Preferential Runway System at Los Angeles

Los Angeles Airport has adopted a "Preferential Runway Use Policy" to help minimise noise around the airport for residents.

During daytime hours, 06:30 - 00:00, the airport uses the Westerly Operations plan, with departing aircraft taking off to the west and arriving aircraft approaching from the east.

During 00:00 - 06:30, the air traffic pattern becomes Over Ocean Operations, with departing aircraft taking off to the west and arriving aircraft also approaching from the west.

Daytime Westerly Operations
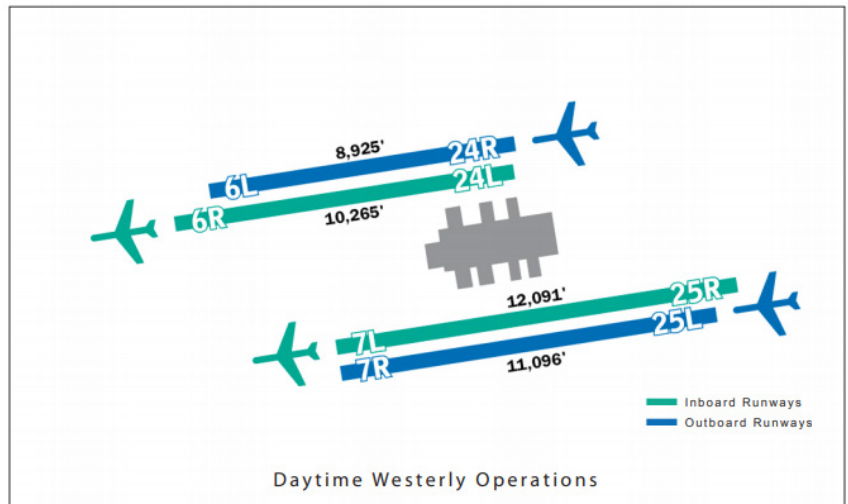
Los Angeles International Airport – Preferential Runway Use Policy
Figure 4
Preferential Runway Use at LAX

Over-Ocean Operations
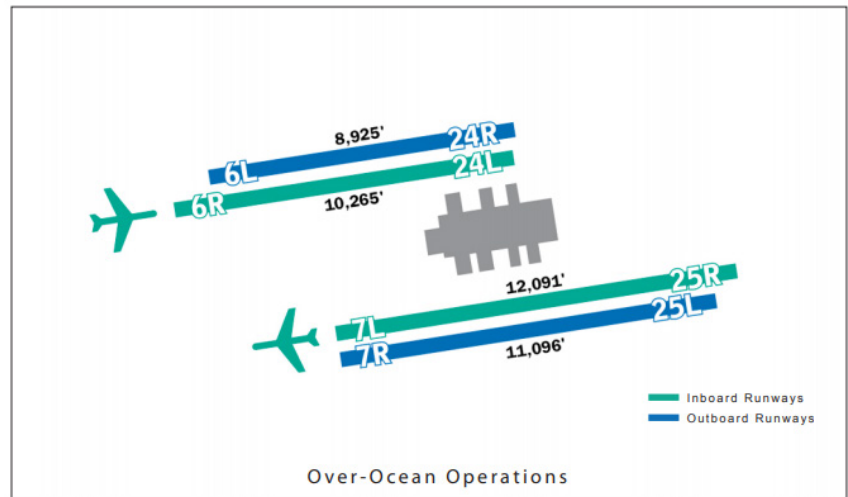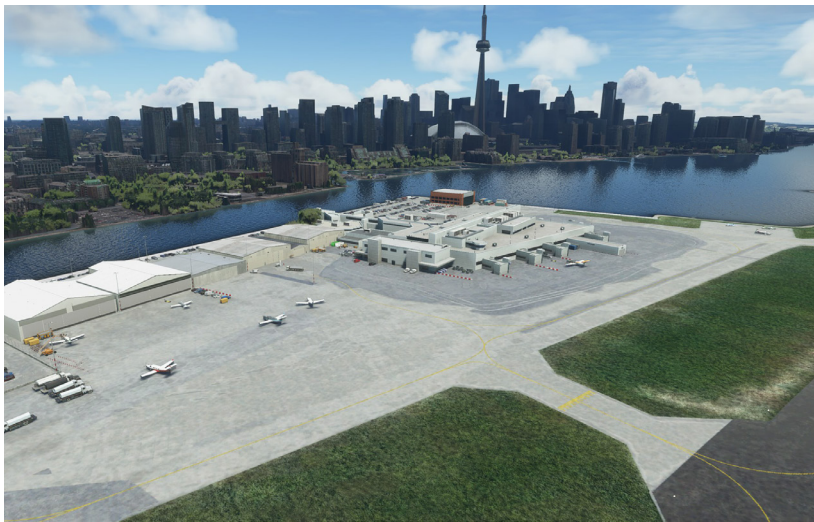
Billy Bishop Toronto City

CYTZ / YTZ

REGIONAL // CANADA

Billy Bishop is a conveniently placed small airport built upon the Toronto Islands on Lake Ontario. It is primarily used for civil aviation, air ambulances and regional airlines providing shuttle services to key cities.

Airport elevation: 252ft
Runway designations: 08/26 - 3,998 x 150ft | 06/24 - 2,460 x 100ft
Approach types: ILS, RNAV (GNSS & RNP), LOC

GO AND SEE
Fly south from Billy Bishop tracking the Niagara River to experience the beauty of Niagara falls.

Stewart Aerodrome

CZST / ZST

AIR FIELD // CANADA

Stewart Aerodrome is located at the head of the Portland Canal near the Alaskan pan handle and sits adjacent to the small town of Stewart. The town served as a port for Canadian mining activity after the discovery of Silver in the Salmon river basin. The Aerodrome lacks basic facilities and operates ad-hoc services.

Airport elevation: 24ft
Runway designations: 18/36 - 3917 x 50ft
Approach types: Visual

QUICK TIP
Careful of the turbulence caused by the mountains on departure as they will rock you.

SEATTLE-TACOMA

INTERNATIONAL AIRPORT

BRIEF BIO

Located between the cities of Seattle and Tacoma, the airport was built in 1944 after the US military took control of Boeing Field. The airport is the largest in the pacific northwest region and it serves many airlines across the world featuring a large cargo hub. On a clear day you'll be able to see Mt Rainier as you depart south. Alternatively, take a scenic flight north, tracking the Duwamish Waterway into Elliot Bay, flying along the coast you'll see Pike Place Market.

Seattle is another of the included photogrammetry cities meaning buildings and structures will look lifelike. Go and find the iconic Space Needle.

World Map: 47.621027, -122.349664

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Aspen-Pitkin (KASE), Los Angeles (KLAX), John F. Kennedy (KJFK), Orlando International (KMCO), Paris Charles de Gaulle (LFPG), Haneda (RJTT)

Deluxe - Telluride (KTEX), Amsterdam Schiphol (EHAM), Chicago O'Hare (KORD), Madrid-Barajas (LEMD)

Premium - Denver (KDEN), Dubai International (OMDB), Frankfurt Main (EDDF), Heathrow (EGLL), San Francisco (KSFO)

INSPIRE ME

Key Information

Airport elevation: 432ft

Runway designations:
16R/34L - 8,500ft x 150ft
16C/34C - 9,426ft x 150ft
16L/34R - 11,900ft x 150ft

Approach types:
ILS, LOC, RNAV (GPS & RNP), Visual

DENVER

INTERNATIONAL AIRPORT

BRIEF BIO

Located north east of Denver, Denver International is home to the longest public use runway in North America. Its unmistakeable white peaked roof designed to resemble snow capped mountains and pay homage to the Native Americans whose teepees were located throughout the Great Plains.

Key Information

Airport elevation: 5,434ft

Runway designations:
16R/34L - 16,000ft x 200ft
16L/34R - 12,000ft x 150ft
17R/35L - 12,000ft x 150ft
17L/35R - 12,000ft x 150ft
07/25 - 12,000ft x 150ft
08/26 - 12,000ft x 150ft

Approach types:
ILS, LOC, RNAV (GPS & RNP)RNP), Visual

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Los Angeles (KLAX), John F. Kennedy (KJFK), Orlando International (KMCO), Mariscal Sucre International (SEQM), Rio de Janeiro (SBGL)

Deluxe - Haneda (RJTT) Amsterdam Schiphol (EHAM), Chicago O'Hare (KORD), Madrid-Barajas (LEMD)

Premium - Dubai International (OMDB), Frankfurt Main (EDDF), Heathrow (EGLL) San Francisco (KSFO)

INSPIRE ME

CHICAGO O'HARE

INTERNATIONAL AIRPORT

BRIEF BIO

Located just under 27km northwest of the Windy City, O'Hare held the title for being the first world's busiest airport, a title it defended from 1963-1998. To give you an idea of scale O'Hare handles on average 2,520 aircraft movements per day, partly due to its high volume of regional airlines that permit travel to almost every part of the united states.

Chicago O'Hare is currently undergoing redevelopment and expansion to enable same terminal transfers between domestic and international flights, faster connection and improved facilities for both passengers and staff.

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Aspen-Pitkin (KASE), Los Angeles (KLAX), John F. Kennedy (KJFK), Orlando International (KMCO), Paris Charles de Gaulle (LFPG), Sedona Regional (KSEZ)

Deluxe - Telluride (KTEX), Haneda (RJTT), Amsterdam Schiphol (EHAM), Cairo International (HECA), Madrid-Barajas (LEMD)

Premium - Frankfurt Main (EDDF), Heathrow (EGLL), San Francisco (KSFO), Denver Airport (KDEN)

INSPIRE ME

Key Information

Airport elevation: 672ft

Runway designations:
09L/27R - 7,500ft x 150ft
09R/27L - 7,967ft x 150ft
10L/28R - 13,000ft x 150ft
10C/28C - 10,800ft x 200ft
10R/28L - 7,500ft x 150ft
04L/22R - 7,500ft x 150ft
04R/22L - 8,075ft x 150ft

Approach types:

ILS, LOC, RNAV (GPS & RNP)
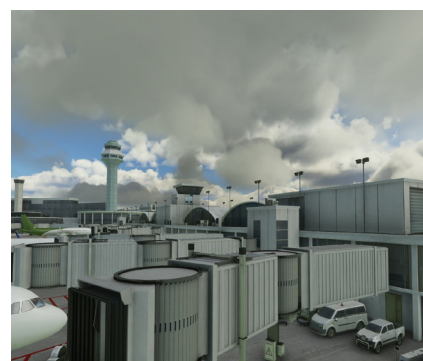
SAN FRANCISCO

INTERNATIONAL AIRPORT

BRIEF BIO

The City by The Bay - It can be none other than San Francisco. 21km South of downtown San Francisco you'll find San Francisco International. It is the largest airport in the Bay Area and protrudes into the San Francisco Bay. The area boasts a plethora of sights to take in.

Why not take off flying north up the Bay, over the San Francisco Oakland Bay Bridge past Treasure Island, towards Alcatraz then tracking to the Iconic Golden Gate Bridge before looping back towards Coit Tower, tracking the piers along the coast before heading back to SFO.

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - John F. Kennedy (KJFK), Aspen-Pitkin (KASE), Los Angeles (KLAX), Orlando International (KMCO), Paris Charles de Gaulle (LFPG)

Deluxe - Amsterdam Schiphol (EHAM), Chicago O'Hare (KORD), Madrid-Barajas (LEMD), Cairo International (HECA)

Premium - Dubai International (OMDB), Frankfurt Main (EDDF), Heathrow (EGLL)

Key Information

Airport elevation: 13ft

Runway designations:
01L/19R - 7,650ft x 200ft
01R/19L - 8,650ft x 200ft
10L/28R - 11,870ft x 200ft
10R/28L - 11,381ft x 200ft

Approach types:
ILS, LOC, RNAV (GPS & RNP), LDA, Visual

INSPIRE ME

ASIA / OCEANIA

A region full of lush tropical vegetation, busy urban cities and a wealth of opportunity. Asia and Oceania is often forgotten about, but can provide a truly wonderful flight simulation experience.

KEY CITIES

Explore some of the richest cities in Asia or fly over up and coming locations within the world of the new flight simulator. Here are some of our top picks.

- Dubai
- Hong Kong
- Tokyo
- Mumbai
- Seoul
- Singapore
- Jakarta
- Bangkok
- Sydney
- Wellington

Included In Standard

Included In Premium Deluxe

Dubai (City)

The most populated city in the United Arab Emirates hosts numerous sky scrapers, businesses and a range of luxury hotels and apartments. This makes it an interesting place to do some scenic flying.
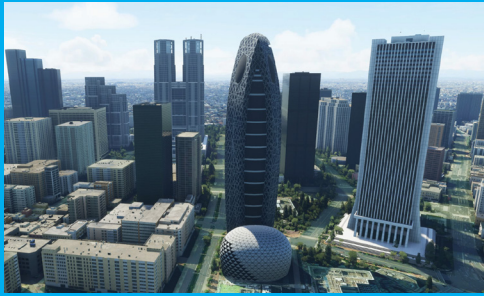
Tokyo (City)

Tokyo is home to numerous tech companies operating all over the world and houses a hugely dense population in tall high-rise buildings. Numerous key landmarks and beautiful parks give you plenty to see from the air.

Paro Airport

Only 24 pilots in the whole world are able to land into Paro Airport, take on the challenge in your virtual environment to see how well you can perform the landing through the steep valleys.

Haneda Airport

One of the busiest airports in Japan both for domestic and international arrivals. Take travellers to far away destinations thanks to the variety of runways available at Haneda Airport.

Sydney (City)

Visit Sydney like never before. Take a tour along Sydney Harbour and see the famous Opera House or land a sea plane straight into the docks of this beautiful city. Make sure you visit at night for great views.

HANEDA

INTERNATIONAL AIRPORT

BRIEF BIO

Located on the west side of Tokyo Bay, Haneda is one of two primary airports serving the city of Tokyo. Whilst Narita is built on the outskirts of the city, Haneda is very much an unmistakable part of the city skyline. Visitors from all around the world visit Haneda Airport because of the easy access to and from Tokyo via the local transport links. This busy hub is always thriving with traffic and a great location for you to see in Asia.

> Being so close to Tokyo means you will see numerous high-rise buildings, but none stick out quite as much as the Tokyo Skytree standing at 2,080ft.

World Map: 35.710742, 139.811387

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Los Angeles (KLAX), John F. Kennedy (KJFK), Orlando International (KMCO), Paris Charles de Gaulle (LFPG), Sydney Airport (YSSY), Seattle-Tacoma (KSEA)

Deluxe - Amsterdam Schiphol (EHAM), Chicago O'Hare (KORD), Madrid-Barajas (LEMD)

Premium - Dubai International (OMDB), San Francisco (KSFO), Heathrow (EGLL)

Key Information

Airport elevation: 21ft

Runway designations:
04/22 - 8,202ft x 197ft
05/23 - 8,202ft x 197ft
16R/34L - 9,843ft x 197ft
16L/34R - 11,024ft x 197ft

Approach types:
ILS, LOC, RNAV (GNSS & RNP), LDA and Visual

INSPIRE ME

Tenzing-Hillary Airport

VNLK / LUA

AIR FIELD // NEPAL

Known for being the gateway to Everest, the airport attracts visitors from all over the world who connect via Kathmandu. Lukla was rated the world's most dangerous airport in the world thanks to its unforgivable terrain, high altitude and ever-changing weather systems.

Airport elevation: 9,337ft
Runway designations: 06/24 - 1,728ft x 98ft
Approach types: Visual

QUICK TIP
You may have to apply more power for longer due to the high-altitude you will land at.

Queenstown Airport

NZQN / ZQN

REGIONAL // NEW ZEALAND

In 2015 the airport was voted the 'Worlds Most Scenic Airport Landing'. With its crested peaks jutting skywards, the many mountains in the area provide a clear obstacle to aviators but alas, with some fancy sky work you can conquer this stunning approach.

Airport elevation: 1,171ft
Runway designations: 05/23 - 5,830ft x 148ft | 14/32 - 2,362ft x 131ft
Approach types: RNAV (GNSS & RNP), VOR, Visual

CHALLENGE YOURSELF
Crank up the winds and feel the turbulence come from the nearby mountains on approach.

Paro International Airport

VQPR / PBH

REGIONAL // BHUTAN

Perhaps one of the most restrictive and revered airports in the world. Perilously located at the bottom of a deep valley on the banks of the Paro Chhu river shouldered by steep mountains as high as 18,000ft, Paro Airport is only accessible in visual conditions.

Airport elevation: 7,364ft
Runway designations: 15/33 - 7,431ft x 98ft
Approach types: Visual, RNAV (RNP)

DID YOU KNOW?
Amazingly less than 24 pilots are certified to operate in and out of Paro.

BUGALAGA AIRSTRIP

WX53

AIRFIELD // INDONESIA

Located in the heart of Bugalaga, this small airstrip poses multiple challenges to pilots. Not only is the terrain very uneven, but the tall surrounding trees, short runway and nearby buildings mean you have to be incredibly skilled to make this landing.

Airport elevation: 6,233ft
Runway designations: 06/24 - 478ft x 75ft
Approach types: Visual

TOP TIP
Be mindful of your altitude and power settings when on the final approach.

SYDNEY
INTERNATIONAL AIRPORT

BRIEF BIO

Located on the northern banks of Botany Bay, Sydney Airport started life as a Bullock paddock before being acquired by Nigel Love, a first world war fighter pilot. Love was interested in establishing an aircraft manufacturing facility, a first for the country. Eventually the small strip grew to become the busiest airport in Australia. In 2018, Sydney Airport was rated the 20th best airport in the world at the Skytrax World Airport Awards.

> With the city of Sydney located just 12km north of the airport it's possible to see stunning views of Sydney Harbour and the famous Opera House.

World Map: -33.857616, 151.214907

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Los Angeles (KLAX, John F. Kennedy (KJFK), Paris Charles de Gaulle (LFPG*), Orlando International (KMCO), Queenstown (NZQN), Haneda (RJTT)

Deluxe - Amsterdam Schiphol (EHAM), Cape Town (FACT), Chicago O'Hare (KORD)

Premium - Cape Town (FACT), Chicago O'Hare (KORD), Dubai (OMDB, Heathrow (EGLL), San Francisco (KSFO)

INSPIRE ME

Key Information

Airport elevation: 21ft

Runway designations:

16R/34L - 12,999ft x 148ft

16L/34R -   7,999ft x 148ft

07/25 -   8,301ft x 148ft

Approach types:

ILS, GLS, RNAV (GNSS), LOC

DUBAI

INTERNATIONAL AIRPORT

BRIEF BIO

Dubai International Airport needs very little introduction. This industry giant handles around 86 million passengers a year with Emirates accounting for 51% of all passenger movement. Situated just under 5km east of the City of Dubai, it is an incredibly strategic location particularly for flights requiring a stopover with more than 63% of their total annual passenger count made up of transit passengers joining connecting flights.

Key Information

Airport elevation: 62ft

Runway designations:
12L/30R - 14,275ft x 197ft
12R/30L - 14,590ft x 197ft

Approach types:
ILS, RNAV (GNSS)

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Los Angeles (KLAX), John F. Kennedy (KJFK), Orlando International (KMCO), Paris Charles de Gaulle (LFPG)

Deluxe - Cairo International (HECA), Cape Town (FACT), Chicago O'Hare (KORD), Madrid-Barajas (LEMD)

Premium - Madrid-Barajas (LEMD), Frankfurt Main (EDDF), Heathrow (EGLL), San Francisco (KSFO), Denver Airport (KDEN)

INSPIRE ME
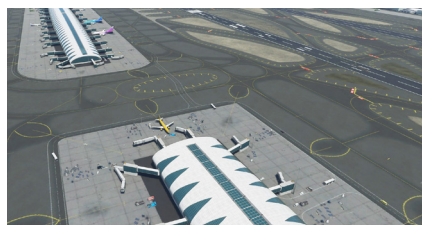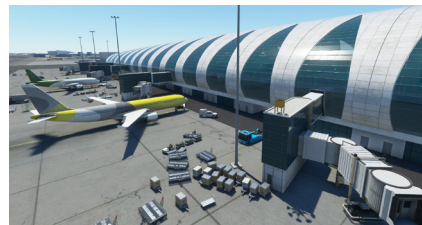
AFRICA

Known as the Motherland, Africa has a nice variety of exciting destinations. From desert-filled cities to tropical jungles, Africa offers bush fliers the perfect place to explore.

KEY CITIES

We love flying around Africa thanks to the varied locations throughout the large continent. Here is a selection of cities you should go and explore in the simulator.

- Cape Town
- Lagos
- Cairo
- Kinshasa
- Nairobi

- Johannesburg
- Cassablanca
- Morocco
- Durban
- Hurghada

Included In Standard

Included In Deluxe

Cairo (The Great Pyramids)

See one of the Ancient Wonders of World up close from the comfort of your own home. Taking off from Cario to see these fascinating structures is breathtaking and simply must not be missed.

Cape Town (City)

This South African city has great vistas thanks to nearby mountain ranges, numerous settlements and a variety of ports. Once the sun sets, enjoy the twilight glisten across the ocean.

Entebbe International Airport

Located on the northern shores of Lake Victoria, Entebbe international is the only international airport in Uganda, with flights across the continent and beyond.

African Plains

Explore the plains of Africa where wildlife congregate in the most diverse and enormous numbers. Be sure to check out the interrupted expansiveness of the Serengeti: Ol Doinyo Lengai is the only active volcano in the area.

Casablanca

Casablanca serves as the largest city in all of Morocco. The coastal city is an economic power-house with a range of exciting buildings, tower blocks and other points of interest to find amongst the various souks.

ENTEBBE
INTERNATIONAL AIRPORT

BRIEF BIO

Located on the northern shores of Lake Victoria, Entebbe international is the only international airport in Uganda, with flights across the continent and beyond to the likes of Istanbul, Amsterdam, Brussels and Dubai this airport offers true versatility.

So grab your long-haul plane and set-off on a new journey.

> Queen Elizabeth National Park is home to a huge range of wildlife that may be out and about exploring in your simulator. Fly low and slow to see them!

World Map: -0.161432, 30.019181

Key Information

Airport elevation: 3,784ft

Runway designations:
17/35 - 12,001 x 148ft

Approach types:
ILS, RNAV (GNSS), VOR

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Paris Charles de Gaulle (LFPG)

Deluxe - Amsterdam Schiphol (EHAM), Cairo International (HECA), Cape Town International (FACT), Madrid-Barajas (LEMD)

Premium - Dubai International (OMDB), Frankfurt Main (EDDF), Heathrow (EGLL)

INSPIRE ME
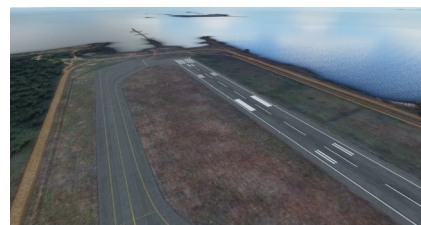
The Great Pyramid of Giza

LANDMARK // EYGPT

The oldest of the Seven Wonders of the Ancient World, The Great Pyramid of Giza sits high and mighty in the middle of the desert. Soar closer than any tourist can from the comfort of your own home. Not only can you see the pyramids, but also The Great Sphinx of Giza.

Landmark Height: 66ft

Nearby City: Cairo

Location on World Map: 29.980201, 31.133987

DID YOU KNOW?
It is thought that over 2 million bricks were used to construct The Great Pyramid of Giza.

Table Mountain

LOCATION // SOUTH AFRICA

Table Mountain is a flat-topped mountain forming a prominent landmark overlooking the city of Cape Town in South Africa. It is a significant tourist attraction, with many visitors using the cableway or hiking to the top. Its heighest point is just over 3,500ft above sea level and has a cable car taking visitors to the peak on a regular basis.

Elevation: 3,558ft

Nearest City: Cape Town

Location on World Map: -33.957314, 18.403108

DID YOU KNOW?
Table Mountain is one of the New Seven Wonders of the world.

CAIRO

INTERNATIONAL AIRPORT

BRIEF BIO

Cairo International is the busiest airport in Egypt, located just 20km northeast of the City of Cairo and around 41km from The Great Pyramids of Giza, it's a popular hub for both the residents of Cairo and visitors to one of the 7 wonders of the world. Originally built as Bayn Field Air Force Base which served allied forces during the war, this was a strategically important location providing vital air links to Benghazi, Algiers and Dakar as well as further east to Jeddah and Karachi.

Key Information

Airport elevation: 467ft

Runway designations:
05L/23R - 10,830ft x 197ft
05C/23C - 13,120ft x 197ft
05R/23L - 13,123ft x 197ft

Approach types:
ILS, LOC, VOR, RNP

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Los Angeles (KLAX), John F. Kennedy (KJFK), Paris Charles de Gaulle (LFPG), Haneda (RJTT)

Deluxe - Amsterdam Schiphol (EHAM), Cape Town (FACT), Chicago O'Hare (KORD), Madrid-Barajas (LEMD)

Premium - Dubai International (OMDB), Frankfurt Main (EDDF), Heathrow (EGLL)

INSPIRE ME

CAPE TOWN

INTERNATIONAL AIRPORT

BRIEF BIO

Located right in the centre of Cape Town, Cape Town International is the fourth busiest airport on the African continent. Annually the airport serves just under 11 million passengers a year. With its stunning views of Table Mountain as you approach, it's sure to delight. Popular for its diverse attractions, tourists flock to Cape Town each year to experience all that it has to offer. From the Winelands to Boulder beach its appeal is obvious.

Key Information

Airport elevation: 151ft

Runway designations:
01/19 - 10,502 x 200ft
16/34 - 5,581ft x 151ft

Approach types:
ILS, RNAV (GNSS & RNP), VOR

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Entebbe (HUEN), John F. Kennedy (KJFK), Paris Charles de Gaulle (LFPG), Rio de Janeiro (SBGL), Haneda (RJTT)

Deluxe - Amsterdam Schiphol (EHAM), Cairo International (HECA), Madrid-Barajas (LEMD)

Premium - Dubai International (OMDB), Frankfurt Main (EDDF), Heathrow (EGLL)

INSPIRE ME

CENTRAL & SOUTH AMERICA

There are plenty of locations across Central and South America ready for you to explore. From the lush beaches of the Caribbean to the extravagant Andes in South America, you are sure to have a varied flying experience.

KEY CITIES

The huge variation in terrain makes flying in both Central and South America thrilling and exciting. Here are some key cities to refuel at before you continue your journey.

- Rio de Janeiro
- Buenos Aires
- Santiago
- Quito
- Salvador

- Panama City
- Antigua
- Mexico City
- San Miguel
- Lima

Included In Standard

Rio de Janeiro Airport

Over time new facilities were added including a new terminal and runway. Today it is the fourth busiest airport in Brazil by passenger traffic and features a beautiful approach.

Gustaf III Airport

Known more famously as St. Barts, this tropical island paradise is located 28km south east of Sint Maarten and features a spine tingling drop over the brow of a hill before touching down on the extremely short runway,

Juancho Yrausquin Airport

Saba is located on the Dutch Caribbean island of Saba, some 52km south of Sint Maarten. It is serviced by Windward Islands Airways (Winair) who have operated to and from the island since 1963.

Mariscal Sucre International Airport

Officially opened on the 20th of February 2013 to replace the old, dangerous Quito Airport located in the middle of the city, the airport is the only 5-star airport in the western hemisphere according to Skytrax.

Toncontin International Airport

Its geographical location makes it necessary for approaches from the south to follow a very strict descent schedule with several low turns near terrain to align with the runway.

Toncontin Airport

MHTG / TGU

REGIONAL // HONDURAS

Its geographical location makes it necessary for approaches from the south to follow a very strict descent schedule with several low turns near terrain to align with the runway.

Airport elevation: 3,307ft
Runway designations: 02/20 - 6,631ft x 148ft
Approach types: RNAV (RNP), VOR

DID YOU KNOW?
The southern end of the runway received a 984ft extension to make landing easier.
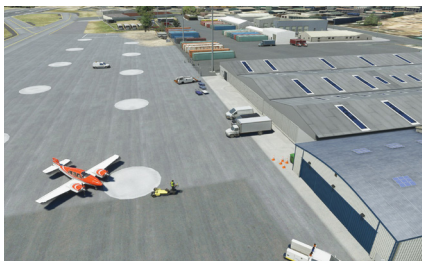
Sirena Aerodrome

MRSN

AIR FIELD // COSTA RICA

This grass strip airport does not currently have any scheduled services. It is commonly used by charter services on an ad-hoc basis to bring tourists to this area of Costa Rica.

Airport elevation: 24ft
Runway designations: 03/21 - 2383 x 50ft
Approach types: Visual

QUICK TIP
Finding the airport is hard because of the surrounding forest so using a marker may help.

RIO DE JANEIRO

INTERNATIONAL AIRPORT

BRIEF BIO

Like most airports, Galeão started out as a military Air Force Base. Post war, Santos Dumont Airport was unable to handle the increasing demand from both airlines and passengers given its tricky location, so it was decided to expand Galeão. Over time new facilities were added including a new terminal and runway. Today it is the fourth busiest airport in Brazil by passenger traffic and features a beautiful approach.

> Taking off from Rio De Janeiro-Antonio Carlos Airport and heading south-west will take you towards one of the Wonders of the World: Christ the Reedemer.

World Map: -22.949999, -43.210359

Key Information

Airport elevation: 28ft

Runway designations:
10/28 - 13,123ft x 148ft
15/33 - 10,433ft x 154ft

Approach types:
ILS, LOC, RNAV (GNSS), NDB, VOR, Visual

FREQUENT VISITORS

CITY PAIR SUGGESTIONS

Standard - Los Angeles (KLAX), John F.Kennedy (KJFK), Orlando International (KMCO), Paris Charles de Gaulle (LFPG), Mariscal Sucre International (SEQM), Toncontin (MHTG)

Deluxe - Amsterdam Schiphol (EHAM), Chicago O'Hare (KORD), Madrid-Barajas (LEMD)

Premium - Denver (KDEN), Dubai (OMDB), Heathrow (EGLL), Frankfurt Main (EDDF), San Francisco (KSFO)

INSPIRE ME

Mariscal Sucre Airport

SEQM / UIO

INTERNATIONAL // ECUADOR

Officially opened on the 20th of February 2013 to replace the old, dangerous Quito Airport located in the middle of the city, the airport is the only 5-star airport in the western hemisphere according to Skytrax.

Airport elevation: 7,910ft
Runway designations: 18/36 - 13,445ft x 148ft
Approach types: ILS, LOC, RNAV (RNP), VOR

QUICK TIP
You will use a lot of the long runway because of the humid weather and high-altitude.

Chagual Airport

SPGL

AIR FIELD // PERU

Chagual is a very small airport serving the local community and town of Chagual. Located in a deep canyon on the banks of the Marañón River, flanked by dangerous terrain, this airport is sure to challenge your flying ability.

Airport elevation: 3,967ft
Runway designations: 14/32 - 3,953ft x 60ft
Approach types: Visual

GO AND SEE
Travel south-east and you'll eventually find the stunning waters of Laguna Pias.

Gustaf III Airport

TFFJ / SBH

REGIONAL // ST BARTS

Known more famously as St. Barts, this tropical island paradise is located 28km south east of Sint Maarten and features a spine tingling drop over the brow of a hill before touching down on the extremely short runway, don't think just because you've touched down the ride is over, you've still got to stop.

Airport elevation: 48ft
Runway designations: 10/28 - 2,119ft x 59ft
Approach types: Visual

QUICK TIP
You can only take off on runway 10. Taking off from runway 28 is prohibited in real-life.
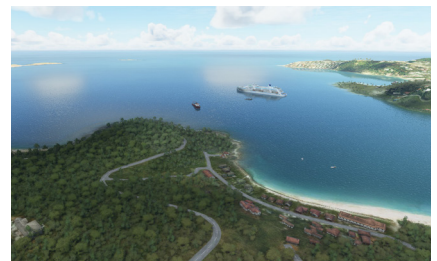
Juancho E. Yrausquin Airport

TNCS / SAB

REGIONAL // SABA

Saba is located on the Dutch Caribbean island of Saba, some 52km south of Sint Maarten. It is serviced by Windward Islands Airways (Winair) who have operated to and from the island since 1963 providing vital air links to the local community and further afield.

Airport elevation: 138ft
Runway designations: 12/30 - 994ft (12) 1312ft (30) x 48ft
Approach types: Visual

DID YOU KNOW?
The airport is widely known for having the shortest commercial runway in the world

TRAINING FLIGHTS

HELPING YOU TO SUCCEED YOUR INITIAL TRAINING FLIGHTS

Now that you have an understanding of the simulator, the aircraft, airports and other functionality, it is time to step into your first training sessions. With the new simulator, your initial training will comprise of eight detailed tutorial sessions. In each of the eight training lessons, your captain will brief you, provide you with objectives and provide support all along the way. You and your captain will conduct all of your flights from Sedona Airport in the Cessna 152 and you'll have all the help you need to: take off, fly a circuit, navigate and, of course, land. In total, the initial eight training sessions will take you two hours to complete. You can jump in at any time and even repeat those that you want a bit more time with. So buckle up and get ready to take to the skies on your brand new adventure.

1 - BASIC CONTROLS AND CAMERAS

Training Session Duration: 08 Minutes

Key Learnings:

·   Use the camera control system.

·   Pitch and roll the aircraft using your control set-up.

·   Use the rudder to yaw the aircraft safely.

·   Add and reduce power to the aircraft and its behaviour towards these changes.

Overview:

Starting off in the air, you will be introduced to your instructor and given the run down on some quick action camera controls and also the basics of controlling the aircraft.

Walkthrough

Your instructor will give you all the direction you need for this one. Simply hit the right key commands when instructed and you'll pass first time.

Top Tip: Use gentle force when moving the controls and try to be as smooth as possible. Jerky movements will cause you to lose control.

2 - ATTITUDES & INSTRUMENTS

Training Session Duration: 07 Minutes

Key Learnings:

· Read the instruments in the cockpit and know their functionality.

· Change pitch attitude to control your airspeed.

· Manage power to control how your aircraft climbs or descends.

· Maintain attitude when making turns.

Overview:

Now you have an understanding of the laws of flight, you can put this into practice by maintaining altitude, descending and climbing. Cockpit panel instruments are also covered in this lesson.

Top Tip: Don't rush going through the instruments in the cockpit. Take the time to fully understand what data they show you.

Walkthrough

You start this tutorial in the air, where your captain will introduce you to the horizon line, also known as the cruise attitude. You will then be given a rundown of various instruments in the cockpit, including your airspeed indicator, your attitude indicator and altitude indicator. Afterwards, your instructor will give you control of the aircraft.

Your first task will be to head into a climb with a gentle pull back on the stick and with full throttle. Once you've climbed, you will have to level out with an RPM set to 2,300. Your instructor will give you the next task of entering the descent attitude. Simply push down gently and reduce the throttle until you reach idle. As you watch your speed increase and altitude drop, be sure to be mindful of the terrain.

With us now knowing how to change altitude, our next part of the lesson is how to bank,

whilst maintaining altitude. When you enter the bank, you must be mindful to pull gently back on the stick so that you don't loose altitude in the turn. This is because your aircraft will dip down below the horizon as your wings make the turn.

Once you have made the turn, slowly start to level out your wings by maneuvering in the opposite direction. Do be mindful of your speed as it will fluctuate as you make the directional change.

Once you have completed this, you'll hand controls back to your captain in preparation for the next lesson.

3 - TAKE OFF

Training Session Duration: 07 Minutes

Key Learnings:

· Taxi your aircraft onto the runway.

· Set take-off power in a small aircraft.

· Take off and climb to a low cruising altitude.

Overview:

Learning to take off is both exciting and exhilerating. In this tutorial, you'll be able to experience your first take off in the Cessna 152.

Walkthrough

Starting on the edge of runway 21, you will begin your taxi onto the runway. Gently apply a bit of power and release the parking brakes with your assigned key or controller input. Following the yellow line will lead you nicely onto the runway.

Your instructor will also tell you to be sure you're clear of any oncoming traffic so use your camera contols to pan to the left-side to allow you to check this. Once cleared, line up on the runway and when you're as central as possible, apply the brakes and come to a complete stop.

Now your friendly instructor will give you the go ahead to apply full throttle power until you accelerate to 55 knots. Be sure to use the rudder pedal controls to stay as central on the runway as possible, whilst also keeping an eye on your airspeed. Once you reach 55 knots, your instrcutor will tell you to "gently pull back on the yoke."

Once airbourne, maintain a pitch that will give you a climb speed of 75 knots until you reach 5,500ft on the altimeter. Now level off by reducing power on the throttle and slowly lowering the nose to maintain cruise attitude.

Now that you have performed your first take off, you're ready to learn how to get back to Earth.
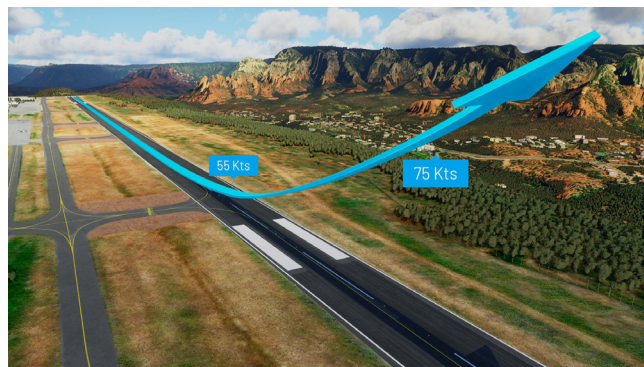
Top Tip: Using your elevator trim will help you to maintain a good rate of climb whilst also providing you the right speed.

4 - LANDING

Training Session Duration: 04 Minutes

Key Learnings:

· Manage power and pitch during an approach.

· Use flaps to increase drag and reduce speed.

· Flare the aircraft.

· Safely stop after touching down.

Overview:

You've mastered take off, but now it's time to land. This very quick tutorial will have you perform an approach into Sedona Airport and land safely on the runway.

Walkthrough

This tutorial is a little more challenging because you start 6000ft up and around 5 miles away from the runway meaning you have to react as well as listen to instruction.

Top Tip: If at any point you feel a little overwhelmed and need to break, press the PAUSE key to stop the sim. You can also listen to the instructions from your captain whilst your plan remains motionless.

From the start of your tutorial lesson, you will be told to try to maintain an approach speed of 65 knots. Whilst you try to maintain this speed, you also need to keep youself aligned with the runway. If you need to, apply small amounts of roll, but be sure to put your wings level again as soon as you are aligned.

To keep you on the correct glideslope for landing, you will want to aim for the runway's number. If you find yourself a bit too high, adjust your pitch and reduce the throttle so that you increase your rate of decent. If you're too low, increase your pitch and add power.

When correcting your approach path, remember to only make minor and incremental adjustments.

If you still find yourself too fast and high, you can apply more flaps. You can do this by panning your view to the lever that controls the flaps to manually adjust or by using the default F7 key. As you apply the flaps, your aircraft will start to slow down and pitch up. This is because you are adding drag and lift to the aircraft. You may need to compensate for this by applying more power or pitching your aircraft down. Another sidenote: you should only apply flaps when at safe speeds to do so. In the Cessna 152, this is indicated by the white inner line on the airspeed indicator.

Once you start to approach the threshold of the runway, your instructor will tell you to change your aimpoint to the end of the runway. Continue to fly the approach and start to consider the landing flare.

For most aircraft, you will need to flare to touch down smoothly and safely. This is done so that the main landing gear touches down first, followed by the nose gear. Flaring becomes easier with experience and practice. Pulling back too much, too quickly will send you flying again. Too late and you'll be kissing the ground a bit harder than you'd like.

Continued on next page...

DID YOU KNOW?
The main gear is located at the front of some aircraft which means flaring isn't necessary since the main gear touches down before the tail gear. One example is the Zlin Shock Ultra.

4 - LANDING CONTINUED

Once you are over the runway's threshold, you need to start the flare. As mentioned, you need to be quite delicate to achieve this. First, you should slowly reduce the power to idle with your throttle. This will now start to slow your airspeed so that you can touch down.

Pull gently back on the stick so that your nose is slightly above your aimpoint. Now that you're in the flare, the aircraft will start to slowly glide onto the runway. Don't panic if things aren't happening too quickly, just make fine adjustments to get yourself on the ground. Eventually, the aircraft will touch the ground and begin the rollout.

Once all of your landing gear is firmly on the runway, you can apply the brakes by hitting the corresponding key and your aircraft will slowly start to decelerate. As your aircraft slows down, keep on the centre-line until you come to a complete stop.

Once you have successfully landed, your intructor will give you some advice which is important to remember.

" Landings can be hard, even for seasoned pilots "

Don't be put off if you found this scenario quite tough. The more you practice, the easier it becomes, and you'll always find landing is the most rewarding part of any flight.

5 - TRAFFIC PATTERN

Training Session Duration: 09 Minutes

Key Learnings:

·   Complete a full flight from take off to landing.

·   Utilise power management to reach specific altitudes and speeds.

·   Vacate the runway safely.

Overview:

With take off and landing now complete, it's time to take on your first circuit. This flight will take you out of Sedona Airport, fly a left-hand turn and fly 1,000ft above the airport before descending back into Sedona.

Walkthrough

Start by releasing the parking break and applying full power to start the take off roll. Once you hit 55 knots, gently pull back and start your climb keeping on the same heading as the runway.

Once airbourne, you will need to climb to 5,400ft. Maintain a climb speed of 75 knots whilst keeping full power on the throttle. You should adjust your elevator trim where needed to maintain a good rate of climb. A marker will appear on your screen alerting you that there is about a mile to go until you need to start making a left-hand turn.

Once you reach the entrance to the traffic pattern, you will need to turn left heading 122 degrees. Slowly move the stick to bank. Remember to watch your airspeed and altitude, making adjustments to the power and pitch to maintain a speed of 75 - 90 knots.

As you make the turn, you will need to start climbing to 5,700ft. If you can, keep an eye on the left-side of your wing. The runway should appear almost central as you exit the turn heading 122 degrees. A new marker will appear so be sure to take advantage of it to help you stay on course. Once at the marker, you are going to turn onto heading 034 degrees.

This puts you on the downwind leg. Level off at 5,700, reduce power to 2,100 RPM and check the runway out on your left-hand side again to make sure you are flying parallel with the runway.

Continued on next page...
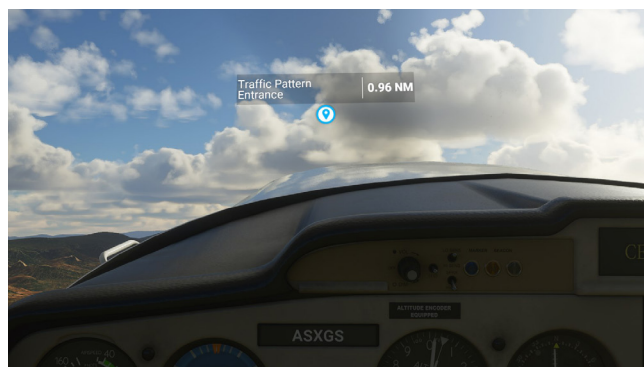
Top Tip: The loading screen will be helpful here. Take careful note of the points you will be flying to so that you have a visual reference.

5 - TRAFFIC PATTERN CONTINUED

The downwind leg can get quite busy. During this time, you need to start considering your approach and landing.

As mentioned in the landing tutorial, you want to start slowing the aircraft down by applying flaps. Once the speed is within the white inner-arc, we can extend the flaps by 10 degrees. You can do this by pressing F7 on your keyboard. Watch your speed and be prepared to counter the new change in lift by applying some downward elevator trim.

Continue to fly towards the marker "Base Turn" which is about a mile past the threshold of the runway, whilst maintaining speed and 5,700ft.

Once you reach the marker, you need to make another left-hand turn heading 283 degrees. This is known as the base leg. However, as you bank, you need to gently reduce power to idle whilst maintaining cruise attitude so you start a slow descent over the valleys. You should have a vertical speed of around -700 feet per minute (FPM). As you slow down to 65 knots; your approach speed, keep your eye on the runway. When you can see the runway on your left-hand side, you will need to complete the final part of the circuit, known as, the final leg.

Turn left to align yourself with the runway, ensuring you maintain a careful rate of descent and keeping your speed at 65 knots. Just as with the landing tutorial, you will want to aim for the runway's number and as you reach the threshold of the runway, you will want to change your aimpoint to the end of the runway. As you reach 10ft, reduce power to idle, start the flare, and touch down.

Congratulations, you've just done your first complete flight.

The next tutorial sees you completing the same circuit, just without any navigation aids or instructor. Good luck!

Top Tip: If you feel the final leg is too short, you can always extend the downwind leg a little bit more to give yourself some extra time.

6 - FIRST SOLO FLIGHT

Training Session Duration: 09 Minutes

Key Learnings:

·   Complete the Sedona traffic pattern on your own.

Overview:

This tutorial flight will put you in total control of your Cessna 152 to complete your first solo flight. This will be the same traffic pattern as you completed in the previous tutorial.

Walkthrough

This tutorial flight is the same as the previous tutorial. The difference this time is that you are on your own and there will be no navigation markers to help guide you.

Here are the key points about this flight to remember:

- **Take Off Leg:** Take off at a speed of 55 knots and maintain the runway heading until you reach 5,400ft.

- **Crosswing Leg:** Turn left heading 112 degrees and continue to climb to 5,700ft.

- **Downwind Leg:** Keeping the runway parallel outside your left window, maintain 5,700ft, heading 283 degrees. Apply 10 degrees of flaps once you are parallel to the runway's threshold. Continue for approximately another mile.

- **Base Leg:** Gently reduce to idle, lower the nose to start pitching down and keep your speed at 65 knots.

- **Final Leg:** Line up with the runway ensuring you maintain a safe descent profile. Flare once you are over the runway threshold and keep the nose slightly up until you touch down.

Once you have landed, taxi the aircraft to a position of choice.

Congratulations, you've just completed your first solo flight!

Top Tip: Use the objectives menu to remind you which phase of the circuit you are currently in and which phase you should complete next.

7 - NAVIGATION

Training Session Duration: 24 Minutes

Key Learnings:

· Follow a planned route using landmarks to guide you.

· Monitor time and distance to ensure you're on target.

Overview:

With your first solo flight out of the way, it's time to start trecking across the country. In your first navigation flight, you will fly from Sedona Airport (KSEZ) to Flagstaff Airport (KFLG) using only visual flight rules.

Walkthrough

The first step is to take off and climb to 5,800ft. Don't stray too far from the airport as you will need to overfly it once you reach 5,800ft. Once you have established cruise attitude, you will need to overfly the airport as indicated by the marker 'Departure Position'. After reaching the airport, your instructor will tell you to start the clock. The Nav Log menu will pop up automatically, click on start and proceed to the next stage of your cross-country journey.

With your timer now on, your next task is to head to the first position in your nav log; Munds Park. You will need to fly heading 041 degrees for approximately 8.85nm, which is going to take you around 5 minutes. Your instructor will advise you to consider factors like wind, which may change your estimated enroute time. The timer you started will allow you to compare your actual with the estimated flight time.

After enjoying some of the scenic views out of your window, you will soon come across Munds Park. Your instructor will tell you to fly to Flagstaff-Pulliam Airport. Whilst a marker will appear on your screen, your instructor will advise you to instead use identifiable landmarks to guide you to the airport. In this case, you'll be using the I-17 highway to take us towards the airport. Start to turn so that you overfly the highway. Note: be sure to restart your timer.
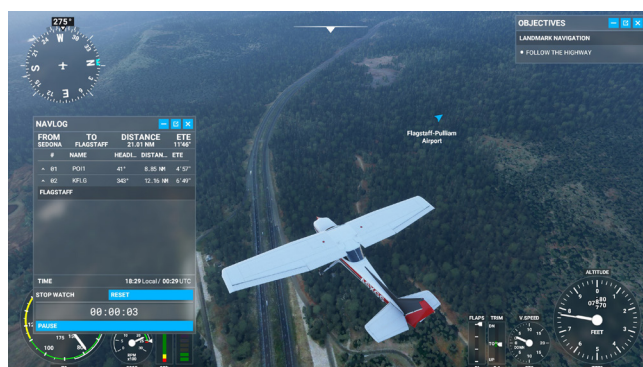
7 - NAVIGATION CONTINUED

As you close in on the airport, your instructor will tell you to get ready to enter the traffic pattern. You will need to keep your cruise attitude and enter the downwind leg as you continue to follow the highway and markers. As you approach the downwind marker, you should be parallel to the runway on your left-hand side.

With entering the traffic pattern, you will need to reduce power and pitch down slightly to start your descent. Keep flying heading 240 until you reach the base turn marker.

The rest of the flight will continue as though you're completing a traffic pattern. You will need to reach the base turn with 10 degrees of flaps applied and start to reduce your throttle to idle. Continue the pattern, lining yourself up for a landing on runway 21.

Once you're down, apply some braking, make a right turn off the runway and park up.

That's it, you've done your first navigation flight.

Top Tip: Note any key locations, landmarks or even parks down below. You'll need to remember this for the next tutorial to help you.

8 - FIRST SOLO NAVIGATION FLIGHT

Training Session Duration: 24 Minutes

Key Learnings:

· Gain confidence in navigating on your own.

Overview:

This is the last of the included tutorial flights and will bring everything you have learned over the previous seven lessons to fruition. You will need to navigate yourself; without any markers, from Flagstaff Airport (KFLG) to Sedona Airport (KSEZ).

Walkthrough

From take off to touch down, it's all down to you. You will start at Flagstaff Airport on the runway ready to depart. Once you're ready, push the throttles to full thrust and take off at the usual speed of 55 knots.

Here are the key points about this flight to guide you back to Sedona:

• **Once Airbourne:** Climb to 8,000ft, remembering to not go too far from the airport.

• **Departure Checks:** When at cruise attitude, overfly the runway, just as you learned in the previous tutorial. Start the timer and begin following the I-17 highway back to Munds Park.

• **From Munds Park:** It should take you around 7 minutes to reach Munds Park. After you fly overhead, turn onto heading 221 degrees and fly for another 5 minutes.

• **Entering the Pattern:** You will now have Sedona Airport in sight. Enter the traffic pattern as you were taught in previous tutorials and remember to fly the pattern at 5,700ft.

• **Landing:** Complete the pattern, remembering to approach the airport at a speed of 65 knots. After you have landed, turn off the runway and park up.

Congratulations, you have successfully completed all the training missions with your new flight simulator. **Now take to the skies!**

Top Tip: You may feel overwhelmed since you're on your own, but use the external camera views to get a better picture of your surroundings.

TAKE ON A CHALLENGE

With your initial training flights now complete, you are ready to take on any of the numerous challenges or missions available.

Landing Challenges

Take on some of the toughest landing challenges in the world or take advantage of some of the most scenic.

There are 24 of these challenges to start you off.

Some Examples Include:

- Landing an A320neo at Sydney, Australia.
- Landing a Cessna 172 at Llanada Grande, Chile.
- Landing a Cessna Grand Caravan at Lukla Airport, Nepal.
- Landing a TBM 930 at Saba Airport in the middle of the Caribbean.
- Landing a Boeing 747-8i in strong winds at Innsbruck Airport, Austria.
- Landing a Cessna 152 in a strong crosswind at Sedona Airport, USA.

Bush Trips

Three 7 hour+ bush trips are ready for you and a friend to go and take on together. Take the Zlin Savage Cub across North America or soar across Europe in the Cessna 172 Skyhawk in numerous flights that you will never forget.

Famous Landmarks

Throughout the world, there are plenty of exciting and well-known landmarks to discover. Either take off from a nearby airport and navigate to your destination, or find them on your world map and start your journey right next to them.

This is the perfect way to see the world and capture amazing screenshots all along the way.

G1000 OVERVIEW AND TRAINING

With your first flights now out of the way, you likely want to get to grips with some more advanced systems. In the previous lessons, you took the time to learn how to follow roads and landmarks as part of a true VFR experience. Whilst this is flying in the truest sense, technology has advanced over the years to provide pilots with even more data and systems to make flying safer, more enjoyable and easier than ever to navigate.

The Garmin G1000 avionics suite is industry-leading when it comes to providing detailed information for pilots and observers. The large glass displays are brimming with useful information for pilots and provide data to keep pilots aware of the situation at all times.

Using the G1000 In Flight Simulator

As with the real-world, having a G1000 avionics suite provides you with even greater detail when flying around the virtual world. From keeping a close eye on your aircraft's speed, altitude and bank, you can also set direct courses, manage your radios and even enable a basic autopilot system to guide you to your destination.

In any flight simulator, this means you can spend more time enjoying the views than worrying about navigation - especially on the longer flights.

In this new flight simulator, we have the chance to fly with this technology in a variety of aircraft. As such, the next few pages will cover successfully operating the G1000 included with the simulator.

What This Guide Will Cover

Across the next few pages, this guide will talk you through each of the functions the G1000 in the new simulator will provide, along with a step-by-step guide on completing your first basic autopilot flight.

Before you to take on the challenge of learning the built-in G1000, be sure to be familiar with flying, your aircraft's handling and other basic sim functions (such as ATC handling) so that you are not overwhelmed with information.

Our Examples

We will be using the standard Cessna C172 Skyhawk equipped with the Garmin G1000 for our example flights. Other aircraft have the G1000 fited, but may have a slight variation on functionality and uses.

G1000 Display

Standard

Cessna 172 Skyhawk

Facts and Figures

Max Take-Off Weight
1,157kg

Maximum Passengers
3

Max Altitude
14,000ft

Range
640nm

Cruise Speed
124 KTAS / 230 km/h

First Flew
12 June 1955

MANEUVERING SPEED: 105 KIAS

GARMIN

NAV1 113.90 ↔ 110.50
NAV2 113.90   110.50

DIS __.__NM BRG ___°   127.850 ↔ 124.850 COM1
                        124.850   124.850 COM2

HDG 360°   CRS 360°

TAS 0KT

199°

OAT 8° C

XPDR 7000 ALT LCL 06:39:48

29.92IN   STBY BATT

INSET | PFD | CDI | ADF/DME | XPDR | TMR/REF | NRST | CAUTION

Main Display Overview

Upon loading the Cessna C172 Skyhawk, you will notice that there are two displays on each side of the cockpit. This overview is for the one on the captain's (left) side.

1 - NAV AUDIO LEVELS

When passing over certain markers, an audible noise can be heard in the cockpit. Adjust this knob to change the volume.

2 - NAVIGATION TUNING

Adjust the navigation tuning using this dial. You can see the current tuning on point A.

3 - AUTOPILOT FUNCTIONS

Numerous buttons are present here serving as part of the built-in autopilot functionality. From the top, you have the heading control, followed by numerous softkeys.

This will be covered in greater detail on page 141.

4 - ALTITUDE SET

When using the autopilot functionality, here is where you can adjust the altitude you wish to set. You can see the result of the changes in the blue text on point E. This is known as the 'Selected Altitude'

You can adjust the HUNDREDS with the top dial, or the THOUSANDS with the bottom dial.

5 - SOFTKEYS

Numerous softkeys to change various options. More details starting on page 133.

6 - VOLUME KNOB

Non-functional in the simulator, but this would allow you to adjust the speaker volume of the G1000 device.

NEW v1.20

7 - COM TUNING

Adjust the radio tuning for your communication channel. You can switch standby and active comes with the two-way arrow button. Clicking the central button will swap COM1 to COM2.

8 - CRS/BARO CHANGE

Change the barometric pressure and/or course information using this knob.

9 - RANGE

This will enable you to adjust the range of the map on your display.

10 - FMS SOFTKEYS

Buttons used to program-specific functionality of the Flight Management System (FMS).

11 - FMS KNOB

Two-tier knob to adjust specific areas of the FMS.

On The Display Overview

A - Navigation Frequencies

For turning VOR or NDB information.

B - Distance and Baring

Distance and direction to next waypoint.

C - Communication Frequencies

The radio frequency tuned for communication (Eg. ATC).

D - Speed Strip

Your Indicated Airspeed (IAS). Inactive until 20 knots.

E - Altitude Indicator

Blue represents your selected altitude and white is current.

F - Artificial Horizon and Attitude Indicator

See the pitch and bank of your aircraft whilst in the air.

G - Inset Map

A bird-eye view of the vicinity you are in. Can be adjusted.

H - Heading Indicator

See the heading you are flying and also course selected.

I - Barometric Pressure Indicator

The currently selected pressure manually set by the pilot.

J - System Warnings

Information on current warnings. Empty if none occurring.

K - Transponder Information

Transponder details and local time.

On The Map Display Overview

A - RPM Indicator

Your current Rotations Per Minute for your engine.

B - Fuel Flow Per Hour (Gallons)

How much fuel you are using on a per hour basis.

C - Oil Pressure

The oil pressure in your engine.

D - Oil Temperature

The indicated oil temperature in your engine.

E - EGT and VAC Indicators

Exhaust Gas Temperature (EGT) that you're producing and VAC system information.

F - Fuel Quantity (Gallons)

How much fuel you have in your tanks (left and right).

G - Electrical Information

The electrical information for your aircraft.

H - Wind Indicator

The direction and strength of the wind in your location.

I - Map / Aircraft Indicator

Your current location in the world with a VFR map.

J - Waypoint Indicator

Waypoints in your nearby vicinity.

K - Range Indicator

The map range indicator which is adjustable.

ZOOMING INTO THE DETAILS

The range of your map can be your best friend. The smaller your range, the more detail you will get for the area you're in.

If you're at an airport, then you can see runway information, taxiway information and much more. The You can set a range to 0.5nm for the most detail and as far out as 200nm. This can be adjusted using **point 9** (page 130)

NEW v1.20
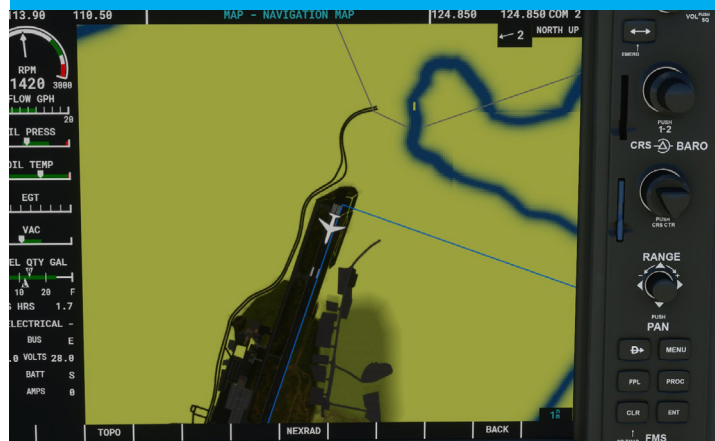
G1000 IN-DEPTH

With an understanding of the layout of the G1000, it is time to have a bit more of an overview of some of the more minor details found in the system.

Start on the main display and cycle through the various options on the soft keys (point 5). This guide will go from left to right, starting with INSET.

INSET

OFF

Turns off the inset map.

TOPO

Toggle between turning on or off a topographic map in the range you're in.

Note: This is best displayed on the main map and not the inset.

NEXRAD

Shows weather and radar coverage as blocks within the local area.

Note: This is best displayed on the main map and not the inset.
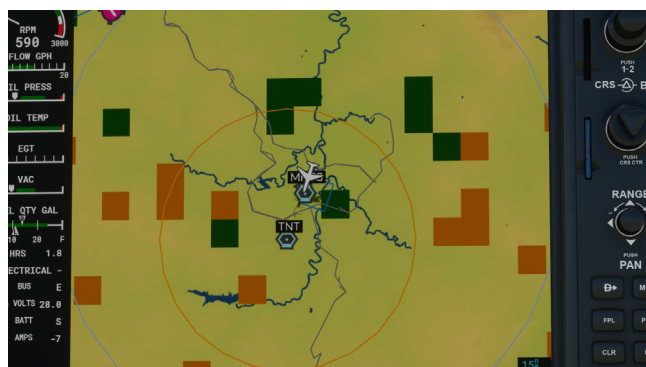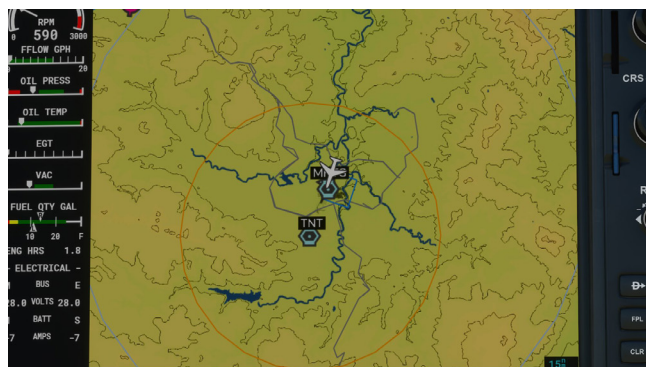
PDF

WIND

Various options on how to display the wind on the G1000's primary flight display (PDF).

DME

Toggle between showing or hiding a DME based on the ADF/DME data. This is shown on page 135 on how to input.

BRG1 / BRG2

Cycle between various bearing distance measurements including GPS (based on a flight plan), ADF and information found in the navigation information (point A).

HSI FRMT

Adjust between a 360 Horizontal Situation Indicator (HSI) or an Arc HSI.

CDI

Course Deviation Indicator (CDI) enables you to switch which navigation mode you're following when using the G1000. You can cycle between FMS or VORs. The FMS data can be obtained through a flight plan (details on page 138).
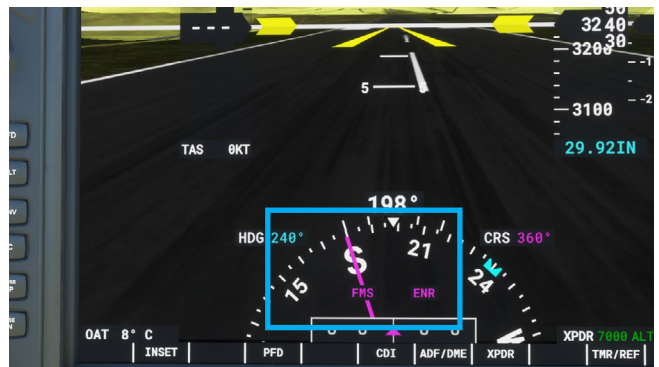
ADF/DME

Input information for local ADF and DME to help you navigate. To change it, click on the appropriate softkey, and use the FMS knob (point 1) to adjust the tuning information. Then press enter once to confirm the frequency, and enter again to transfer the information across.

XPDR

This section relates to your transponder. This is a signal and data sent out to nearby radio towers and ATC stations to track which aircraft is which.

Each aircraft flying IFR is assigned a squawk code, but those flying VFR can use 1200 as you will be identified using other information.

You can set your transponder to be on, off or alternative.

Clicking on VFR will default the squawk code to 1200 and the IDENT softkey will send out a pulse signal to the tower so they can identify where you are in their vi9cinity. This is not functional when flying in the simulator, but if you were flying online (e.g. VATSIM), then this would be used and requested.

Finally, CODE will enable you to program in a squawk code you may have been given by ATC.

TMR/REF

Here you will be able to see a selection of reference speeds for your aircraft along with a timer. You can use the FMS knob (point 11) to adjust the time. Use the FMS soft keys (point 10) to confirm the details.

NRST

Display the nearest airports to you based on nautical miles. You are able to use the FMS knob (point 11) to navigate between them and then use the FMS softkey (point 11) **DIRECT** to set a direct course to your chosen airport. Once you have selected it, ACTIVATE the new course using the **ENT** key on the FMS softkeys.

ALERTS

Displays all the alerts happening in your aircraft right now.

G1000 FMS MENU

The built-in G1000 features a flight management system that can help you fly directly to airports, waypoints and more. Here is the functionality you can use with the built-in systems.

These functions are all activated by the FMS softkeys (point 11) and the FMS knob (point 10)

DIRECT

As mentioned on page 136, this DIRECT key will enable you to select a waypoint or airport to set as your next waypoint. In our tutorial lesson (page 138), we'll show you how to put this into practice.

Use the FMS knob (point 10) to scroll through your options. Airports are referred to by their ICAO codes (e.g. KLAX is for Los Angeles)

MENU

Enables to select numerous options including cancelling the direct following (from the previous selection)

Note: This can only be pressed when in a menu for another FMS function, e.g. DIRECT.

FPL

The flight plan button will showcase your current flight plan. If you launched into the simulator with a flight plan from the map page. This would include direct routing, VOR to VOR and even low-altitude airways.

This will also show you your distance to go for each segment.

PROC

If your airport or route has procedures (SID and STAR) you can select them through this option.

CLR/ENT

These keys will either clear (CLR) or enter (ENT) your action. Enter is also known as confirm.

G1000 TUTORIAL FLIGHT

With an understanding of the G1000, it's time you took to the skies.

For this flight, head to your world map, load up a flight from **La Mesa International Airport (MHLM)** to **Toncontin International Airport (MHTG)**. This is about a 50-minute cross country flight.

From the world map page, just under the aircraft selection menu, click on the drop down menu and select VOR to VOR. This will add an additional waypoint for us to head to on our cross-country VFR flight.

Load up the simulator and you will be placed onto runway 22 with the engines running and the Garmin G1000 loaded up.

Checking Our Flight Plan

As you have filed a flight plan on the world map page, you can quickly check our flight plan within the G1000. Click on the FMS softkey to open up your flight plan.

Here you can see you are going to travel to Toncontin International Airport (MHTG) via SAP and then ESC. SAP is your next waypoint on our route and is actually just beside La Mesa International Airport (MHLM).

With everything now looking good, you can set up other elements such as the transponder, course settings and other navigation aids.

Squawk Code

As you are flying a VFR flight today, you can choose the VFR option in the XPDR menu. This will automatically set our transponder to 1200. With this set, set this to 'ON'.
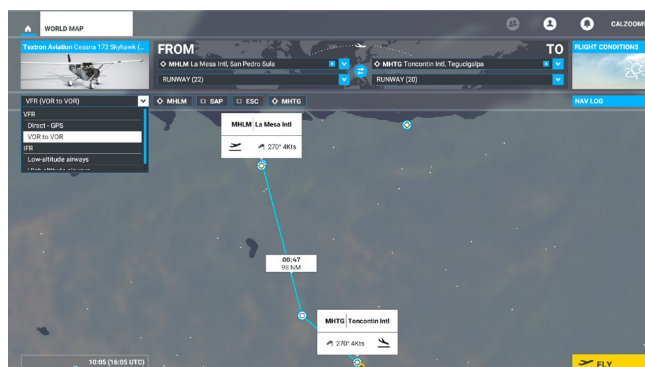
Taking Off

Now that the basics are set up and ready, you should now take off. Use the G1000 to help you monitor your speeds and climb rate.

As a reminder, you can check your VR speed (rotate) using the TMR/REF softkey. If you loaded up the default aircraft with standard weights, the take-off speed should be 55 knots.

After take-off, climb straight out until you reach 1000ft.

Heading for SAP

Once you have reached 1000ft, make a right turn to head for the SAP waypoint. Using the G1000 to help you visually, continue flying towards the waypoint and keep your airspeed around 80 knots. Start climbing to 1500ft by adjusting your throttles and also your trim.

As you fly over SAP, you will see your G1000 change the next waypoint you need to head to. Along with changing the waypoint, new information will be displayed on your system to help you best navigate to the next waypoint. Take a look at your HSI and note the new CRS and the magenta lines. This CRS is the recommended direction you should now head in to reach the ESC waypoint. As you make your turn, you will see that the magenta line will start to line up with the direction of your aircraft.

The goal is to get your aircraft following the magenta line on your HSI. This means you are on the right course and following the flight path set out by the G1000. Once you have lined up, climb up now to 5,500ft and continue following the magenta line ensuring you stay on course (165 degrees). Continue flying this until you reach the waypoint ESC.

Heading for ESC

Your journey now to the next waypoint is around 58 nautical miles. This will take approximately 30 minutes over stunning landscapes and a handful of mountains.

When flying these types of routes, especially with the terrain you have to navigate, you will need to make minor adjustments to your speed, pitch and trim to ensure you are getting optimal efficiency from your aircraft.

After you have reached 5,500ft, you should find yourself making minor adjustments to your throttle, mixture and pitch settings to maintain a good cruise speed of 110 knots and an RPM of 2300. You can find your RPM on the secondary display (point A).

Another point to note is to avoid clouds. Whilst flying in a straight line is quicker, you should avoid clouds at all costs. Right now you are flying a VFR (visual flight rules) flight which means you must have visibility at all times. Passing through a cloud will obstruct your visibility and you are currently not authorised to then use Instrument Flight Rules (IFR). If you find yourself heading towards a cloud, then make the appropriate turn to avoid it and then use the magenta line and your course settings to get yourself back on track.

Using the Autopilot

As you continue to your trip to ESC, now is a great time to try out the autopilot capabilities of the G1000.

Before you turn on the autopilot, it's worth noting some of the functionality and what each of the various switches means.

AP - Autopilot On / Off Toggle

This will turn on or off the autopilot feature.

FD - Flight Director On / Off Toggle

The flight director is a visual of the path your aircraft should be taking to maintain the correct course.

HDG - Heading On / Off Toggle

Heading mode will follow the selected heading, which is tuned using the HDG knob. Your selected heading is shown in blue on the left side of the HSI.

ALT - Altitude On / Off Toggle

Altitude mode will set the selected altitude, which is tuned using the ALT knob. Your selected altitude is shown in blue at the top of the altitude indicator strip. You must have this on if you wish to maintain an altitude set.

NAV - Navigation Mode On / Off Toggle

If you have a flight path set, the aircraft will follow that navigation route set if this is on.

VNV - Vertical Navigation On / Off Toggle

If this is on, your aircraft will climb and descend based on the data in your flight plan to those selected altitudes.

APR - Approach On / Off Toggle

If an approach is programmed in, the aircraft will follow the approach pattern.

BC - Backcourse On / Off Toggle

Used when you're approaching a runway with an ILS approach.

VS - Vertical Speed On / Off Toggle

Climb or descend the aircraft based on a selected vertical speed.

FLC - Flight Level Change On / Off Toggle

Change your altitude (set by the ALT knob) based on your current speed. This will automatically climb or descend at a rate best suited to maintain the current speed.

NOSE UP / DN - Nose Up or Down On / Off Toggle

Climb or descend based on the nose profile you wish to maintain. This gives you even greater control over your climb or descent rates. You need to use this to adjust your VS speed.

As you continue towards ESC, let us set up some autopilot functions so that you can spend more times adoring the views outside without worrying on the flying aspect.

1 - Flight Director

Turn on the Flight Director. This will enable the autopilot to know exactly where you need the aircraft to head.

2 - Set the Altitude

You want to maintain your altitude of 5,500ft. Set the altitude using the ALT knob. The outer knob handles the HUNDREDS of feet, whilst the inner knob handles the THOUSANDS.

Providing you are at 5,500ft, click on altitude hold mode to on and your aircraft will automatically trim itself to maintain that altitude.

3 - Set the course

As you have already established a flight plan, your G1000 will already have a route loaded in. Clicking on NAV will automatically enable your aircraft to follow the flight director to stay on course for the next waypoint. In our case, it is ESC. Let go of the controls and watch your plane manoeuvre itself to stay on track.

With these things set, your autopilot will now handle the rest.

Climb to 6,500ft

As you continue your plan towards ESC, you will notice that there are numerous tall mountains in the area. Whilst 5,500ft is a safe altitude, now is a good time to practice using the G1000 autopilot to climb another 1,000ft. Using what you have learned so far in this guide, set a new altitude to 6,500ft and use FLC to climb. You should aim to maintain a speed of 100-110 knots.

Remember to reapply your prop mixture and throttle to ensure your aircraft and climb whilst maintaining speed.
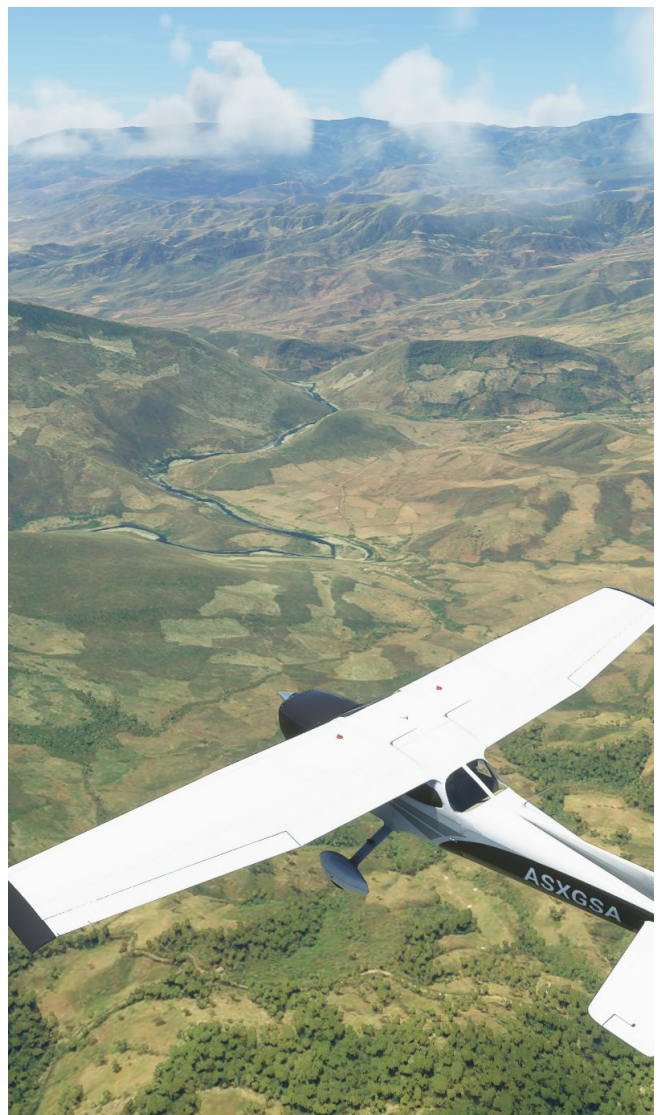
Next Stop: Toncontin Airport (MHTG)

You should soon be approaching the ESC waypoint. If you have your autopilot set to nav, you will find your aircraft will continue to fly towards it and make a left turn towards your next waypoint; Toncontin International Airport (MHTG).

The airport is approximately 30nm away from the ESC waypoint and should give you plenty of time to consider your descent.

Approximately 15nm from MHTG, change your altitude to 4,300ft. This will put you approximately 1,000ft above the elevation of the airport itself. Afterwards, select VS and adjust your vertical speed to -500 foot per minute. This will place you approximately 5nm away from the airport once you reach 4,300 providing you maintain 100 knots.

As you approach the airport, continue following the navigation set by the autopilot. Once you are 1nm away, disengage the autopilot so you can continue hand-flying the rest of the approach.

Overfly the airport by 1nm and then enter a left-hand circuit for runway 20. Continue using the primary flight display on the G1000 for information such as your speed and altitude to continue a stable approach and landing, as you have learned in past lessons.

Whilst Toncontin Airport features an ILS approach, we will leave that tutorial for another time and another aircraft. However, you should now be confident to play around with the features of the G1000 and it's functionality.

Congratulations, you have successfully used the G1000 to navigate from one airport to another, whilst using the autopilot functionality to assist.

There is still much more to learn and discover with the Garmin G1000 so now that you know the basics, you should easily be able to discover so much more.
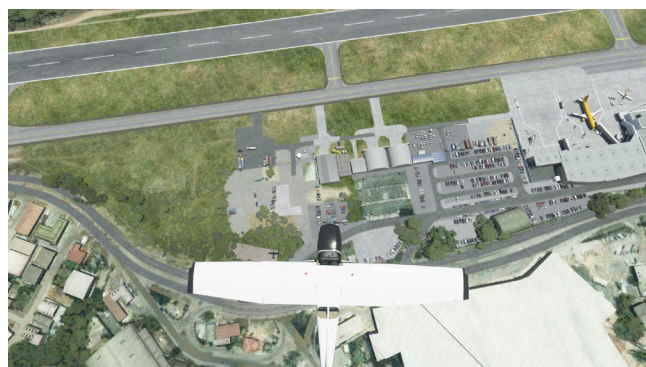
AIRPORT MANOEUVRING

In your journey to learn more about the world of flight simulator, you have always started on the runway. As this guide continues to expand, more focus will be placed on point A to point B flying, meaning this will include navigating airports.

Navigating airports in flight simulator can be easy and there are numerous tools to assist you. Navigating an airport from the gate to the runway means you will need to taxi across taxiways, possibly cross active runways and also make way for other aircraft at various intersections.

Taxiways are made up of paths, intersections, holding points and other aircraft specific areas. They are each given an alphanumeric code (not always in alphabetical order). It may seem daunting at first, especially at larger airports, but navigating airports is made easier in the simulator thanks to some of the built-in tools.


After Pushback

After you have pushed back from the gate, you will need to contact the air traffic control tower to request clearance to taxi to the runway. They will instruct you on the taxiway routing you need to take. The larger the airport, the more complex sometimes the routing can be.

In our example, we are looking to take off out of Dubai International Airport (OMDB). Once ATC has been contacted, they will issue instructions on which runway you will be taking off from and how to get there.

With complex airports, there is a lot to take in. If you're new to moving around airports, then, fortunately, you can turn on some assists to help navigate you. Press ESC to open the main menu and then click on 'Assist'. From there, click on the drop down menu for Navigation Aids and search for 'Taxi Ribbon'.

Turning this on will give you a series of markings in the simulator guiding you along the path ATC gave you to help you to the runway.
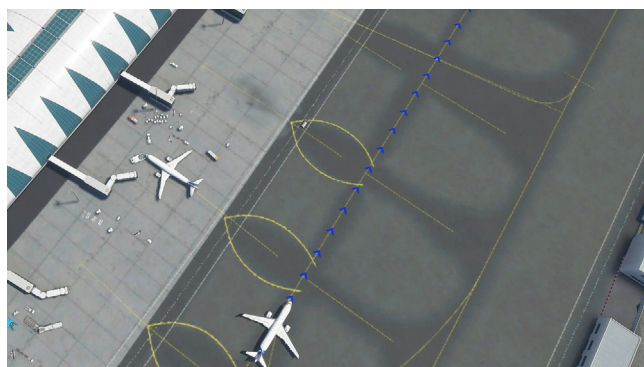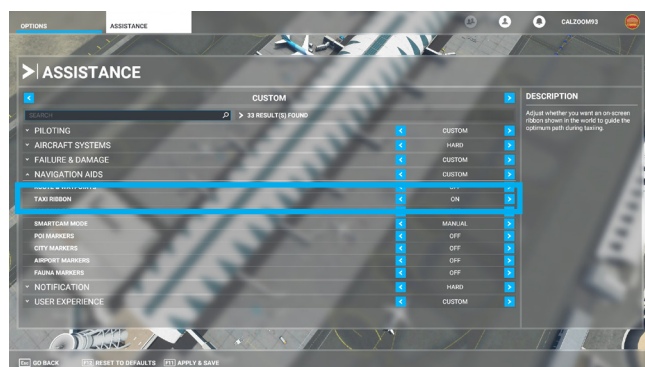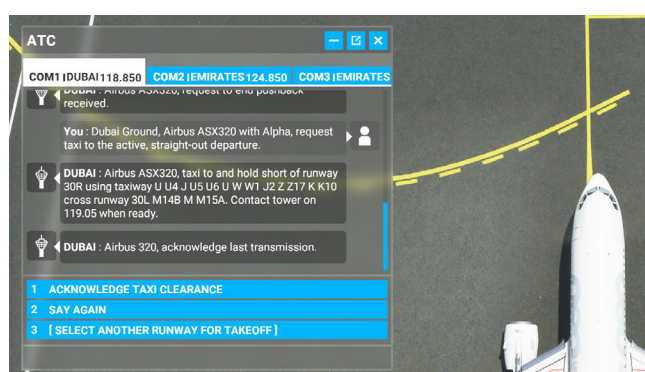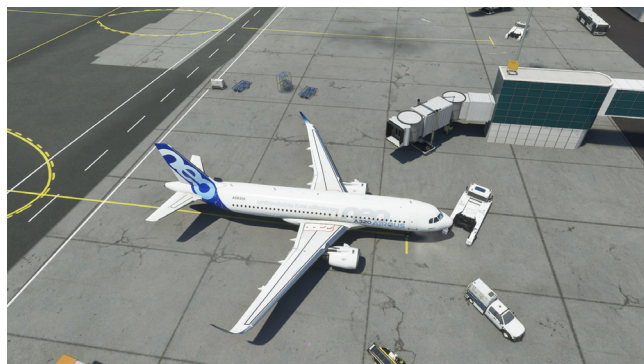
Taxiway Lines

When manoeuvring around the airport, you need to keep your nosewheel on the central yellow taxiway line. This has been done to ensure adequate clearance from buildings and other taxiways. Taxi slow and carefully.
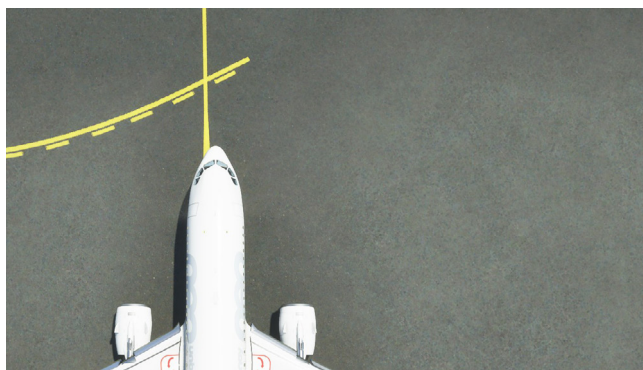
Airport Signage

Those who are looking for a bit more realism in moving around the airport will want to use the airport signage. Understanding these big signs is easy once you learn some of the basics. Whilst some of the signage may vary from country to country and airport to airport (depending on the use), there are some fundamentals that will help you regardless.

Yellow Background, Black Text

This signage represents taxiways you're about to cross. These intersection indications give you, as the pilot, knowledge of which taxiway lies in which direction.

Black Background, Yellow Text

This indicates to you which taxiway you are currently on. If you were to continue straight at an intersection, it means you will remain on that said taxiway.

Sometimes you may get a number following the letter, meaning it's likely an intersection or holding point along a specific taxiway. The number represents which one in a series of intersections / holding points along that given taxiway.

Red Background, White Text

Red is an indication that you're entering a critical part of the airport. These are dominant at runway intersections and serve as a stark reminder that you should only enter this area if you've been given specific instruction to do so. You will see the runway designator on these taxiway signs.

Next to the signage you will also find ground markings again reminding you this is a critical part of the airfield. The yellow block lines. indicate this is where you must stop if you have yet to receive clearance to taxi onto the runway.

MULTIPLAYER

Fly Online With Friends

Now that you are ready to explore the world on your own, this is actually the perfect time to grab some friends and fly together.

Luckily, flying with friends in multiplayer is super easy with the new simulator. Providing you have their gamertag, you will be able to add them to your friends list and get a flight going in a matter of minutes.

We'll talk you through each step to help get you started.

First - Get on the Server

From the main menu, head on up to your username in the top right hand side. Clicking on it will show you the available servers to you.

Providing you haven't changed anything since installing the simulator, the sim will default to the nearest server to you. You will see a number (e.g. 18ms) followed by a series of bars. These represent how quickly your internet can interact with the server. The lower the number, the better it is.

Leaving your simulator in automatic mode will always hook you up to your nearest server, but if you need to change it, this is where you would go.

Adding Friends

Now that you're hooked up to the right server, it's time to add some friends to your list. Simply click on the "Add Friend" icon from the main menu, enter their Gamertag and click send.

A request will be sent to them, which needs to be accepted before you'll be able to fly together. If you get a request, you will recieve a notification and you'll have the chance to approve or decline.
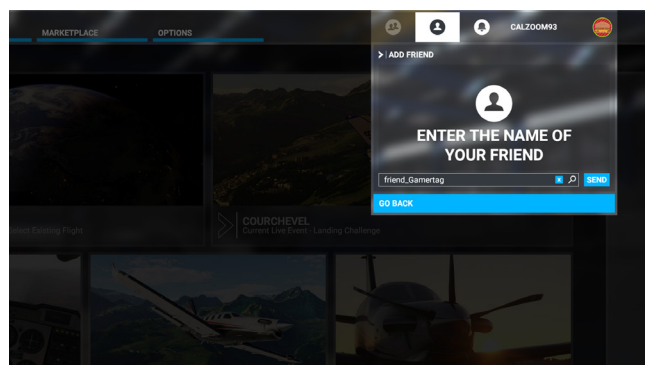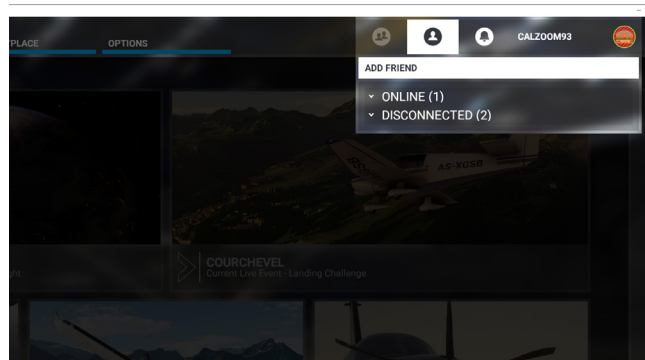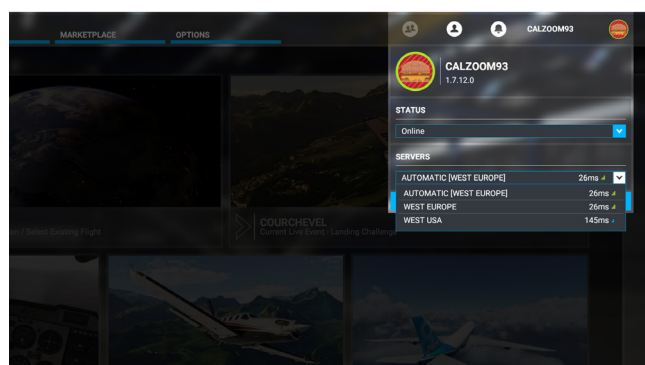
Creating a Group

When it comes to online flying, you have a few options, one of those is to create a group and/or join a group.

Creating a group is done by clicking on your friend's name from your friends list and clicking create group. This will create a virtual server that only you and those you have requested join the group will appear in.

In group mode, you are able to set whether you have live traffic, AI traffic, real world weather, pre-set weather or completely custom made traffic and weather. If you are in a group, the group leader (the person who makes the group) can change the time of day and weather on-the-fly for everyone in the group. So whether you're looking for a challenging approach or a calm bush tour, the group leader can customise your experience to suit everyone in the group.

Once the group is made, and the conditions are set, you can then spawn into the flight simulator and you will all see each other. If you have tags turned on in the general settings, then you will be able to identify who is who.

You can be completely private, in a group or take part with the rest of the world.

Being Part of the Online World

It isn't just creating private groups that form part of the multiplayer options, you are also able to join the thousands of online pilots in a world packed full of simmers.

While you are flying online, you will have to fly with live weather and live traffic. You will also be able to see friends, (and others online) practicing their landings, taking off on long-haul flights and finding their next landing-strip.

To be part of the online world, all you have to do is select the "Live Players" option from the main flight conditions page and jump into any airport around the world.
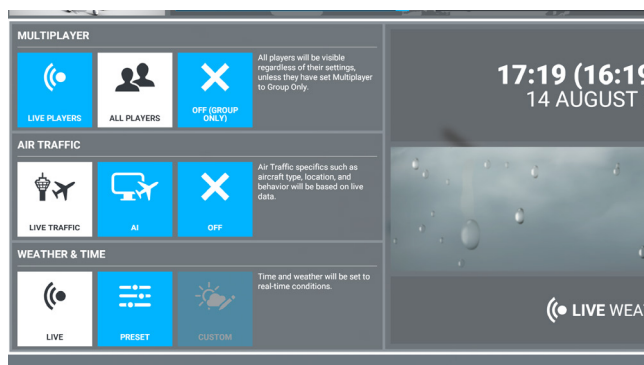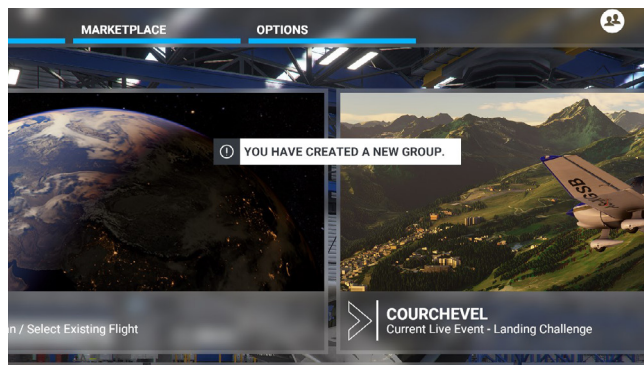
Top Tip: You must be on the same server if you intend on flying with friends to see each other. If you still can't see each other, change servers and go back to the original one. This has been a prooven fix for many.

FINDING ANIMALS

Explore Wildlife

The world is full of life. Whilst there are plenty of cities, towns and landscapes to explore, there are also plenty of opportunities to find wildlife within your flight simulator.

Below is a complete guide on how to find a range of wildlife scattered around the globe in their respective geographical locations.

From the Main Menu

Your first step is to head to the World Map. You should be familiar with the World Map, but if not, head to page 26 for a rundown.

From here, you'll be able to find wildlife, but with animals in the simulator spread far and wide, you should use the filter system to make the process easier.
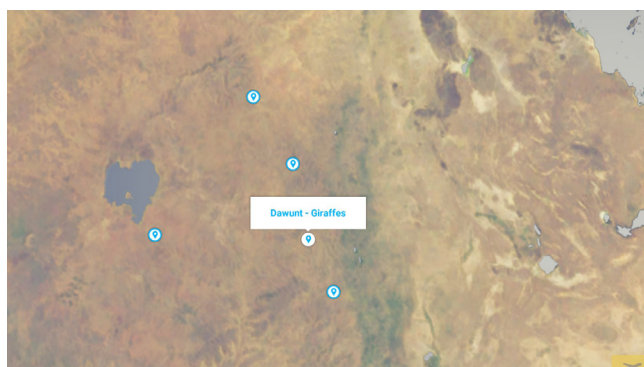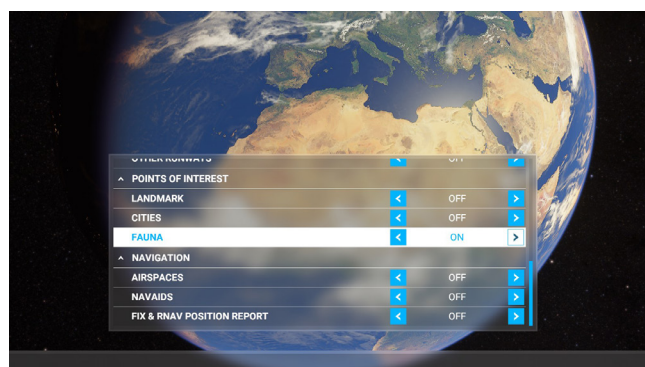
Finding Animal Clusters

Pressing the F key on the World Map menu will open up the filter options. As a reminder, these options are there to make finding areas of the world much easier. Since we're looking for clusters of animals, you should turn off most options such as cities, landmarks and points of interest.

However, you should leave 'Fauna' left on. As described by the Biology Dictionary, "Fauna is a term which refers to all of the animal life within a specified region, time period, or both."

With this option left on for the World Map, finding animals is a lot easier. You will need to zoom into the map a little closer than usual to find them, but our handy guide on the next page will help you identify which animals you can find and where in the world they are waiting for you.

Once you have found them, as with other identifiers on the map, click and set the animal as a departure (or arrival). You can then load up the simulator to discover these wonderful creatures.

Biology Dictionary 'Fauna' Definition

What You Can Find

The world is huge and finding the clusters of animals can be a little challenging. Below you'll see all of the different types of animals you can find and where in the world they are.

> **Top Tip:** Use the 'Smart Camera' to be pointed in the direction of the cluster of animals in the nearby area. This makes finding them easier.

Geese

WHERE TO FIND THEM:

- Skadar Lake, Montenegro
- Limni Voularia, Greece

Elephants

WHERE TO FIND THEM:

- Bugna, Ethiopia
- Dessie Zuriah, Ethiopia

Giraffes

WHERE TO FIND THEM:

- Dawunt, Ethiopia
- Blue Nile, Sudan
- Meshesha Wenz

Black Bears

WHERE TO FIND THEM:

- Bodad (CA), USA
- Grass Lake (CA), USA
- Yosemite (CA), USA

Seagulls

WHERE TO FIND THEM:

- McNeil Cove (AK), USA
- English Bay (AK), USA
- Lake Isabella (CA), USA
- Lake Tahoe (CA), USA
- Punta Arenas, Chile
- Tivat & Rijeka, Montenegro
- Syros, Greece

Flamingos

WHERE TO FIND THEM:

- Cochrane, Chile
- O'Higgins, Chile
- Lago Argentino, Argentina
- Dahlak, Massawa

Grizzly Bears

WHERE TO FIND THEM:

- Chinitna Bay (AK), USA
- Izembek (AK), USA
- Norma Bay (AK), USA

GET MAXIMUM PERFORMANCE

Whilst the new flight simulator is geared towards modern hardware, as outlined on page 12, there is still plenty of scope to improve your personal performance to get the best possible results from your simulator. Here are some handy tips for you to get maximum performance from your simulator. All of our tips are verified by an industry expert and an IT professional.

Before We Begin

It should be noted that these tips and tweak are simple, safe and generally quite common across multiple simulators and games. Whilst tweaking your system may result in better performance, you should be aware that the simulator can continue to be optimised (it doesn't utilise all processing cores, as an example) and that this simulator is also built for more powerful hardware in the future.

It is also worth noting what your specifications are and comparing that to the recommended components outlined by Microsoft. Tweaking will yield some positive results, but if you're on low-end machines, then you may need to consider the hardware needs upgrading.

That said, applying some of these tweaks should help you boost performance. Your mileage may vary and we'll continue to update the guide if and when new tweaks are found.
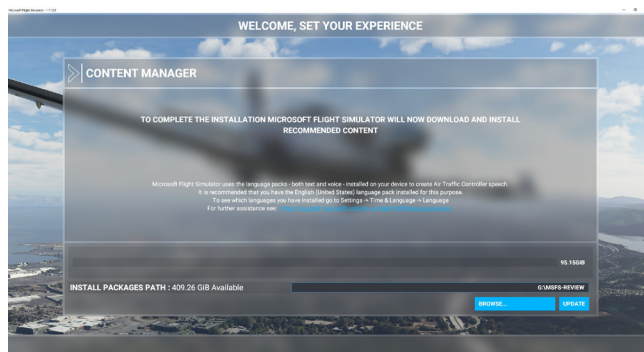
Up to Date Video Card Drivers

The first thing you should do is ensure that your video card drivers are up to date. Video card drivers link your physical hardware (your GPU) to your computer and have specific optimisations for games and applications (including Microsoft Flight Simulator).

Nvidia Graphics Cards:

The latest Nvidia video card driver is **452.06 WHQL**, which was released on August 17th 2020. This driver has specific optimisations for Microsoft Flight Simulator to help maximise your performance.

AMD Graphics Cards:

The latest AMD video card driver is **20.8.2**, which was released on August 17th 2020. This driver has specific optimisations for Microsoft Flight Simulator to help maximise your performance.

Clean Install of Video Card Drivers

If you already have a video card driver installed (which is very likely), you should perform a "Clean" install of that video card driver. Below is a quick guide on how to uninstall your current driver and replace it with the most up-to-date in a "Clean" state.

Nvidia Drivers

Step 1 - Removing Old Drivers

Navigate to your 'Add or remove programs' menu on your Windows PC. In the search bar, look for Nvidia, which will look for all programs with that name. You will then see your driver. Click on 'Uninstall' and follow the prompts to uninstall the driver. This will take a few minutes and your screen may go black a few times, but this is normal. You will need to restart your PC afterwards.

Note: If you already have 452.06 installed, then you have the latest already.

Step 2 - Downloading New Drivers

If you haven't already downloaded the new drivers (452.08), then you will need to from Nvidia's website.

Select your graphics card, language, etc and the system will find you the correct driver to download. For the cleanest driver download, choose the 'GeForce Game Ready Driver - WHQL' version. The download will now start and will take a few minutes depending on your connection.

Step 3 - Installing Clean

With your new driver downloaded, you are now able to start the process of installation. Run the download as an Administrator on your system.

During the installation process, a checkbox named "Perform Clean Install" will be visible. Ensure that this is checked. This will help ensure any old files are deleted to prevent any issues.

With the driver now installed, SHUT DOWN your computer and turn it back on.
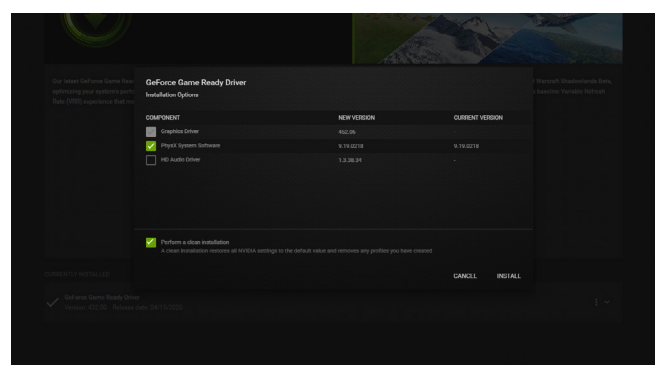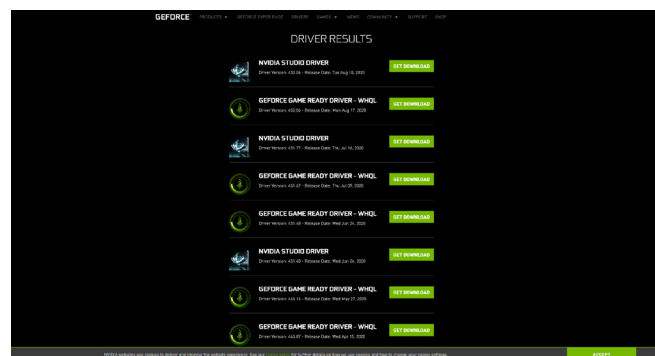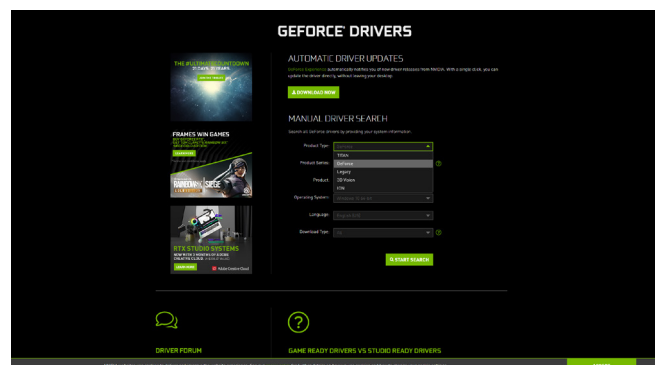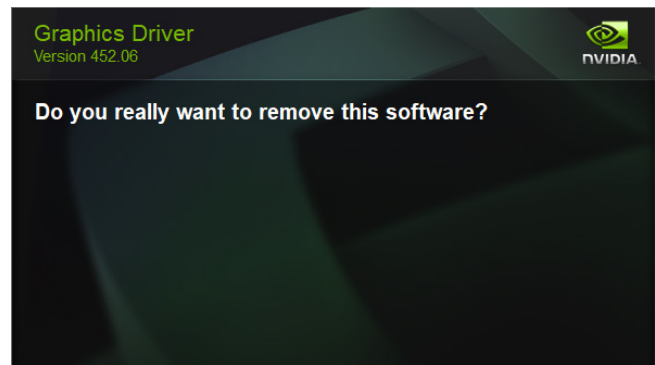
AMD Drivers

Step 1 - Removing Old Drivers

AMD has provided a simple solution to remove your AMD drivers. Download the AMD Cleanup Utility from their website and run after it has downloaded.

Follow the prompts to reboot your PC in 'safe mode'. Rebooting in 'safe mode' will give you the best results for a smooth driver update.

After your PC has rebooted, a new prompt will appear asking you if you wish to remove all AMD drivers and applications. Click on 'Yes' and the removal process will begin. Afterwards, shut down your PC and turn it back on.

Note: Navigate to your Windows installation folder in your Windows Explorer folder and if you have a folder named 'AMD', delete this completely. The typical location for this folder is "C:\AMD"

Step 2 - Downloading New Drivers

If you haven't already downloaded the new driver, v**20.8.2,** then head to the AMD website and enter the details of your card. This will search for the latest driver for you to install.


Click on download and start the process of saving the driver to your PC.

Step 3 - Installing Clean

Once the new driver has downloaded, start the file as an Administrator.

Since you have removed all the previous folders, files and driver data in step 1, the driver will perform a clean install. You can also click on 'Clean Install' to ensure this is still the case. Wait a few minutes for this to happen. Your screen may flicker at this time.

With the driver now installed, SHUT DOWN your computer and turn it back on.
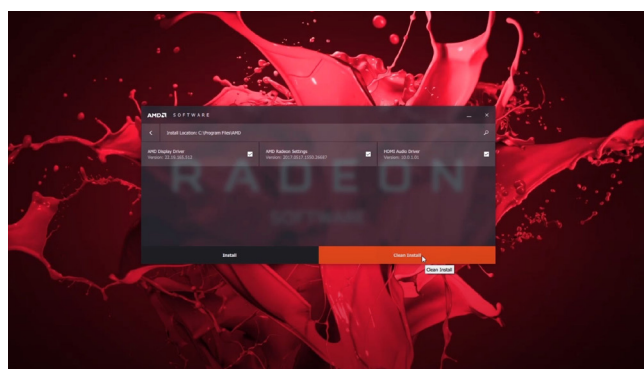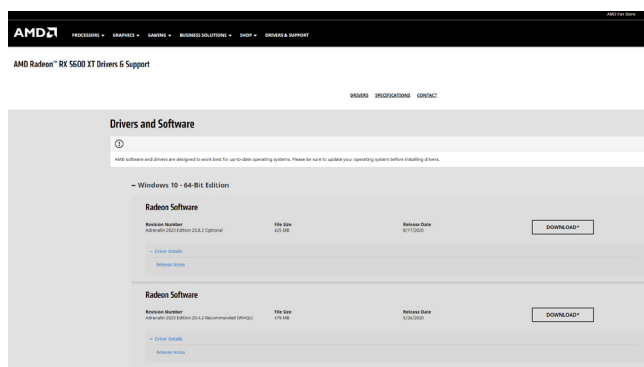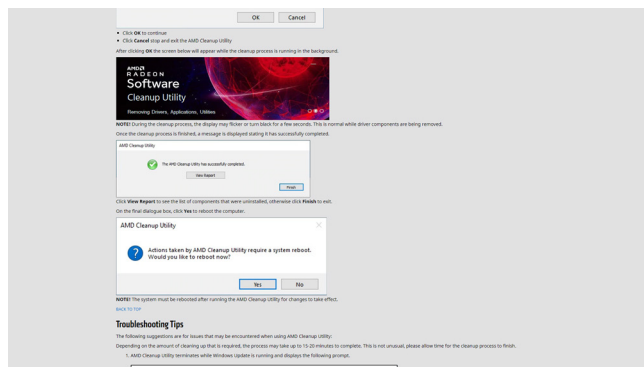
ADVANCED USERS Using DDU

The previous instructions are intended for those unfamiliar with using PCs to remove/install video card drivers. For those with more advanced knowledge can also use tools such as 'Display Driver Uninstaller' (DDU) to perform the clean driver installation.

This tool will work for both Nvidia and AMD video cards. Set up does require a little more knowledge and experience.

Graphic Card Settings

With fresh drivers now installed, you should now look at adjusting a few settings within your Graphic Card Control Panel.

These settings are easy to configure and change should you wish to revert back.

Nvidia Users

On your desktop, right-click and select 'NVIDIA Control Panel' to open up a new window.

Within the Control Panel, on the left-hand side, open '3D Settings' to show a new menu named 'Manage 3D Settings'.

In the main menu area, you will see a new range of options appear. Click on the tab 'Program Settings' and from the drop-down menu, find and select Microsoft Flight Simulator. Here you will change two settings.

Power Management Mode

Scroll down to find 'Power Management Mode' and change it from 'Use global setting (Optimal Power)' to **'Prefer Maximum Performance'**. This will now use the full power of your GPU.

Texture Filtering - Quality

Find 'Texture Filtering - Quality' and change it from 'Quality' to **'High Performance'**. These are proven to help with 3D performance in various games and simulators.

Now click on 'Apply' for these to take effect.
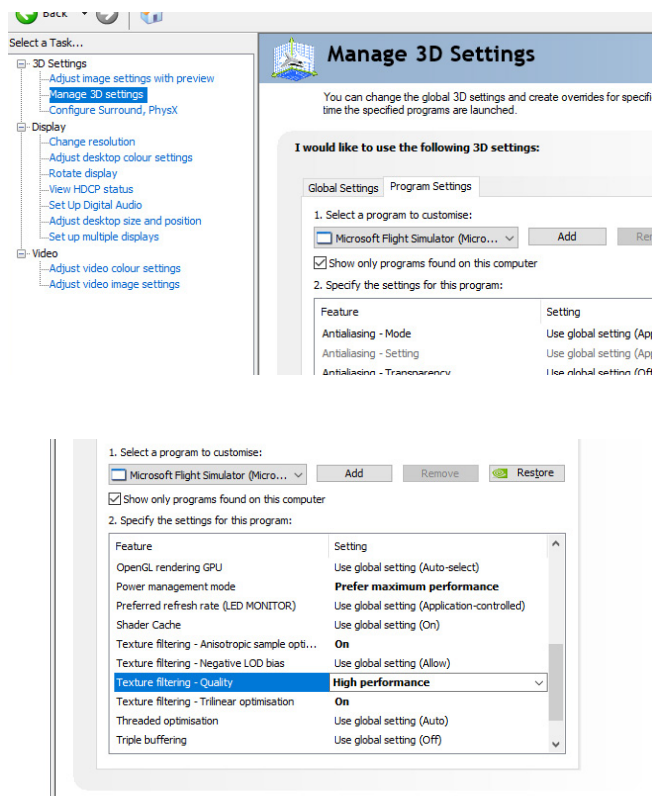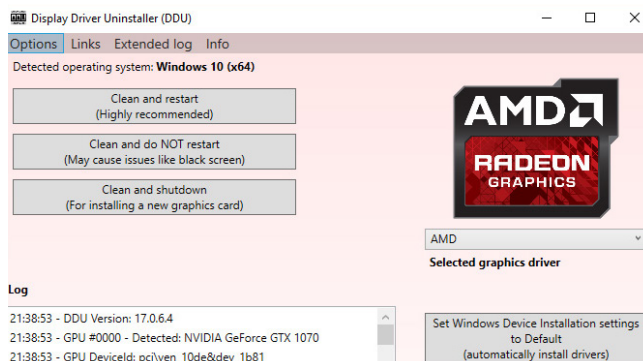
Top Tip: If you purchased Flight Simulator on Steam, you won't see the sim on Program Settings on Nvidia Control Panel. Instead, you can adjust these as Global values to take effect for Steam users.

NEW v1.20

Adjusting Windows Settings

We have our video card drivers now set up, so now it's time to ensure we are getting the most from Windows.

Not only do we want to get the best performance from Windows, but we also want to ensure that our processors are doing as much work as possible to get that stutter-free experience.

There are a handful of quick tweaks we can do to maximise our performance.

Game Mode

Contrary to popular belief, 'Game Mode' actually has benefits for those using Microsoft Flight Simulator on a Windows 10 PC. By switching this setting to on it will prioritise and allocate resources (GPU & CPU power, etc) on your PC to the game/simulator which is running.

To turn this on, in your start bar, start typing 'Game Mode' to perform a search. Select the option from your menu, and ensure the option is on.

Hardware-accelerated GPU Scheduling

From the 'Game Mode' menu, on the right-hand side is a menu option named 'Graphics settings'. Click on this to open up 'Hardware-accelerated GPU Scheduling'.

Having this option switched to 'on' will improve performance and reduce latency. If you see stutters in the simulator, changing this option should help to reduce the occurrence of them. Head back to the 'Game Mode' menu.

Captures

The final change you're going to make is to 'Background recording'. To ensure this is 'Off', click on 'Captures' from the left-hand side to open up a new menu. Now you can turn off 'Background recording'.

With these changes in place, now restart your PC.

Top Tip: If you are running any other background tasks such as Nvidia ShadowPlay, turning this off will also help with performance.
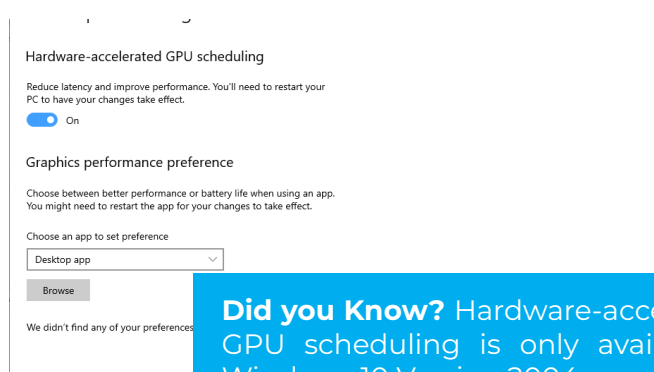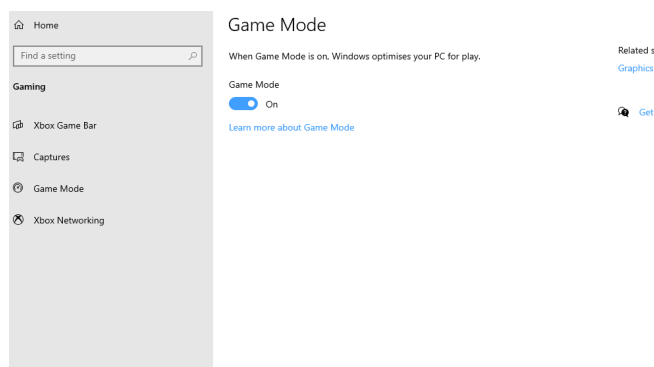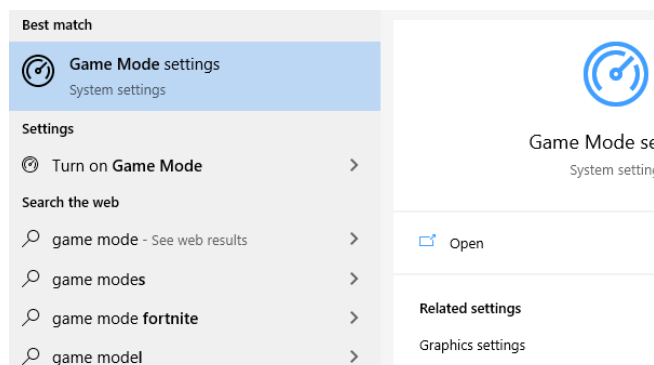
Did you Know? Hardware-accelerated GPU scheduling is only available in Windows 10 Version 2004.
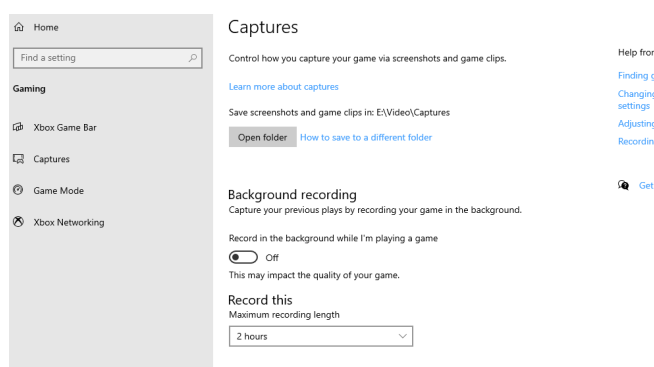
Setting the Priority to High

With the video drivers now set and your windows settings enabled to give you maximum performance, we're now going to make some changes to how the simulator runs. We want to ensure that the simulator now uses as much of the processing power we have to give us the smoothest experience. There is a function within Windows, which is known as changing priority.

To do this, first load up the simulator as you usually would. Once it starts to boot, you want to run the Task Manager. If you're unsure how to open up the Task Manager, hit CTRL + ALT + DELETE at the same time, and then click on 'Task Manager' from the menu.

In Task Manager

When in Task Manager, you may only see a basic overview. Click on 'More Details' to show a lot more information. If you're less technically minded, don't worry as we'll only be touching a handful of things here.

With the new view on display, click on the 'Details' tab. This will show you a list of programs running on your PC. Scroll down to find 'FlightSimulator.exe'.

Now, right-click on it, hover your mouse over 'Set priority' and now select 'High'. This will now give your simulator a higher priority for your processing power over other applications.

Why not set to Real-Time?

This has adverse effects to your system and other functions simply need to have that type of priority over a flight simulator. Setting it to 'High' is safe and gives you improved performance.

RECOMMENDED SIM SETTINGS

On page 39, this guide documented some of the key changes you could make to the simulator to get the best performance in your simulator.

With version 1.10 of this guide, we have decided to expand upon it, which when combined with our tweaks and tips listed on the previous pages, will give you the maximum performance possible on your simulator.

From any point in the simulator, click open up the 'Options' menu, then 'General' and ensure you are on the 'Graphics' tab.

Biggest Performance Impact

We have identified there there are several settings within the new simulator that have the biggest impact on performance. These settings do have an effect on the overall visual look of the simulator, but tweaking them just enough will give you smoother performance whilst also retaining a good looking flight simulator.

Let us take a look at some of those that have some of the biggest impacts on performance.

Terrain Level of Detail

This will adjust the level of detail you will have from the terrain. The higher the setting, the better quality you will see, but reduced performance.

We recommend a setting no higher than 100.

Why?

Our testers and experts found this was the best balance between quality and performance. Even if you have a PC that can have 'Ultra' settings, anything above 100 will degrade performance with no added benefit for visual quality.

Above: Terrain Level of Detail 100

Below: Terrain Level of Detail 200

Object Level of Detail

This setting will adjust objects such as generated buildings and other objects in the world. The higher the setting, the better quality you will see, but reduced performance.
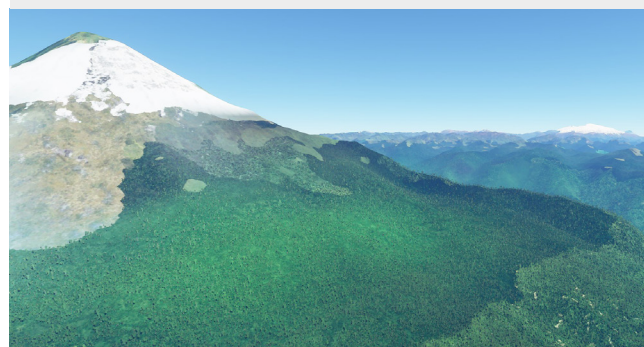
We recommend a setting no higher than 100.

Why?

Our testers and experts found this was the best balance between quality and performance. Even if you have a PC that can have 'Ultra' settings, anything above 100 will degrade performance with no added benefit for visual quality.

Texture Supersampling

This setting adjusts the texture's Anti-Aliasing. Higher settings will use more **VRAM**, so a modern GPU is required for higher settings. If you use a high-res display, you can use lower values to compensate for the increased pixel number.

We recommend a setting no higher than 4 x 4 (even if your GPU has loads of VRAM)

Why?

The performance benefit of a lower setting outweighs the minor visual differences of higher settings. Regardless of monitor size or GPU, 4 x 4 is a good setting to balance performance and visuals.

Shadow Maps

Shadows make the world look alive, especially when the sun is low. This setting will adjust the quality. The higher the number, the more impact it will have on performance.

We recommend a setting no higher than 768.
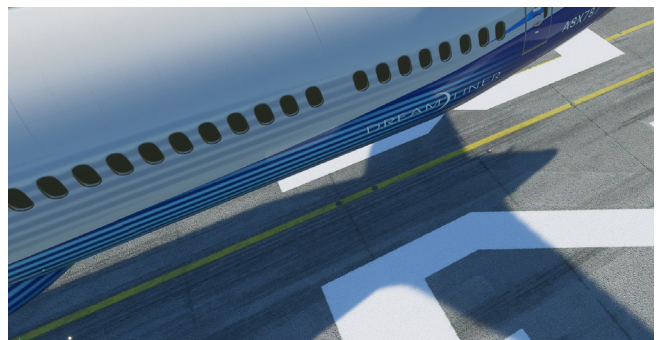
Why?

When flying at altitude, our testers found the visual quality to be little to no different than on higher settings, but the added performance benefit was worth it. However, you may notice some jaggy textures a little closer to the ground.
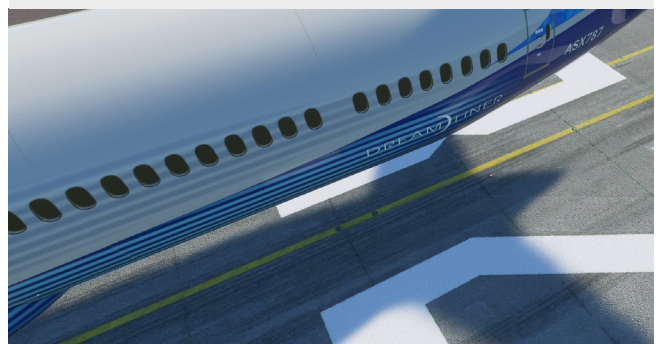

Above: Object Level of Detail 100

Below: Object Level of Detail 200

Above: Shadows @ 2048

Below: Shadows @ 768

Anti-Aliasing

In simple terms, this setting smooths out the edges within the simulator. This will enable models and texturing to look crisp and clear with no rough edges or 'jaggies'.

We recommend using TAA (Temporal Anti-Aliasing)

Why?

Whilst anti-aliasing is a huge performance killer, you want to balance visual quality and performance. Turning this setting any lower than TAA resulted in better performance, but at an expense of bad looking texturing and modelling. Our testers preferred to cut down on other elements whilst keeping this setting to TAA.

Water Waves

This will adjust the resolution of the waves produced in the flight simulator. The higher the setting, the better the quality but at a cost to performance.

We recommend using Medium settings.

Why?

Unless you intend on doing a lot of water-based flying, then putting this setting to medium will improve performance to have little to no impact on your flying experience. This was said by numerous testers, especially when flying at altitude.

Depth of Field

This setting will adjust how far afield the simulator will render and to what quality. High values improve quality but reduce performance.

We recommend using Medium or High
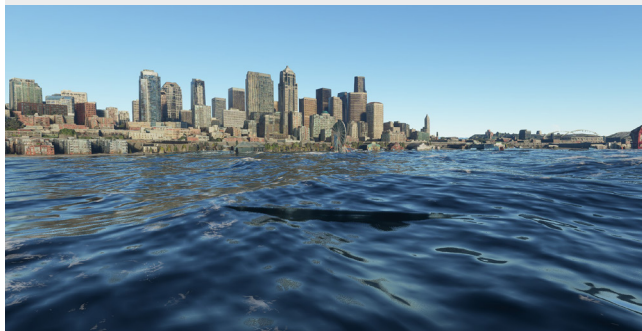(GPU dependant)

Why?

This felt more like eye-candy settings rather than something that enhanced the experience. Turning this down gave better performance with little visual impact.

Left: TAA **Right:** FXAA

Above: Waves HIGH

Below: Waves LOW

Above: Depth of Field HIGH

Below: Depth of Field LOW

Other Settings to Consider

Those were just some of the setting we have adjusted to improve performance, whilst maintaining a good looking flight simulator.

If you still find performance is not adequate enough for you, then you should try these other recommended settings.

Bloom

Turning off bloom saw a minor increase in performance, but our testers did miss the visual effect.

Reflections

Turn to medium to find a good balance between performance and good looking visuals.

Texture Synthesis

Turning this to medium helped add a few extra FPS to our performance, even in intense areas such as New York.

Trees

Turning this setting to medium gave out testers a small performance boost and little to no changes visually.

VSync

Our testers found that keeping this setting 'Off' offered the best performance and minimised stutters.
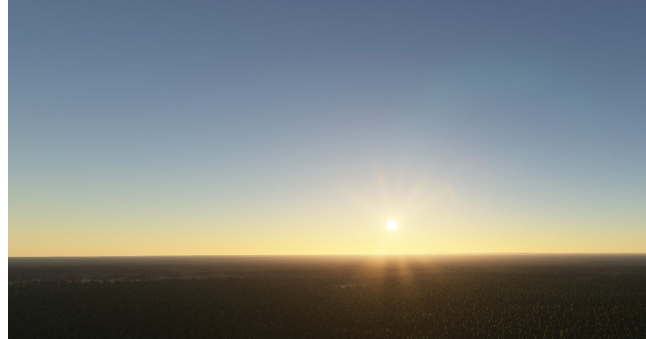
Above: Bloom On
Below: Bloom Off
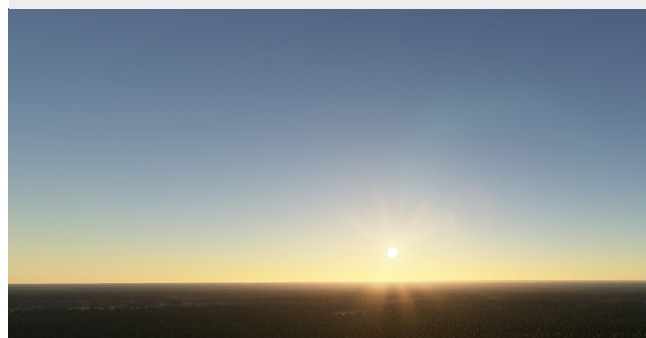
Above: High Tree Setting
Below: Medium Tree Setting

Do Remember that these tweaks have been tested by numerous people all of whom have had a varied degree of success. You should set your own expectations when it comes to performance and not always assume you will reach the magic "60 FPS" number we all so crave. Performance will improve over time thanks to updates to the simulator, changes to hardware and of course, the more we learn, the more we can advise of future tweaks and tips.

Our commitment to you is that when we feel there is something new that will enhance performance is we will update this guide accordingly so you always have the best possible information to help youmaximise performance in your new flight simulator.

ACHIEVEMENTS

Do More; Earn More

To help you get the most out of the new simulator, there are over 40 achievements you can earn. The more you do, the more you will earn and ultimately be able to brag to your friends.

Here is the complete list of achievements available to you and how to earn them.

Did you know? After you have earned a badge, you can apply it to your Pilot Profile. Simply head to the badges page in your profile, select your favourites, and then select a slot to apply it to. Now when people view your profile, they can see what badges you have earned.

Challenge Accepted
Complete any activity.

Fill 'er Up!
Refuel at any ground fuel station.

Rubberneck
Use the Smart Cam to view a star landmark for 3 seconds, from a distance of 550 yards or less.

Mother Nature
Adjust the weather during a flight.

Start Me Up
Manually start the Airbus A320neo's engines, without using Assistance.

By the Book
Request landing clearance from ATC at a towered airport, without using ATC assistance.

In The Wild
Use the Smart Cam to view animals for 3 seconds, from a distance of 550 yards or less.

Service with a Smile
Request each type of pre-flight Ground Service while at an appropriate airport gate.

Back-Up Plan
Utilize pre-flight Pushback Service to move aircraft, for a total distance of 1 mile.

Job Shadowing
Create a flight plan based on a Live Traffic aircraft, then fly the route without assistance.

Wheels Up, Wheels Down
Complete a non-stop flight of at least 300 miles from take-off to landing.

Look Ma, No Hands!
Utilize autopilot for a total of 600 miles.

Light Chop
Land at an airport where windspeeds are in excess of 5 knots, without using any assistance.

On the Green
Land on a grass runway, without using any assistance.

Stay on Target
Use the Instrument Landing System (ILS) to complete a landing.

My Way
Complete a non-stop 300+ mile flight from parking to parking spot, without assistance.

Deadstick Landing
After receiving landing clearance, switch off engines and successfully land on the runway.

Working for the Weekend
Complete a weekly activity.

Frequent Flyer Miles
Fly from LFBD airport near Asobo Studio to KSEA airport near Microsoft HQ.

Road Trip
Taxi aircraft for a total distance of 100 miles.

A Few Bumps
Land at an airport where windspeeds are in excess of 15 knots, without using any assistance.

Short Stuff
Land on a runway shorter than 2,000ft, without using any assistance or bypassing any travel.

Uphill Climb
Land on a runway that has at least a 12 degree incline, without using any assistance.

Night Owl
Accumulate 50 hours of flight time at night.

Fire and Ice
Complete the Patagonia Bush Trip, without using any navigation assistance.

Instrumental
Accumulate 50 hours of IFR flight time, including at least one take-off and landing.

Anemoi
Complete the Balkans Bush Trip, without using any navigation assistance.

Decathlon
Complete 10 weekly activities.

Goldrush
Complete the Nevada Bush Trip, without using any navigation assistance.

Completionist
Complete every activity.

Tour Guide
Use the Smart Cam to view 25 star landmarks, from a distance of 550 yards or less.

SIDs and STARs
Land at every star airport shown on the World Map.

Pilot Program
Accumulate 50 hours of flight time in a single pilot profile.

Landmarks the Spot
Use the Smart Cam to view 100 star landmarks, from a distance of 550 yards or less.

Greased
Complete every Landing Challenge.

World Traveler
Land successfully at 500 different airports.

Hydroplaning
Accumulate 50 hours of flight time in rainy weather.

Jack of All Planes
Complete a 300+ mile flight with every aircraft in the standard edition of Flight Simulator.

Flights of Fancy
Complete flights of at least 300 miles using a prop, jet and airliner.

Journeyman
Accumulate 500 hours of flight time in a single pilot profile.

Saddle Sore
Complete a flight of at least 8 hours with a propeller or turbo-prop aircraft.

Wing Commander
Accumulate 1,000 hours of flight time in a single pilot profile.

Century Club
Accumulate 100 hours of flight time in a single pilot profile.

THIRD-PARTY CONTENT

Enhance Beyond the Base Simulator

Flight Simulators, across all platforms, have thrived on having talented developers create content that goes beyond the base simulator. Whilst this new simulator goes above and beyond what we've seen before, there is still plenty to improve on, for aircraft, utilities and airports.
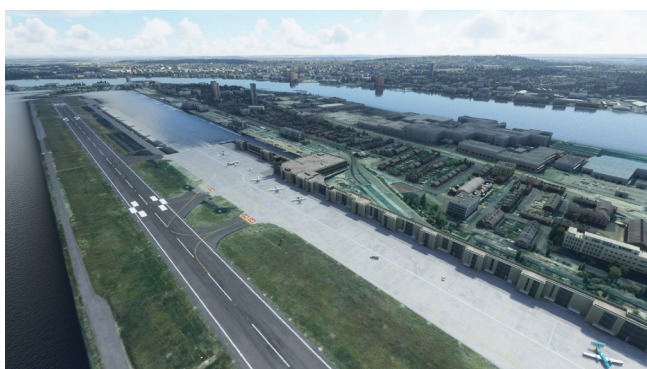
SoFly has partnered with scenery developer Orbx to showcase the difference a third-party add-on can have to the flight simulator to enhance the experience.

Default Airport vs Third-Party Airport

A default airport is any of the 37,000 airports included with the simulator.

London City Airport (EGLC) Comparison

DEVELOPER HIGHLIGHT

orbx simulation systems

Top-Tier Scenery Development for Flight Simulation

Orbx is the largest and most prolific scenery developer in the flight simulation community. From the start, they have focused on producing quality software and delivering exceptional customer service. With over 250 products in their catalogue, we are expecting many of them to make their way to the new flight simulator.

Orbx also has its very own convenient store called Orbx Central, which houses all your Orbx products and enables you to buy, install and configure them through one app.

Accessing new flight simulation content couldn't be easier with Orbx.
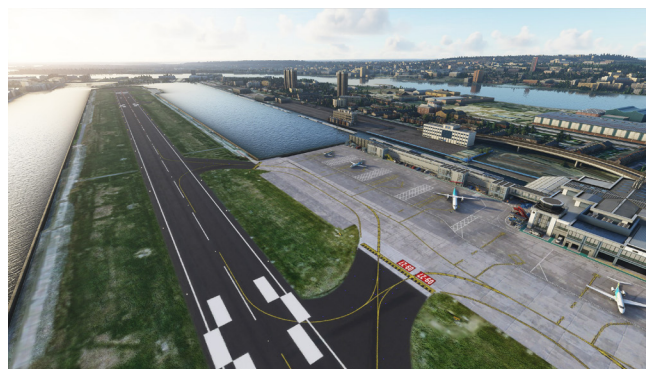
DEFAULT AIRPORT

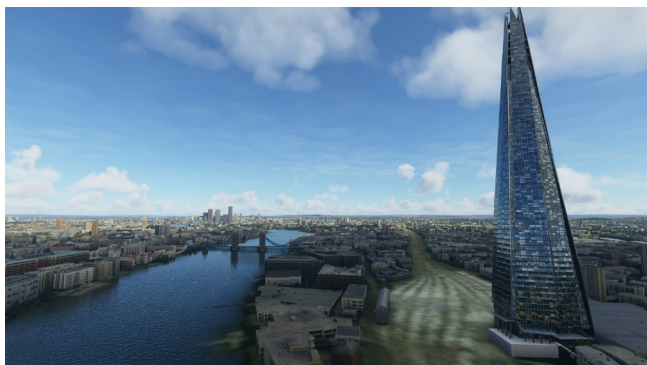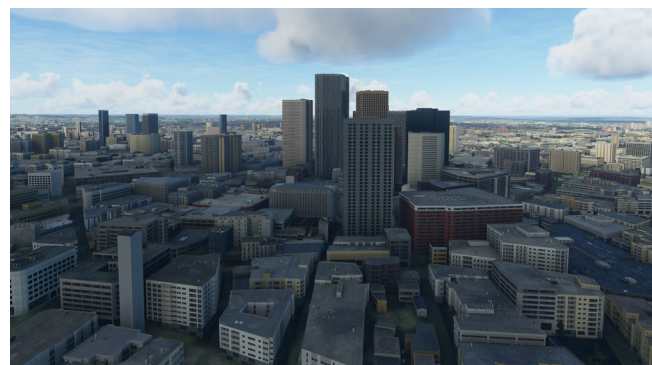### ORBX ADD-ON

Buy Now From Orbx

London City (Landmarks) Comparison

DEFAULT AIRPORT

ORBX ADD-ON

Innsbruck Airport (LOWI) Comparison

[Buy Now From Orbx]

HAND-CRAFTED AIRPORT

ORBX ADD-ON

[Buy Now From Orbx]

DEFAULT KEY COMBINATIONS

By now you will have mastered many elements of the new flight simulator. However, with so much to take in, having a guide to key combinations will be super useful to help get you started with the simulator.

This is a comprehensive list of all of the default key combinations available to you in Microsoft Flight Simulator.

Remember that these are the default controls and you can change any of them at any time in the settings page.

Menu keyboard controls

Toggle Active Pause - Pause

Toggle Pause - Esc

Toggle Basic Control Panel - Ctrl + C

Display Checklist - Shift + C

Help Menu - Tab

Next Toolbar Panel - (.)

Previous Toolbar Panel - /

Miscellaneous keyboard controls

Minus - Ctrl + Numpad plus

Plus - Ctrl + Numpad subtract

Skip RTC - Backspace key

New UI Window Mode - Right Alt

Request Fuel - Shift + F

Toggle fuel - Shift + P

Display Map Navigation - V

Display Navlog - N

Sim Rate - R

Toggle Delegate Control to Co-pilot (AI) - Ctrl + Alt + X

> **A FREE UPDATE** for this guide will be issued in the near future giving you a visual representation of each key combination on a keyboard to help you even further.

Flight Instruments keyboard controls

Set Altimeter - B

Toggle Autorudder - Shift + Ctrl + U

Select Airspeed Bug - Shift + Ctrl + R

Select Altitude Bug - Shift + Ctrl + Z

Select Heading Bug - Shift + Ctrl + H

Decrease Heading Bug - Ctrl + Del

Increase Heading Bug - Ctrl + Insert

Toggle Alternate Static - Alt + S

Set Heading Indicator - D

Instruments and Systems keyboard controls

Select Engine - E

Auto Start Engine - Ctrl + E

Engine Autostop - Shift + Ctrl + E

Toggle Anti Ice - H

Toggle Pitot heat - Shift + H

Toggle Master Battery - Alt + B

Toggle Master Battery and Alternator - Shift + M

Toggle Master Alternator - Alt + A

Increase Cowl Flap - Shift + Ctrl + V

Decrease Cowl Flap - Shift + Ctrl + C

Magneto - M

Magnetos Both - Shift + Alt + F

Magnetos Left - Shift + Alt + S

Magnetos Right - Shift + Alt + D

Magnetos Start - Shift + Alt + G

Magnetos Off - Shift + Alt + Q

Toggle Master Ignition Switch - Alt + I

Fuel keyboard controls

Toggle Fuel Pump - Alt + P

Fuel Selector 1 All - Alt + W

Fuel Selector 1 Off - Ctrl + Alt + W

Toggle Fuel Dump - Shift + Ctrl + D

Toggle All Fuel Valve - Alt + V

Control Trimming keyboard controls

Elevator Trim Up - Numpad 1
Elevator Trim Down - Numpad 7
Rudder Trim Left - Ctrl + Numpad 0
Rudder Trim Right - Ctrl + Numpad Enter
Aileron Trim Left - Ctrl + Numpad 4
Aileron Trim Right - Ctrl + Numpad 6

Power keyboard controls

Cut Throttle - F1
Decrease Throttle - F2
Increase Throttle - F3
Mixuture Lean - Shift + Ctrl + F1
Decrease Mixture - Shift + Ctrl + F2
Increase Mixture - Shift + Ctrl + F3
Mixture Rich - Shift + Ctrl + F4
Propeller Pitch Low - Ctrl + F1
Decrease Propeller Pitch - Ctrl + F2
Increase Propeller Pitch - Ctrl + F3
Propeller Pitch High - Ctrl + F4

Exterior Lights keyboard controls

Toggle Beacon Light - Alt + H
Toggle Strobes - O
Togle Nav Lights - Alt + N
Toggle Taxi Lights - Alt + J
Toggle Landing Lights - Ctrl + L
Landing Lights Up - Shift + Ctrl + Numpad 8
Langing Lights Down - Shift + Ctrl + Numpad 2
Landing Lights Left - Shift + Ctrl + Numpad 4
Landing Lights Right - Shift + Ctrl + Numpad 6
Landing Lights Home - Shift + Ctrl + Numpad 5

Radio keyboard controls

Transponder - T

Com Radio - C

Nav Radio - N

DME - F

ADF - Shift + Ctrl + A

VOR OBS - Shift + V

Frequency Swap - X

Set Transponder - Shift + Alt + W

Set Com 1 Standby - Shift + Alt + X

Com 1 Switch to Standby - Alt + U

Nav 1 Swap - Shift + Ctrl + N

Display ATC - Scroll Lock

Decrease VOR 1 OBS - Shift + Ctrl + End

Increase VOR 1 OBS - Shift + Ctrl + Home

ATC Panel Choice number (from 0 to 9) - (from 0 to 9)

Increase Wheel Speed - Shift

Toggle Marker Sound - Ctrl + 3

Increase Nav 1 Frequency - Shift + Ctrl + PgUp

Decrease Nav 1 Frequency - Shift + Ctrl + PgDown

Secondary Control Surfaces keyboard controls

Decrease Flaps - F6

Increase Flaps - F7

Retract Flaps - F5

Extend Flaps - F8

Toggle Spoilers - /

Camera Instruments keyboard controls

Next - A

Previous - Shift + A

Set Custom Smartcam Target - T

Reset Smartcam - Ctrl + F

Camera AI Player - Ctrl + Home

Select Next Point of Interest - PgUp

Next Smartcam Target - Ctrl + PgUp

Previous Smartcam Target - Ctrl + PgDown

Toggle Follow Smartcam Target - PgDown

Unset Custom Smartcam Target - Shift + T

Toggle Instrument View number (from 0 to 9) - Ctrl + (from 0 to 9)

Cockpit Camera keyboard controls

Cockpit Upper View - Space key

Reset Cockpit View - Ctrl + Space key

Zoom In the Cockpit View- =

Zoom Out the Cockpit View - -

Cockpit View Left - Left

Cockpit View Right - Right

Increase View Height - Up

Decrease View Height - Down

Translate Cockpit View Forward - Right Alt + Up

Translate Cockpit View Backward - Right Alt + Down

Load Custom Camera number (from 0 to 9) - Alt + (0 to 9)

Save Custom Camera number (from 0 to 9) - Ctrl + Alt + (0 to 9)

Load next custom camera - K

Load previous custom camera - Shift + K

Toggle Smart Camera - S

Look Up - Shift + Up

Look Down - Shift + Down

Look Left - Shift + Left

Look Right - Shift + Right

Quickview Cycle - Q

Quickview Up - Ctrl + Up

Quickview Rear - Ctrl + Down

Quickview Left - Ctrl + Left

Quickview Right - Ctrl + Right

Camera Mode Switches keyboard controls

Toggle Drone - Insert key

Cockpit/External View Mode - End key

Fixed Camera keyboard controls

Next Fixed Camera - A

Previous Fixed Camera - Shift + A

Reset Fixed Camera - F

Toggle Fixed Camera number (from 0 to 9) - Ctrl + Shift + (0 to 9)

External Camera keyboard controls

Zoom In External View - (+)

Zoom Out External View - (-)

Reset External View - Ctrl + Space

External Quickview Left - Ctrl + Left

External Quickview Right - Ctrl + Right

External Quickview Top - Ctrl + Up

External Quickview Rear - Ctrl + Down

Drone Camera keyboard controls

Translate Drone Backward - S

Translate Drone Forward - W

Translate Drone Left - A

Translate Drone Right - D

Translate Drone Up - R

Translate Drone Down - F

Top Down View - Ctrl + Space

Pitch Up - Numpad 8

Pitch Down - Numpad 2

Roll Left - Numpad 7

Roll Right - Numpad 9

Reset Roll - Space

Yaw Left - Keypad 4

Yaw Right - Keypad 6

Reset Target Offset - Numpad 5

Decrease Translation Speed - F1

Increase Translation Speed - F2

Decrease Rotation Speed - F3

Increase Rotation Speed - F4

Toggle Follow Mode - Tab

Toggle Plane Controls - C

Zoom In - Keypad +

Zoom Out - Keypad -

Toggle Depth of Field - F1

Decrease Depth of Field - F2

Increase Depth of Field - F3

Decrease Exposure - Ctrl + F2

Increase Exposure - Ctrl + F3

Toggle Autofocus - F4

Toggle Foreground Blur - F5

Attach to Next/Previous Target - Ctrl + PgUp/ PgDown

Lock to Next Target - T

Lock to Previous Target - Shift + T

Toggle Auto Exposure - Ctrl + F4

Toggle Lock Mode - Ctrl + Tab

Quick Tip: You can plug in almost any game controller (Xbox, PlayStation, Nintendo) and use this to control the drone. We highly recommend it.

THIS IS JUST THE START

Your flight simulation journey has only just started. We hope you have felt that this guide has provided you with the support, guidance and tips you need to get off to a flying start.

From understanding the complexities of airliners and emergency procedures to interacting with live air traffic control and reading charts, we know there is still so much out there to learn. Whilst flight simulation may still seem somewhat daunting, we hope this guide has given you an insight into the world of simming and been able to provide you with some helpful tips to get you on your way.

Our Guide to Flight Simulation just scratches the surface of everything there is to learn out there. At SoFly, we want to continue providing you with quality guides, tutorials & training, and lots more services to help you have the best virtual flight simulation experience.

The Future

This guide will be updated over the next few weeks with further insight into cities to explore, animals to find and more tutorials for the more challenging approaches.

A Pro Edition will also be released where we will go into detail about how to fly airliners, plan more advanced navigation and how to handle various emergency situations.

Resources

Fortunately, there is a wide range of resources out there already to help you better understand flight simulation, and how to get involved with the various communities in this hobby.

Community Forums / Websites

Avsim

Flightsim.com

Official Microsoft Flight Simulator Discord

The Sky Lounge.tv Discord

Media Outlets (News, Reviews & Previews)

FSElite

HeliSimmer.com

Threshold

Online Flight Simulation Networks (ATC)

IVAO

POSCON

VATSIM

Content Producers (Twitch / YouTube)

320 Sim Pilot

Aus Flight Simmer

Chewwy94

JonFly

The Flight Sim Deck

NovaWing24

Credits

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Your support, guidance and feedback has helped keep us motivated through this challenging and tough time. We value that now and always as we help others to discover the wonderful world of flight sim, just as you helped us to learn for ourselves.

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