

RF7

REALFLIGHT[®]

Written and Edited by: Knife Edge Software[™]
and Great Planes Model Manufacturing



R/C Flight Sim

True to Life[™]

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GREAT PLANES

RealFlight 7

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Table of Contents

Introduction	1	The Environment Menu	145
RealFlight 7 Feature Highlights	2	Select Airport...	146
How to read this manual	7	Edit <i>Current Airport...</i>	148
Before You Begin	8	Utilizing the Editor	160
System Requirements	8	Create New Airport	167
Video and Sound Cards	9	Sun-	167
Getting the Most out of RealFlight	10	Thermals-	169
Getting Started	11	Wind-	170
Installing RealFlight 7	11	Reset to Default	172
Using Your Own R/C Radio	17	Airport MRU	173
Exploring RealFlight 7	18	Challenges Menu	175
Keyboard Commands	37	Air Race	177
Where to Go From Here	40	Balloon Burst	178
Controlling RealFlight 7	41	Grapple	179
Start Flying!	43	Limbo	180
The Simulation Menu	47	Spot Landing	181
Select Scenario...	48	Ring Race	182
Manage Scenarios...	49	During Flight	182
Select Controller...	51	Gadgets Menu	185
Physics...	57	NavGuides	186
Graphics...	59	Radio	188
Flight Failures	60	Binocular	189
Setup Failures	65	Viewport	190
Import	70	Variometer	192
Export	73	Multiplayer	193
Manage User Files	75	Overhead	193
Mute/Unmute Audio	78	Timer	194
Settings	79	Heads-Up Display	195
Capture Screenshot	112	Quick Load...	197
Show Title Bar	113	Close All	198
Exit	114	Edit NavGuides...	198
The Aircraft Menu	115	Multiplayer Menu	205
Aircraft Selection...	116	Pilot Profile	207
Edit Current Aircraft	118	Join	210
Quick Edit...	133	Host	214
Select Color Scheme	135	Disconnect...	217
Save Color Scheme As...	136	Host Options	217
Randomize Color Schemes	138	Scoreboard	226
Remember Aircraft Position	139	Server Details...	229
Clear Aircraft Position	140	Game Help...	231
Reset Position	141	Game Gadgets	232
Kill Engine	142	Select Target	235
Aircraft MRU	143	Simulation Sounds	237
		Voice Chat	238

Text Chat	242	Index	371
Enter MultiMode	243	License	375
Recordings Menu	247	Credits	379
Start Recording	248		
Stop Recording	248		
Open Recording...	249		
Record Microphone Input	252		
Recordings MRU	253		
Training Menu	255		
Takeoff Trainer	256		
Landing Trainer	261		
Heli Hover Trainer	267		
Heli Autorotation Trainer	273		
Heli Orientation Trainer	277		
Airplane Hover Trainer	280		
Virtual Flight Instruction	287		
View Menu	291		
Scenery	292		
Effects	292		
Camera Type	294		
Camera Position	297		
Look At	298		
Zoom Type	298		
Zoom In	300		
Zoom Out	300		
Zoom Reset	301		
Head Tracking	302		
Help Menu	305		
RealFlight Help	306		
Radio Interface Help	306		
Tactic TTX600 Help	307		
Keyboard Commands	308		
Welcome Screen	310		
Video Player	312		
Websites	313		
License	315		
About	315		
Basics of Flying	317		
Airplane Basics	317		
Helicopter Basics	322		
Helicopter Flight	327		
RealFlight 7 Launcher	329		
Run RealFlight	330		
Additional Options	330		
If You Experience Difficulties	340		
How to Get Help and Information	340		
Before You Do Anything Else	341		
If You Need Additional Assistance	343		
Examples of Common Problems and Solutions	344		
Transmitter Modes	346		
Convert Mode 2 to Mode 1	347		
Glossary	349		

Introduction

*Welcome to the RealFlight 7 R/C
Flight Simulator*

RealFlight 7 is without question, the most advanced R/C aircraft simulation available. RealFlight 7 is so technologically advanced and so realistic, you'll find it hard to believe that it's only a simulation. The culmination of over fifteen years of development and design, RealFlight 7 offers advancements that will serve to fine-tune the flying skills of even the most seasoned R/C veteran. If you're an entry-level R/C-er, RealFlight 7 is the ideal way to learn to fly, practice maneuvers, feel the effects of design modifications, or just have an incredible amount of fun.

RealFlight 7 includes over 100 models that look and fly like the real thing, plus a multitude of flying sites (each with their own unique "feel" and distinctive characteristics). In addition, RealFlight 7 offers its users the most powerful, flexible aircraft and flying site editors ever unveiled to the modeling community; allowing modelers to experiment with a virtually unlimited number of parameters. RealFlight 7 enables you to change the look and feel of a flying site with nothing more than a few keystrokes, a click of the mouse and a little imagination. The integrated AccuModel™ aircraft editor makes modifying aircraft just as easy.

RealFlight 7 also offers a wide array of tools to help you understand how to use the program and how to improve your R/C piloting skills. This extensive manual explains every feature and option; as well as how to use them. We offer a number of training aids and assistance including (but not limited to): our Virtual Flight Instruction, Heli Hover Trainer, Airplane Hover Trainer, Takeoff and Landing Trainer, Heli Autorotation Trainer and Heli Orientation Trainer. These helpful training aids provide on-the-fly learning opportunities, and we encourage you to take full advantage of them. No other R/C simulator goes further to enrich your R/C experience.

The following section briefly outlines some of the exciting features in RealFlight 7. Subsequent chapters will describe all RealFlight features in complete detail. We strongly

suggest that you peruse this manual in its entirety, as it explains every feature and option, as well as how to use them.

Finally, we'd like to express our gratitude to you for purchasing RealFlight. We think you will be enormously pleased with RealFlight 7. Have fun flying!

RealFlight 7 Feature Highlights

This section briefly outlines some of the features included in RealFlight 7, the USB InterLink Elite Controller and the RealFlight interface. The hardware included depends on the edition of RealFlight 7 you choose to purchase.

USB InterLink Elite Controller-

The multi-patented InterLink Elite Controller incorporates a significant number of enhancements and improvements over previous RealFlight systems.

The InterLink Elite Controller by Futaba is a revolutionary device that offers you the following:

- A high quality USB controller for RealFlight 7.
- A built-in interface for (optionally) using your own R/C transmitter to control RealFlight 7.
- QuickSelect™ Buttons—take control of RealFlight's menus and options from the InterLink Elite without touching the keyboard or mouse.
- The InterLink Elite Controller is fully hot swappable—you can connect and disconnect the InterLink or your own transmitter without rebooting your computer (or even shutting down RealFlight).
- High-speed response to control inputs.
- Digitally precise inputs with digital trims for unmatched control precision.
- MultiMode™ split screen capability allows you to use the InterLink Elite as a controller and an interface simultaneously.
- A keyboard-free push button reset of the simulation.
- Instantly rewind your current flight and start over from any point.
- The ability to hand launch aircraft.

USB interface-

The USB interface offers a simple method to use your own transmitter without a lot of fuss. Like the InterLink Elite, the interface is plug-and-play for quick installation. Also included on the device is a Reset/Rewind button.

Menu-Driven Interface-

RealFlight 7 utilizes a drop-down menu-driven interface system. Created for ease of use and maximum flexibility, the menu system provides an interface familiar to even a casual computer user.

Additional Features-

- **RealPhysics™ 3D-** One of the most ambitious models of flight in the world, RealPhysics 3D is unmatched in its ability to re-create the lifelike characteristics of model flying. RealFlight 7's physics engine has been tried and approved by world-class competition pilots like Frank Noll, Jr., Bobby Watts, and Matt Botos. Furthermore, aircraft in RealFlight 7 behave with real-world predictability because they are carefully modeled using advanced methods and extensive real-world data. If it happens at the field or in the air, it's re-created with exacting detail in RealFlight 7!
- **Challenges-** These game-like events provide a fun way to test and develop your skills. Each has multiple levels. Difficulties increase as you move from one level to the next. Successfully earning a medal in each challenge unlocks new content.
- **Float Fly-** RealFlight 7 offers a number of flying sites with water along with a variety of float fly aircraft. Practice your takeoffs or landings on water and admire the view at the same time.
- **Instant Rewind-** Test your pattern flying over and over again with the new Rewind feature. Hold the Reset button and watch your flight rewind. Let go of the button at the point you wish to re-start your flight. Use the data lever on the controller to seek forward or backwards through your flight.
- **InterLink Elite QuickSelect™-** With RealFlight 7's InterLink Elite, you're able to make quick changes such as, selecting a different aircraft or airport without touching the keyboard or mouse.
- **Quick Load-** Know the name of the aircraft or flying site you wish to use? Open the Quick Load gadget to quickly search and load the aircraft.
- **Quick Edit-** If you ever wish to make minor refinements to the aircraft, but don't wish to dive into the complexity of the full aircraft editor, the Quick Edit is the solution for you!

- **Training Videos**-Access the built in video player to training and feature videos.
- **Real Rendering™**- Taking advantage of cutting edge 3D graphics technology, RealFlight not only flies realistically; it also looks true to life.
- **Variable Pitch Prop**- Take 3D flight to 4D with the variable pitch prop. Select the popular FlatOuts™ Extra 300S with V-Pitch and try amazing maneuvers you didn't think were possible with an airplane—like flying backwards.
- **Grappling Hook**-Select the Skycrane heli to hook, grapple and drop objects.
- **Hovering Training Aids**- Learn to torque roll or hover a heli with RealFlight's Heli and Airplane Hover Trainer. For more excitement, try the Heli Orientation Trainer. Both are great training aids for anyone new to radio control.
- **Takeoff and Landing Training Aids**- The RealFlight 7 simulator is a great way for new pilots to learn the art of R/C flying. The best places to start are training aids, designed to teach you the basics of takeoffs and landings.
- **Overhead View**- This on-screen gadget helps you find and line up to the runway for easier landings. Or use it to help find your friends during multiplayer sessions.
- **Sky Grid and Trails**- Practice your precision maneuvers with these graphical aids. Sky Grid will display a pattern in the sky for reference. Enable Trails and you will see where your aircraft has flown; allowing you to perfect your maneuvers.
- **Night Flying**- Just because the sun is down, doesn't mean that you can't fly. The same is true with RealFlight night flying. Pick a nighttime airport and watch as your aircraft lights up the sky.
- **PhotoFields™**- RealFlight 7 also includes ultra-realistic PhotoField airports. Using incredible high resolution digital images, RealFlight PhotoField airports are as real as it gets. The Import feature allows you to use your own panoramic photos to create new flying sites.
- **“Full Coverage” collision detection**- Instead of using sensors at only a few points along the aircraft, “Full Coverage” blankets the entire aircraft with detection points ensuring that every part of an aircraft will not only register a strike but, will react authentically. Contact can result in damage ranging from minor handling problems to spectacular crashes complete with realistic sound effects.
- **TruFlo Wind Dynamics™**- RealFlight 7 introduces modelers to R/C's most realistic wind model. All the components of TruFlo Wind Dynamics work

together to create the single most accurate wind field in any simulation. Wind impacts every facet of your flight, just as it would at the local field.

- **AccuModel™ Aircraft Editor-** RealFlight 7's aircraft editor is the most powerful and most flexible editor ever introduced in an R/C simulator. AccuModel allows you to change virtually every aspect of your model with ease. It places over 1,500 airfoils at your disposal, a multitude of propellers, and much, much more! AccuModel brings up a wire-frame model for easy reference and highlights the editing area. Make a change and it's immediately reflected on-screen, ready for review and revision.
- **Flying Sites with over 5,000 square miles to explore-** RealFlight's TrueLife Terrain™ goes beyond the limitations of traditional simulator flight. Created and mapped from satellite imagery, RealFlight 7's landscape looks as "right" and richly varied as the view from your front door. Digital elevation data brings it all into accurate perspective.
- **A living, breathing environment-** Everything in RealFlight 7's 3D world is as realistic as possible; complete with depth and details that transcend the traditional "billboard" look of other simulators. You'll see leaves and branches that dance in a passing breeze and clouds that roll by with the prevailing winds.
- **FlexiField™ flying site editor-** The FlexiField™ editor takes you beyond 2D scenes into a 3D environment rich in new objects and editing options. Customize an existing field with new foliage, different objects, or both. Create a new field with nothing more than a mouse, imagination and a few simple keystrokes.
- **InterLink™ Elite Controller-** RealFlight 7's InterLink Elite controller functions as a controller, an interface, or both. Its push-button is capable of resetting and rewinding the aircraft, or hand-launching a sailplane. Additionally, the InterLink Elite is the key to navigating the QuickSelect menus – select alternative aircraft, flying sites and more, all from the controller.
- **Fly Split Screen-** RealFlight 7's MultiMode™ option allows two modelers to fly simultaneously on one PC. It's perfect for practicing formation flight, a game of tag, or personalized flight instruction.
- **VirtualRevolution™ sound technology-** Doppler-correct stereo sounds heighten the realistic effect with true sound recordings of 2-stroke, 4-stroke, turbine, electric, ducted fan and gasoline engines. As the aircraft crosses the field, the engine sound follows, just like its R/C counterpart.
- **RotoSonic™ technology-** Recreating distinctive engine/blade sounds with startling accuracy. The sounds are so lifelike, you'll swear you are at the field!
- **VFI (Virtual Flight Instruction)-** VFI gives you personal flight lessons from R/C's leading experts. Using VFI, you can select a maneuver (loop, roll, etc.) from an extensive list of options. VFI then demonstrates the maneuver on-

screen, performed by an expert. While you watch, the voice of the pilot/instructor will explain how to perform the maneuver.

- **AFR (Advanced Flight Recorder)**- This feature allows the pilot to not only view prerecorded maneuvers, but also to record maneuvers of his/her own as well. RealFlight 7 even allows you to record your own audio for personalized flight instruction. This feature also allows you to pause, speed up, slow down, and loop the performance. The pilot has the option to activate the digitized transmitter display, so that he/she can view the radio input while flying.
- **NavGuides™**- Using the NavGuides, you can display a variety of heads-up on-screen information. Options range from altitude and airspeed to aircraft heading and engine RPM. This feature improves your ability to “see” what is going on in your virtual world.
- **Viewport**- You can open up a picture-in-picture display and treat it as an independent “window on the world”. You can individually adjust each of the viewport’s vantage points, zoom level, and direction of view.
- **Multiplayer**- You can fly with many other RealFlight 7 owners. Participate in online competitions, or just enjoy the thrill of flying around with one another. This feature can also be used to learn new maneuvers from pilots across the street or around the world.
- **Combat Events**- Compete in Streamer Cut, Paintball, Rocket and Machine Gun combat. Or combine racing and combat in an exciting match of DeadRinger™. Plug in a headset and microphone to your computer and chat live during these contests.
- **Animated control surfaces and retracts**- Control surfaces, retracts, propellers, and rotor blades move for added realism.
- **Aircraft exhaust/smoke**- You can control the color, density, “hang time”, and other parameters related to airplane and helicopter smoke and exhaust.
- **Streamers**- Add streamers to any aircraft, to any location, in any color. Watch as they corkscrew behind the airplane during a roll, or react accordingly to the wind and the propwash.
- **Flight Failures**- RealFlight can simulate many common flight failures (radio interference, stuck servos, engine failures, etc.). Use this feature to prepare for emergencies at the field.
- **Fully editable aircraft paint/decals schemes**- Create customized trim schemes for your aircraft. (To design your own paint scheme, you must use a third-party program that edits TGA files.)
- **Launcher**- RealFlight 7’s Launcher allows for easy one-click access to program upgrades, online registration, and technical support.

- **Extensive Help materials-** RealFlight 7 features extensive online tool tips and diagrams, a detailed manual, and technical support to enhance your enjoyment of the program.

How to read this manual

RealFlight 7 is a menu-driven program, which allows you to make quick changes without having to reload the simulator each time. This manual will break out each main menu to its own chapter. This allows you to quickly find information on features and functions by the related menus.

Along with this manual, a large RealFlight community is available online to help and discuss any topics with each RealFlight fan. This online support, in the form of a forum, can be found at:

<http://www.knifeedge.com/forums/>

Before You Begin

To get the most out of RealFlight 7, it helps to first understand how to get the most out of your computer.

RealFlight 7 is designed to work on a large variety of computer hardware. Similar to a car, if you want to go faster, you need a bigger engine. The same holds true with RealFlight. You'll be able to enjoy the simulator on most modern computers, but having the most up to date hardware for your computer will greatly increase your enjoyment.

System Requirements

You will find the suggested system requirements for the RealFlight 7 R/C Flight Simulator listed below. The minimum recommended system requirements are the bare minimum PC configuration for installing RealFlight 7. Meeting the minimum requirements will allow you to enjoy RealFlight 7. However, in order to take complete advantage of the many features and functions offered by RealFlight 7, you should have a computer that meets or exceeds the specifications as specified in the optimum system requirements.

Minimum Recommended System-

- Some graphical features may be disabled
- Aerodynamic Calculations will still be high-quality

Windows®* XP, Windows* Vista™, Windows* 7 or Windows* 8

*Administrator Access Required

Intel Pentium 1.0GHz or equivalent

512 MB RAM

10 GB Hard Drive Space

DVD Drive

3D Accelerated Video with:

- 32 MB Dedicated Video Memory
- Full DirectX 9 compliant (Shader Model 2.0 or better)

Optimal System-

- For best graphical performance

Dual Core 2.4GHz CPU

2 GB RAM

3D Accelerated Video with:

- 512 MB dedicated video memory

Multiplayer Requirements-

Broadband connection

Computer microphone for voice chat

Video and Sound Cards

In order to achieve optimum performance and the best flying experience in RealFlight, there are two important components of your computer that deserve special attention: the video and sound cards.

RealFlight 7 has undergone countless hours of compatibility testing and evaluation. As such, this software will adequately function with a variety of video cards—ranging from yesterday’s favorites to tomorrow’s hits.

While RealFlight works well on a wide variety of hardware configurations, it offers many features and functions that are designed to take particular advantage of the latest video technology. If you have an older computer, or a newer computer with a lower-end video card, you may want to consider purchasing a new video card to take advantage of these features and functions. This moderately priced upgrade can vastly enhance your enjoyment of RealFlight. Aside from increasing your satisfaction with RealFlight 7, a new video card will also work with many other games or simulators, improving their performance as well.

While not as important as the video card, upgrading your sound card may also improve your satisfaction with RealFlight. This is especially true if your computer uses an on-board sound card (a sound card affixed to the motherboard).

Getting the Most out of RealFlight

We think you'll agree that RealFlight offers the finest set of instructions and practice tools of any R/C simulator suited for both beginners and experienced pilots. Great Planes and Knife Edge Software are committed to the continual improvement of our products. When using the software, you should keep two things in mind:

First, similar to other pursuits, what you get out of RealFlight depends upon what you put into it. Mastering radio control requires a great deal of patience and practice. If you crash an aircraft in the simulation, take it very seriously. Crashing an actual R/C aircraft can cost you a lot of time and money. Try to identify what you did incorrectly, and use the experience to avoid making the same mistake again.

Secondly, while the simulator is quite realistic and will assist you in learning many of the skills necessary to become a proficient pilot, there is no substitute for actual flying time at the field. A simulation can be a wonderful practice tool. However, no simulator, no matter how realistic, can completely replace a qualified, experienced, human flight instructor. If you are new to R/C, you should never attempt to fly a real aircraft without the supervision of a qualified instructor; no matter how accomplished you are on the simulator.

Getting Started

A brief overview and assistance to start you on your R/C adventure.

This chapter covers the installation procedure for RealFlight 7, it describes the basics of running the program, and introduces you to some of RealFlight's frequently used features.

The first section, *Installing RealFlight 7*, offers a step-by-step approach to the installation procedure for both the program software and the controller.

The second, *Using your own R/C Radio*, offers the instructions you need if you intend to use your own R/C transmitter to control RealFlight 7. If you only wish to fly with the InterLink Elite controller, you may choose to skip this section.

Finally, the third section, *Exploring RealFlight 7*, offers a brief tour of the RealFlight 7 program. You'll learn how to perform some basic functions, such as selecting the aircraft you wish to fly, performing simple edits to the flying field, manipulating viewports, and using RealFlight's Virtual Flight Instruction feature.

This chapter only touches briefly on some of RealFlight 7's features. We strongly suggest that you also read the subsequent chapters, which describe the various features in comprehensive detail.

Installing RealFlight 7

Regardless of whether you plan to use the InterLink controller by itself, or your own R/C radio through the built-in transmitter interface, follow the instructions on Program Installation in this section.

Program Installation-

RealFlight 7 features a simple, one-step installation process. There are, however, further steps that must be followed prior to running the program for the first time. This section will explain how to install the RealFlight 7 software and hardware. Upon completion of this section, you should be able to fly the aircraft on your PC.

The InterLink controller's built-in transmitter interface also allows you to use your own R/C transmitter to control RealFlight 7 should you opt to do so. To activate the interface adapter, you will first need to follow the instructions in the section below. This section explains how to use the transmitter interface option in the InterLink controller.

Update Drivers-

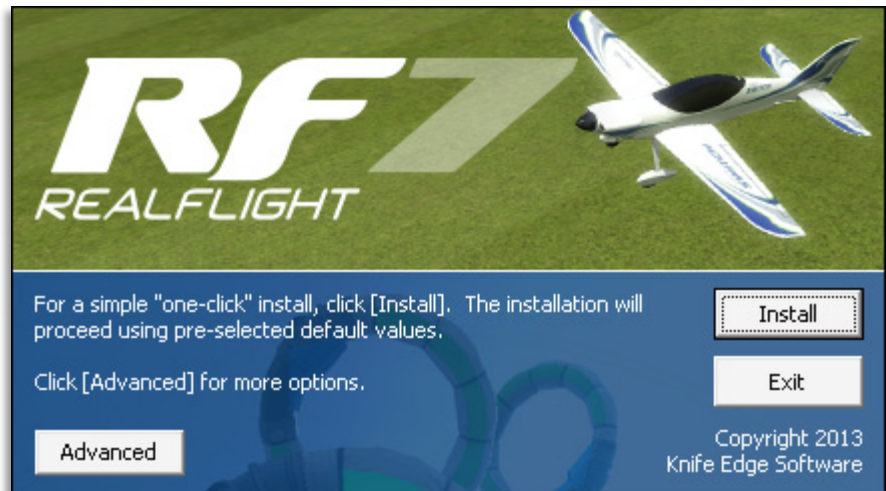
Before you begin installation, we strongly suggest that you update the drivers for both the sound and video cards on your PC. A driver is a software program that your computer uses to control hardware devices. Each card has its own respective driver. Most problems with installing and using RealFlight, as well as many other programs that use Microsoft DirectX, arise from using outdated video and/or sound card drivers.

If you are not sure how to update your drivers, you can find instructions in the article Q01-1038, "Locating and installing drivers", at the following address: <http://www.gpssoftware.com/kb/q01-1038.htm>. This support article will take you through the process step-by-step, and has links to driver download sites for most manufacturers.

Installing the Software-

After you have completed installation of the new video and sound card drivers, you are now ready to install RealFlight 7.

1. Before installing the software, make sure to close any applications that you are running. This includes virus scanning software and other similar background applications.
2. Insert the **RealFlight disc** into the appropriate DVD drive.
3. If Auto-Play is active, setup will begin automatically when the DVD drive is closed. Simply click the **Install** button when prompted. If Auto-Play is not active, click Start on the task bar. Next, click **Run**. In the dialog box that appears, type '**d:\setup**' (assuming that 'd' is your DVD drive) and click **OK**.



Follow the on-screen instructions to complete the setup procedure. Upon completion of the installation, click **OK**.

Installing or Updating DirectX-

1. RealFlight will ask if you wish to install DirectX 9 on your PC. It is important that your PC utilizes DirectX 9.0c or later. Click **OK** to proceed to the DirectX License Agreement.
2. Click "**I accept the license agreement**" to install DirectX 9.0c. Alternatively, if you do not wish to update DirectX at this time, click **Cancel**.
3. If you have opted to accept the license agreement, click **Next** to proceed with the installation. DirectX will install the necessary files to update your PC.
4. When prompted, click **Finish**. Your PC will power down and then restart once again.

Connect the InterLink Elite Controller or interface-

The InterLink Elite controller and the RealFlight interface use the USB (Universal Serial Bus) port, so there is little to do in the way of setup.

1. With the software installation procedure complete, firmly plug into an available USB port on the PC. You do not have to shut the PC down to plug the controller in.



2. Shortly after plugging in, a dialog box should appear on the screen indicating that Windows has located a new device and will then automatically install the necessary drivers.

Please note: It is possible that Windows will need to install the appropriate files for the InterLink Elite or interface to function properly. Please have your Windows disc available in case it is required.

Starting RealFlight 7-

1. Double-click the **RealFlight 7 Launcher** located on your desktop.
2. Type the **software serial number** and the **InterLink controller serial number** or **interface serial number**, depending on which you purchased, in the appropriate location. Please be sure to enter the numbers exactly as they appear. Failure to enter the serial numbers correctly will not allow you to proceed to the next step. Once the serial numbers are entered properly, you will see that the OK button will now become active and allow you to continue.



3. Click **OK**. RealFlight 7 will attempt to activate your software. The activation process must proceed in order to run RealFlight 7. If the computer is not currently connected to the internet, this activation process will fail to connect to the activation server and the following window will appear.



If you do not have internet access on the computer which RealFlight 7 is installed, follow the on-screen prompts. Write down the serial numbers and activation code that appear and log on to www.realflight.com/RF7activation on a different computer to activate RealFlight 7. Alternatively, you may contact Software Support via email or phone.

4. Once activated, the RealFlight 7 Launcher will appear. Click **Run RealFlight**. RealFlight 7 will start with the default aircraft and default flying site.

Using Your Own R/C Radio

The RealFlight interface requires you to fly in the simulator using your own R/C transmitter.

Alternatively, if you purchased the RealFlight 7 InterLink Elite controller, it has several different modes of operation. By itself, it serves as a realistic 'stand alone' controller or joystick. Alternatively, it has a built-in interface that lets you use your own R/C transmitter to control RealFlight 7. The final mode of operation combines the InterLink Elite's ability to serve as a controller and an interface simultaneously.

Follow these instructions if you intend to use your own R/C transmitter to control RealFlight 7. If you do not want to use your own transmitter, you may skip this section.

Connecting Your Transmitter to the InterLink Elite-

You can use your R/C transmitter to control RealFlight 7 by connecting it to the InterLink Elite controller, 'buddy box' style (see diagrams). RealFlight 7 includes several cables used to make the connection to many popular R/C transmitters.



Locate the cable input port on the rear of the InterLink Elite Controller. Plug one end of the included connector cable into this port. Next, plug the other end of the adapter cable into the buddy box port (a.k.a. trainer jack) of your transmitter. The procedure for doing so depends on your transmitter:

- If your transmitter's buddy box port directly accepts the 1/8" stereo plug, insert this end directly into the radio. This works for most JR® and Spektrum® radios.
- If your transmitter's buddy box port requires the micro (square) connector, use the square adapter cord included with the simulator.

Connecting your Transmitter to the RealFlight interface-

The USB end of the interface should already be plugged into the computer. Plug the other end of the interface cable into the buddy box port (a.k.a. trainer jack) of your transmitter. The procedure for doing so depends on your transmitter:

- If your transmitter's buddy box port directly accepts the 1/8" stereo plug, insert this end directly into the radio. This works for most JR® and Spektrum® radios.
- If your transmitter's buddy box port requires the micro (square) connector, use the square adapter cord included with the simulator.

Setup-

After you have connected your transmitter, you will need to perform a brief setup procedure before utilizing it with the simulation.

1. First, make sure that the transmitter is in FM or PPM mode rather than PCM mode. Refer to the manual for your transmitter if you are unsure how to do this.
2. If the transmitter did not power up when the interface cord was plugged into it, turn the power switch on at this time.
3. Next, click the **Simulation** menu and then highlight the **Select Controller...** menu item. Choose the correct **Profile** from the drop down option, or create a new one to match your radio. For more detail information about this dialog, see page 51.

Exploring RealFlight 7

Now that you have completed the installation of RealFlight 7, it's time to begin exploring the program. The following sections will take you on a quick tour of RealFlight 7's most popular features, such as selecting an aircraft, choosing alternate

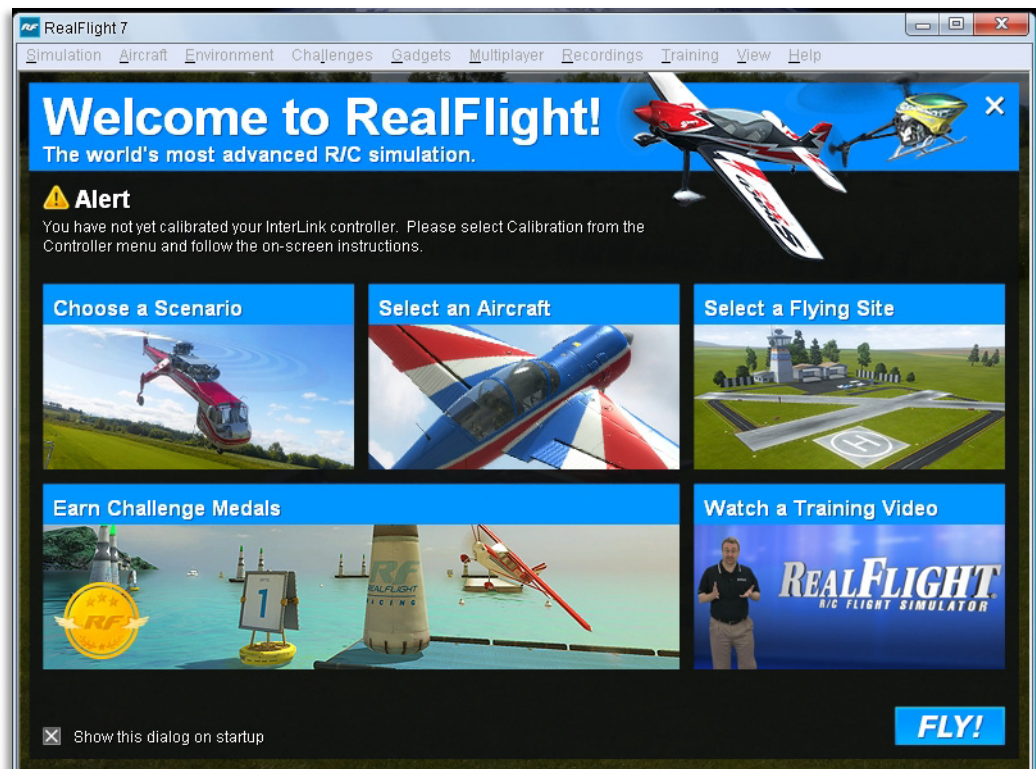
flying locations, customizing the flying sites, and using the training aids instruction. Along the way, we will show you where to go for help and how to obtain additional information.

Even if you are familiar with previous versions of the RealFlight software, you should read this section thoroughly. Some features described here are either new, or have been completely revised for RealFlight 7.

Start the Program-

1. Close all open applications. This includes virus scanning software and other similar programs.
2. Double-click the **RealFlight 7 Launcher** located on your desktop.
3. To start the simulation, click the **Run RealFlight** button.

The program will start by displaying a Welcome Screen. The Welcome Screen allows you to choose an aircraft, flying site or a scenario (a pre-selected combination of aircraft and flying site). At the bottom is a large button to allow you to jump directly into the RealFlight challenges.



From the Welcome Screen, you can also access helpful videos. The videos will walk you through some of the more popular features of RealFlight. For true beginners of R/C, the training videos are a great place to start, teaching you the basic controls for flight.

If you'd like, you can disable the Welcome Screen by unchecking the box labeled *Show this dialog on startup*. You may access the Welcome Screen at any time through the Help menu.

The Main RealFlight Display-

RealFlight 7 is a menu-driven program. As seen in the picture below, a menu bar appears across the top of the RealFlight screen. Those menus contain additional sub-menu items and pull-down lists for the related options of the respective menu. These menus allow access to the command and control functions for the RealFlight 7 simulation.

Navigating the Menus-

To access the various menu items, simply highlight and click the mouse on the menu that you would like to view. For example, clicking on the Aircraft menu activates the sub-menu items for that menu.



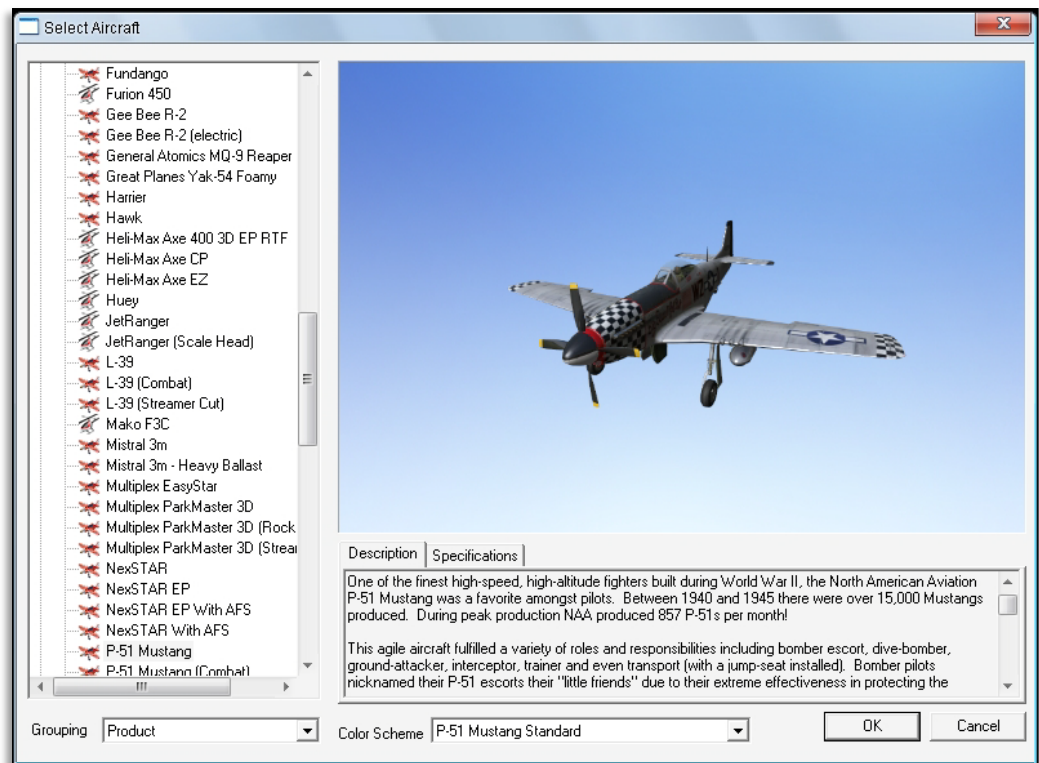
This manual includes a separate chapter for each menu title. Later chapters describe in detail all of the menu items, sub-menus and options.

Please note: It is also possible to access many of the features and functions of RealFlight 7 using hotkeys. Pressing the H key on the keyboard activates the Keyboard Commands dialog, which summarizes the available hotkeys.

Aircraft Selection-

When you start RealFlight 7 for the first time, you will be piloting a Thunderbolt Sbach. This is the default aircraft for RealFlight 7.

To select a different aircraft, click the **Aircraft** menu title in the main menu bar. Next, click the **Select Aircraft...** menu item found in the drop-down menu. This activates the Select Aircraft dialog (as shown below), which displays a list of available aircraft.



Each aircraft available in RealFlight 7 is listed along the left-hand side. The icon next to each name differs depending on whether the model is an airplane or a helicopter. To select an aircraft from the list, click on the desired aircraft. The selected model will now appear in the ReadySelect™ preview box. Additionally, the aircraft's description and information data will appear in the aircraft information pane, which appears just below the ReadySelect preview window.

When you are satisfied with your selection, click **OK** to return to the simulator using the newly selected aircraft.

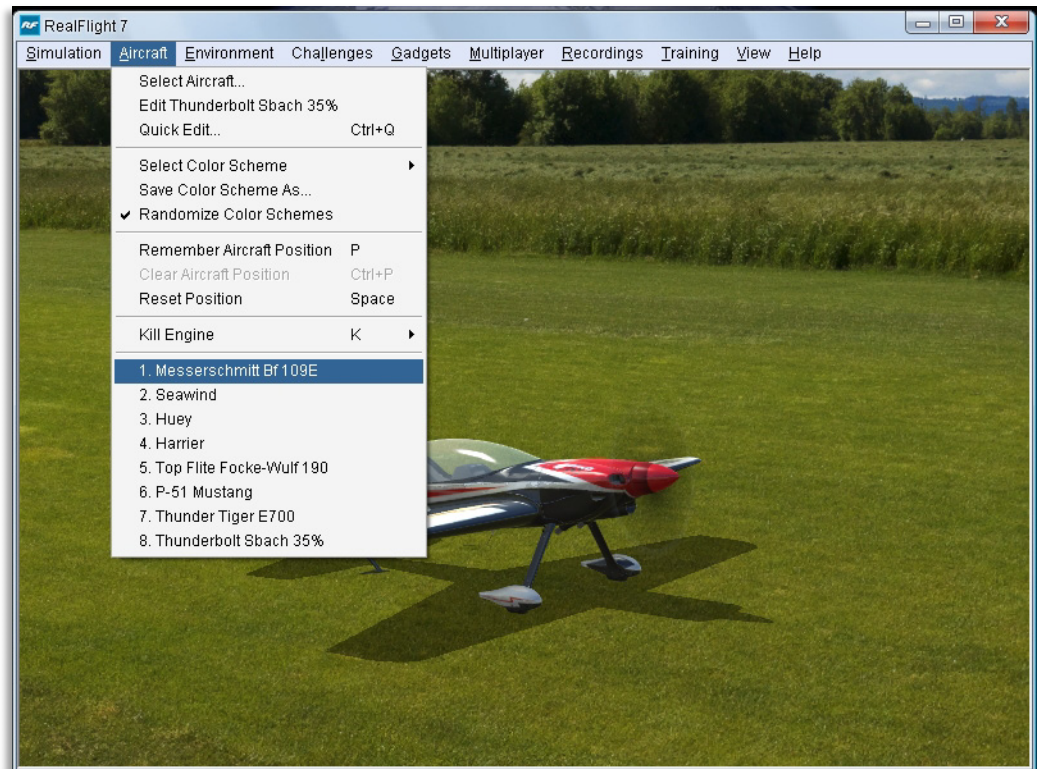
Complete information pertaining to the **Select Aircraft...** menu item is available in Chapter 6 of this manual, **The Aircraft Menu**.

Alternatively, you may use the InterLink Elite controller to change aircraft selections. (This feature is not available with the InterLink Plus controller.) Simply press the **Menu/Select** button located on the front of the InterLink Elite controller. This will bring forth the QuickSelect tabs on the left side of the computer screen and the aircraft selection tab, represented as an airplane icon, should be the highlighted tab. Press the **Menu/Select** button once again to bring up the QuickSelect Aircraft Selection dialog box. Move the **Data Lever**, found on the lower right side of the InterLink Elite controller, up or down to view the available aircraft. To select an aircraft, simply highlight the name and press the **Menu/Select** button. You will return to the simulation using the newly selected aircraft. Further instructions can be found on page 116.

If you wish to exit the Aircraft Selection screen without making any changes, simply press the **Reset** button on the InterLink Elite.

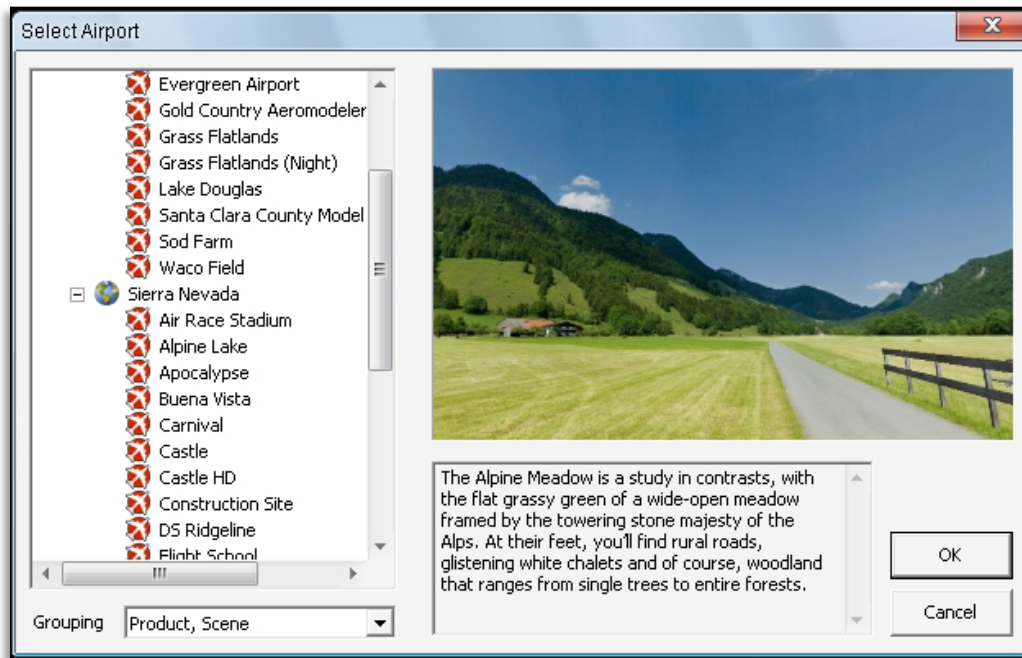
Aircraft Most Recently Used List (MRU)-

If you have selected any different aircraft previously, you will note that these aircraft appear on a list in the Aircraft menu; as shown below. This list is at the very bottom of the menu. This list is commonly referred to as a Most Recently Used, or MRU list. It is limited to the eight most recently used aircraft. If you wish to fly one of the aircraft from this list, simply click on the name of the aircraft in the MRU list.



Airport Selection-

Changing flying sites uses a process similar to selecting an aircraft. To select a new flying location, click the **Environment** menu title. Next, click the **Select Airport...** menu item found in the drop-down menu. This opens the Select Airport dialog. All the airports in RealFlight 7 are initially grouped by their respective location or scene: Archipelago, Flatlands, PhotoFields, or Sierra Nevada.



Some scenes are preceded by a [+] (plus) and an icon. The [+] (plus) indicates that another expansion level (selection) is available to you. To access the complete list of airports for a particular scene, either click the **[+] (plus)** or double-click on the name of the desired scene. For example, clicking the [+] (plus) next to the PhotoFields folder reveals all of the PhotoFields flying sites available to you.

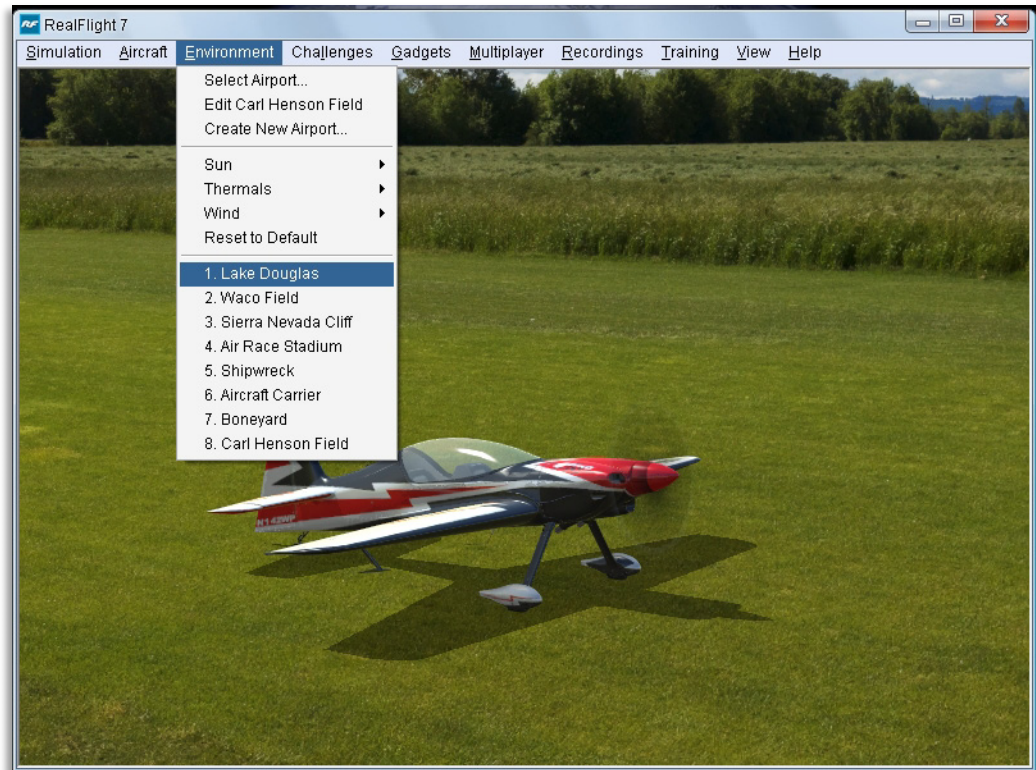
To select an airport from the list, click on the desired airport. The selected airport will now appear in the preview box. Additionally, an airport description will appear in the information pane, which appears just below the preview window. When you are satisfied with your selection, click **OK** to return to the simulator using the new airport selection.

Navigating the Airport Selection menu using the QuickSelect feature is almost identical to the process mentioned previously for selecting aircraft. Only this time, you will select the Airport Selection menu, which is represented by a runway icon. With the QuickSelect tabs visible on the computer screen, move the **Data Lever** down one time. This should highlight the runway icon. Press the **Menu/Select** button to bring forth the available flying sites. Using the same method, as described previously for aircraft, select the new airport and press the **Menu/Select** button to return to the simulation using this new flying site.

Airport Most Recently Used List (MRU)-

If you have previously selected an alternative flying location, it will appear on a list in the Environment menu. This list is at the very bottom of the menu and is commonly referred to as a Most Recently Used, or MRU list. It is limited to the eight most

recently selected locations. If you wish to fly at one of these locations, simply click on the respective location in the MRU list to load it into the simulation.



QuickSelect Tabs-

If you have the InterLink Elite controller, RealFlight 7 offers a revolutionary method for accessing many features and functions quickly and easily without ever touching the keyboard or mouse. There are seven main areas of access available through the QuickSelect tabs. They are: Scenario Selection, Aircraft Selection, Flying Site Selection, NavGuides, On-Screen Radio, Binocular view, and Viewport.

To access any of the QuickSelect tabs, press the **Menu/Select** button on the InterLink Elite controller. This will bring forth the available options on the left side of the computer screen. Move the **Data Lever** up or down to cycle through the QuickSelect tabs. The highlighted tab is the item that is active. To access the active tab, press the **Menu/Select** button.

You can also access the QuickSelect tabs with the mouse by moving the mouse cursor over to the left side of the screen. The QuickSelect tabs will appear and you may click on the desired icon.



For additional information on how to use the QuickSelect tabs, please refer to the information contained in the section entitled QuickSelect- on page 44.

Some Common Tasks-

- The easiest method of resetting your aircraft to its original takeoff position is to press the reset button located on the front of the InterLink controller. Alternatively, you can reset the aircraft by pressing the space bar on the keyboard, or by selecting the Reset Position menu item, which is located in the Aircraft menu.
- If your aircraft is equipped with smoke, the two-position switch located on the right side of your InterLink controller will generally be utilized to activate this feature.
- To zoom in on an aircraft, press the **[+]** (**plus**) key on the number pad of the keyboard. Alternatively, you may use menu commands to zoom in. To do so, click on the **View** menu and then click on the **Zoom In** menu item. Each time the **[+]** (plus) key or the Zoom In menu item are pressed or selected, the view will increase incrementally.
- To zoom out of the current view, press the **[-]** (**minus**) key on the number pad of the keyboard. Alternatively, you may use menu commands to zoom out. To do

so, click on the **View** menu and then click on the **Zoom Out** menu item. Every time you press [-] (minus) key or select and press the Zoom Out menu item, the view will decrease incrementally.

- To reset the view to the default zoom level, press the **Backspace** on the keyboard.

Please Note: The Zoom keys are not always functional for all camera modes. Press **Z** or **C** on the keyboard to cycle through the different zoom and camera modes, respectively.

Creating a Viewport-

RealFlight allows you to create an additional picture-in-picture viewport. Once you create a new viewport, you may resize or reposition it by dragging the mouse. You can also adjust all of the viewport's properties independently of the main window. The viewport may be utilized for a variety of applications, such as changing the viewing perspective of your simulation.

To create a new viewport, click the **Gadgets** menu title followed by the **Viewport** menu item. Alternatively, you may also press the '4' key on the keyboard to create an additional viewport.



To change the vantage point within the active viewport, press the ‘C’ key on the keyboard. This toggles through the various camera modes, one of which is the cockpit or pilot’s perspective. Others include: chase view and a fixed viewpoint, or what you would see if you were standing at the side of the runway.

Please note: Depending upon the flying site selected, some of these viewing options may not be applicable.

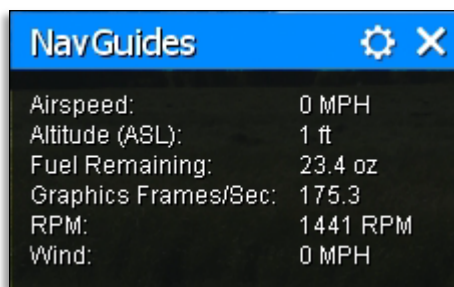
Also, some aircraft include onboard cameras for additional viewing perspectives. The View chapter of this manual contains a thorough explanation of the viewport and camera options.

Using Gadgets-

The RealFlight 7 software includes several gadgets that may be displayed in the main window when running the software. A gadget is an on-screen display that provides helpful information, or allows you to access to a variety of RealFlight features and functions.

For example, the NavGuides gadget displays continuously updated information relating to your aircraft’s altitude, airspeed, directional heading, and other flight parameters. To display the NavGuides gadget, click the **Gadgets** menu title followed by the **NavGuides** gadget located in the drop-down menu. You may also access the NavGuides by pressing the numerical ‘1’ key on your keyboard. Alternatively, you may activate the NavGuides through the QuickSelect tabs. To do so, press the **Menu/Select** button on the InterLink Elite controller. Next, move the **Data Lever** downward twice. Finally, press the **Mode/Select** button to activate the NavGuides.

When you select NavGuides, you should see the NavGuides gadget appear on your screen:

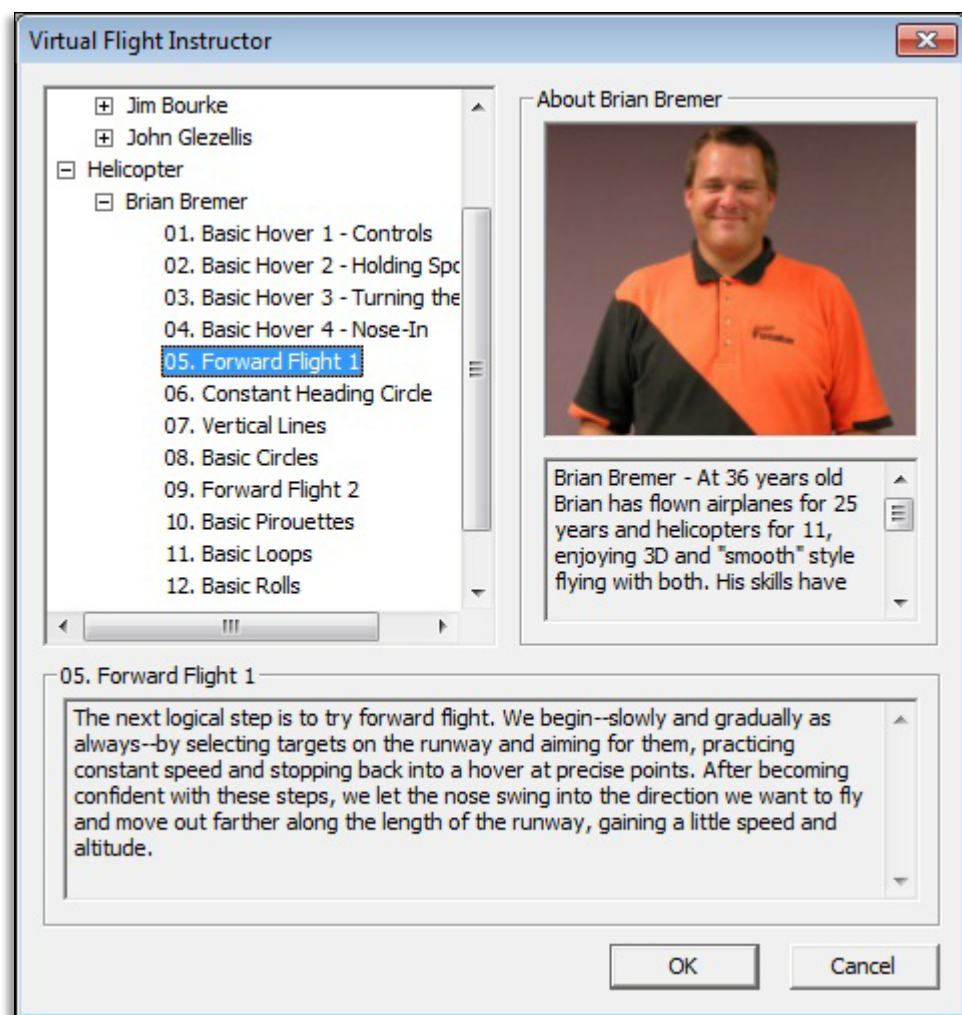


As discussed previously, you can customize the gadgets for personal preference. For complete information on how to do so, please refer to the chapter pertaining to the Gadgets menu options.

Virtual Flight Instruction-

RealFlight 7 includes a variety of pre-recorded maneuver lessons for helicopter and airplane pilots. A professional, award-winning R/C pilot talks you through every facet of the maneuver. You can use the Virtual Flight Instruction to learn new maneuvers as well as to perfect those maneuvers that you already know.

To activate the pre-recorded maneuvers, click on the **Training** menu followed by the **Virtual Flight Instruction...** menu item. This brings forth two options: airplane and helicopter, each preceded by a [-] (minus) symbol. Each option has a number of pilots listed beneath. To select amongst the pilots, click the **[+]** (plus) which precedes their name. Alternatively, you may double-click the pilot's name.



To select a maneuver, double-click the name of the maneuver itself. Alternatively, highlight the name of the maneuver by clicking on it, then select **OK** to proceed. RealFlight 7 will automatically load the appropriate airport and start the VFI recording.

Once the VFI starts, you will see the instructor's aircraft fly the maneuver and hear the instructor's voice explaining how it's done. As depicted below, you can also watch the instructor's actual stick movements using the on-screen, digitized R/C radio.



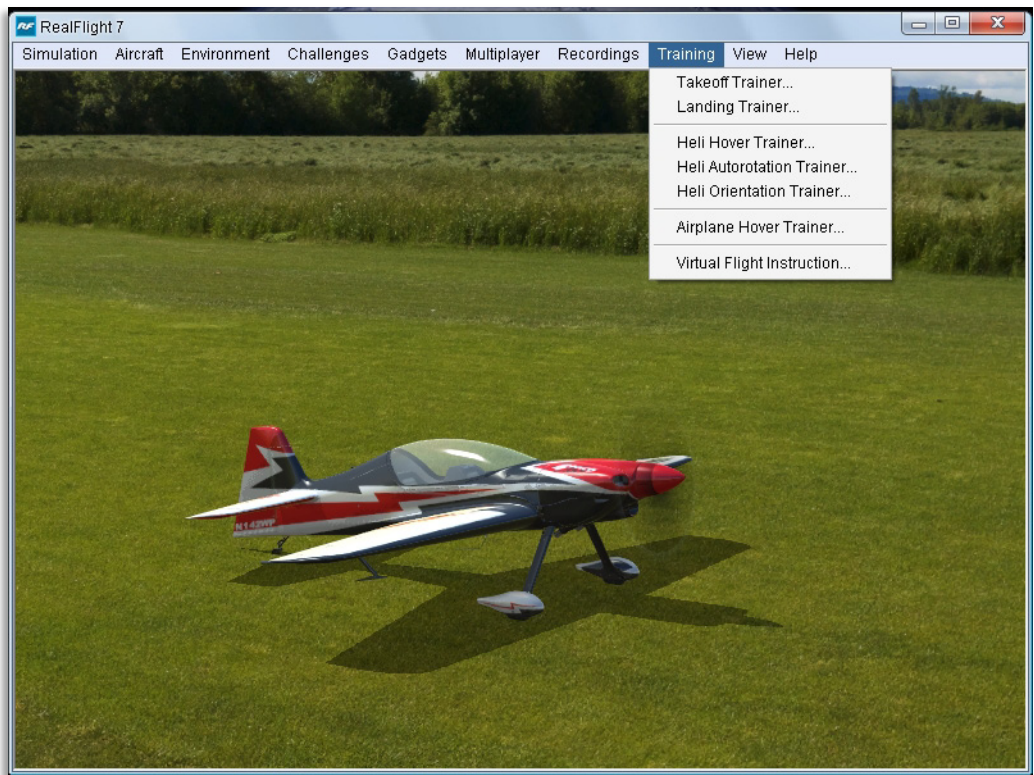
You can even fly your own aircraft next to the instructor's! This allows you to mimic the inputs and aircraft reaction simultaneously. To simultaneously watch your aircraft and the instructor's, create an additional viewport focused on your aircraft. The main window will show the instructor's aircraft and the on-screen radio will show the instructor's stick movements. The newly created viewport will show your aircraft.

RealFlight Trainers-

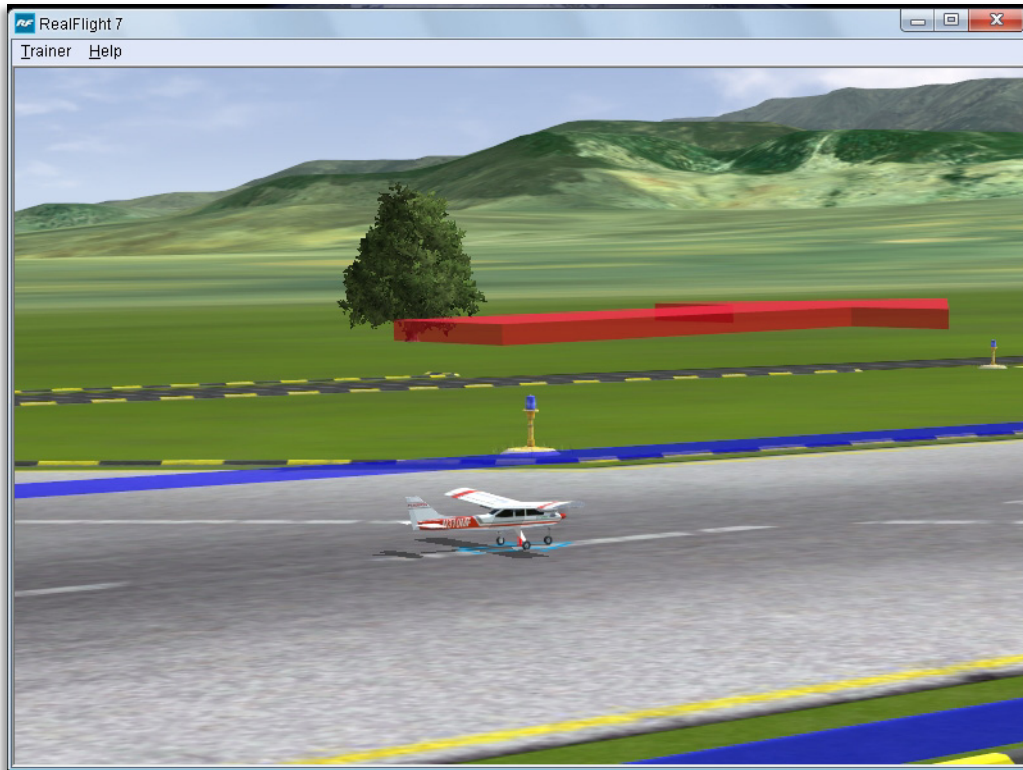
RealFlight 7 includes several training aids to help learn the basics of taking off and landing an airplane. Obviously, mastering these skills is essential to the success of your entry into radio control flight.

The Takeoff training feature, as the name suggests, is designed to enable pilots of all skill levels to perfect their takeoffs.

To select the Takeoff training feature, click on the **Training** menu title followed by the **Takeoff Trainer...** menu item. The Takeoff Trainer will start using the default settings. If you wish to alter any of the settings, click on the **Trainer** menu title. For additional information pertaining to these settings, please refer to the section entitled

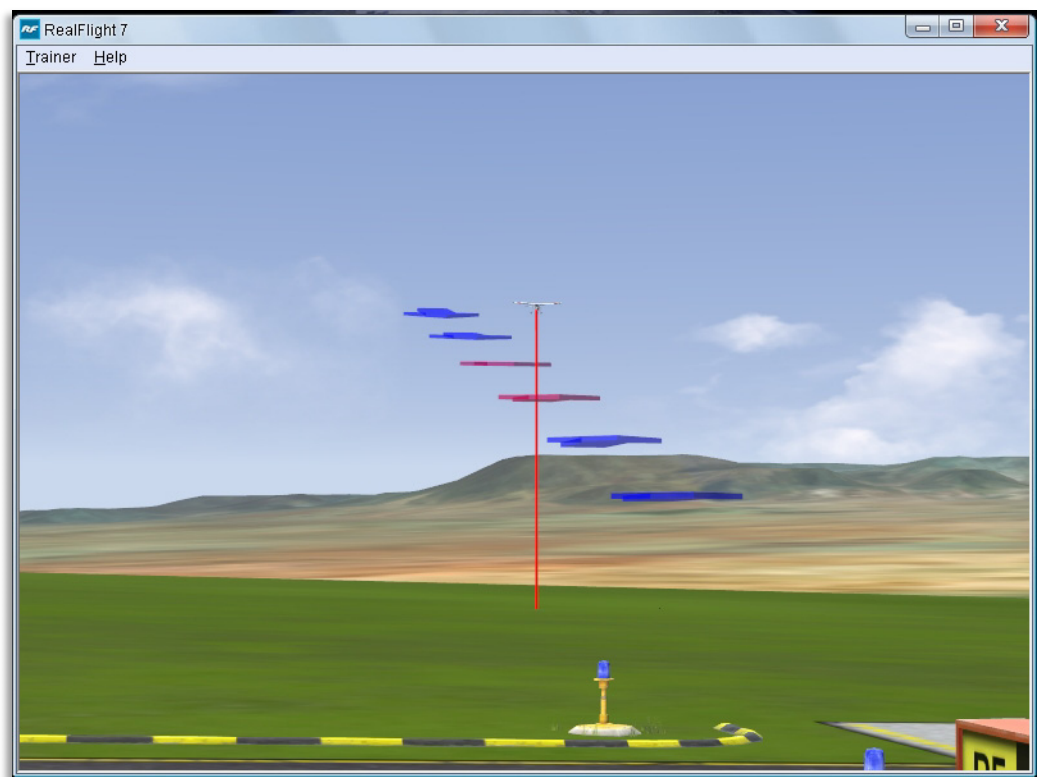


Takeoff Trainer on page 256 in this manual.



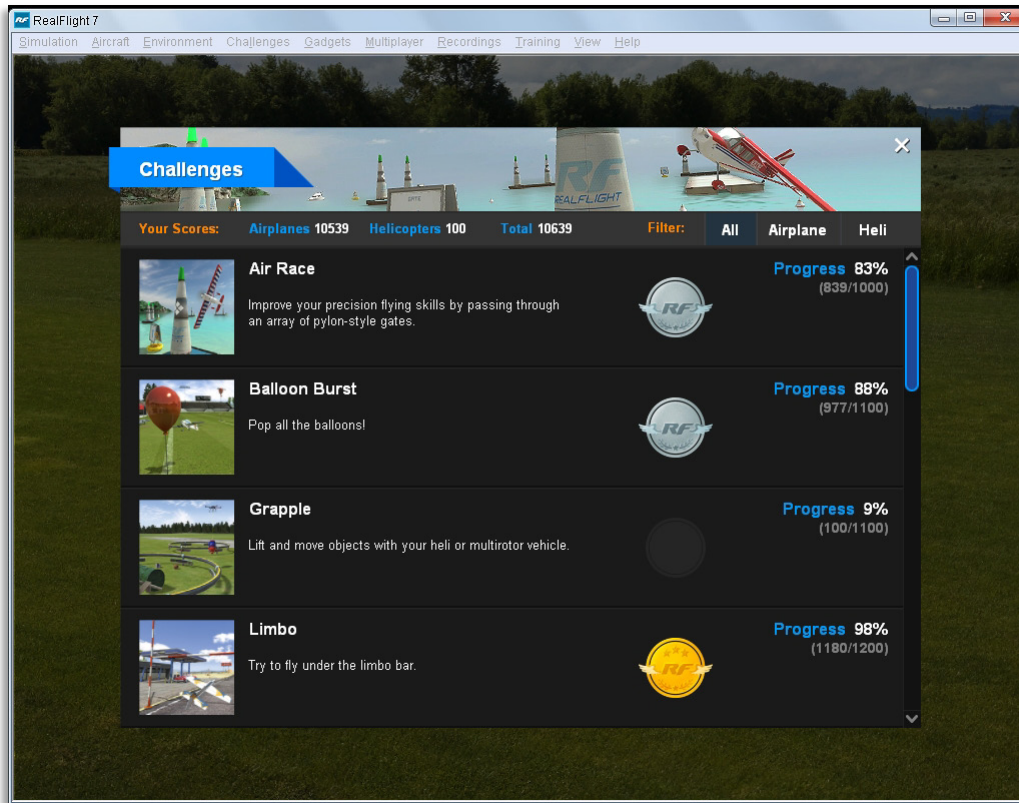
The Landing Trainer feature is designed to enhance a pilot's landing skills. As with full-scale aircraft, it is imperative that an R/C pilot be well-versed in the proper technique of landing their aircraft in various conditions. Failure to land an aircraft properly may result in a damaged aircraft...or perhaps even destroy it entirely.

To select the Landing Trainer feature, click on the **Training** menu title followed by the **Landing Trainer...** menu item. The Landing Trainer will begin with the aircraft in a pre-determined position using its default settings. If, however, you wish to alter any of the settings, click on the **Trainer** menu title. For additional information pertaining to these settings, please refer to the section entitled Landing Trainer located on page 261 in this manual.



Challenges-

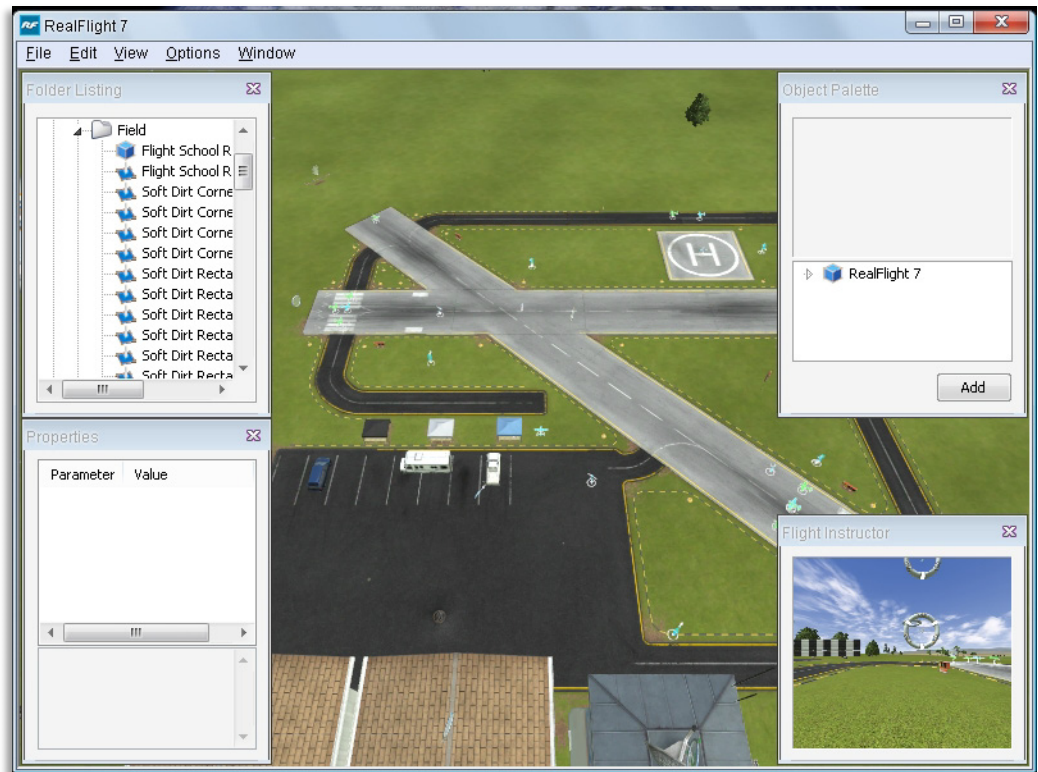
Beyond the traditional training aids, RealFlight 7 offers a large number of challenges to help you test and refine your flying skills. As you improve your skills and score well in the challenges, more levels become available, each progressing higher in difficulty.



Do well in these challenges, and you may be rewarded for your efforts with new content, including new aircraft to fly.

Airport Editing-

RealFlight 7 offers the most powerful, flexible flying site editor ever produced on an R/C simulation. RealFlight 7's FlexiField editor allows you to completely customize virtually every aspect of your flying sites.



You can add, remove, change the orientation of, or resize virtually every aspect of your flying site. You can alter the position and orientation of the ground objects (such as runways) that ‘snap’ to the terrain—you can even have a runway running up a hill! It’s even possible to control lighting, terrain, clouds, fog/haze, and much more. FlexiField provides you with almost unlimited freedom to create the flying environment you want. Moreover, when you’ve created an airport, you can share it with other RealFlight 7 users.

To learn more about the FlexiField flying site editor, please refer to the section titled Edit on page 148.

Aircraft Editor-

RealFlight 7 also includes a powerful aircraft editor, allowing you full control over every aspect and parameters for an aircraft.



The Aircraft Editor allows you to make both simple and complex modifications to any aircraft. You could simply change the diameter of the wheel on the landing gear, or add new wings, streamers, or paintball guns. The possibilities are endless, and you can expect your modifications to accurately affect the behavior of your edited aircraft.

To learn more about the Aircraft Editor, refer to section Edit Current Aircraft on page 118.

To make simple refinements to the selected aircraft, we suggest utilizing RealFlight 7's Quick Edit feature. To do so, simply press **'Ctrl + Q'** on the keyboard. Make the desired changes, and then click **Save**.

For more information about the Quick Edit feature, see page 133.

Multiplayer Contests-

RealFlight 7 now offers multiplayer combat events. With an internet connection, you can challenge your neighbor next door, friends from the local R/C club, or anyone, anywhere in the world.



Multiplayer contests include: Deadringer, Combat, Streamer Cut, Paintball, and Rocket Wars on a variety of different aircraft. Up to 32 people can participate in a multiplayer session. RealFlight also offers a way to automate contests into events, so the host can spend more time enjoying RealFlight.

To quickly join a public multiplayer session, click the **Multiplayer** menu followed by the **Join...** menu item. On the dialog window that appears, select a multiplayer session from the list and click **Connect**.

For more information about multiplayer and combat events, check out Chapter 10 on the Multiplayer Menu.

Keyboard Commands

Many options throughout RealFlight may be activated quickly by a simple press of a key on the keyboard. Below is a list of functions and their related keys. You may also access this list in the simulator by pressing 'H' on the keyboard.

Virtual Channels-

Channel 5	Y
Channel 6	U
Channel 7	I
Channel 8	O

View Commands -

Reset Aircraft	Space
Zoom Reset	Backspace
Zoom In	+
Zoom Out	-
Quick Look at Windssock	Up Arrow
Quick Look at Ground	Down Arrow
Fixed Camera	F1
Nose Camera	F2
Chase Camera	F3
Onboard Cameras	F4-F10
Set Viewport Camera	Ctrl + F1-F10
Change Camera Mode	C
Pivot Camera	E
Orbit Camera	Ctrl + E
Select Pit Position	X
Select Previous Pit Position	Shift + X
Select Default Pit Position	Ctrl + X
Change Zoom Mode	Z
Change Movement Mode	Q

Movement Commands –

Move Forward	W
Move Backwards	S
Move Left	A
Move Right	D
Move Slow	Ctrl
Move Fast	Shift
Move Very Fast	Shift + Ctrl

Gadget Commands -

NavGuide Gadget	1
Radio Gadget	2
Binocular Gadget	3
Viewport Gadget	4
Variometer Gadget	5
Multiplayer Gadget	6
Overhead Gadget	7
Timer Gadget	8

Heads-Up Display	9
Console Gadget	~
Chat Gadget	Enter

Environment Commands –

Increase Turbulence	Insert
Decrease Turbulence	Delete
Increase Wind Direction	Home
Decrease Wind Direction	End
Increase Wind Speed	Page Up
Decrease Wind Speed	Page Down
Increase Sun Azimuth	Shift + Home
Decrease Sun Azimuth	Shift + End
Increase Sun Inclination	Shift + Page Up
Decrease Sun Inclination	Shift + Page Down

Game Commands –

Target Previous Aircraft	[
Target Next Aircraft]
Clear Target	\
Toggle Padlock View	/

Miscellaneous Commands –

Take Screenshot	Tab
Toggle Microphone On/Off	V
Kill Engine	K
Start/Stop Recording	R
Look at Next Aircraft	T
Look at Previous Aircraft	Shift + T
Look at My Aircraft	Ctrl + T
Remember Aircraft Position	P
Clear Position	Ctrl + P
Flight Failures	F
Quick Load Gadget	Ctrl + F
Quick Edit Gadget	Ctrl + Q
Mute/Unmute Audio	M
Toggle Full Screen Mode	Alt + Enter
View Keyboard Commands	H
Copy Messages to Clipboard	Ctrl + C

Where to Go From Here

The examples in this chapter only scratch the surface of RealFlight 7's unparalleled capabilities. We encourage you to explore RealFlight 7 using some of the methods below.

- Browse through the menus. Many of the menus are self-explanatory, providing you with a more thorough look at the software. If you're adventuresome, dive right in and start making modifications to an aircraft or a flying site! It's a great way to learn more about what makes RealFlight 7 tick!
- If you'd like to learn more about a particular menu or item, look it up in the table of contents.
- If you would like RealFlight 7 to perform a certain function but cannot locate the appropriate command, check the index.
- Use the Help option in RealFlight's Help menu.
- Talk to other RealFlight users at www.knifeedge.com/forums.

Controlling RealFlight 7

*Fly with the InterLink Elite, the
Tactic TTX600, or with your own radio.*

The R/C transmitter is a key component in all types of R/C flying. This unique method of control is part of what separates R/C from every other type of aviation. Consequently, a realistically simulated transmitter is an important key to an authentic simulation of the R/C experience.

With this in mind, we at Great Planes are proud to offer many choices to control RealFlight 7. Our revolutionary USB InterLink Elite (U.S. Patent #6,842,804 and #7,010,628) controller, made by Futaba, is the most popular option. The InterLink Elite controller was designed from the ground up to meet the needs of the R/C purist. We believe that no other R/C simulator control method goes further to enrich your R/C simulator experience.



The RealFlight interface option allows you to fly using your own transmitter. This device was designed to offer you quick access and setup to RealFlight's amazing flight physics with little effort from you.



Features of the InterLink Elite Controller-

- USB compatibility and convenience. The InterLink Elite offers the “plug and play” convenience, “hot pluggable” installation and removal, as well as the high-speed digital performance made possible by Universal Serial Bus (USB) technology.
- High quality “mockup” transmitter. Use the InterLink Elite controller by itself as a pseudo R/C transmitter, with the controls you expect in a standard 8-channel

radio. The mockup transmitter features two 2-position switches, one 3-position switch, a rotary knob, knurled control sticks with adjustable length and a push-button reset.

- Built-in transmitter interface. If you so choose, you can use your own FM or FM-compatible R/C transmitter to control RealFlight, using the InterLink Elite controller's built-in interface. You can even switch back and forth between the pseudo controller and your own transmitter! Interface adapter cords are included for most JR, Spektrum and Futaba transmitters.
- Simultaneous interface and controller. The InterLink Elite makes it possible for two modelers to fly on the same PC; each using his/her own controller to pilot the aircraft.
- QuickSelect menu controls. With the InterLink Elite, you're able to make a variety of common adjustments to the simulator (such as selecting a different aircraft or airport) without having to touch the keyboard and mouse.
- Easy setup and use. Simply plug it in and go!
- Simulate sophisticated computer radios. The InterLink Elite, used in conjunction with the RealFlight software, allows you to simulate the programmability (mixing, exponential, etc.) of sophisticated computer radios.

Features of the RealFlight interface-

- USB compatibility and convenience. The interface offers the "plug and play" convenience, "hot pluggable" installation and removal, as well as the high-speed digital performance made possible by Universal Serial Bus (USB) technology.
- Use your own FM or FM-compatible R/C transmitter to control RealFlight. Interface adapter cords are included for most JR, Spektrum and Futaba transmitters.
- Reset/Rewind – We brought the best function of the InterLink Elite to the RealFlight interface with the Reset/Rewind button. With the interface near hand, there is no need to reach for the keyboard.

Start Flying!

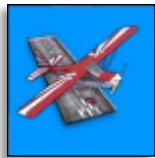
When you start RealFlight for the first time, the software will automatically detect the InterLink Elite controller. When you close the Welcome Screen, simply add throttle and start flying right away.

If you are flying with your own radio with the RealFlight interface, or through the InterLink Elite, please refer to the Select Controller section on page 51.

QuickSelect-

The InterLink Elite also offers QuickSelect buttons located at the bottom of the controller. These buttons allow you to make simple changes to the simulator without having to put the controller down and reach for the keyboard or mouse. This makes it convenient to change the current aircraft and airport, or display popular on-screen gadgets.

To access the QuickSelect tabs, press the **Menu/Select** button to display a number of tabs along the left side of the simulator. Use the Up and Down direction on the **Data Lever**, located on the lower right side of the controller, to scroll through these options. Pressing the **Menu/Select** button again will select the highlighted tab. Pressing the **Cancel** button on the InterLink Elite will exit out of the tabs and hide them.



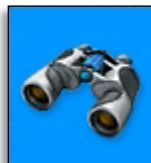
Select Scenario



Radio Gadget



Select Aircraft



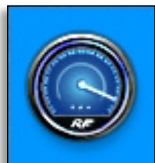
Binocular View



Select Airport



Viewport



NavGuides Gadget

When using the QuickSelect buttons in the Select Aircraft or Select Airport dialog screen, press **Menu/Select** to select the highlighted item. Press and holding **Cancel** on the InterLink Elite will move you up a level, so you can quickly change folders. To exit out of these dialog screens without making any changes, simply press the **Reset** button.



Look for the icon to the left throughout this manual for suggestions on when to use the QuickSelect buttons.

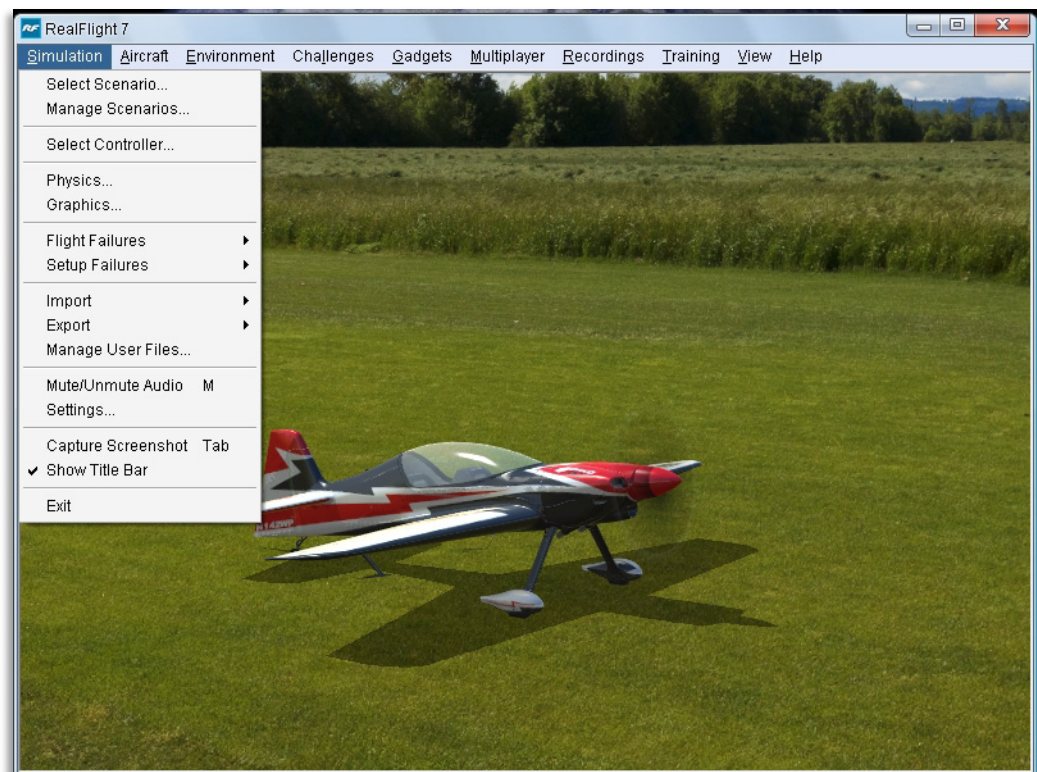


The Simulation Menu

Allows access to a variety of simulation-related features, functions and options.

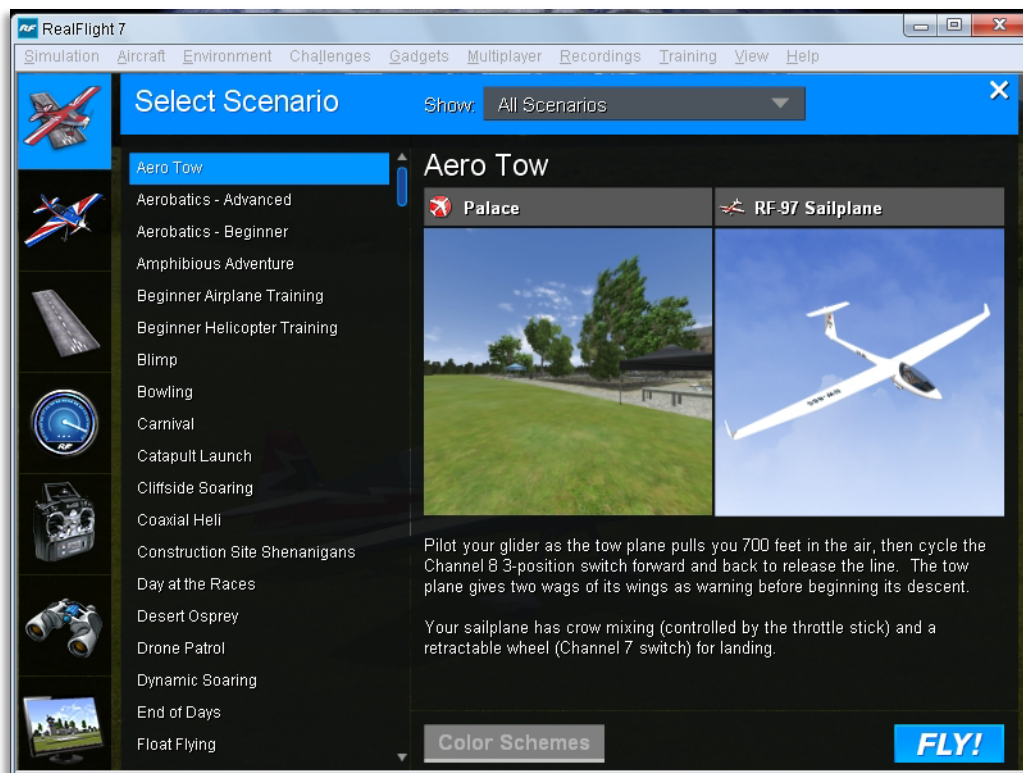
The Simulation menu gives you access to many simulator related features, such as adjusting physics parameters, changing simulator settings, or importing and exporting RealFlight files.

Clicking the Simulation menu will open the drop-down menu as illustrated in the following screen shot.



Select Scenario...

Often times you'll find yourself wanting to fly a particular aircraft at just the right flying site under the perfect conditions. For example, you may wish to fly a glider along a cliff with the winds just right for soaring. RealFlight offers many of these scenarios pre-configured to save you time.



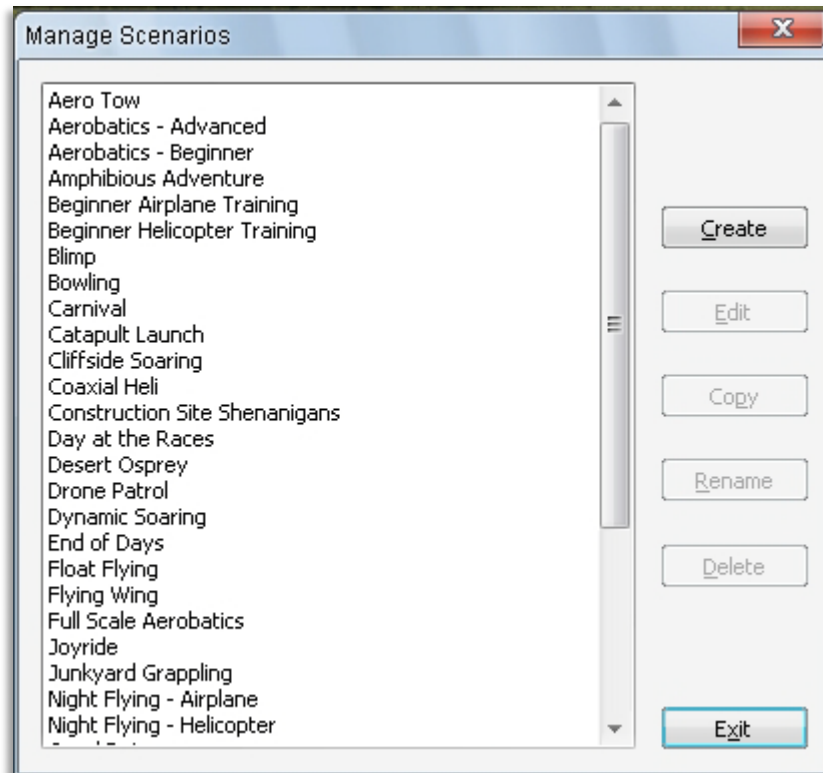
Choosing the Select Scenario... menu item from the Simulation menu will display a dialog window with many scenario options listed out for your convenience. For slope soaring along the cliff, you might select Cliffside Soaring to fly the Mistral 3m at the Sierra Nevada Cliff airport.



Change scenarios by using the InterLink Elite. Press the **Menu/Select** button, then, with the scenario tab highlighted, press the **Menu/Select** button again. This will bring up the Select Scenario QuickSelect dialog window. You can continue using the **QuickSelect** buttons in this dialog to select a new scenario, or press **Reset** to resume flying without making any changes.

Manage Scenarios...

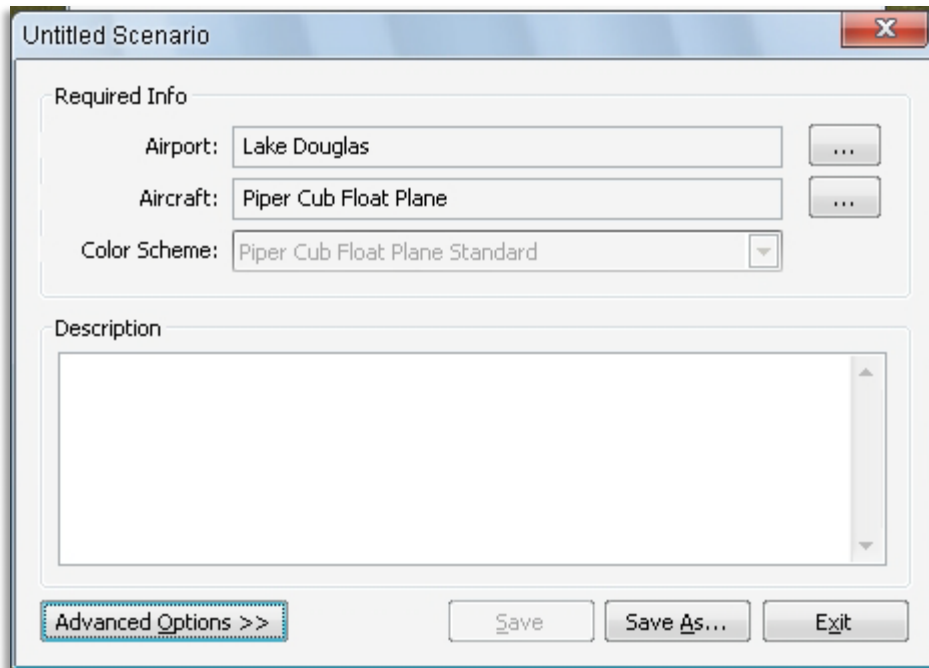
If you wish to create and edit Scenarios to your own tastes, choose **Manage Scenarios** from the **Simulation** menu. Doing so will display the following dialog:



The list on the left displays all the scenarios currently accessible to you. On the right are all the actions that are available to you. They include:

- **Create** – This button allows you to create a brand new scenario.
- **Edit** – This allows you to make changes to the selected scenario from the list.
- **Copy** – If you wish to make a new scenario with the same parameters, select it from the list and then click copy. This is a quick way to make a new scenario that you like but would like to make only minor changes, instead of creating a new one.
- **Rename** – Use this to rename a selected scenario. This option is only available to scenarios that you create. You cannot rename stock scenarios.
- **Delete** – As the name implies, choose this to delete a scenario. Like rename, this is not available if a stock scenario is selected.

When you click **Create** or **Edit**, the following dialog window will appear:



This window allows you to select and change all parameters associated to a scenario. They include:

- **Airport** – Press the ... button to choose an airport.
- **Aircraft** – Press the ... button to choose an aircraft for this scenario.
- **Color Scheme** – If the aircraft you selected is available in multiple trim schemes, you may select the default for this scenario from the drop down list.
- **Description** – As the name implies, this field allows you to type up a short message that describes the scenario.

By clicking the **Advanced Options**, two more parameters will be available to you if you choose a 3D airport (not PhotoField). They include:

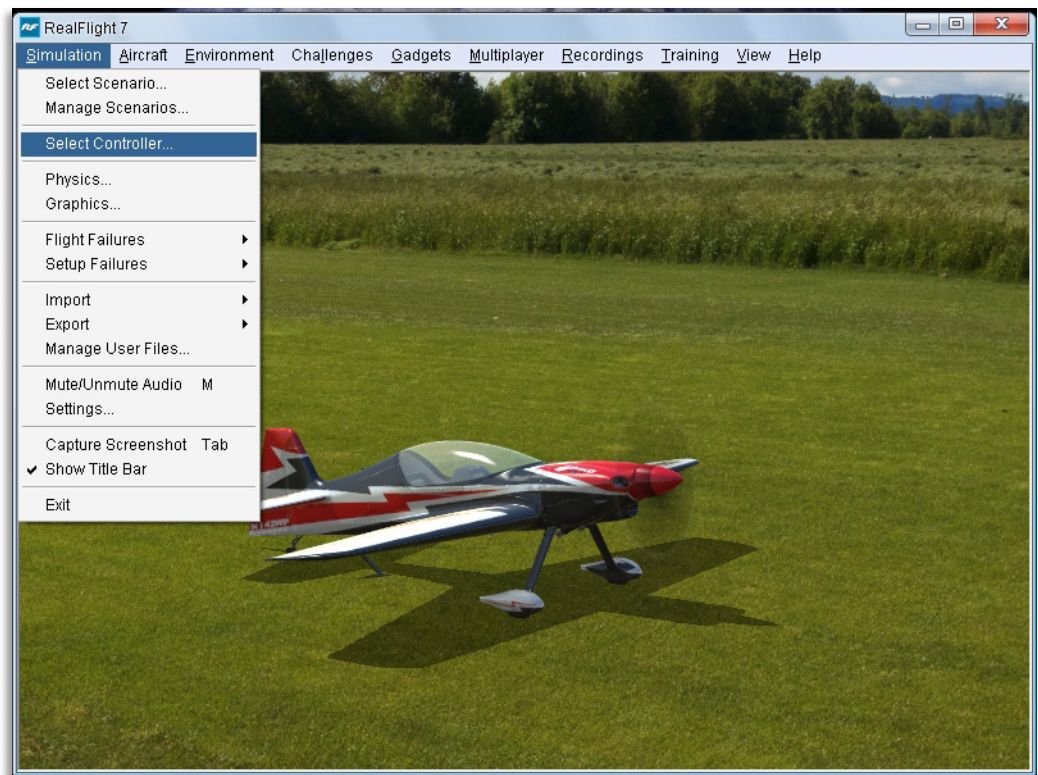
- **Starting Position** – Some 3D airports have multiple locations from which you can start your flight. Choose the location you wish to be the default for the scenario from this drop down list.
- **Camera Type** – When flying at 3D airports, you have the option to change your camera location. You may change the default for your scenario from this drop down list.

Finally, click **Save**, to save your changes to the current scenario. If you are editing a stock scenario, this option is unavailable. Clicking **Save As** allows you to save

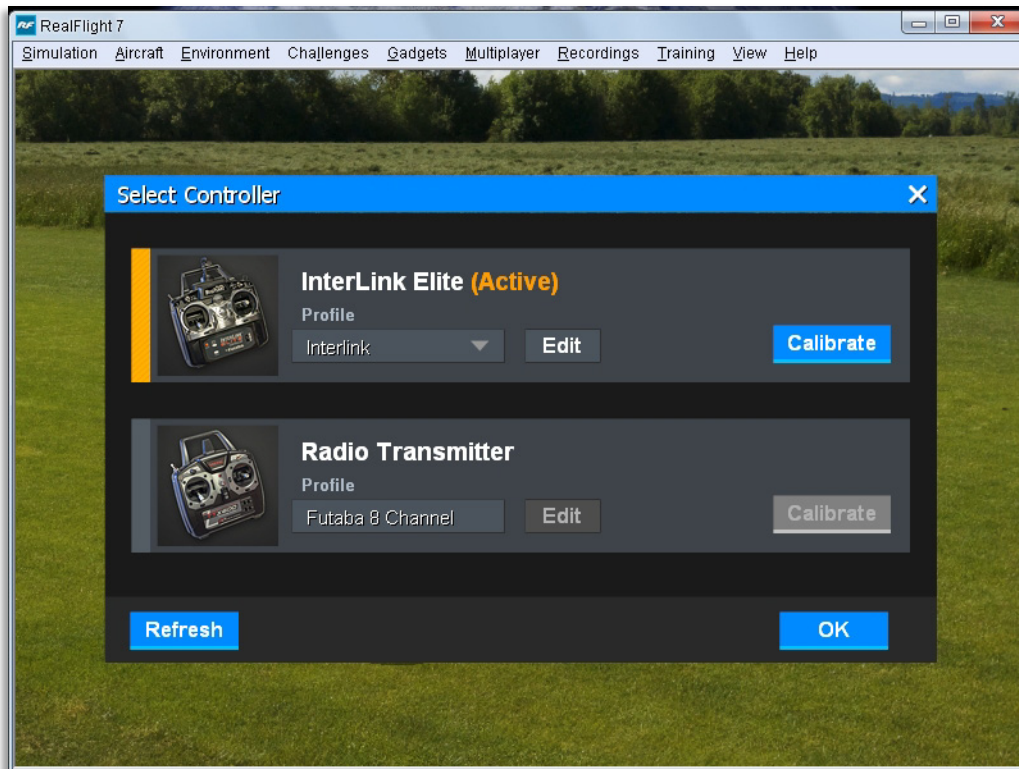
under a different name. If you wish to quit out to the Manage Scenarios window without saving any changes, simply click the **Exit** button.

Select Controller...

RealFlight 7 is offered in a number of different editions, allowing you to control the aircraft in a variety of ways. This includes the InterLink Elite or the RealFlight interface. To assist you, RealFlight includes features to help walk you through setting up your choice of controller.



After clicking **Select Controller...**, a new window appears with all the controllers available to you. For many users, you will only see one controller listed. If you happen to have a real transmitter plugged into the InterLink Elite, for example, your screen may look something like the following:



The controller that is currently in use for flight will have an orange bar next to it as well as “(Active)” next to the name. A few options are available to you from this window:

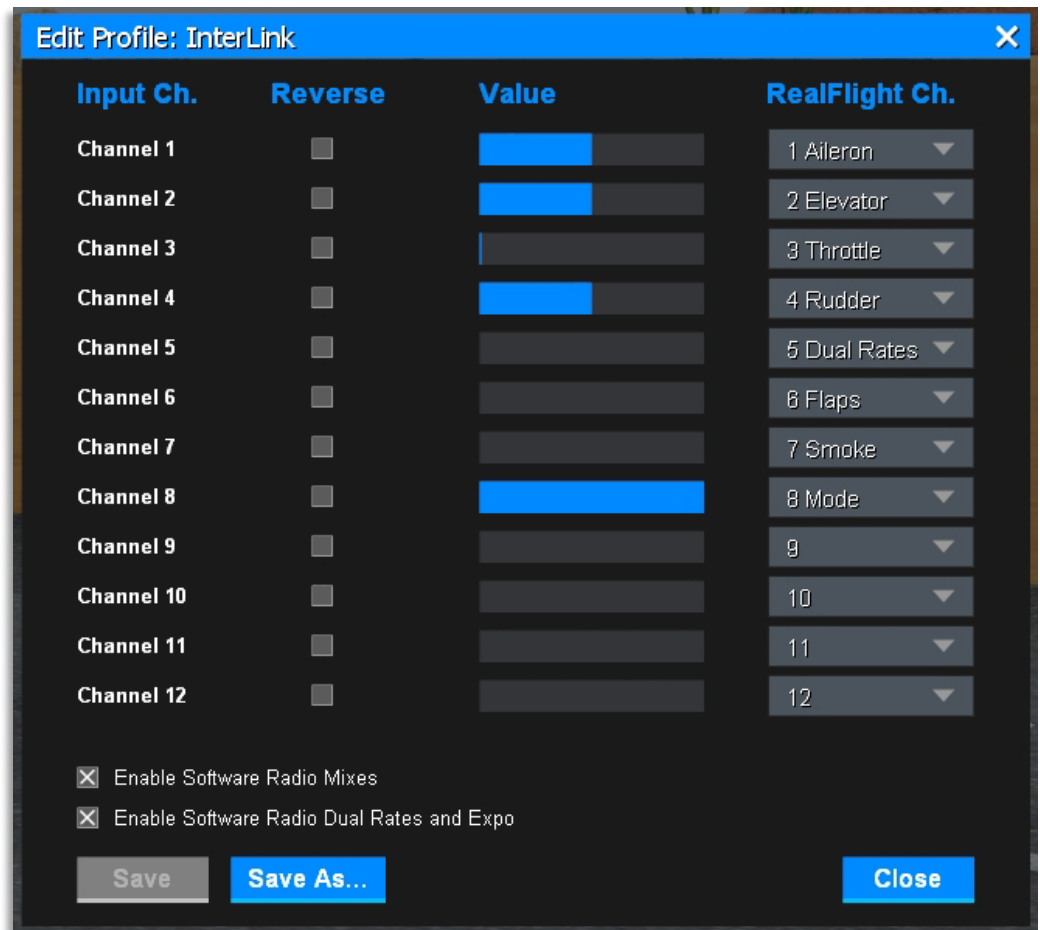
- Profile – RealFlight allows you to save profiles for the different radios you might want to fly with. Choose the profile that best matches your controller from this drop down list.
- Edit – Clicking Edit on the Active controller will open a new screen that gives you access to modify and adjust the controller’s channels and other parameters. See below for more information.
- Calibrate – To insure that your controller is properly calibrated to fly aircraft in RealFlight, click Calibrate on the Active controller. See more information about the calibration process below.
- Refresh – If, at any time, you plugged in a radio and turned it on while this screen is visible, click Refresh to update the list to include your new controller method.

To switch the Active controller, simply click on an available controller listed. You will see the orange selection bar switch to the new controller as well as “(Active)” appear next to the name.

There are hundreds of radios that are compatible with RealFlight, but not all of them function exactly the same. Some may have a different channel order, or possibly reversed. To assist you with making, changing and saving these settings, RealFlight offers controller Profiles.

Edit-

If you wish to use a radio that is not listed in the Profile drop down list, pick something similar, then click **Edit**. The following screen will appear:



The four columns visible include:

- Input Channel – This is the list of channels that RealFlight uses for its aircraft. These cannot be modified.
- Reverse – Check this box to reverse the direction of a channel

- Value – The bars that appear in this column show the current value for each input channel. For example, if you move the throttle stick on your controller, the associated bar will move.
- RealFlight Channel – This is the channel on your radio that is assigned to the Channel column.

Using the information from these columns, you can edit the channel lineup to match your radio. For example, if your radio outputs the throttle on channel 1, you will follow these steps to correctly assign it to RealFlight's throttle:

1. Find "3 Throttle" from the channel column.
2. Change the Input channel assigned to throttle to Channel 1.
3. The Value for throttle to move to the far right at full throttle and to the far left at idle. If this is backwards, click the Reverse box for this assignment.

Repeat for all other channels you wish to reassign.

Enable Software Radio Mixes-

By default, RealFlight will handle all channel mixing in each aircraft. This is the simplest method to fly in RealFlight. In this mode, you should not have any mixing programmed into your radio, otherwise channels will be mixed twice; once by your radio and then by RealFlight. If you wish to use the mixing programmed in your radio, uncheck the box **Enable Software Radio Mixes**.

Enable Software Radio Dual Rates and Expo-

Some radios allow you to program the expos and dual rates on your transmitter. If you prefer this method, make sure **Enable Software Radio Dual Rates and Expo** is unchecked.

If you are flying with the InterLink Elite, or with a radio that does not offer this functionality, you will want to enable this feature. Then, make sure you assign a channel to "5 Dual Rates" in the channel assignments above. RealFlight will then handle all rates and expos for you.

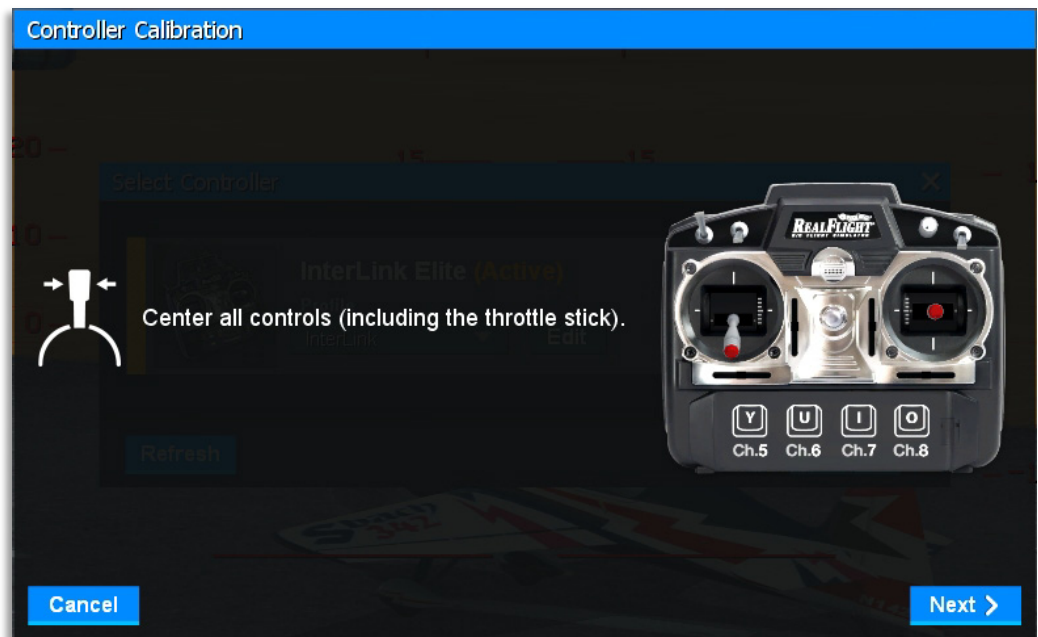
Save and Save As-

After making changes to your controller profile, you will want to save all modifications. Note that you cannot make changes to stock profiles that are included with RealFlight. If you made changes to a stock profile, the **Save**

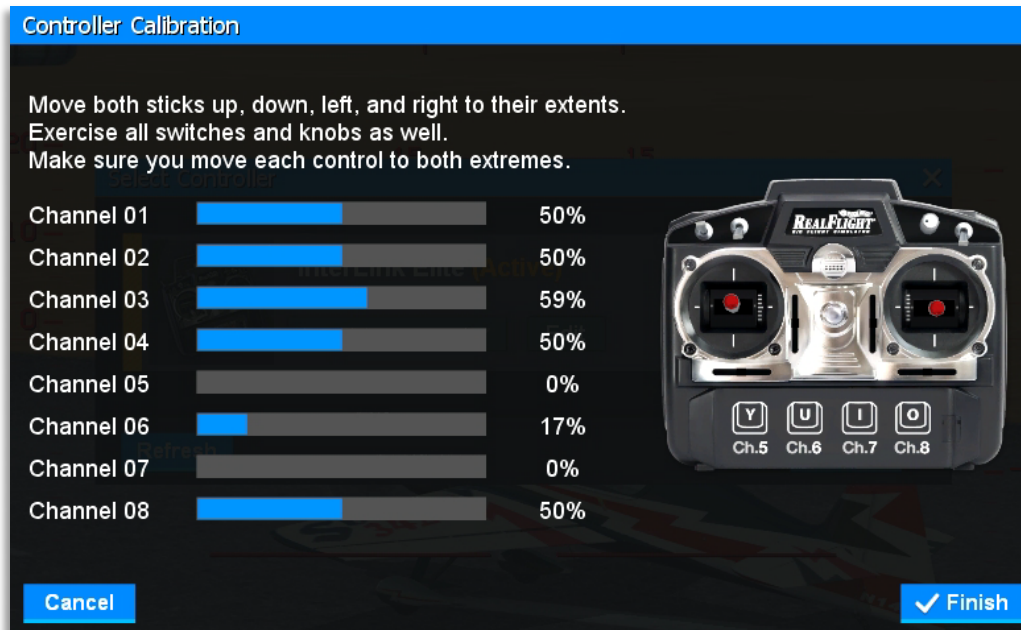
button will be disabled. Click the **Save As** button to save the profile under a different name.

Calibrate-

Clicking the **Calibrate** button on the Active controller allows you to adjust and fine-tune the controller input for the simulation, so that you will achieve the desired responses. Once clicked, the following screen appears:



As directed, place all sticks to their center positions. Click **Next** when finished.



It is imperative to move all of the sticks, knobs and switches through their complete range of motion several times. This is the key to a properly calibrated controller. When completed, click **Finish**. You will now be returned to the Select Controller screen with a calibrated controller.

Virtual Channels-

Many aircraft that are included with RealFlight, as well as user created aircraft, require 5, 6, 7 or even 8 channels to completely operate them effectively. Some radios have fewer channels. If you are flying with a radio that has fewer channels than the currently selected aircraft requires, you can use the keyboard.

Channel 5 Key: Y

Pressing **Y** will act like a two-position switch. Press the key to flip the switch to its opposite position.

Channel 6 Key: U

Pressing **U** will activate the knob to one extreme or the other, while holding the key down will slowly rotate the knob.

Channel 7 Key: I

Pressing **I** will act like a two-position switch. Press the key to flip the switch to its opposite position.

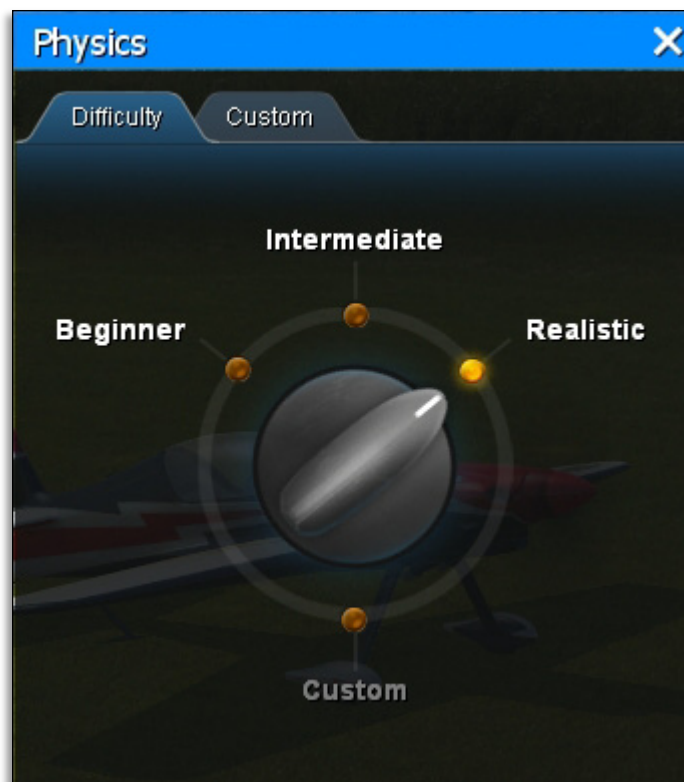
Channel 8 Key: O

Pressing **O** will act like a three-position switch. A quick press of the key will flip the switch to one extreme or the other, while holding the key down will place the switch to its center position.

It might be help to display the Radio Gadget to view these channels in action and to assist you in learning how they function.

Physics...

One of the great benefits of RealFlight 7 is the ability to adjust features and settings that you would not be able to do at a real flying field. The Physics setting is one of these great features. It allows you to adjust how realistic the flight physics are in the simulator on a global scale, meaning that all of the simulator's characteristics reflect this modification. The options that are available are as follows:



Beginner-

This setting is perfect for the first time pilot. It reduces the speed of the physics to allow a beginner time to react and learn how an aircraft is controlled. At this level, you cannot run out of fuel, and crashes are more forgiving.

Intermediate-

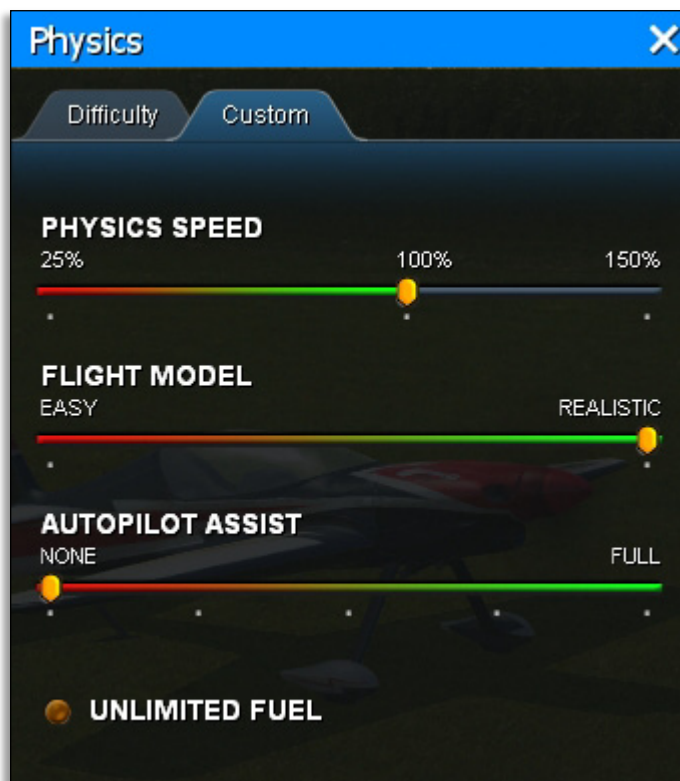
Crashes are not as forgiving, and aircraft will run out of fuel just as they would at the field.

Realistic-

By default, RealFlight 7 is set to Realistic. As the name implies, this setting accurately reflects the flight performance of their real-world R/C counterparts. The flight physics level for Realistic is very similar to Intermediate. However, you will notice that the severity of the stalls has also increased; forcing the pilot to react faster to stalls and other similar flight characteristics.

Custom-

Custom will be selected if you made changes to the default settings for physics speed, flight model, autopilot assist or fuel consumption. If you wish to adjust the physics parameters to fit your skill level, click the Custom Tab at the top of the Physics gadget. The following options are available.



- **Physics Speed** – Expressed as a percentage, this value controls the time scale of the simulation. Reducing the value allows you to create a slow-motion effect. This is useful when learning new skills or maneuvers; slowing the aircraft’s reaction time.
- **Flight Model** – This setting can range from “Easy” to “Realistic”. At an Easy setting, the aircraft are easier to fly than in real life. This is especially true at slow speeds. If set to Realistic, RealFlight 7 simulates real life aerodynamics in every way, including abrupt loss of lift during an aerodynamic stall. Setting the Flight Model to something in between will provide a compromise.
- **Autopilot Assist** – This setting improves overall stability of the aircraft. Much like the Active Flight Stabilization found on Hobbico’s NexSTAR, the Autopilot Assist will attempt basic wing leveling when you release the control sticks. For helis, the Autopilot Assist manages the collective to resist crashes. The strength of the assistance is inversely proportional to the aircraft’s height above the terrain, meaning that it will let you mess up a bit but will try to keep you from actually colliding with the ground.
- **Unlimited Fuel** – This option determines whether or not your aircraft will run out of fuel. If selected, the engine will run indefinitely – assuming, of course, that you do not crash. If disabled, the aircraft will indeed run out of fuel. The length of time required to do so is based upon a number of factors including the engine utilized and throttle management, just as it would be at the flying field.

Graphics...

Not all computers are created equal. You might find that RealFlight will perform better if you reduce the graphics quality of the simulator. Alternatively, if you have a high-end computer, you might enjoy the visualizations better by increasing the graphics quality.

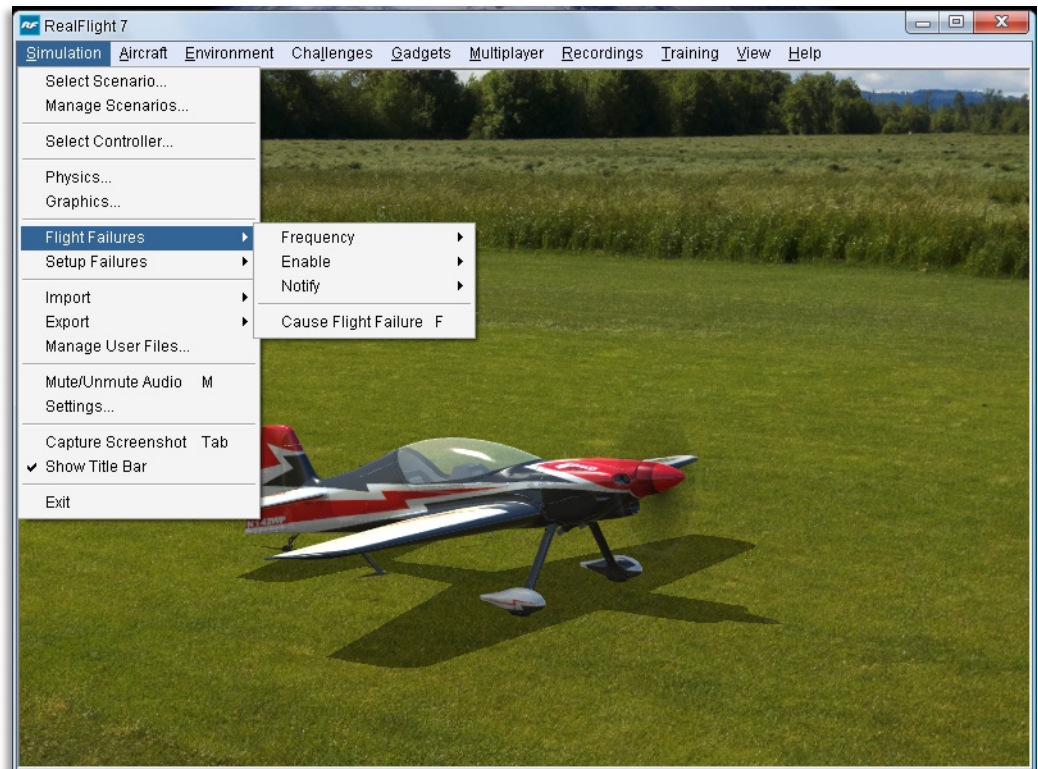


At the bottom of the Graphics Quality Settings dialog, you will notice a slider. Moving this from Low to Highest will alter the screen shot displayed above the slider, depicting the current selection. If you find RealFlight is not performing at its peak, try reducing these setting.

The slider will be set at Custom if you decide to alter individual graphics parameters in the Settings dialog. See Settings on page 79 for more information.

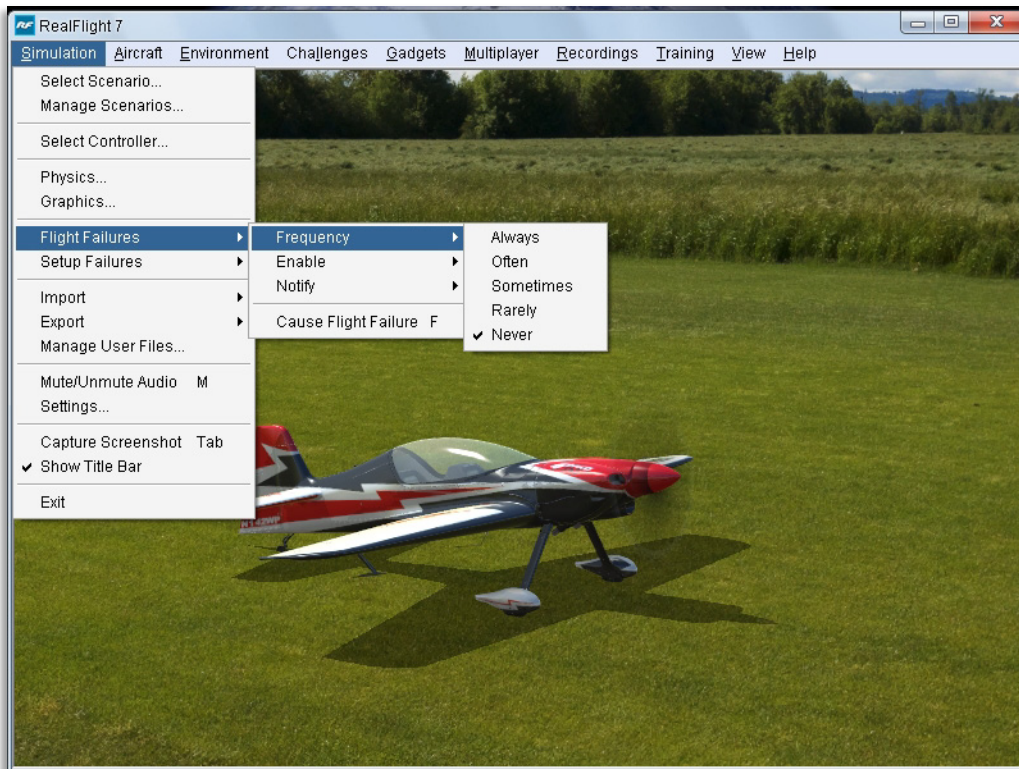
Flight Failures

RealFlight 7 offers the ability to simulate common failures for your aircraft. Flight Failures aids in teaching you how to remain calm and react appropriately when an actual failure occurs during flight. RealFlight 7 allows you to determine the types of flight failures that you will face, as well as how often these failures will occur.



Adjust the Rate of Occurrence-

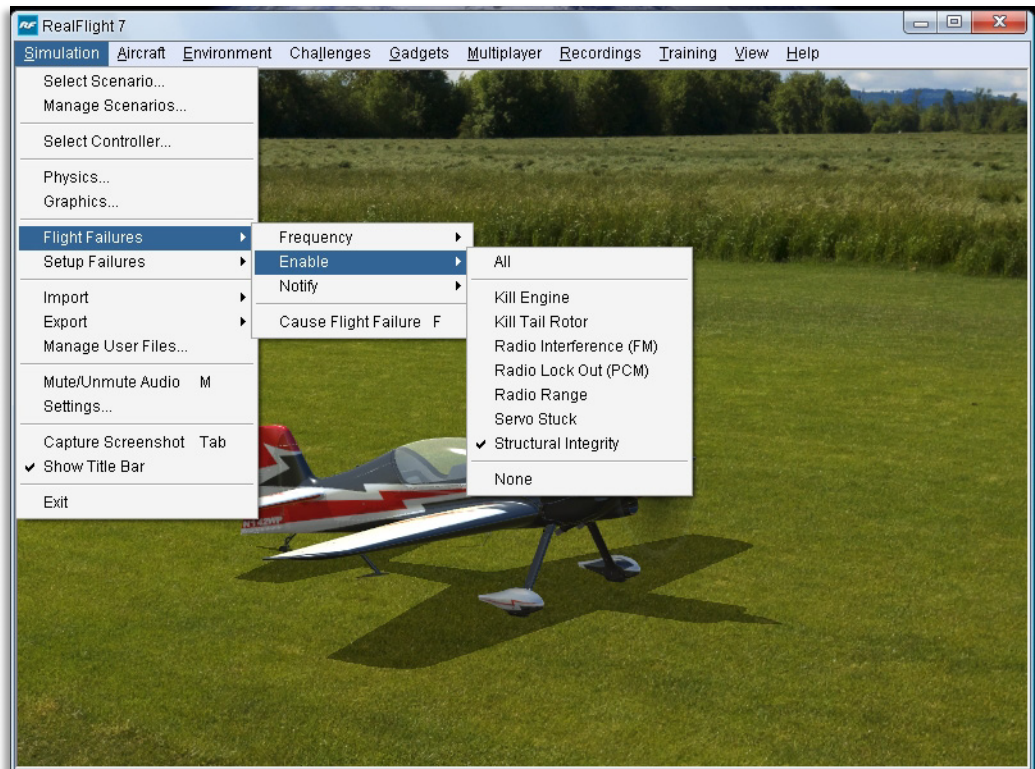
To reduce the frequency of flight failures, click on the **Simulation** menu followed by the **Flight Failures** menu item, and then the **Frequency** menu item. This brings up a sub-menu as shown in the screen below. Once the sub-menu is visible, simply mouse click on one of the options in the pull-down menu.



If you do not wish to experience any flight failures, click the **Never** option in the drop-down menu or, if you wish to gain a great deal of experience at handling emergencies, click the **Always** option.

Selecting the Type of Flight Failures-

RealFlight 7 allows you to determine the type of flight failures that you will experience within the simulation. To do so, click the **Simulation** menu followed by the **Flight Failures** menu item. Next, select **Enable** to bring forth the list of available flight failures. If an item has a check mark next to it, then that flight failure is enabled. To toggle the flight failure, click on it with the mouse.



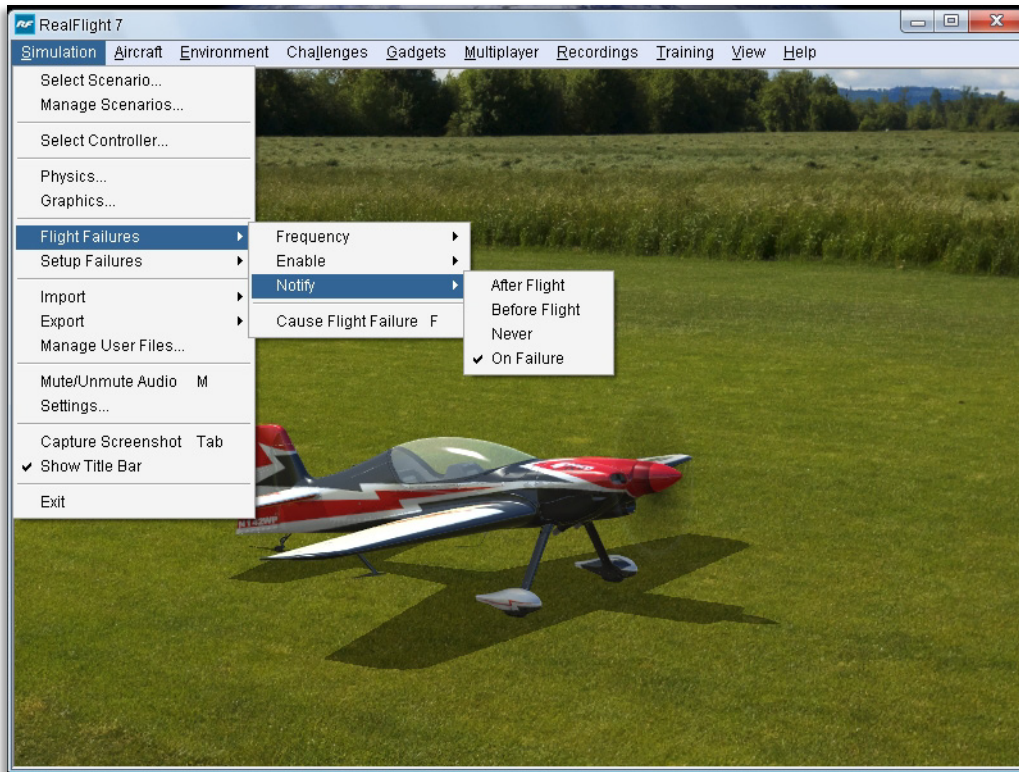
The options for Flight Failures consist of:

- Kill Engine - The engine will fail or quit in flight, which means that you will have to perform a deadstick landing or autorotation.
- Kill Tail Rotor (heli only) – This failure will cause the tail rotor of the heli to stop functioning during flight.
- Radio Interference (FM) - The receiver will experience intermittent radio interference during which the servos will behave erratically.
- Radio Lockout (PCM) - The receiver will experience intermittent radio dropouts during which the aircraft will fail to respond to control inputs.
- Radio Range - The receiver will experience interference proportional to the distance between the pilot and the aircraft. If the aircraft is close to the pilot's position, the range problems will be minimal, increasing as the aircraft gets farther away.
- Servo Stuck - A servo will become fixed, or stuck, in a certain position.

- Structural Integrity – This failure determines how strong the aircraft is and if parts could break off during flight.

Notify -

This setting allows you to determine if, or when, RealFlight notifies you as to the flight failure experienced.



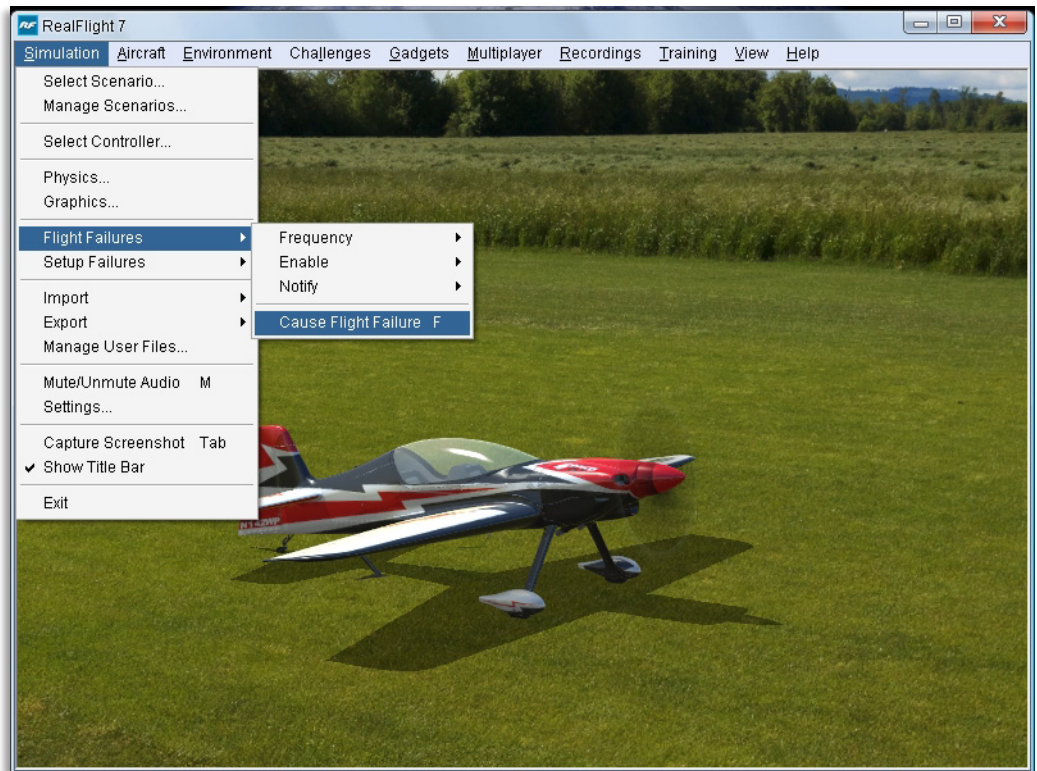
To adjust the settings of this feature, click on the value as indicated in the column to the right of the Notify When indicator. Your options are:

- After Flight - RealFlight will advise you as to the flight failure experienced upon the completion of the flight.
- Before Flight - RealFlight will inform you which flight failure you are about to experience before the flight begins.
- Never - RealFlight 7 will never advise you as to the flight failure that you have experienced, or are about to experience. A little mystery is a good thing.
- On Failure - RealFlight will inform you of the flight failure just as it occurs.



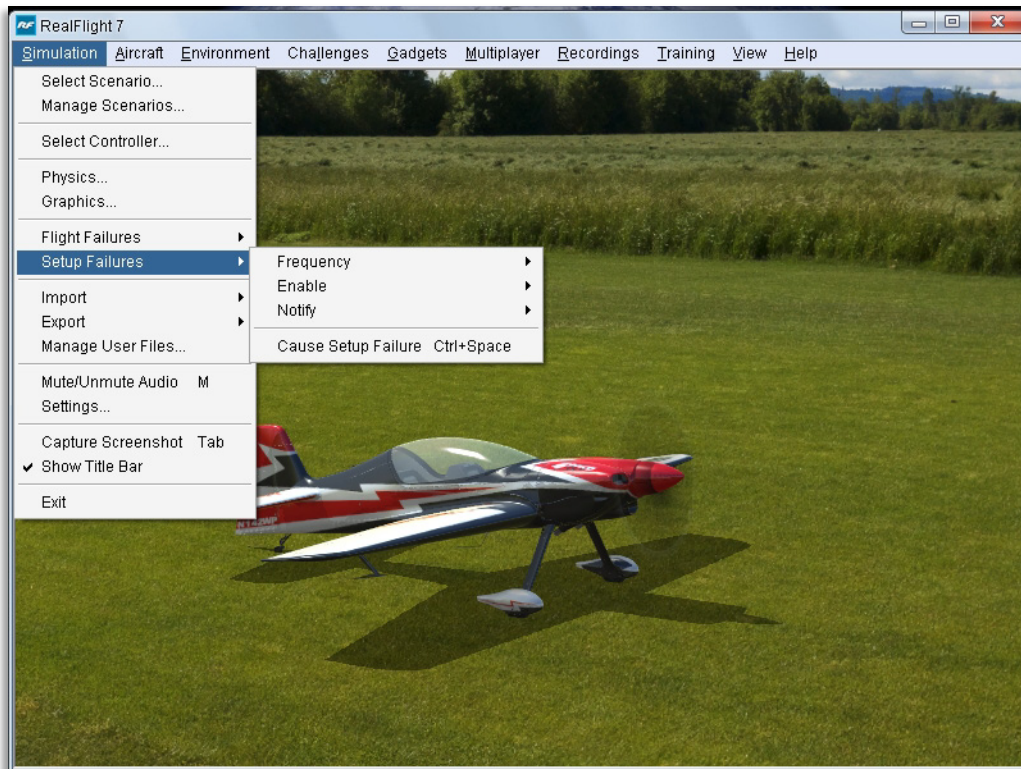
Cause Flight Failure-

This feature causes a flight failure to occur on command. To access this menu item, click on the **Simulation** menu, and then click on the **Cause Flight Failure** menu item.



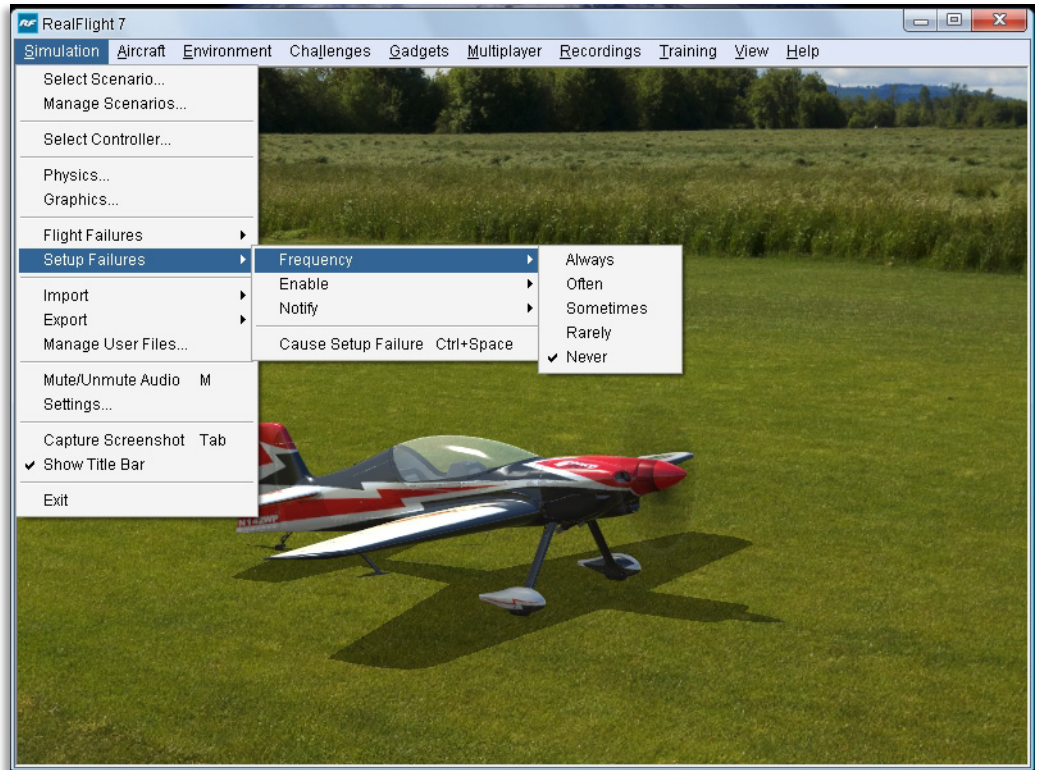
Setup Failures

Setup Failures are basic difficulties that, generally speaking, should be detected before you ever leave the ground. However, they are often overlooked and occur as a result of a hurried modeler. RealFlight 7 allows you to familiarize yourself with and determine the types of setup failures that you will face, as well as how often these failures will occur.



Adjust the Rate of Occurrence-

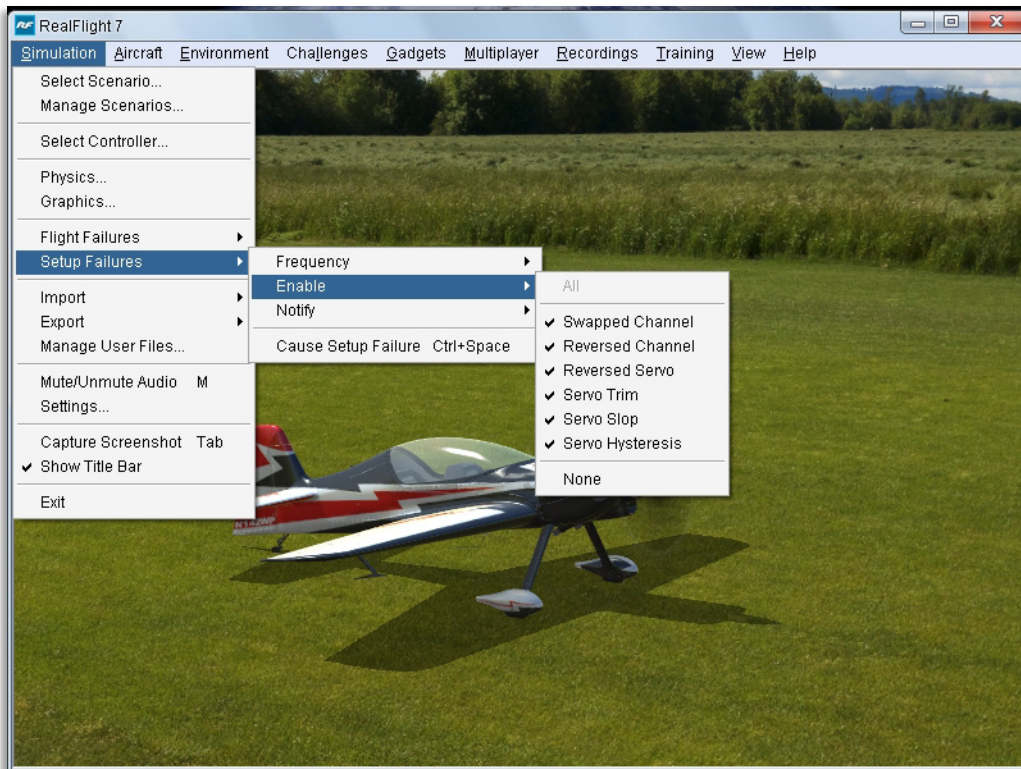
To reduce the frequency of flight failures, click on the **Simulation** menu followed by the **Setup Failures** menu item, and then the **Frequency** menu item. This brings up a sub-menu as shown in the screen below. Once the sub-menu is visible, simply mouse click on one of the options in the pull-down menu.



If you do not wish to experience any setup failures, click the **Never** option in the drop-down menu or, if you wish to gain a great deal of experience at handling emergencies, click the **Always** option.

Selecting the Type of Flight Failures-

RealFlight 7 allows you to determine the type of setup failures that you will experience within the simulation. To do so, click the **Simulation** menu followed by the **Setup Failures** menu item. Next, select **Enable** to bring forth the list of available flight failures. If an item has a check mark next to it, then that flight failure is enabled. To toggle the flight failure, click on it with the mouse.

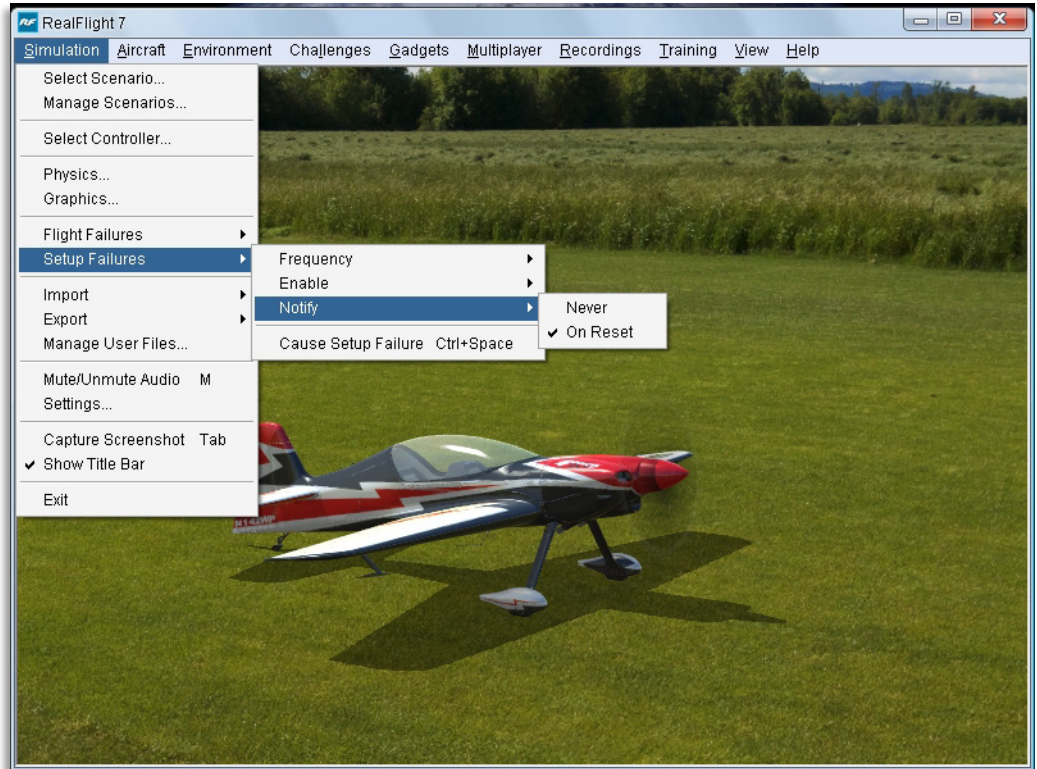


The options for Flight Failures consist of:

- Swapped Channel - This failure simulates the effect of inadvertently swapping two channels. For example, you may find that your rudder controls the throttle, and vice versa.
- Reversed Channel - One of the channels, selected at random, will operate in reverse direction.
- Reversed Servo - The travel direction of one of your servos is reversed.
- Servo Trim - A servo alters the trim settings, modifying the flight control position.
- Servo Slop - Servo slop may be the result of improper geometry of the linkages or the looseness of the servo's gearing.
- Servo Hysteresis - The time or gap between a servo input from the pilot and the movement of the servo on the aircraft.

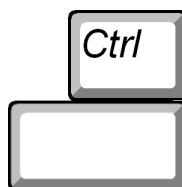
Notify -

This setting allows you to determine if, or when, RealFlight notifies you as to the setup failure experienced.



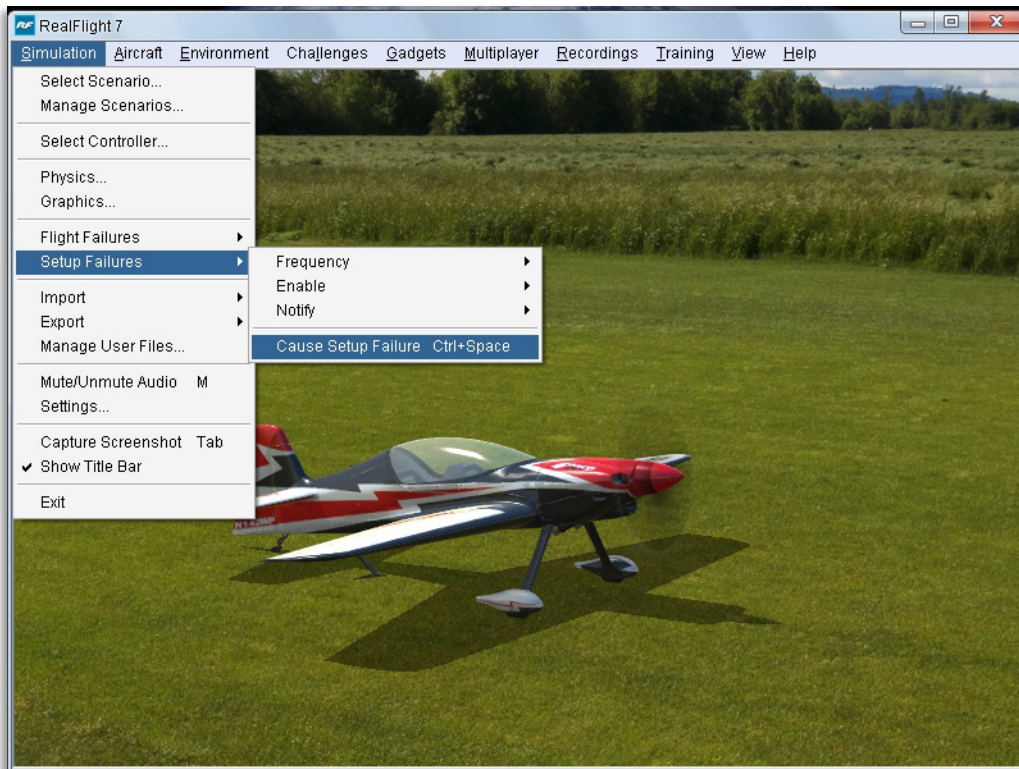
To adjust the settings of this feature, click on the value as indicated in the column to the right of the Notify When indicator. Your options are:

- Never - RealFlight 7 will never advise you as to the flight failure that you have experienced, or are about to experience. A little mystery is a good thing.
- On Reset - RealFlight will inform you of the flight failure when you reset the flight (hitting the spacebar or Reset button on the controller).



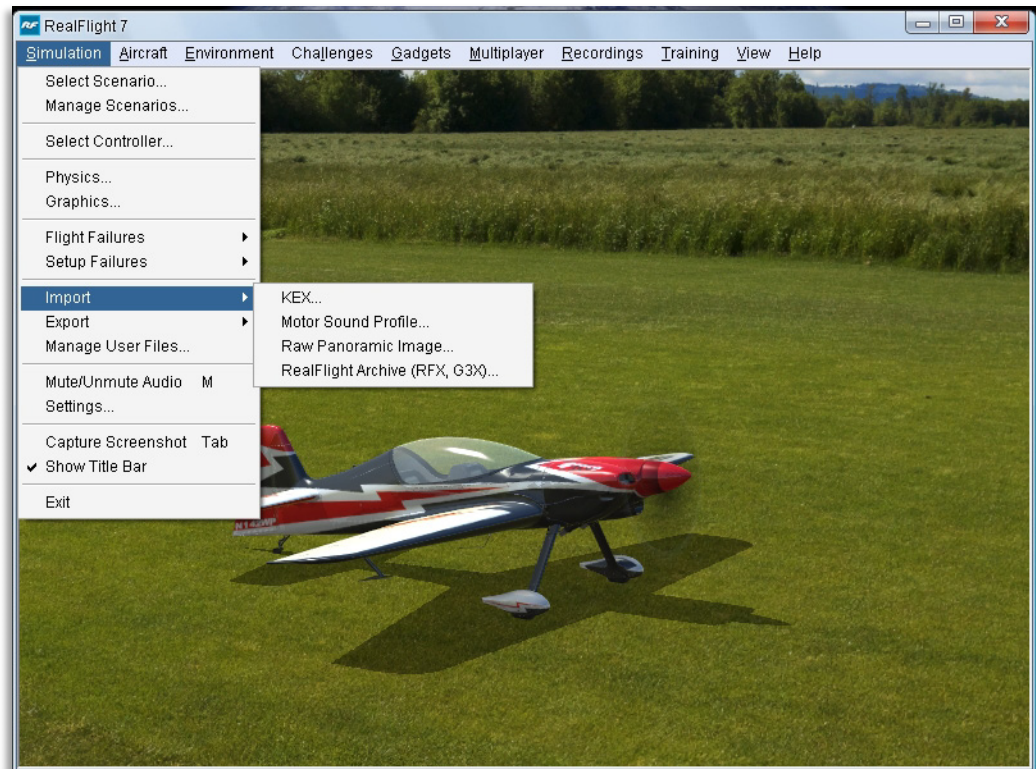
Cause Setup Failure-

This feature causes a setup failure to occur on command. To access this menu item, click on the **Simulation** menu, and then click on the **Cause Setup Failure** menu item.



Import

The Import menu item allows you to import content created by other users. There are three types of files that are associated with RealFlight 7; each will be covered in the section that follows.



KEX-

Knife Edge Software has created a plug-in, or software module that functions with popular 3D modeling tools to create subject matter for the RealFlight software.

The KEX importer is used to bring the model from the plug-in into the simulation itself.

For more information, see: www.knifeedge.com/KEmax/

Motor Sound Profile-

RealFlight allows you to import your own unique sounds for motors that might not already exist in the simulator. By recording the sound of the motor at different RPMs and importing these recordings into RealFlight, the simulator is able to blend these sound files throughout the entire operating range of the motor.

Raw Panoramic Image-

This file type refers to the panoramic image that helps generate the PhotoField flying sites. This option allows you to create a PhotoField using a panoramic image that you may have downloaded or created yourself. It works best with

large images (8000x4000 or larger) that are equirectangular, spanning 360 degrees horizontal by 180 degrees vertical. Click on the **Raw Panoramic Image...** selection to import an image into the simulation. Browse to the location of the image you would like to import. The image may be in any of the bitmap (.bmp), targa (.tga) or a JPEG (.jpg) file formats.

Once you have located the desired image, double-click the image. Select this image and click **Open**. The conversion process can take several minutes for large images. When the process is complete, RealFlight 7 will automatically create a new PhotoField airport that uses your newly imported image.

To edit the new PhotoField airport (for image alignment, object placement, etc.), access the Airport Editor by clicking the **Environment** menu, followed by the **Create New Airport...** menu item. To see the image from the pilot's perspective, refer to the Pilot Preview window. This will make it easier to place objects and adjust the image correctly. If necessary, adjust the image using the Panoramic Image Y Alignment, Panoramic Image X Alignment and/or the Panoramic Image Facing options located in the Properties window.

RealFlight Archive (RFX, G3X)-

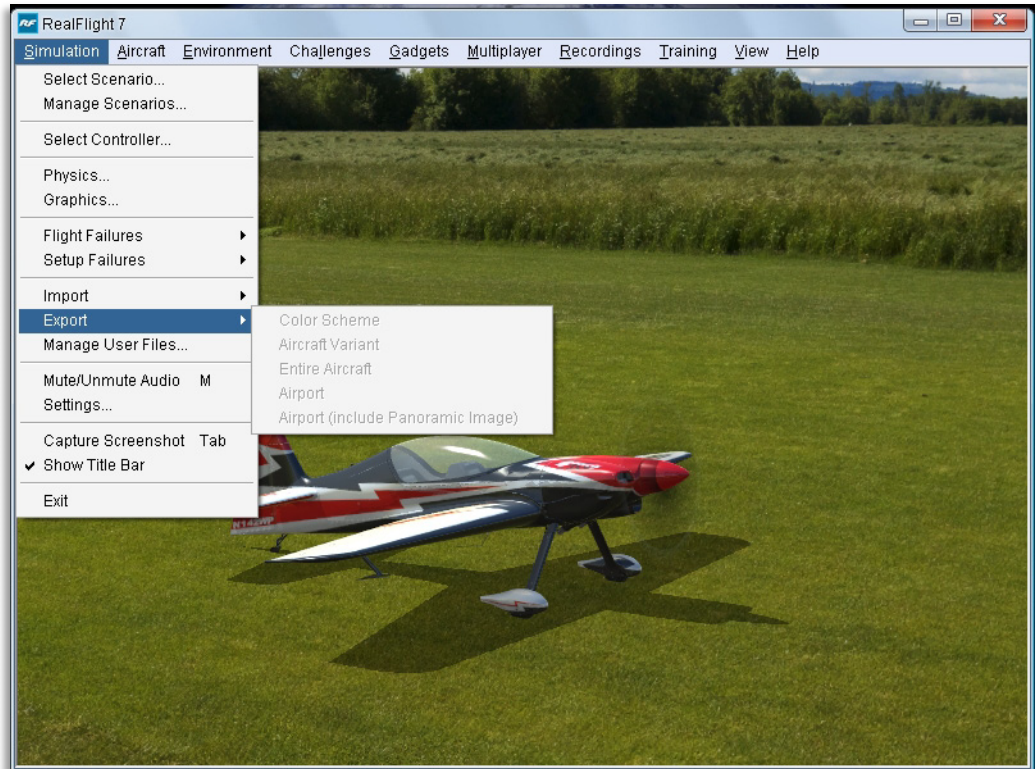
RFX is the file extension that is used for all files exported from RealFlight G4 or later versions. This menu option allows you to import an RFX file. You will use this for all files that you have downloaded. There is nothing special you need to know about the file beforehand; the RFX importer handles all types of content, including: planes, color schemes, airports, PhotoFields, and recordings.

This menu item also allows you to import G3X files used in RealFlight G3 and G3.5.

After choosing the Import menu item, followed by the RealFlight Archive (RFX, G3X), you will be presented with an Open file dialog. Use this dialog to find the file that you want to import. Double-click the file or click the file and click **Open**. The import process will start immediately and once it's finished you will see a message confirming its success.

Export

The Export menu item allows you to share user-created content. It is provided in the Simulation menu as a shortcut to using the Manage User Files dialog.



RealFlight 7 users may share the following items: Color Scheme, Aircraft Variant, Entire Aircraft, Airport and Panoramic Images. If one or more of these options on the list is grayed out, it is because the currently loaded color scheme, aircraft, or airport is part of the simulation by default and not available for export.

Once any of these items are exported, you can then share them with friends or the rest of the RealFlight community. The best choice is to upload the files to the RealFlight swap site found at:

<http://swappages.knifeedge.com/>

Color Scheme-

This option allows you to share the current aircraft color scheme (a.k.a. trim scheme) with other RealFlight users.

To export a Color Scheme, select the **Export** menu item followed by the **Color Scheme** option. A save dialog will appear so that you can choose

where you would like to save the exported color scheme and determine the filename. After saving, a message will appear on-screen advising you whether or not the export was successful. This message will also list the location and name of the file that was exported.

Aircraft Variant-

This option enables you to export an aircraft that has undergone structural modifications such as lengthened wing span, more prop thrust, different airfoils, etc. It is important to note in addition to any wire frame modifications, the Aircraft Variant file option also includes any modifications to the aircraft powerplant, batteries, etc.

To export an aircraft variant, select the **Export** menu item, followed by the **Aircraft Variant** option. A save dialog will appear so that you can choose where you would like to save the exported aircraft variant and determine the filename. A verification message will appear on-screen advising you whether or not the export was successful. This message will also list the location and name of the file that was exported.

Entire Aircraft-

This option enables you to export the entire contents of an aircraft such as trim scheme, structural changes, etc.

To do so, select the **Export** menu item followed by the **Entire Aircraft** option. A save dialog will appear so that you can choose where you would like to save the exported aircraft and determine the filename. A verification message will appear on-screen advising you whether or not the export was successful. This message will also list the location and name of the file that was exported.

Airport-

This option enables you to export a modified airport. Note that any custom panoramic image you may be using with this airport will not be exported. To export an airport with a custom panoramic image, use the “Airport (include Panoramic Image)” option.

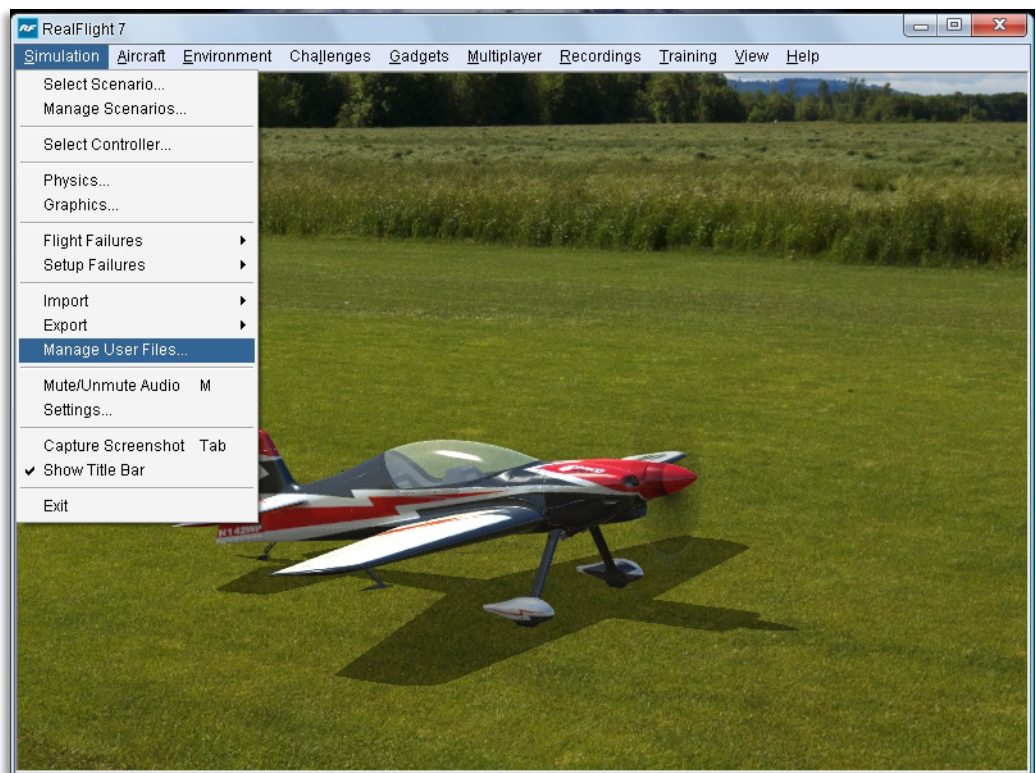
To export an airport, select the **Export** menu item followed by the **Airport** option. A save dialog will appear so that you can choose where you would like to save the exported airport and determine the filename. After saving, a verification message will appear on-screen advising you whether or not the export was successful. This message will also list the location and name of the file that was exported.

Airport (include Panoramic Image)-

This option enables you to export an airport along with its custom panoramic image. To do so, select the **Export** menu item followed by the **Airport (include Panoramic Image)** option. A save dialog will appear which allows you to choose where you want to export the airport and what you want to name the file. A verification message will appear on-screen advising you whether or not the export was successful. This message will also list the location and name of the file that was exported.

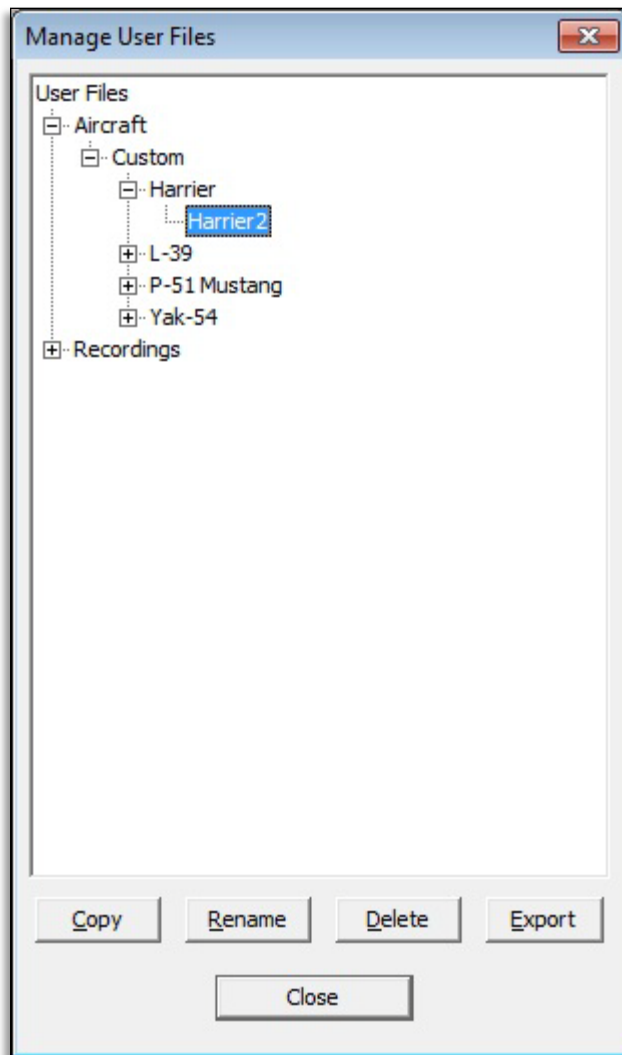
Manage User Files

The Manage User Files menu item allows you to modify the new user content that you have added to the simulation. You will find that the Manage User Files menu item is a handy tool; it maintains all such files in one, easy to find location.



The Manage User Files dialog allows you to copy, rename, delete, or export any custom resource that exists in the simulation. It is important to note that the various Manage User Files buttons will be inactive until a modification to one of the files exists. That is, this menu item is only utilized to modify user-

created items. It will not allow you to modify the airports or vehicles included in the RealFlight 7 software.



Copy-

This option duplicates the information and data pertaining to the currently selected item. For example, if you wish to duplicate a flying site located in the User Files, click the **Copy** button. Once you have copied the file, enter a name for the new item.

Rename-

This option is utilized to rename a user-created item.

To do so, highlight the desired item (flying site, etc.) and click **Rename**. Enter the desired name for the item in the dialog provided. The item will now appear in its respective list of offerings with the new name.

Delete-

This option is utilized to delete an item entirely. All files associated with the item will be removed from your computer.

It's important to note that users are only allowed to delete items which they, or other users, have created. You cannot delete default items that are included in the software.

To delete a user-created item, select the item in the User File menu and click **Delete**. If you wish to delete this item, click **Yes** in the verification dialog. Please note: once deleted, this resource will no longer be available in the simulation.

Export-

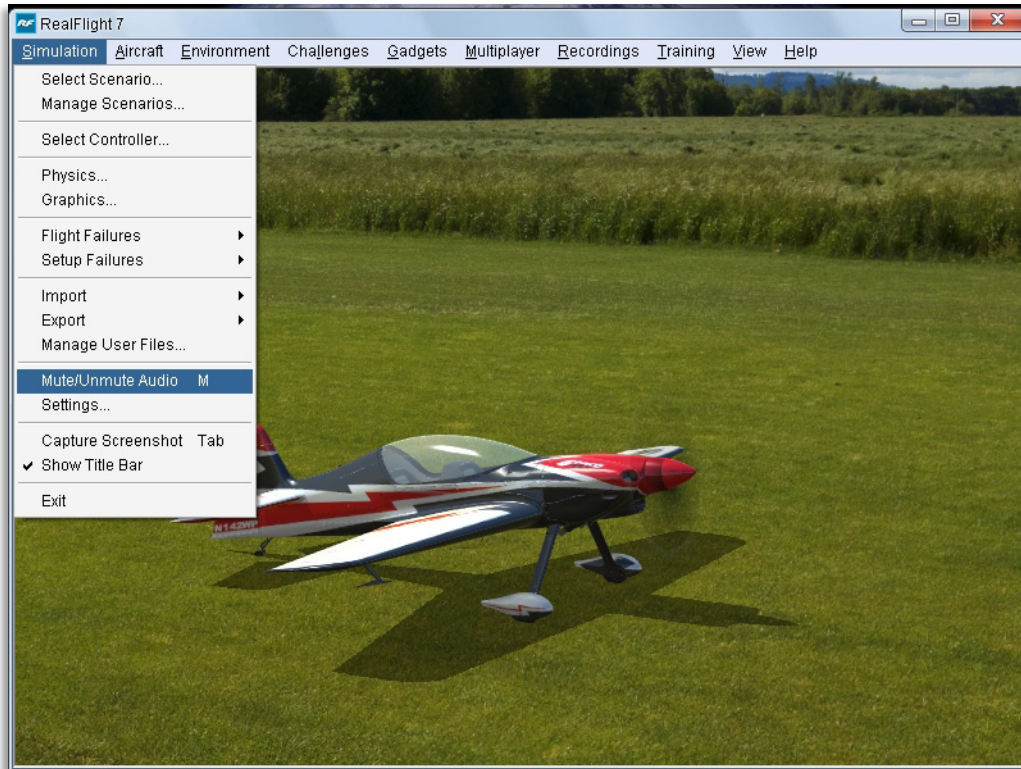
This button is used to export the custom content to a file that can be shared with others. If you have created interesting or unusual content, we encourage you to share your designs with other RealFlight users. The more content that is shared, the more enjoyment everyone will experience.

To export a user-created item, select the respective item in the User File menus and click **Export**. A verification dialog will appear on-screen advising you whether or not the export was successful, and the location and name of the file that was exported. You may then publish the exported file to a web site, move it to another computer, or email it for others to enjoy.



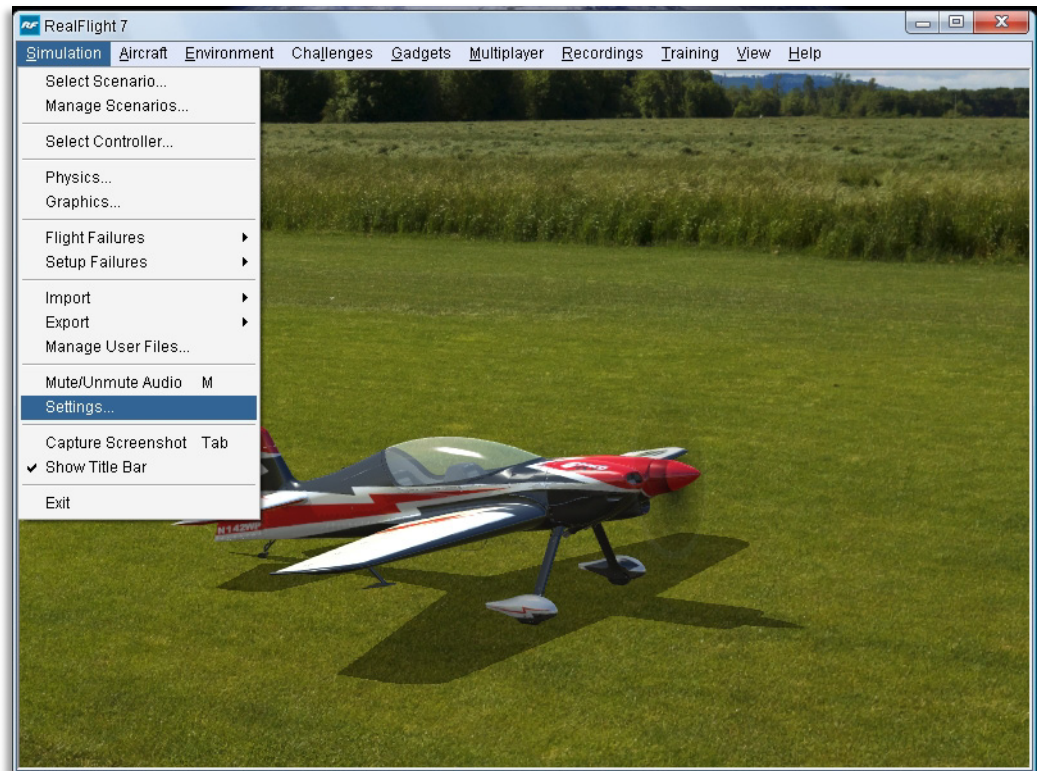
Mute/Unmute Audio

At times, you may want to fly without any sound. Choose this menu item to mute the audio. Select it again to activate the sounds.

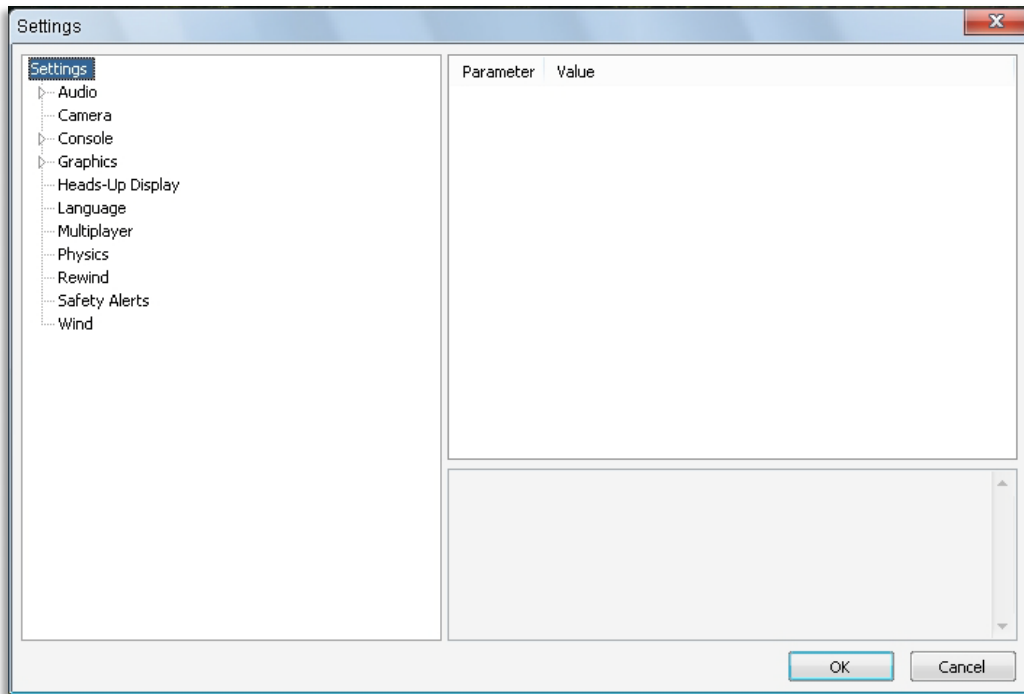


Settings

The Settings option is an integral part of the RealFlight 7 software. This menu item allows you to adjust a multitude of features and functions within the simulation.

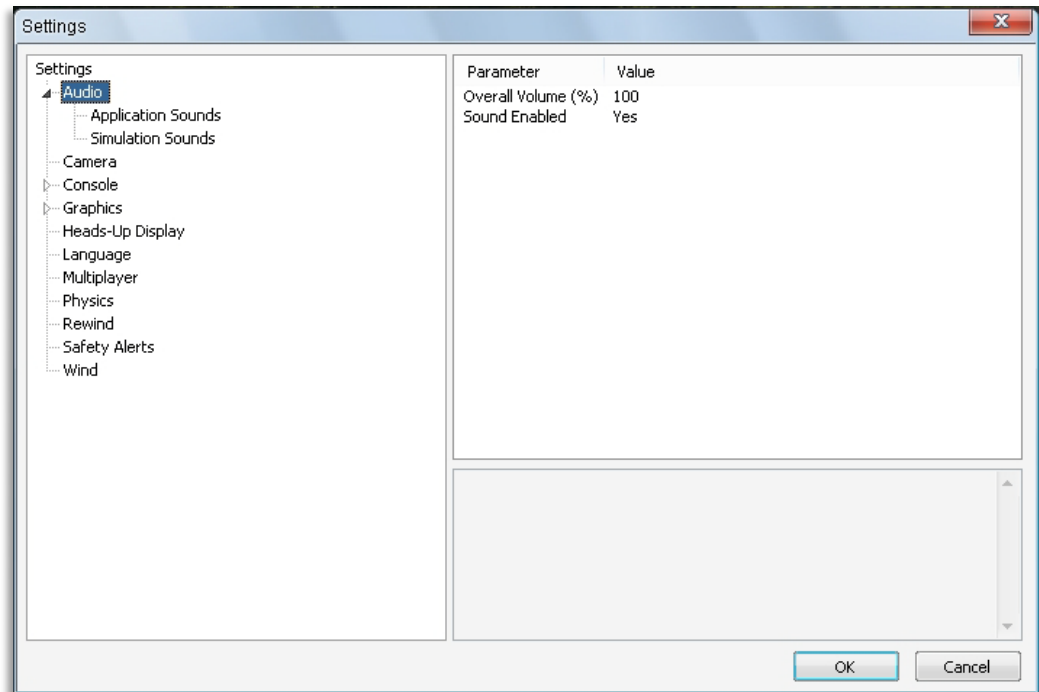


To access this menu item, click on the **Simulation** menu followed by the **Settings...** menu item. The Settings dialog will appear, showing the available options.



Audio-

The Audio settings allow you to adjust the volume levels for the aircraft and various options in the simulation. For each type of sound that is adjustable, there are two parameters that can be changed. First is the Volume, which is a percentage of the Overall Volume. The second is whether the sound should be enabled or muted. Double-click on the **Audio** name, or click on the **[+] (plus)** to expand the list and show the Audio options.



Overall Volume (%)

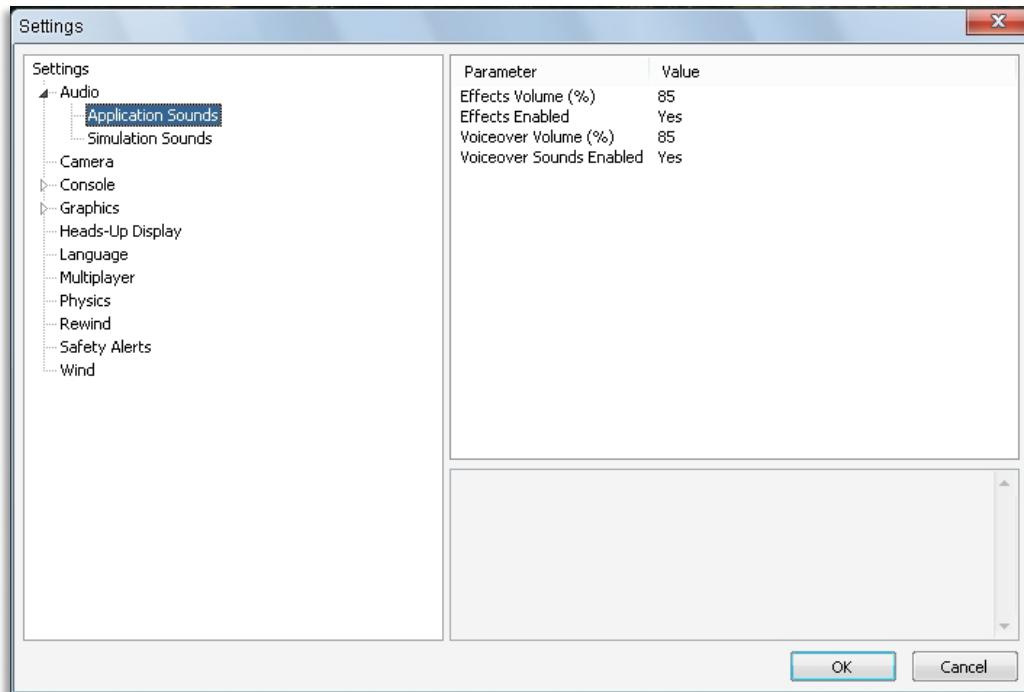
This parameter, found when the Audio setting is selected, controls the volume for all sounds in RealFlight.

Sound Enabled

This will mute or unmute all sounds in RealFlight. You can select the **Mute/Unmute Audio** menu item from the Simulation menu, or simply press **M** on the keyboard to toggle this setting on or off.

Application Sounds

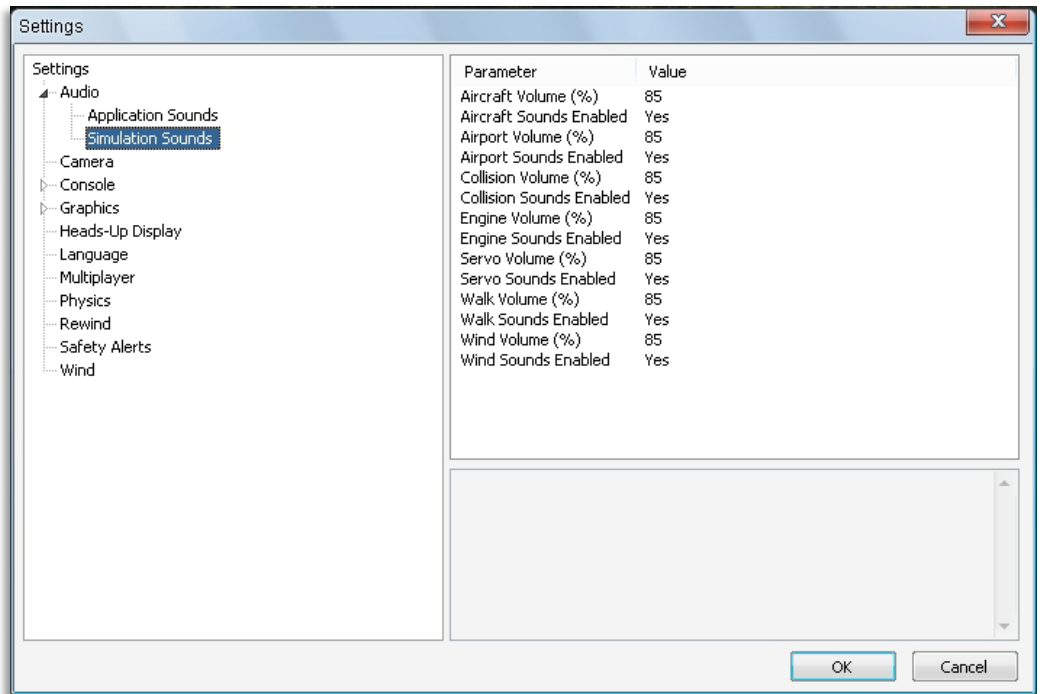
The Application Sounds section controls the effects and voiceover sounds in the simulation.



- Effects Volume (%) - This setting adjusts the master volume level for sounds, except all voiceovers.
- Effects Enabled - Choosing No for this option will mute all sounds for the simulator except for the voiceovers.
- Voiceover Volume (%) – This setting adjusts the volume level for all voiceovers heard during the Virtual Flight Instruction, or voice chat during multiplayer sessions.
- Voiceover Sounds Enabled - Choosing No for this option will mute all sounds for the voiceovers in the simulator.

Simulation Sounds-

The Simulation Sounds section controls the various options related to the miscellaneous sounds in the simulation. RealFlight allows you to make modifications to the various sounds based upon your preferences.



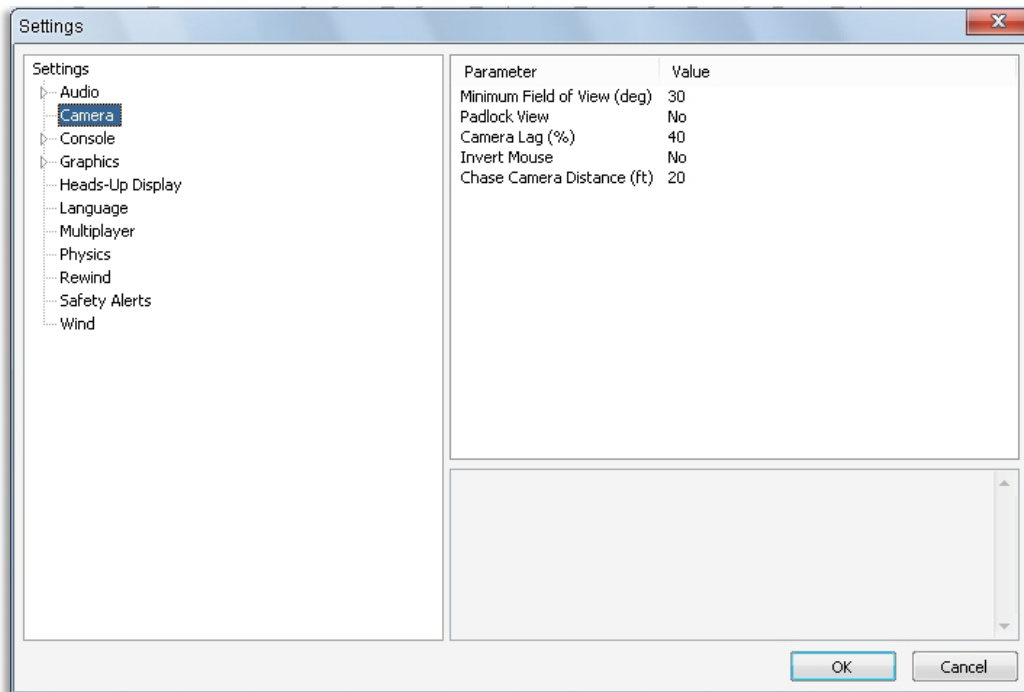
For each type of sound that is adjustable, there are two parameters that can be changed. First is the Volume, which is a percentage of the overall volume. The second is whether the sound should be enabled or muted.

The different sound types are:

- Aircraft – aircraft-related sounds, such as servos.
- Airport – the ambient sounds around the airport.
- Collision – the crashing sounds associated with collisions.
- Engine – the motor and engine sounds.
- Servo – controls the sounds of all the servo motors.
- Walk – the walking sound when moving the camera position.
- Wind – the sound produced by the wind.

Camera-

The camera options are designed to enhance the field of view when utilizing the Keep Ground in View zoom mode. For additional information on this option, please refer to the View menu chapter of this manual.



Minimum Field of View (deg)-

This setting determines the absolute minimum field of view when utilizing the Keep Ground in View zoom option.

To adjust the minimum field of view, click the existing value. Next, enter the desired value either directly from the keyboard or via the mouse wheel.

Padlock View-

With Padlock View enabled, the cockpit camera position will swivel and follow the targeted aircraft during multiplayer combat events.

Camera Lag (%)-

This controls how quickly the camera reacts to the aircraft's movements. If the lag is set to zero, the camera always looks directly at the aircraft. At all other values, the camera will have a spring-like reaction to the aircraft during flight.

At very high values, the camera hardly ever looks directly at the aircraft, and often the aircraft will fly off the screen as the camera tries to catch up. At lower values, the effect is very subtle and yet still softens the camera movement enough so that minor changes in the aircraft's speed/position are more noticeable.

Please note: these settings apply to the “Fixed View” camera mode only. They are not applicable to the cockpit, chase, or onboard views.

Invert Mouse-

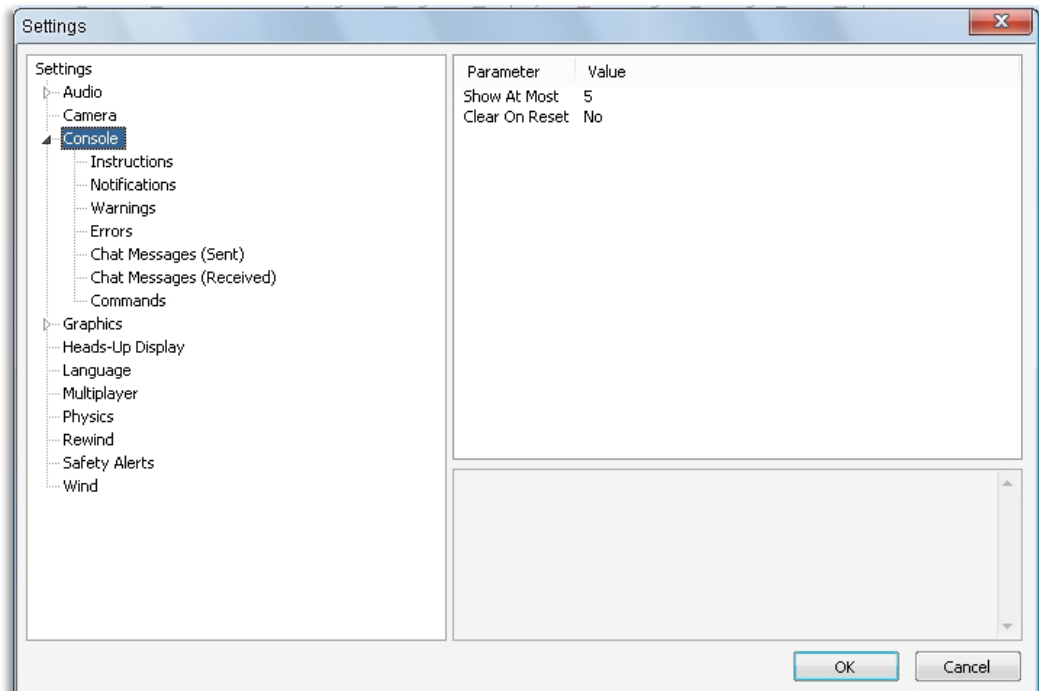
Setting this parameter to **Yes** will invert the vertical, or up/down movement of the mouse when you are in walk mode.

Chase Camera Distance (ft)-

This parameter allows you to adjust the distance which the Chase Camera will follow the aircraft from behind. Adjusting this value may assist you in Challenges like Balloon Burst.

Console-

The Console option has a number of sub-categories that allow you to perform modifications to the messages that appear on-screen while running the simulator. It also offers two parameters that affect all the sub-categories.



Show At Most-

This numerical value indicates the maximum number of messages that will appear on your screen at any given time. When the maximum number is

surpassed, an older message will be removed and the most recent message will take its place on-screen.

Clear on Reset-

This setting controls whether all of the on-screen messages are cleared when the aircraft resets. This prevents the screen from becoming cluttered with messages and information.

Using either the mouse or the up/down arrow keys on the keyboard, select **Yes** (messages automatically clear) or **No** (messages remain on-screen after a reset) from the pull-down listings. If using the up/down arrow keys, press **Enter** to finalize your selection.

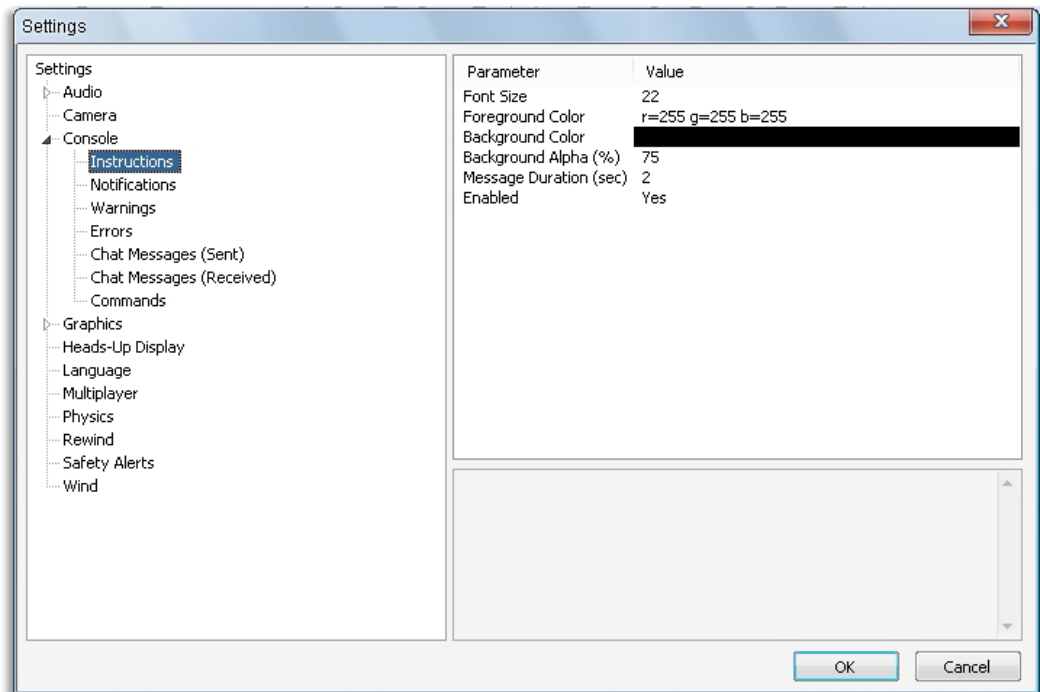
Double-clicking on the **Console** name or clicking on the **[+] (plus)** will bring forth the following options:

- Instructions
- Notifications
- Warnings
- Errors
- Chat Messages (Sent)
- Chat messages (Received)
- Commands

Each of the System Messages screens is independently adjustable and may be tailored to suit your personal preferences. For information on how to do so, please read the following section.

Instructions-

This option determines the settings for the system Instructions messages. To select the Instructions options, click on the Instructions name.



Font Size-

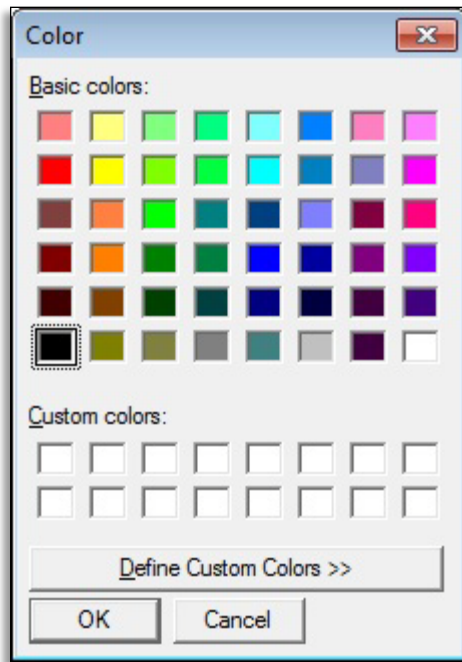
This option allows you to adjust the font size for the messages pertaining to the instructions. Please note: this only affects the Instructions. It does not affect any other system messages.

To access the Font Size options, click on the value shown in the respective column. The desired values may be input directly from the keyboard or modified using the mouse wheel.

Foreground Color-

This option allows the user to adjust the color of the foreground for the Instructions messages.

To access the color palette for the foreground color, click on the **current value**, then click the **more options** button that appears to the right (the gray button with the ellipsis). This will reveal a screen that appears as follows:



To select a color, click the desired color on the palette. If you wish to make a custom color, click the **Define Custom Colors** button and create the color or colors to suit your tastes. Click **OK** to finalize the selection. The selected color will be reflected immediately in the value column.

Background Color-

This setting allows you to adjust the color of the background for the Instructions messages.

To access the options pertaining to the background color, click on the **current displayed color**.

To access the color palette for the background color, click on the **current displayed color**, then click the **more options** button that appears to the right (the gray button with the ellipsis). To select a color, click the **desired color** on the palette. If you wish to make a custom color, click the **Define Custom Colors** button and create the color or colors to suit your tastes. Click **OK** to finalize the selection. The selected color will be reflected immediately in the value column.

Background Alpha (%)

This option adjusts the transparency of the text background for the message.

The desired values may be input directly from the keyboard or modified using the mouse wheel. The higher the value, the more transparent the text background will become.

Message Duration (sec)-

This option adjusts the length of time that a message remains on-screen before it disappears.

You may input desired values directly from the keyboard or modify them using the mouse wheel. The higher the value, the longer the message remains on-screen.

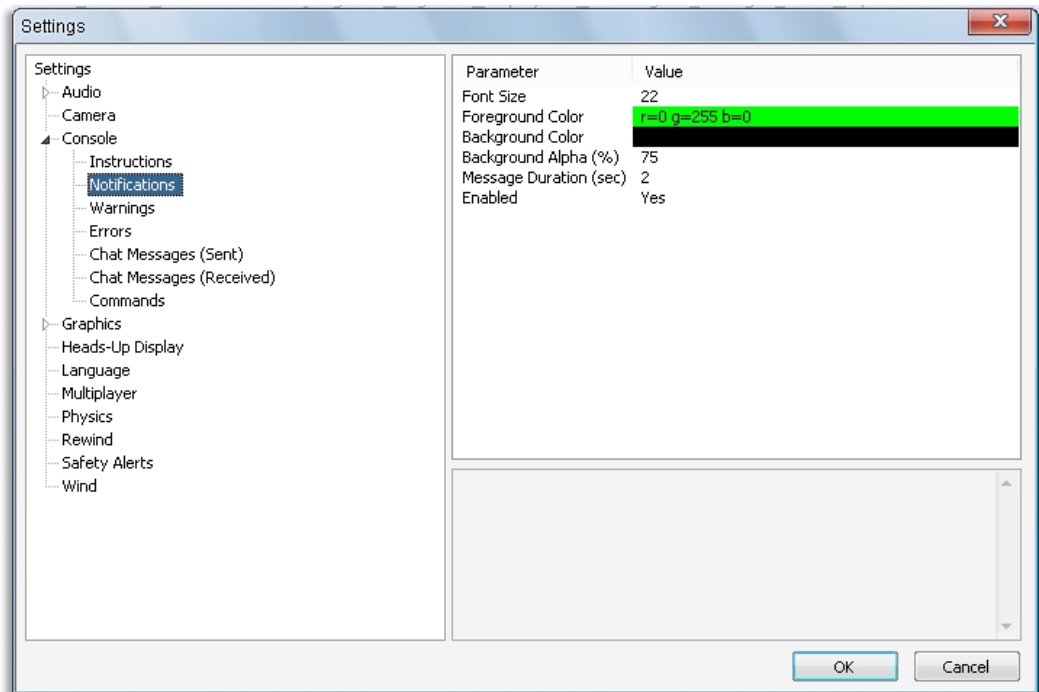
Enabled-

This option determines whether Instructions messages are displayed or not.

To determine whether this is enabled, click on the respective value indicator. Using either the up/down arrow keys on the keyboard, or the mouse, select either **Yes** (Instructions messages are enabled) or **No** (Instructions messages are disabled) from the pull-down listings. If using the up/down arrow keys, press **Enter** to finalize your selection.

Notifications-

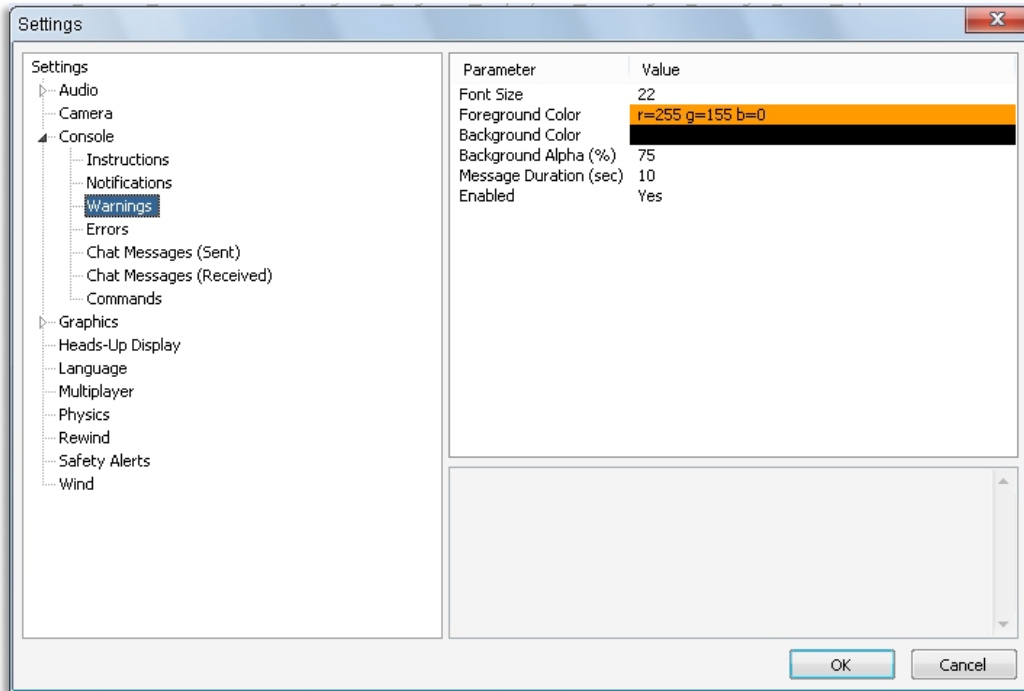
This option determines the settings for the system Notifications messages.



These options function in the same manner as the options for the Instructions messages, except that they only affect Notification messages.

Warnings-

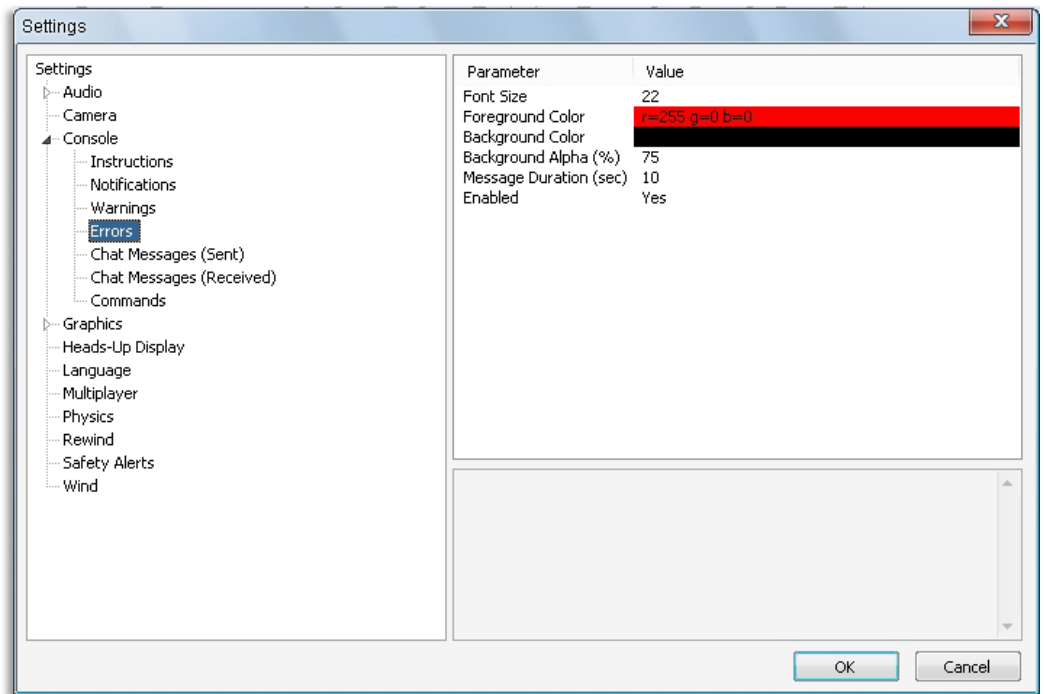
This option determines the settings for the system Warning messages.



These options function in the same manner as the options for the Instructions messages, except that they only affect Warning messages.

Errors-

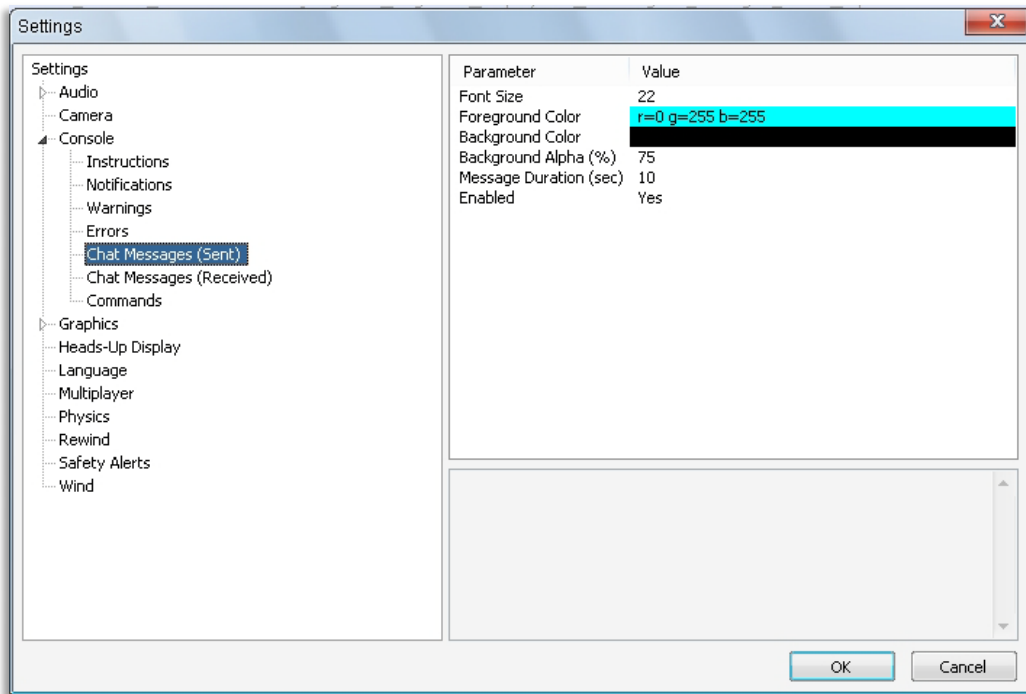
This option allows you to modify the behavior of system error messages.



These options function in the same manner as the options for the Instructions messages, except that they only affect Error messages.

Chat Messages (Sent)-

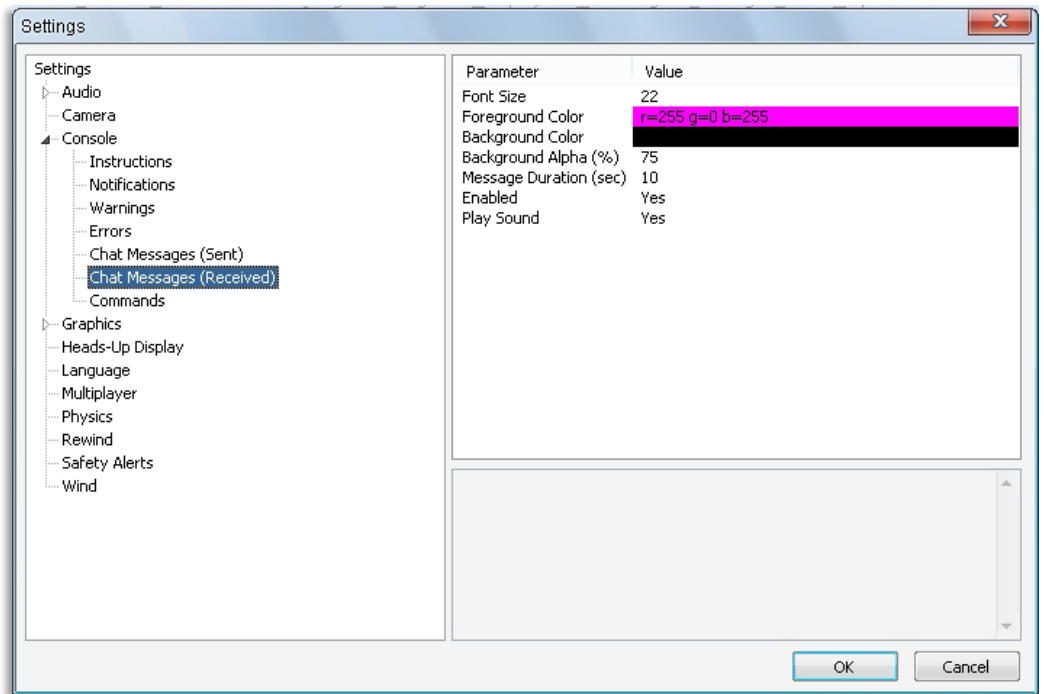
This option allows you to modify the appearance of text that you type for chat messages during multiplayer sessions.



These options function in the same manner as the options for the Instructions messages, except that they only affect Chat Messages (Sent) messages.

Chat Messages (Received)-

This option allows you to modify the appearance of text you receive from other players during multiplayer sessions.

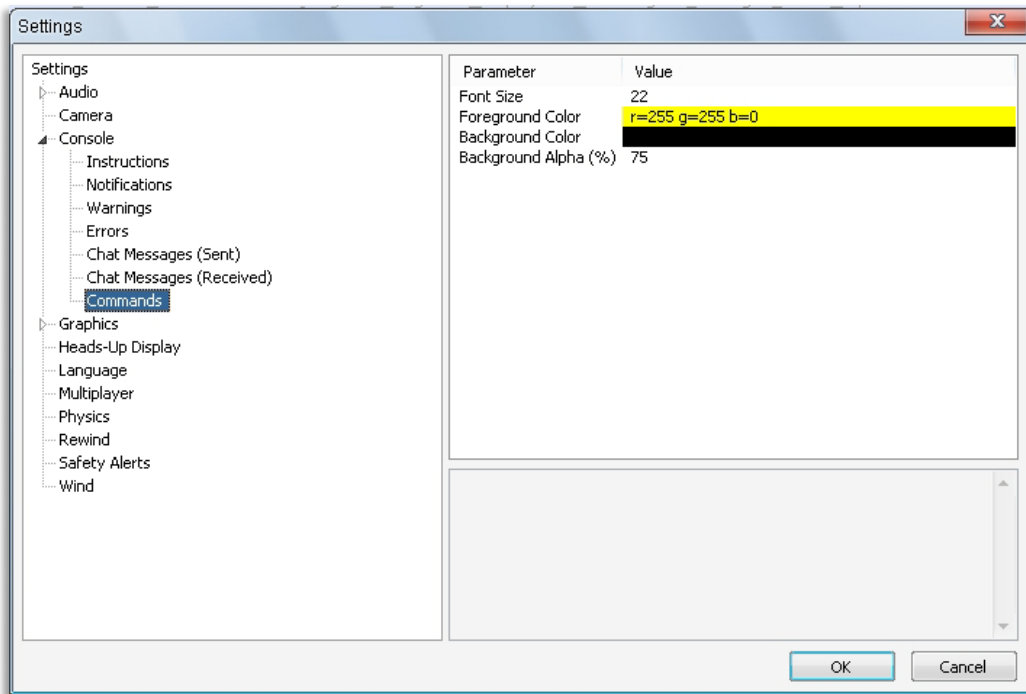


These options function in the same way as the options for the Instructions messages, except that they only affect Chat Messages (Received) messages.

There is one additional parameter available for this option called Play Sound. This allows you to set whether or not a sound is heard when an incoming chat messages arrives.

Commands-

This option allows you to modify the appearance of commands typed in the console screen.



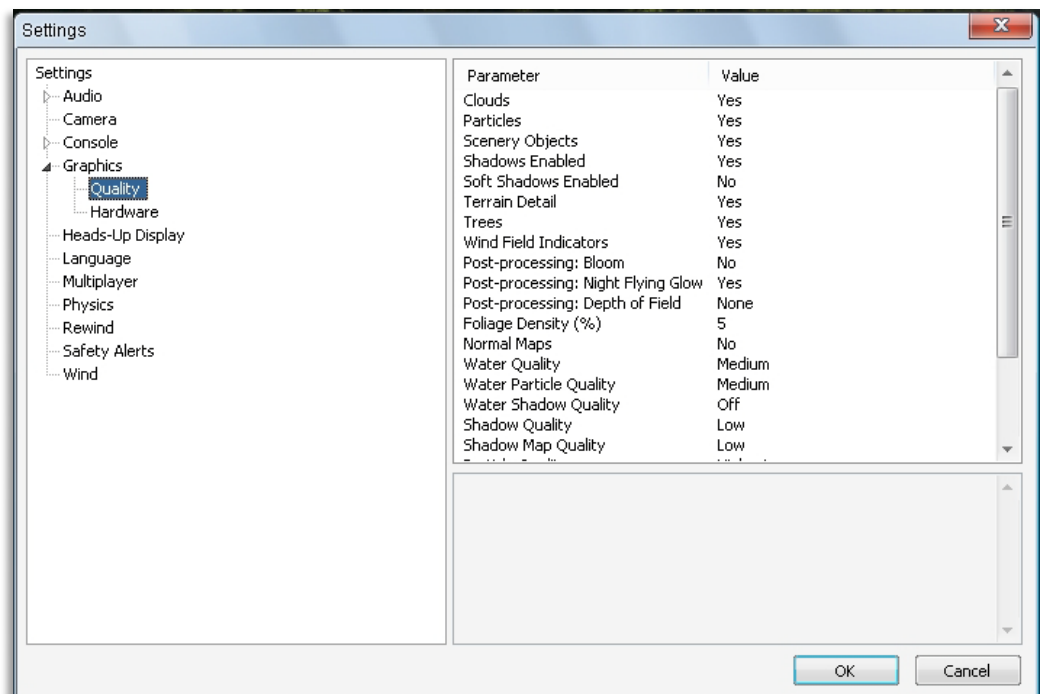
These options function in the same manner as the options for the Instructions messages, except that they only affect Commands messages.

Graphics-

Double-click on the **Graphics** name or click on the **[+]** (**plus**) to expand the menu and display the various Graphics options.

Quality-

The Quality options are quite useful in fine-tuning your simulator, to ensure that it runs as efficiently and realistically as possible on your PC. Use the settings in the Graphics options to obtain the perfect blend of optimal visuals and performance from your PC. If you are experiencing slow frame rates or other performance issues, it may be prudent to turn down some graphics quality options.



Please note: Many of the adjustments will not take place immediately. In many cases, you will need to restart the simulator in order for the selection(s) to take effect.

Clouds-

This option determines whether your flying sites will include clouds in the skyline.

Click on the respective value indicator. From the pull-down options select either **Yes** (clouds will be present) or **No** (clouds will not be present).

Please note: This setting will not affect the presence of clouds in the PhotoField airports.

Particles-

This option determines whether RealFlight will utilize particles such as engine smoke.

Click on the respective value indicator. From the pull-down options select either **Yes** (RealFlight 7 will display smoke), or **No** (RealFlight 7 will not display smoke).

Scenery Objects-

This option determines whether the simulation displays background objects such as buildings, rocks, benches, etc. If Yes is selected, the background objects will be present. If No, the background objects will not appear in the simulation.

To change this setting, first click on the respective value indicator. From the pull-down options select either **Yes** or **No**.

Please note: This setting will not affect the presence of scenery objects that are part of the high-resolution digital image in the PhotoField airports.

Shadows Enabled-

The Shadows option determines whether the simulation displays shadows.

To change the Shadows setting, click the value located to the right of the Shadows name. Next, click **Yes** to display the shadows, or **No** to hide the shadows.

Soft Shadows Enabled-

This option determines whether or not RealFlight 7 displays softer, more realistic appearing shadows.

Enabling this option may adversely impact performance. If you notice a poor frame rate while running RealFlight, try turning this option to **No**.

Terrain Detail-

This option determines whether or not RealFlight 7 displays the details found in the textures.

Modify the Terrain Detail setting by clicking on the value located to the right of the Terrain Detail name. Click **Yes** to display the terrain detail texture or **No**, to eliminate the terrain details.

Please note: This setting will not affect the terrain detail in the PhotoField airports.

Trees-

The Trees setting determines whether or not RealFlight 7 will display trees.

To change the Trees setting, click the value located to the right of the Trees. Select **No**, if you do not wish to display the trees in your simulation. If you wish to view the trees during flight, select **Yes**.

Please note: This setting will not affect the presence of trees that are part of the high-resolution digital image in the PhotoField airports.

Wind Field Indicators-

This parameter determines whether or not RealFlight displays the wind field indicators that are present at select airports.

Post-processing: Bloom-

The Bloom effect will cause lighter colors or lights to bleed into neighboring parts, enhancing their perceived brightness.

Please note: Enabling the Post-Processing: Bloom effect may adversely impact performance. If you notice a poor frame rate while running RealFlight, try turning this option to **No**.

Post-processing: Night Flying Glow-

This option affects whether lights for night flying glow, causing the objects to appear brighter.

Please note: Enabling the Post-Processing: Night Flying Glow effect may adversely impact performance. If you notice a poor frame rate while running RealFlight, try turning this option to **No**.

Post-processing: Depth of Field-

This option affects the strength of the depth-of-field effect. A stronger effect will cause out of focus objects to appear more blurry – great for screen shots. Some pilots will prefer to turn this setting lower for actual flight.

Foliage Density (%)-

This setting determines the density and drawing time of the trees and the grass. Lowering the percentage will ensure that the scenery is drawn faster. Again, if you are experiencing low frame rates, lowering this value will speed up the simulation.

To adjust the percentage, click on the value located to the right of the Foliage Density (%) name. Enter the desired input directly from your keyboard, or use the mouse wheel.

Normal Maps-

Normal Maps add increased details to aircraft and objects without a large increase in video card processing. Normal Maps are part of the Real Rendering feature in RealFlight.

Water Quality-

This setting specifies the quality of the water in the simulation. To modify the quality of the water, click on the value indicated in the column to the right of the Water name. Select the desired level for your simulation from the pull-down list.

The Highest setting will render the best water, but it requires additional processing power. If your frame rate is low, we suggest reducing the water quality.

Water Particle Quality-

This setting controls the different type of graphical particles related to water. A **Low** setting turns off all water particle effects while a **High** setting will show wakes, splashes, and ripple effects.

Water Shadow Quality-

Turning this setting **On**, will show shadows on the surface of the water as well as on the surface beneath the water for a more realistic appearance.

Shadow Quality-

This setting specifies the quality of the shadows in the simulation. To modify the quality of the shadows, click on the value indicated in the column to the right of the Shadows name. Select the desired level for your simulation from the pull-down list. The Highest setting will render the best shadows, but it requires additional processing power. If your frame rate is low, we suggest you reduce the shadow quality.

Shadow Map Quality-

Shadow Map Quality setting controls the size of the shadow texture. A larger size texture will show more detail for a more realistic

appearance. A higher setting improves the look of the shadows but requires additional processing power. If your frame rate is low, try reducing the shadow map quality.

Particle Quality-

This setting adjusts the quality of the smoke, debris and other small objects during the simulation. If the frame rate drops when the smoke is thick, try lowering the quality of the smoke until you achieve an acceptable frame rate.

To do so, click on the existing particle quality. Next, from the pull-down menu, select the desired quality level.

Screenshot Quality-

This setting adjusts the quality of the screenshots. At a low quality, all screenshots are saved as JPG files. If the quality is set to high, screenshots are saved as BMP files.

To change this setting, click on the existing screenshot quality level. Next, from the pull-down menu, select the desired quality level.

Streamer Quality-

This setting adjusts the quality of the streamers during the simulation. If the frame rate drops when flying an aircraft with streamers, try lowering the quality of the streamers until you achieve an acceptable frame rate.

To do so, click on the existing streamer quality level. Next, from the pull-down menu, select the desired quality level.

Texture Quality-

Use this setting to add the realistic textures to the items and various other objects found in the simulation.

To do so, click on the existing texture quality level. Next, from the pull-down menu, select the desired quality option.

Please note: You must restart the simulation for the new setting to take effect.

Misc. Graphics Quality-

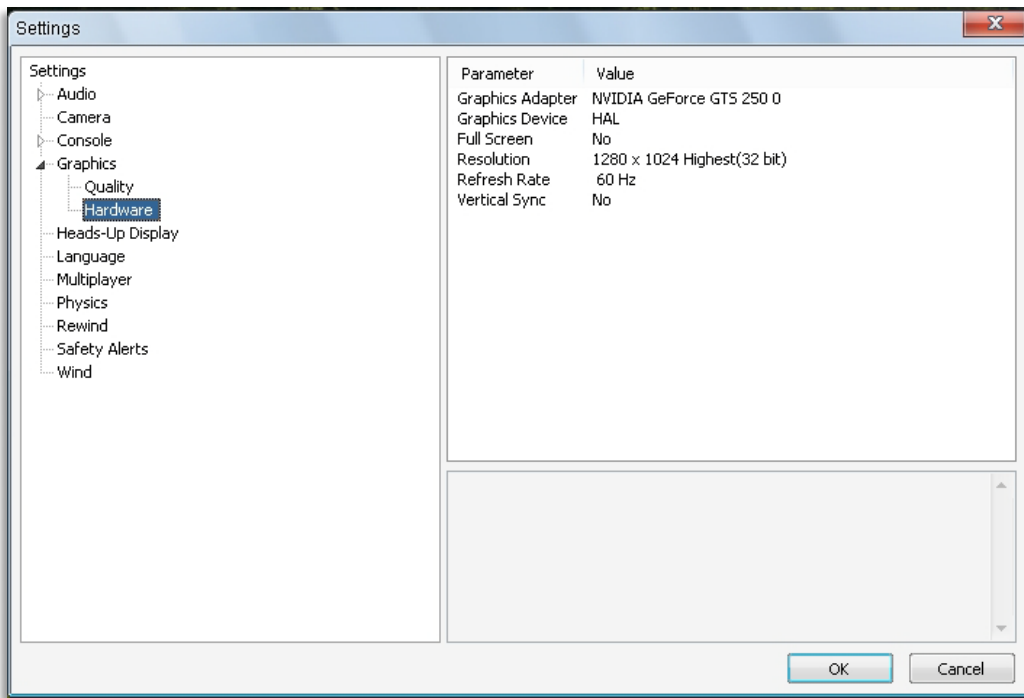
This setting adjusts the quality level of miscellaneous items in your simulation.

To alter the Miscellaneous Graphics level, click on the value located to the right of the Misc. Graphics name. Next, select the desired level to utilize for the graphics.

Please note: You must restart the simulation for the new setting to take effect.

Hardware-

The hardware settings are used to adjust various graphics-related settings to achieve the best possible performance for your PC.



Graphics Adapter-

The Graphics Adapter is the device that RealFlight utilizes to run the simulation, generically referred to as a video card. Most PC's have only one video card, however, some PC's are equipped with multiple cards.

To determine if your PC has an additional video card available to you, click on the video card information located in the values column to the right of the Graphics Adapter name. If multiple cards appear in the drop-down selection there is another option for you. If not, your PC is equipped with only one video card.

Graphics Device-

Some video cards offer multiple devices. HAL (Hardware Abstraction Layer) is the preferred device to use for the graphics rendering. In general, you should never need to modify this setting.

To determine if your PC offers alternative devices, click on the value indicated in the column to the right of the Graphics Device name.

Full Screen-

This option determines whether RealFlight will run using the entire monitor screen for the simulation. If you decide to run in the Full Screen mode, RealFlight's menus will not appear on the screen.

To access the menu while in Full Screen mode, press the **ALT** key on the keyboard.

To adjust the Full Screen option, click on the value as indicated in the column to the right of the Full Screen name. From the pull-down menu, select Yes to run in Full Screen or No, to run in the Windowed mode.

Alternatively, you may access the Full Screen mode by pressing the Alt and Enter keys simultaneously on the keyboard. To exit Full Screen mode, press the **ALT** and **Enter** keys simultaneously.

Resolution-

This control adjusts the screen resolution and color depth. If your frame rate is unacceptably low, you can improve it by reducing the resolution or color depth. This will reduce some of the rendering processes required of your video card.

To adjust the resolution for your simulation, click the value indicated in the column to the right of the Resolution name. Select the desired level for your simulation from the drop-down list.

Please note: This option is only effective when using RealFlight in the Full Screen mode.

We suggest that you test a variety of resolutions and color options to achieve the optimum performance and setup for your system.

Refresh Rate-

The refresh rate is the number of times per second that your monitor retraces its video display. Your video hardware (monitor and graphics card) dictates what refresh rates you are able to utilize in the

simulation. As with Resolution, this option is only effective when running RealFlight in the Full Screen mode.

To adjust the refresh rate, click the value that is indicated in the column to the right of the Refresh Rate name. If there are multiple options in this list, you might opt for a lower value to determine if this improves the frame rate of your simulation.

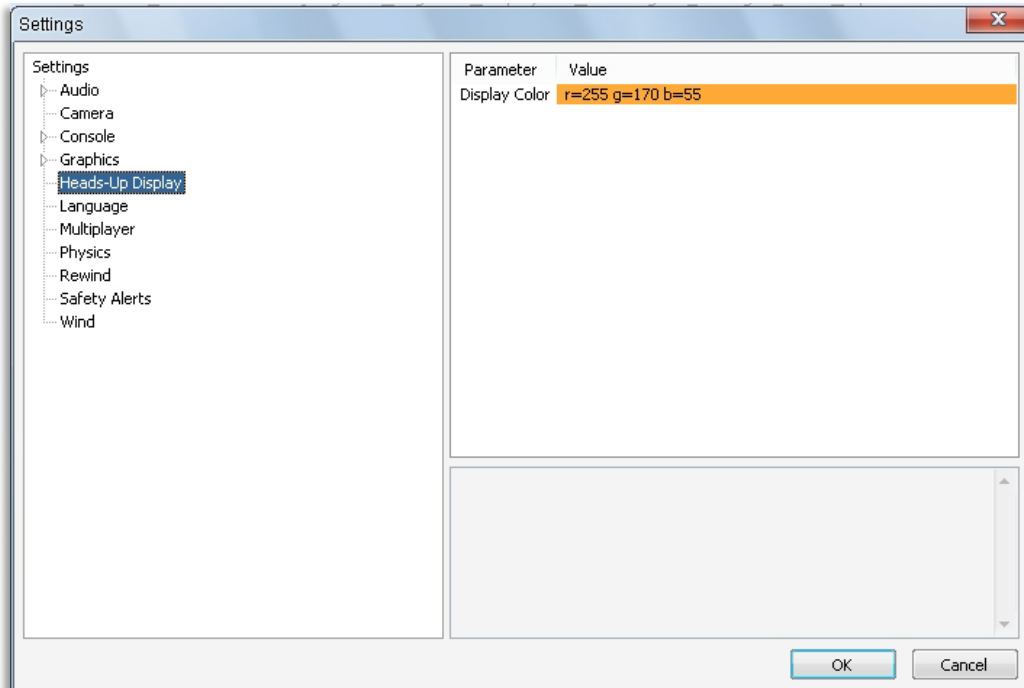
Vertical Sync-

Enabling this option can create smoother motion by forcing RealFlight to limit your frame rate to the refresh rate of your computer monitor. Vertical sync may improve performance if you experience excessive ‘tearing’ of screen images or regular ‘stuttering’ or ‘hitching’, especially if your average frames per second (FPS) is above 60.

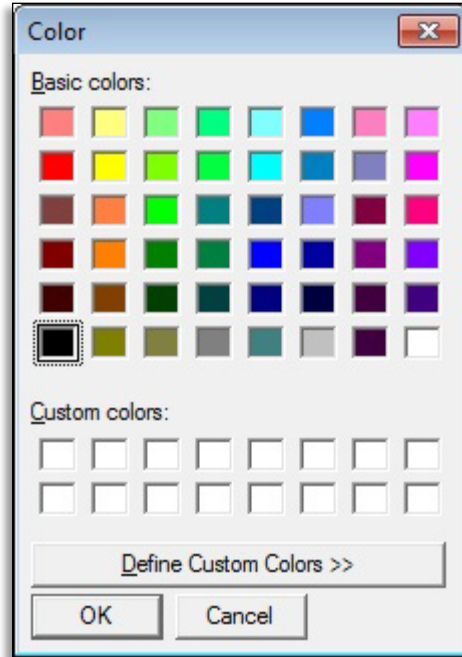
To adjust the Vertical Sync, click the respective value. Select **Yes** or **No** from the pull-down menu that appears.

Heads-Up Display-

Heads-Up Display is a useful tool to display a variety of flight data in real time similar to a fpv (First Person Video) system. Depending on the environment, you may wish to change the color of the HUD.



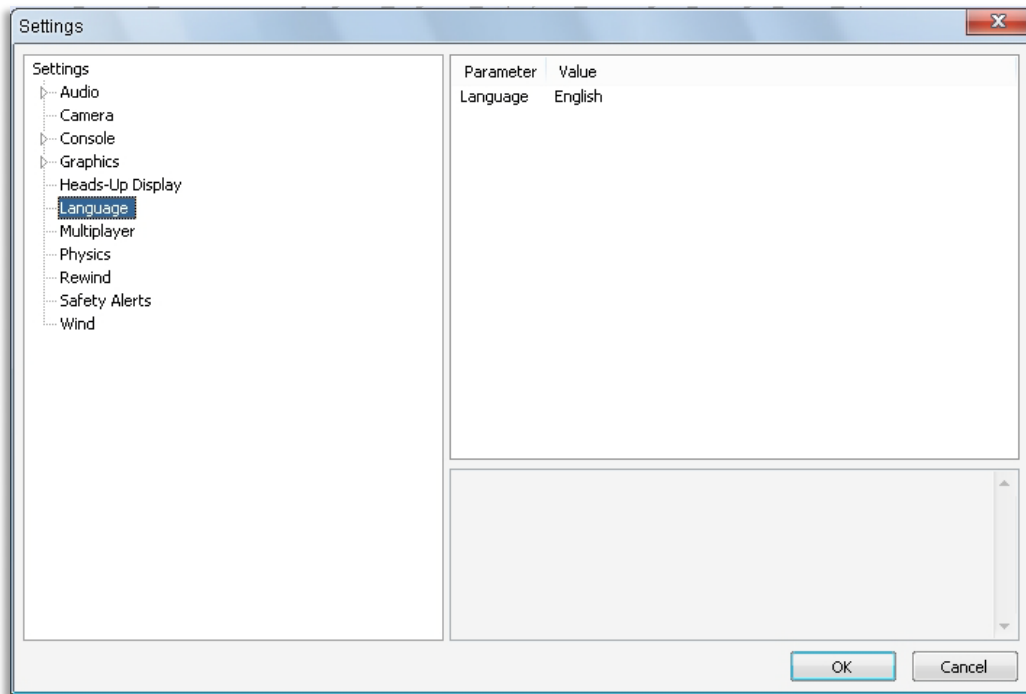
To change the color, click on the **current value**, then click the **more options** button that appears to the right (the gray button with the ellipsis). This will reveal a screen that appears as follows:



To select a color, click the desired color on the palette. If you wish to make a custom color, click the **Define Custom Colors** button and create the color or colors to suit your tastes. Click **OK** to finalize the selection. The selected color will be reflected immediately in the value column.

Language-

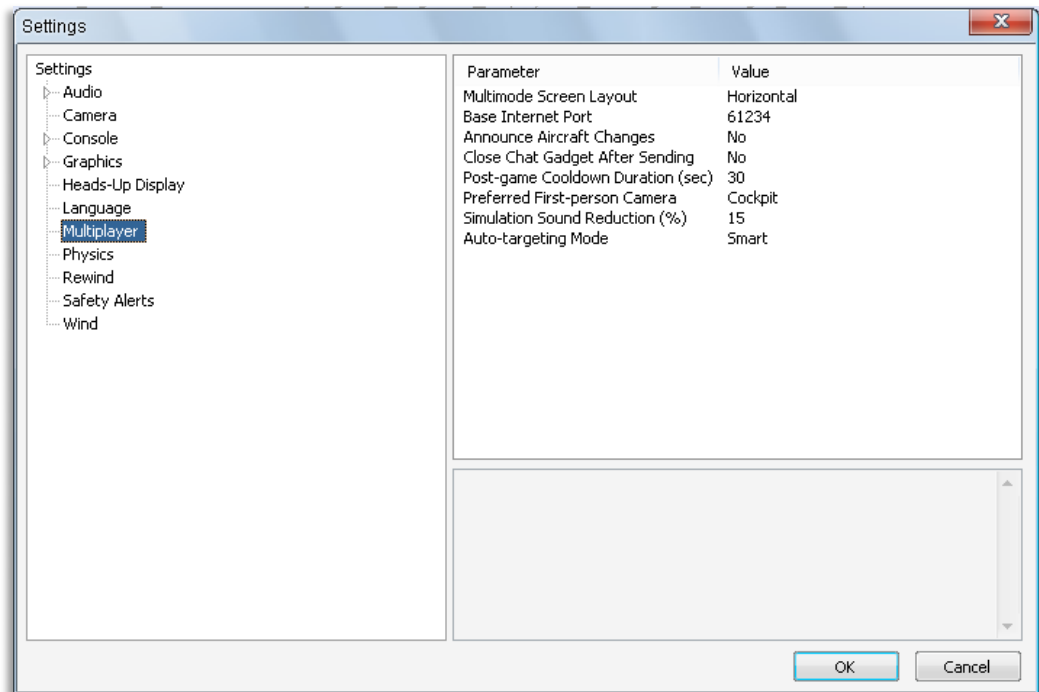
If you wish to adjust the text throughout the simulator to a different language, you can make that change from this setting. You must restart RealFlight for the change to take effect.



To select an alternate language, click the respective value, select the language preference from the drop-down list that appears.

Multiplayer-

Settings available here affect multiplayer parameters and split screen MultiMode.



MultiMode Screen Layout-

This setting specifies the layout of the screen for the MultiMode option. If you select Vertical, the computer screen will split in half on its vertical axis. If you select Horizontal, the computer screen will split in half on the horizontal axis.

To select which mode best suits your tastes, click on the value displayed to the right of the MultiMode Screen Layout column. Next, select either **Horizontal** or **Vertical** from the pull-down options.

Base Internet Port-

To access multiplayer sessions with other pilots over the internet, RealFlight utilizes eight ports on your internet connection. By default, RealFlight is set up to use 61234 to 61241. You can change this range by setting the base port numeric value RealFlight will use the next seven ports.

Please note, if you connect to the internet through a network router and/or firewall, you may need to open these ports in order for RealFlight to connect to multiplayer sessions. Check the user manual for your router on how to do so.

Announce Aircraft Changes-

During multiplayer sessions, RealFlight 7 can update you with a short message whenever another pilot switches aircraft. To view these messages, set the **Announce Aircraft Changes** to **Yes**. Otherwise, to disable this message, set this parameter to **No**.

Close Chat Gadget After Sending-

The Chat Gadget allows you to send messages in multiplayer sessions using the keyboard. By default, this gadget remains visible when it's enabled. If you wish for the Chat Gadget to close after you send a message, set this parameter to **Yes**.

Post-game Cooldown Duration (sec)-

When running through a Game List as the Host of a multiplayer session, you may wish to add a cooldown period between games. This allows players to review the score of the game they just completed and to relax before the next game begins.

Preferred First-person Camera-

Some games allow you to change your viewpoint. Change this parameter to your preferred camera position for use in games.

Simulation Sound Reduction (%)-

If voice chat is active during multiplayer sessions, RealFlight will automatically reduce the volume of all other simulator sounds. Change this percentage to adjust how low simulation sounds are relative to the voice chat.

Auto-targeting Mode-

This parameter allows you to set how RealFlight chooses your target during multiplayer events. This takes affect after each reset of the aircraft. The options available:

Disabled – RealFlight does not change the targeted player. This allows you to have full control of the targeting system.

Leader – RealFlight will target the player with the highest score. If this happens to be you, then RealFlight will select a player at random.

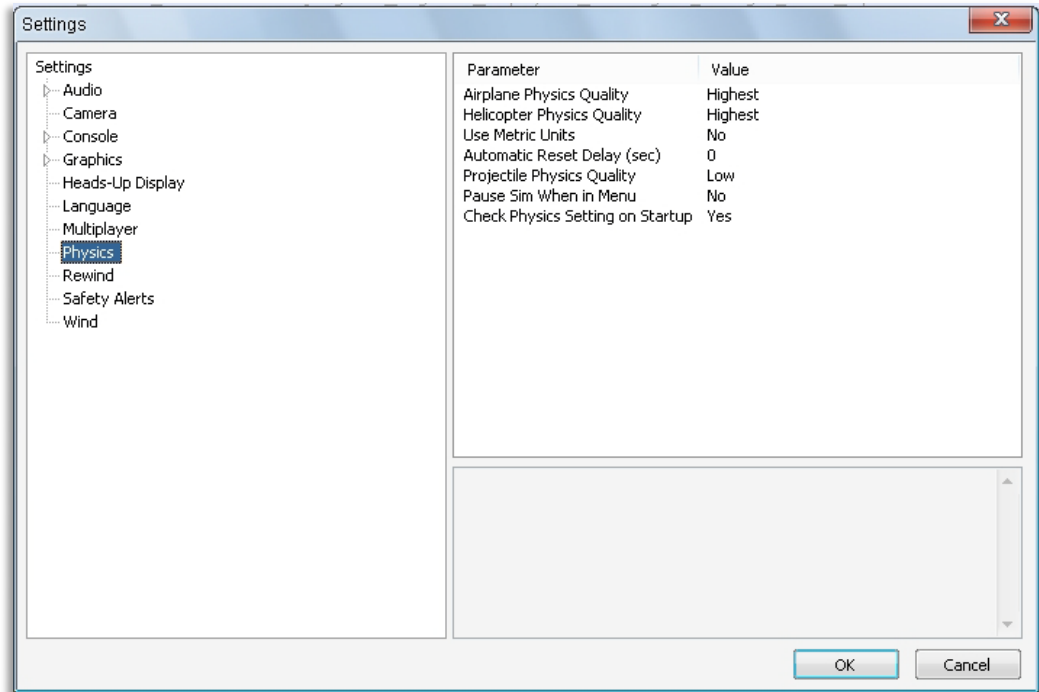
Random – RealFlight will randomly select a player to target.

Smart – All players with a higher score than yourself will be selected somewhat randomly. The player with the highest score and the player that most recently damaged you will have a higher chance of getting selected.

Threat – This option will target the last player which caused damage to you.

Physics-

The physics options are quite useful in fine-tuning the items applicable to the physics of your simulated aircraft.



Airplane Physics Quality-

This setting determines the detail level of physics utilized for the airplanes in the simulation. When the physics level is adjusted to the highest setting, the simulation performs the aircraft calculations more accurately and more frequently. Unless you are running the simulation on an older, slower PC, we suggest using either the 'high' or 'highest' settings. Lowering the physics level will reduce the quality and detail level used in the simulation, thereby allowing the simulation to run at a faster rate on slower PC's.

To alter the physics options, click on the value indicated in the column to the right of the Airplane Physics Quality name. Using either the up/down arrow keys on the keyboard, or the mouse, select the level for your simulation from the pull-down list. If using the up/down arrow keys, press **Enter** to finalize your selection.

Helicopter Physics Quality-

This setting determines the detail level of physics utilized for the helicopters in the simulation. When the physics level is adjusted to the highest setting, the simulation performs the aircraft calculations more accurately and more frequently. Unless you are running the simulation on an older, slower PC, we

suggest using either the 'high' or 'highest' settings. Lowering the physics level will reduce the quality and detail level used in the simulation, thereby allowing the simulation to run at a faster rate on slower PC's.

To lower the physics option, click on the value indicated in the column to the right of the Helicopter Physics Quality name. Using either the up/down arrow keys on the keyboard, or the mouse, select the level for your simulation from the drop-down list. If using the up/down arrow keys, press **Enter** to finalize your selection.

Use Metric Units-

This option determines the unit of measurement for the various displays found in the simulation. RealFlight defaults to display measurement in SAE units. You can easily change this to use metric units.

To do so, click on the value column to the right of the Use Metric Units name. Using either the up/down arrow keys on the keyboard, or the mouse, select either **Yes** or **No** from the pull-down listings. If using the up/down arrow keys, press **Enter** to finalize your selection.

Automatic Reset Delay (sec)-

This setting will force RealFlight to automatically reset the aircraft after a crash during which a piece of the aircraft has broken off.

To adjust the Reset Delay, click the respective value. Enter the desired value directly from the keyboard or use the mouse wheel.

Projectile Physics Quality-

This setting, as the name suggests, is use to determine the physics quality of the rockets, paintballs and guns. With the highest setting, projectiles will collide with terrain, vehicles and all objects at an airport. This is more realistic but requires more processing power. To improve your computer's rendering performance, select a lower setting.

Pause Sim When in Menu-

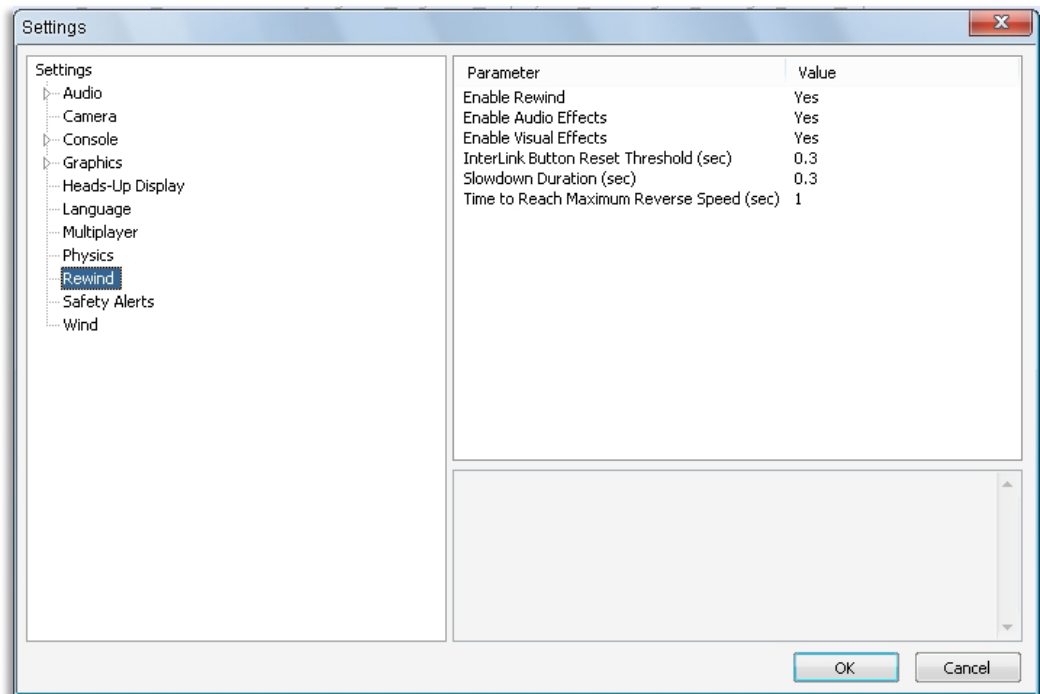
This setting, when enabled, will pause your flight when you access any of the menus. If set to **No**, your flight will continue even when you access the menus. Note that during multiplayer session, RealFlight will never pause regardless of this setting.

Check Physics Setting on Startup-

The simulation is most accurate when the physics difficulty is set to "Realistic" in the Physics Gadget. If any other setting is selected (including "Custom"), RealFlight shows the Physics Gadget on startup to make it obvious. Disable that behavior by setting this to **No**.

Rewind -

The rewind section allows you to control the parameters for the Rewind feature. You may disable the Rewind feature altogether, or alter how it functions with the followings settings.



Enable Rewind-

The Rewind feature is enabled by default. If you wish to turn off this feature, change this setting to **No**.

Enable Audio Effects-

If you wish to turn off the unique audio effects when activating the Rewind feature, change this setting to **No**. This setting is set to **Yes** by default.

Enable Visual Effects-

If you wish to turn off the video tape graphical effects when activating the Rewind feature, change this setting to **No**. This setting is set to **Yes** by default.

InterLink Button Reset Threshold (sec)-

The Rewind feature is only activated if the Reset button is held down for a specific amount of time. This setting allows you to adjust that threshold. If the Reset button is released before this time limit, the flight is simply reset as normal.

Slowdown Duration (sec)-

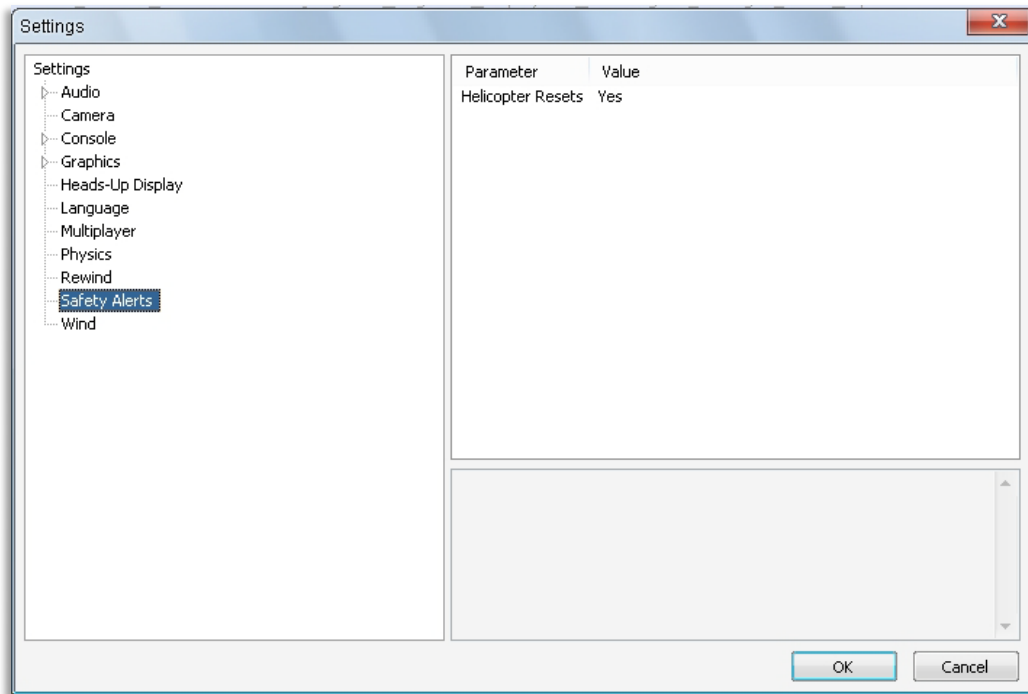
Before the Rewind feature kicks in fully, your flight will slow to a stop, then proceed in reverse. The Slowdown Duration setting allows you to adjust how long this process takes.

Time to Reach Maximum Reverse Speed (sec)-

This setting allows you to adjust the amount of time it takes before the Rewind feature is functioning at full speed.

Safety Alerts -

When you are at the flying field, it is important to make sure your radio switches, dials and throttle are all set appropriately before you start your aircraft. RealFlight 7 helps to remind you of this when you reset your flight.

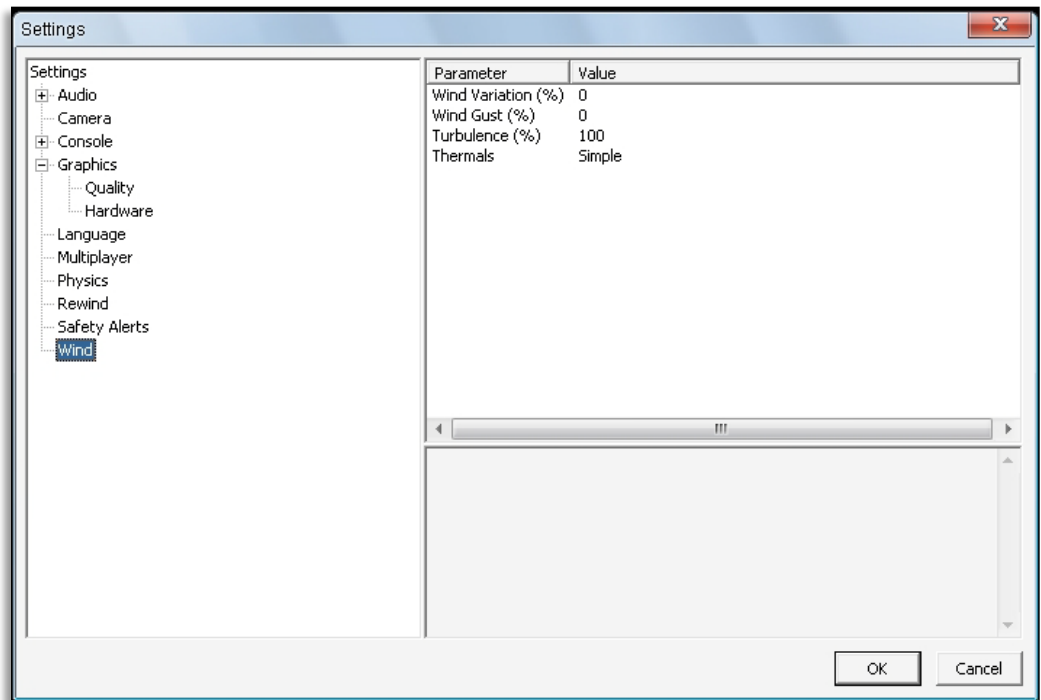


Helicopter Resets-

When you reset your helicopter, a small window will appear warning you if the throttle or switches are in a position which could damage the helicopter. For example, you would not want the helicopter to be reset with the throttle stick in the full throttle position. To disable this feature, change this setting to **No**.

Wind -

The wind and weather options control the atmospheric conditions encountered in the simulation. You can adjust these to match the conditions typically found at your local flying site.



Wind Variation (%)

This adjustment represents the variation in the wind speed and direction in relation to the average speed. Just as the winds that you experience at the local field are not constant, neither are the winds in RealFlight.

To adjust this variable, click on the value indicated to the right of the Wind Variation (%). Using either your keyboard or the mouse wheel, input a numerical value between 0 (unchanging) and 100. A higher value produces more dramatic changes in the wind.

Wind Gust (%)

This value represents the change of the wind speed and direction corresponding to a proportion of the wind speed it calculates in one second.

To adjust this variable, click on the value indicated to the right of the Wind Gust (%). Using either your keyboard or the mouse wheel, input a numerical value between 0 (no changes) and 100 (large changes).

Turbulence (%)

This option allows you to adjust the strength of the turbulence. Since this setting represents a median, some turbulence will be more severe, and some turbulence will be less noticeable.

To adjust the Turbulence Strength Proportion (%) settings, click on the value indicated in the column to the right of this option. The desired values may be input directly from the keyboard or modified using the mouse wheel. A value of 0% indicates that there will not be any mid-level turbulence.

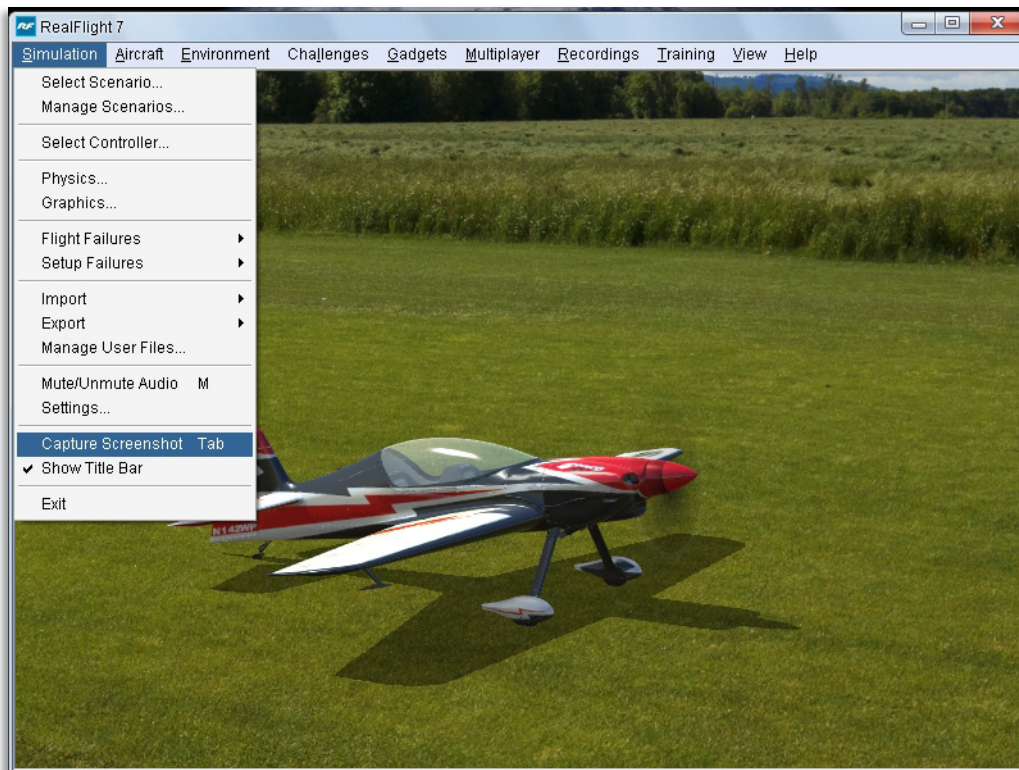
Thermals-

This option allows you to adjust how much of the environment is affected by thermals. Setting this to **Simple** will only activate the thermals that are designed into the airport. **Dynamic** will cause thermals to be located throughout the entire terrain of the simulation. If you wish to fully enjoy bungee and aero tow, we suggest enabling Dynamic thermals.

Tab

Capture Screenshot

Just like the perfect photo opportunity at the local flying field, RealFlight 7 offers the chance to snap off screenshots. Captured screenshots are great to share with friends, add as your desktop wallpaper, or put on the internet for the world to see.

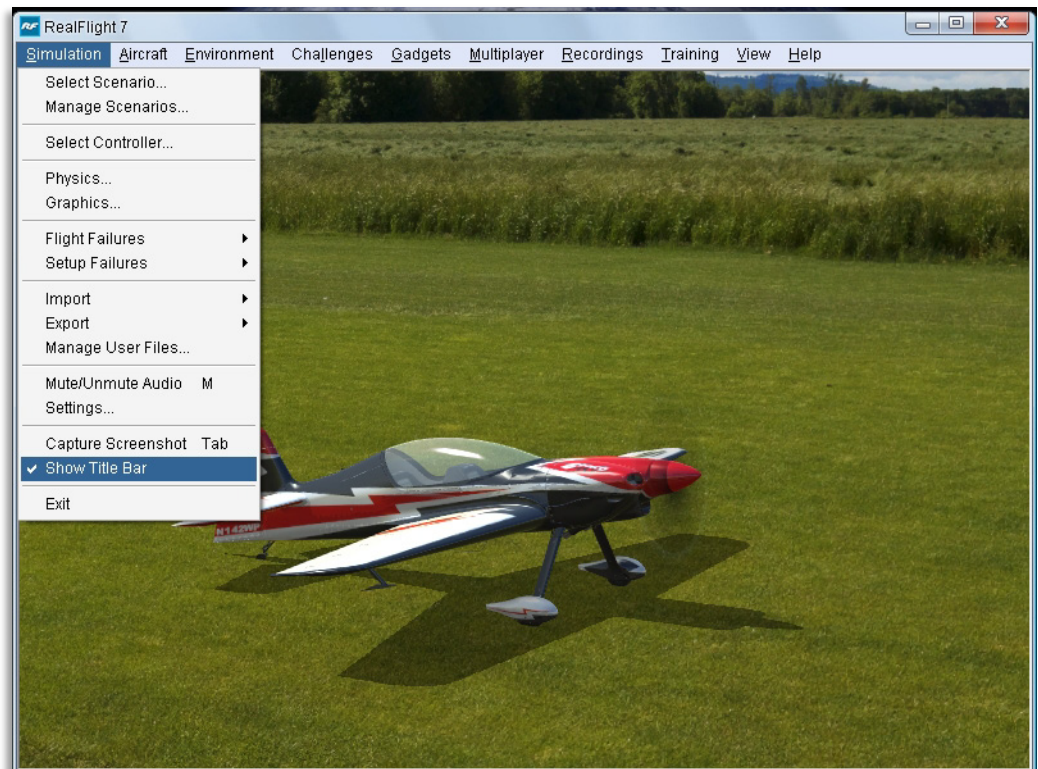


To snap a screenshot, click the **Capture Screenshot** menu item. Alternatively, press the **Tab** key on the keyboard.

Screenshots are stored in the My Documents folder. Each time a screenshot is captured, you will receive an on-screen notification as to the storage location.

Show Title Bar

This menu item determines whether or not the RealFlight 7 title bar is displayed on the screen. By default, the title bar is enabled.

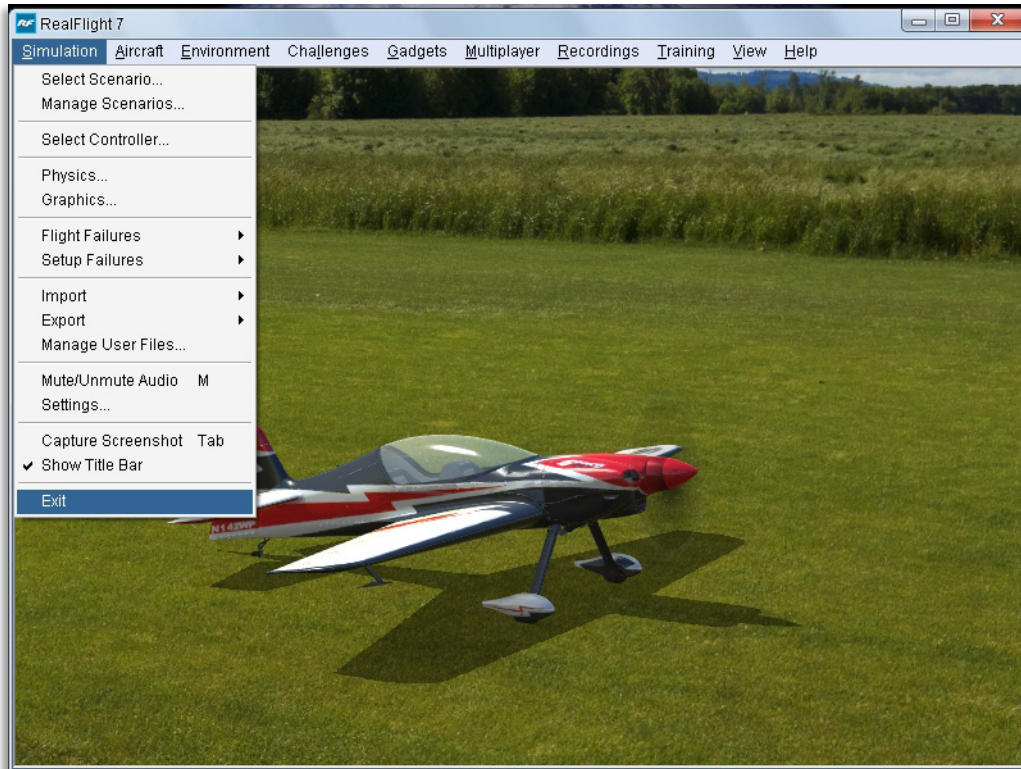


To access this menu item, click on the **Simulation** menu followed by the **Show Title Bar**. This will remove the RealFlight 7 title bar from the screen.

Please note: Removing the title bar also eliminates the ability to minimize or maximize the screen.

Exit

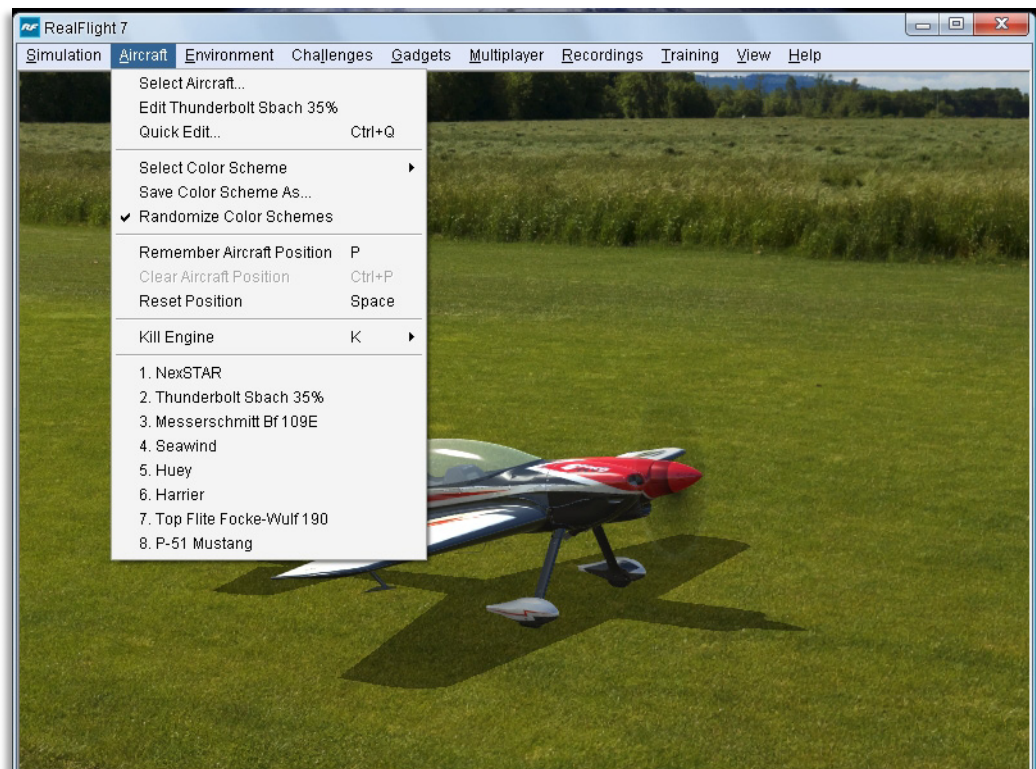
Use this menu item to exit the program entirely.



The Aircraft Menu

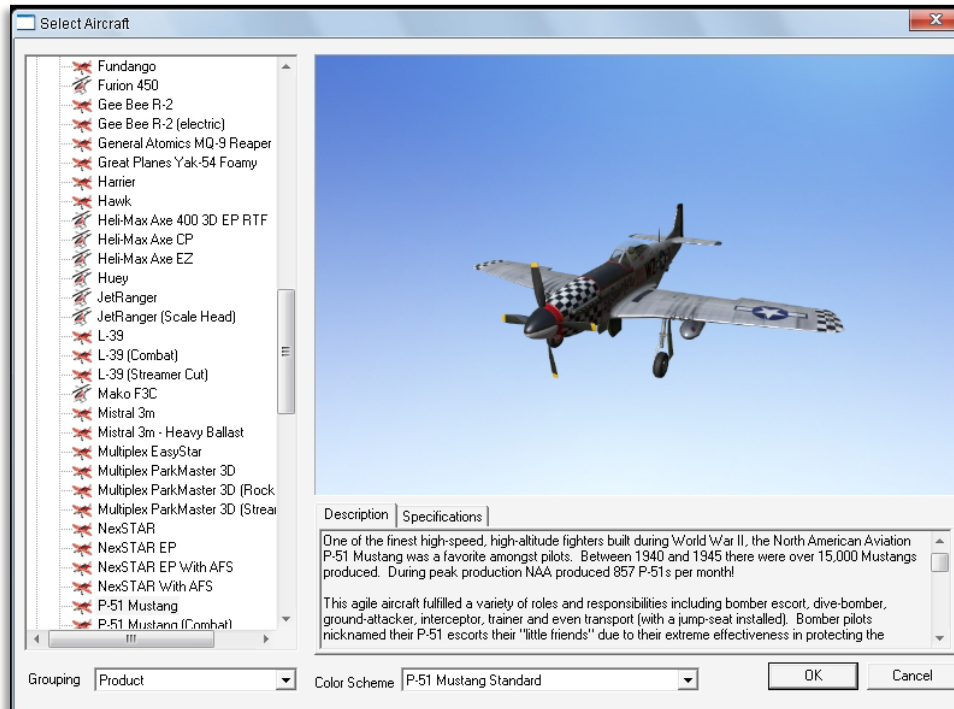
Offers access to a variety of aircraft-related features, functions, and options.

Clicking the Aircraft menu brings forth a pull-down menu similar to the following screen shot.



Aircraft Selection...

When you click on **Select Aircraft...** the following dialog appears:



This dialog allows you to select the aircraft that you wish to fly.



Change aircraft simply by using the InterLink Elite. Press the **Menu/Select** button, then, with the airplane tab highlighted, press the **Menu/Select** button again. This will bring up the Select Aircraft QuickSelect dialog window. You can continue using the **QuickSelect** buttons in this dialog to select a new aircraft, or press **Reset** to resume flying without making any changes.

If multiple trim schemes are available for an aircraft, the Color Schemes button on the screen will be illuminated. You can use the mouse to click this button, or press and hold the **Menu/Select** button to display the list of different trim schemes. Use the **Data Lever** to select the desired trim scheme. To return to the aircraft list, press the **Cancel** button.

You can also filter the aircraft list. Press and hold the **Cancel** button on the InterLink Elite to see the filter options. Use the **Data Lever** to select a filter (All Aircraft, Stock Aircraft, Custom Aircraft, etc.) and press the **Menu/Select** button return to the aircraft list.

The list on the left of the dialog box displays all of the aircraft available to you. If you have created any customized aircraft, they will also appear in this list.

By default, the aircraft are listed in files and directories in accordance with the software from which they were loaded. If, for example, you have installed Expansion Pack 7, the aircraft from this disc will be listed alphabetically beneath the Expansion Pack 7 directory.

Click the **[+] (plus)** or **[-] (minus)** symbol to reveal or hide the aircraft within these directories and folders.

Aircraft Selection-

Every aircraft has its own unique flying characteristics, special features, and functions. To view an aircraft from the listings, simply use the mouse to click on the aircraft name. Alternatively, use the **up/down** keys on the keyboard to scroll through the list one aircraft at a time.

Click the **[+] (plus)** symbol to reveal the aircraft contained within the folder. Using either the **up/down** arrow keys on the keyboard or the mouse, select the desired aircraft from the listings. If utilizing the **up/down** arrow keys, click **OK** to finalize your selection. If using the mouse, double-click on the aircraft to load it.

Have some fun while you're in the Select Aircraft dialog! Using the mouse, click and drag the preview screen to point the camera angle to your choosing. Use the scroll wheel to zoom in and out or move the gimbals to see the control surfaces move. To resume rotating automatically, right-click the preview screen.

Description/Specifications-

The pane below the Aircraft Preview box shows either the aircraft description or aircraft specifications. This box provides you with a brief history of the aircraft (if applicable) and serves to provide you with specific information pertaining to the model selected.

Using the mouse, select either the **Description** or **Specifications** tab.

Grouping-

This list controls how the dialog organizes the list of available aircraft. By default, the aircraft are sorted by Product. Here is an explanation of the different sorting methods:

- **Product, Airframe:** The aircraft are first grouped into folders named by their parent product (i.e. RealFlight 7, Expansion Pack 6, Expansion Pack 8, etc.). Within each parent product folder, the aircraft are further grouped into sub-folder by their Airframe names. For example, "NexSTAR" and "NexSTAR with AFS" are both found in the NexSTAR airframe folder.

- Product: Aircraft are grouped by product alone.
- Airframe: Aircraft are grouped alphabetically by airframe, not by product. Individual aircraft are grouped inside each airframe folder.
- None: There is no grouping at all. All aircraft are sorted alphabetically.

Color Scheme-

If applicable, this list contains the alternative trim schemes for the selected model. If the Color Scheme dialog is grayed out, there are no alternative trim schemes available for this particular aircraft.

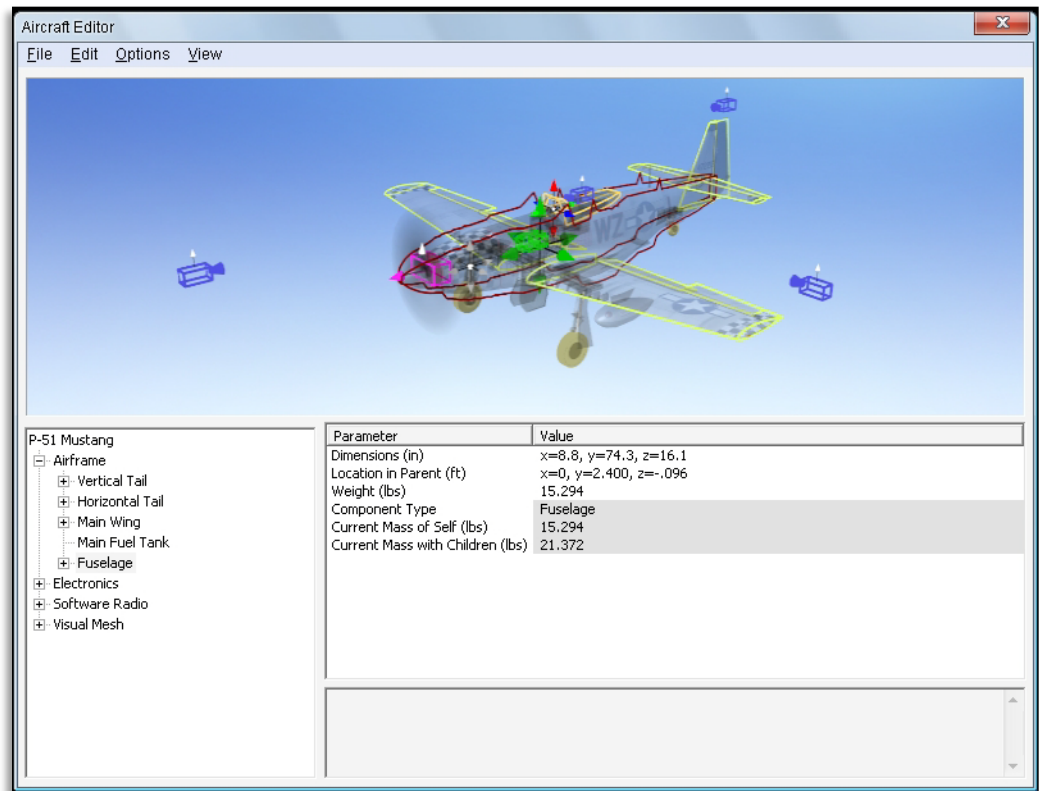
If the list control is active, click on the down arrow to reveal the alternate trim scheme(s). To select an alternate trim scheme, use either the **up/down** arrow keys on the keyboard or select one with the mouse. When an alternative trim scheme is selected, this scheme will appear immediately in the ReadySelect preview box replacing the previous trim scheme.

Modelers may also create their own trim schemes in RealFlight using a third-party bitmap editor capable of manipulating Targa (*.tga) files. Please see the section titled “Save Color Scheme As...”.

Edit Current Aircraft

RealFlight 7 offers the user unparalleled freedom to edit or modify their aircraft. It's possible to add and remove components, alter their location, change airfoils, and much, much more! The first several times that you access the aircraft editor, the task might seem daunting. It may require some getting used to before you are comfortable with this feature and its related functions. The best way to do so is to simply dive in and experiment.

To modify the currently selected aircraft, click the **Aircraft** menu followed by the **Edit Current Aircraft** menu item. This brings up the Aircraft Editor dialog, which will allow you to modify any of the hundreds of parameters for the currently selected aircraft.



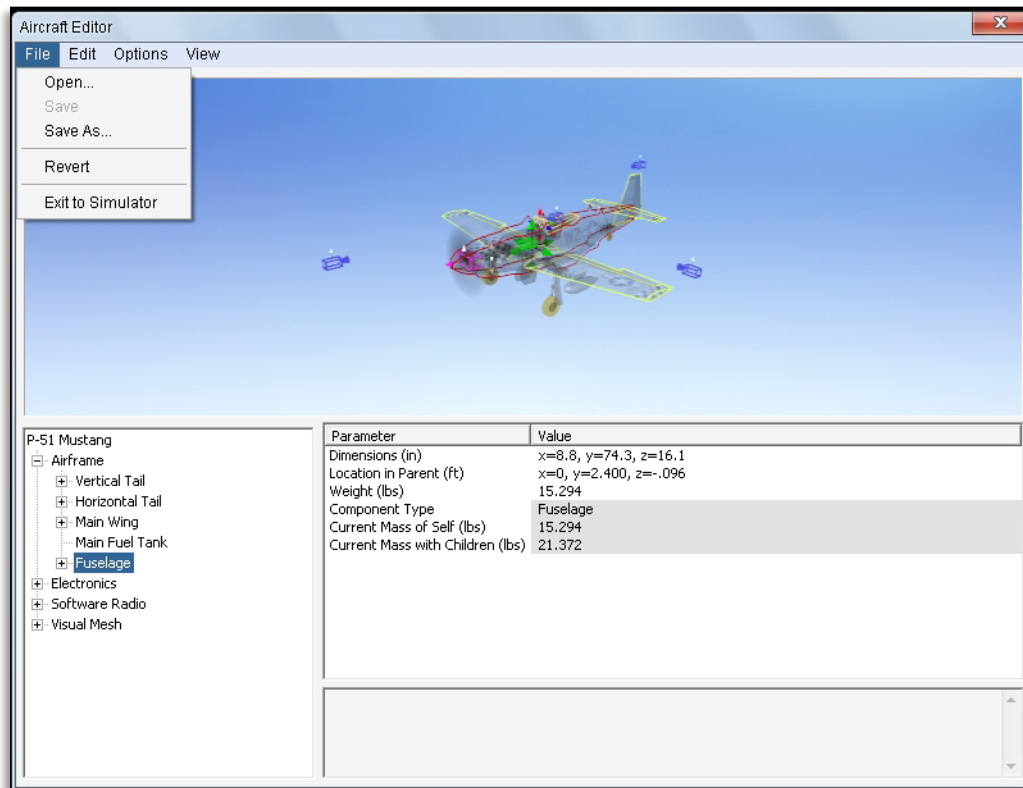
The Aircraft Editor dialog will have an appearance similar to the screen shot shown above. It may deviate slightly depending upon the type of aircraft that you are editing (i.e., biplane, electric model, etc.). However, all aircraft are edited in a similar manner. This section presents you with the general information necessary to edit any aircraft found in RealFlight 7.

Aircraft Editor Menus-

Selecting the **Edit Current Aircraft** option activates the screen shown above.

File Menu-

This menu and its menu items are used to manipulate and control the various folders and related items in the aircraft editor.



Open...-

This menu item is used to open existing and edited aircraft. Selecting this menu item opens the Select Aircraft dialog. To select an aircraft from this list, follow the procedure described in the Aircraft Selection section of this manual.

Save-

This option becomes active once you have renamed and saved the edited aircraft. Prior to doing so, this option will remain inactive and grayed out. This allows you to make further modifications to the aircraft without renaming it each time.

Save As...-

Upon completion of the aircraft editing, click this menu item to rename and save the modifications. You will be asked to create a name for this new aircraft. After you have renamed the aircraft, click **OK** to accept the new name. Afterward, the aircraft will appear in the aircraft listing found under Select Aircraft... in the Aircraft menu.

Revert-

This menu item allows you to revert, or go back to the settings the last time the aircraft was saved. If you have not previously saved the aircraft, the aircraft will return to the default settings.

To use this menu item, open the **File** menu and click **Revert**. This will bring forth the verification dialog. Click **Yes** if you wish to return to the last saved version of this model.

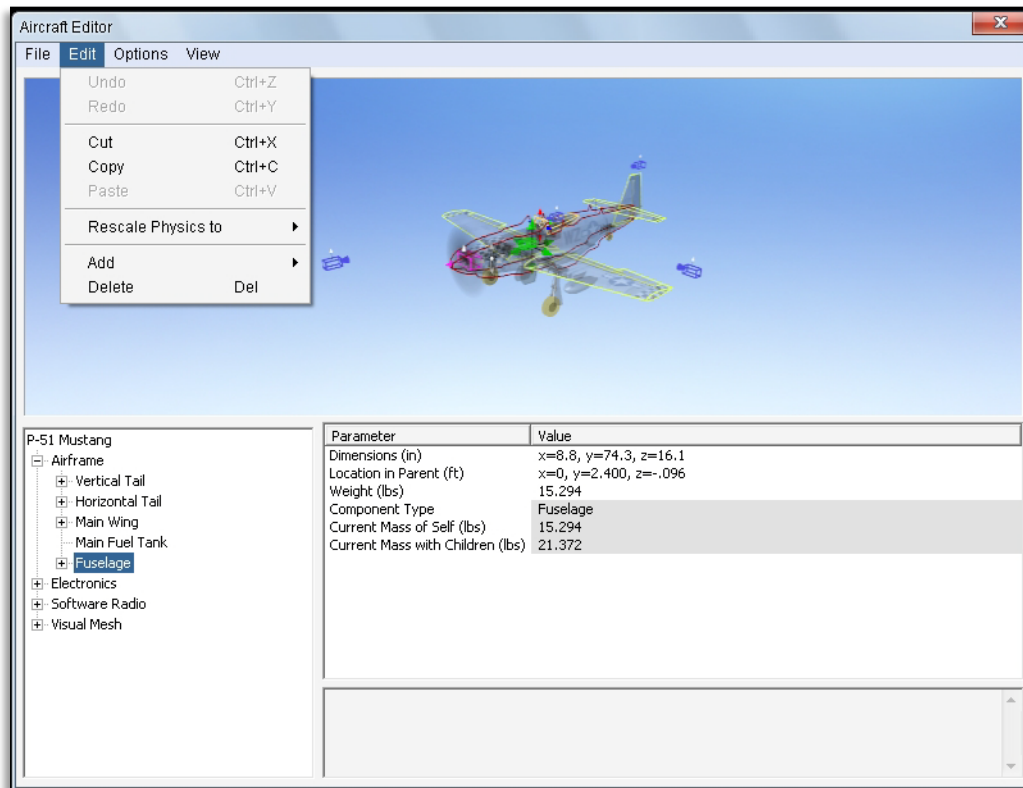
Please note: Any modifications performed after the last time this model was saved will be lost. Clicking **No** will allow you to save the modifications or continue refining the aircraft.

Exit to Simulator-

This menu item returns you to the simulation. If you have performed any modifications to the aircraft and have not saved these modifications, a verification dialog will appear. Choose **Yes** to save the modifications. If you select **No**, the modifications will be lost. Selecting **Cancel** will return you to the editing dialog.

Edit Menu-

As is suggested by the name, this menu is utilized to edit the aircraft. This menu may be used for some simple editing functions on the current aircraft.



Undo-

Select this to undo the last change you made in the aircraft editor.

Redo-

Choose Redo to repeat the last action you performed in the aircraft editor.

Cut-

Select a part on the aircraft and choose **Cut** to remove the object. The part is stored temporarily in RealFlight's memory and can be pasted back onto the aircraft later.

Copy-

Like the Cut option, Copy will store the selected part in RealFlight's memory allowing you to later paste it into the aircraft. Unlike Cut, the selected part will remain at the current location.

Paste-

If any aircraft part has been cut or copied, choose **Paste** to add it to the current aircraft.

Rescale Physics to-

This setting is used to alter the physics calculations utilized for the aircraft. Select one of the predetermined percentages from the sub-menu items, or select the custom option and input the percentage desired.

Use this option to refine the flight characteristics of the selected aircraft accordingly.

Add-

As the name suggests, this enables you to add items to the aircraft. For example, if the aircraft name is highlighted and the Edit menu is selected, there will not be any actions available to you. If the airframe is highlighted, the aircraft editor will allow you to add various components to the airframe.

If you wish to either add or remove an item from one of the aircraft components, right-click on the respective component. This will bring forth the available options.

When editing aircraft, you can click and drag the mouse in the preview area to rotate the aircraft to different angles. This helps to better see components you might be modifying.

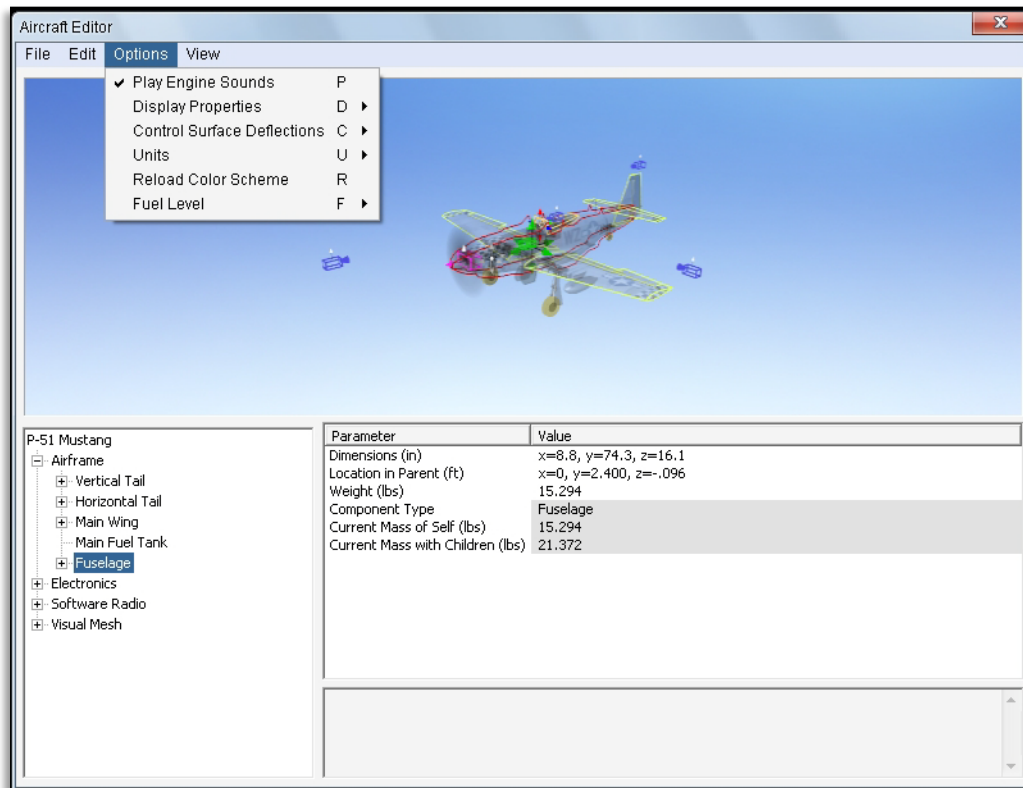
Delete Component-

Delete will remove the selected part from the aircraft. It cannot be retrieved later. Therefore, you cannot paste the part back onto the aircraft.

Options Menu-

This menu provides you with a number of choices or options available in the aircraft editor.

Selecting the Options menu brings forth the drop-down menu items discussed below.



Play Engine Sounds-

Selecting this menu item plays the respective engine sounds during the editing of this aircraft.

Please note: This setting is only temporary. That is, this setting is not retained after you exit the aircraft editor.

To select this option, click the **Play Engine Sounds** menu item. This will place a check mark before the setting and return to the aircraft editor. The engine sounds will become audible.



Display Advanced Properties-

This option displays advanced properties for the components in the airframe. Using the advanced properties, you may fine-tune the physics calculations performed by RealFlight in order to adjust the flight performance to your liking. When this option is checked, additional component properties will be displayed in the property listing area of the aircraft editor dialog.



Control Surface Deflections-

Selecting this menu item displays the deflection, either Simple or Advanced, of the selected control surface. If using ailerons, for

example, and Simple is selected, the parameter available to modify will show only the maximum deflection. If, however, Advance is selected, the maximum, minimum and center deflection parameters will be visible for editing.



Units-

This option toggles the units of measure between metric and SAE units. It is important to note that modifying this option affects all measurements in the simulation. For example, changing from SAE to metric in the editor also affects the airport editor dialogs.

To modify this option, click the **Display Metric Units** setting. Then select the unit of measurements you would prefer from the drop-down menu. The options are **English** or **Metric**. A check mark will appear next to the unit that is currently displayed.



Reload Color Scheme-

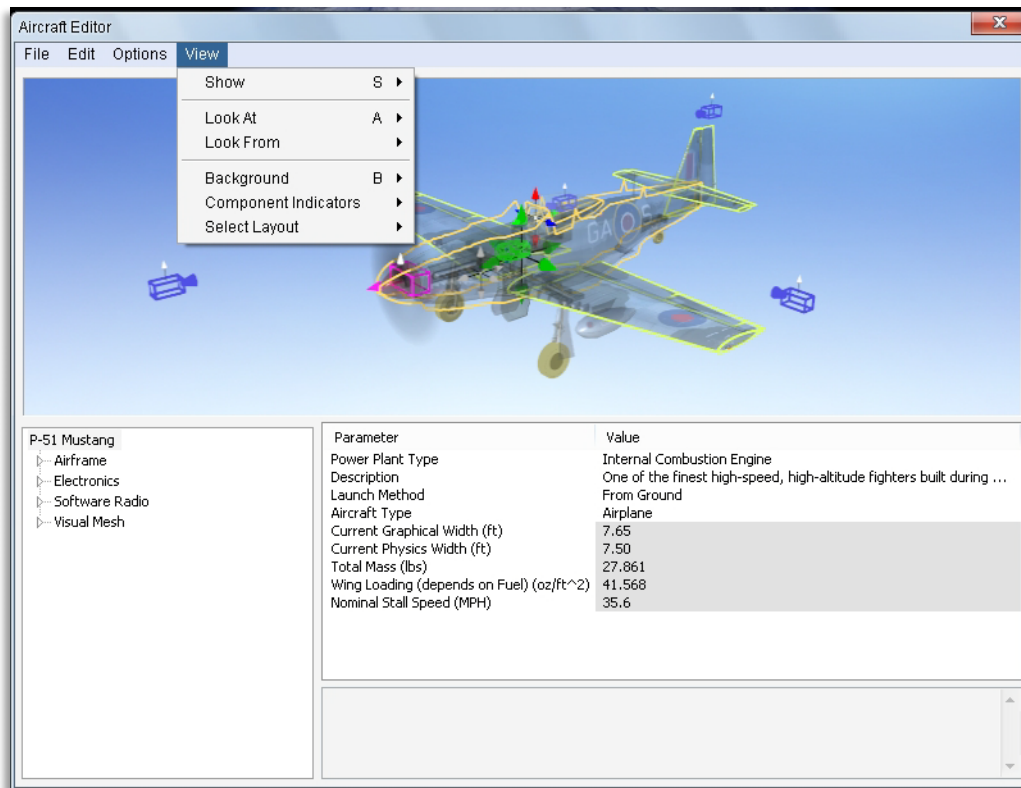
This option allows you to view the results of an edited trim scheme.

There are two ways that you can do so. The first is to use the **Select Color Scheme** menu, which is found within the **Aircraft** menu. Simply click on the color scheme that you have just edited, and RealFlight will reload the color scheme onto your aircraft and reset the aircraft back on the runway.

Alternatively, within the aircraft editor, click on the **Options** menu item. Select **Reload Color Scheme**. Clicking this reloads the color scheme, showing any changes you have made to the aircraft. To improve visibility of the trim scheme, you may wish to remove the wireframe from the preview. To do so, please follow the procedure noted in the description for “Show Wireframe.”

View Menu-

The View menu in the aircraft editor offers choices on the perspectives of the aircraft in the preview window.



Show-

This sub-menu allows you to change the aircraft's appearance in the preview window. There are three options available which you may cycle through using the 'S' key.

- Wireframe Only – This option will only display the wireframe of the individual items that you can modify. It will hide the realistic, graphical view of the aircraft that you would see during normal flight.
- Wireframe and Visuals – This will display the wireframe of the aircraft over the normal view of the aircraft. Use this to help align items on the actual model.
- Visuals Only – This option will turn off the wireframe and display the model as it would appear during normal flight.



Look At-

This option allows you to determine the view of the aircraft being edited. There are three options available from this menu.

- **Aircraft Center-** Check this option if you wish to keep the entire aircraft centered in the view.
- **Component Center-** Check this option to center the view on the component you are editing. For example, if you are modifying the rudder, the aircraft will shift, so that the rudder appears in the center of the preview area.
- **Component Origin-** Checking this option will focus the view on the root, or origin, of the component you are currently modifying. For example, if you have the Main Gear selected, the preview area will be centered at the location where the Main Gear is attached to the fuselage.

To adjust the Look At perspective, click the **Look At** menu item and select the desired view. Alternatively, you may use the **'A'** key on the keyboard to toggle through the aforementioned selections.

Look From-

You can select from pre-determined angles from the Look From menu item. They include:

- **Above** – Look from above the aircraft. Or press the Q key to quickly change to this view.
- **Below** – Look from below the aircraft. Or press the Shift-Q keys to quickly change to this view.
- **Right** – Look from the right side of the aircraft. Or press the W key to quickly change to this view.
- **Left** – Look from the left side of the aircraft. Or press the Shift-W keys to quickly change to this view.
- **Front** – Look from the front of the aircraft. Or press the E key to quickly change to this view.
- **Back** – Look at the back of the aircraft. Or press the Shift-E keys to quickly change to this view.



Background-

This option displays a sub-menu that allows you to change the background color of the preview pane. Depending on personal preference, or the colors of the trim scheme for the aircraft that you are editing, you may want to change the background color to make the aircraft easier to see.

To adjust the background color, click the **Background** menu item and select the desired color.

Component Indicators-

When the wireframe is visible, each component is represented by small wireframe indicators. For aircraft that include many components, these indicators can sometimes get in the way and make things confusing.

There are two methods to assist you with reducing or removing the visibility of components.



- Size – By default, all component indicators are large. Switch to small to reduce the chance of each indicator overlapping in the wire frame.

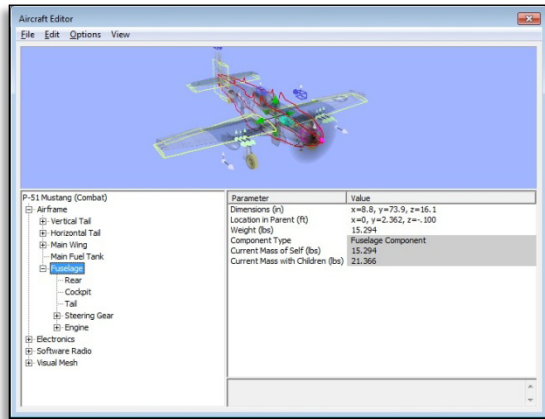


- Visibility – For aircraft with a large number of components, you may wish to change their visibility to **Selected Component Only**. Then, only the component you have selected will be visible, while all others will disappear. Those components still exist, they just won't be visible.

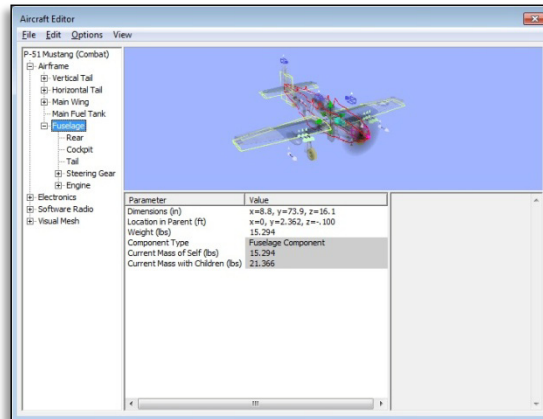
Select Layout-

There are four layout options available from the sub-menu. They will alter the way the different panes in the aircraft editor window are positioned. The options will change the aircraft editor layout as follows:

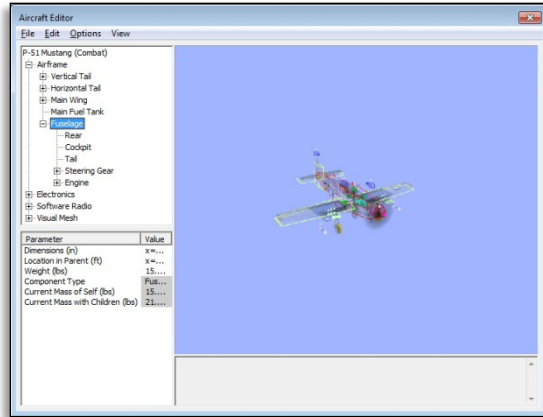
Layout 1:



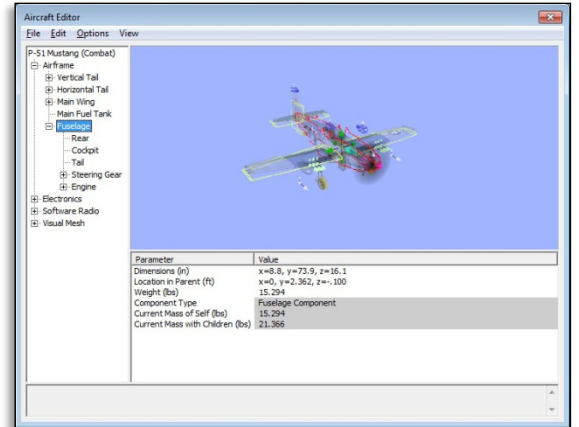
Layout 2:



Layout 3:

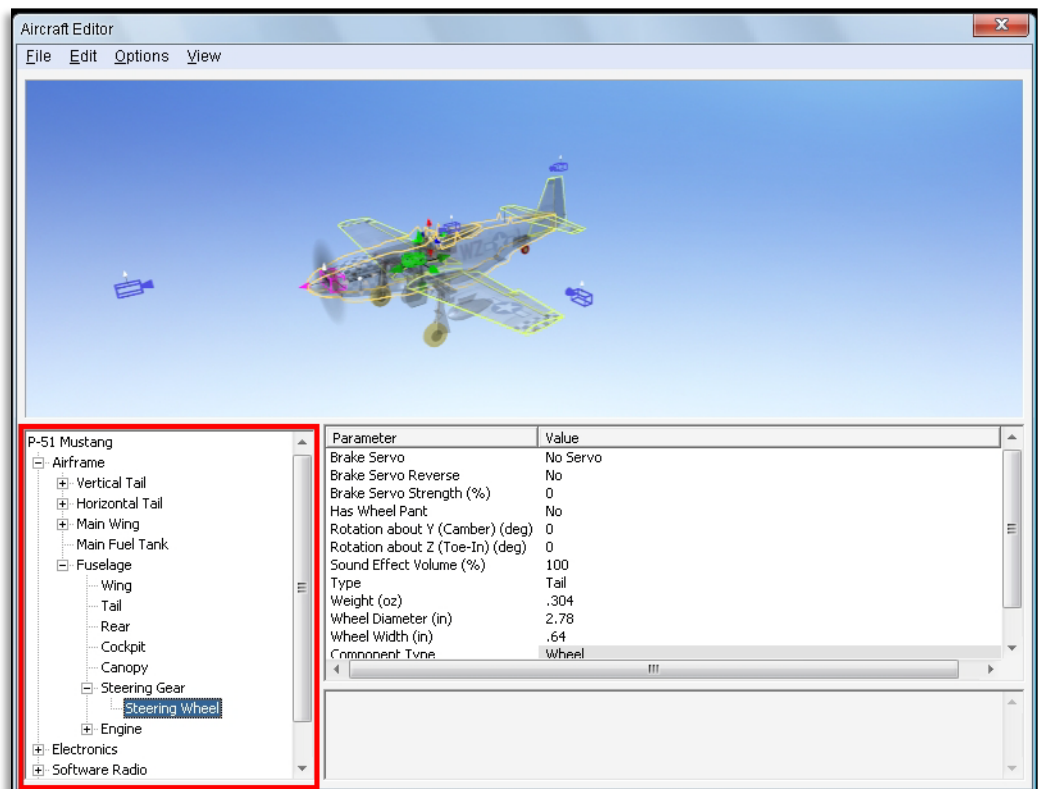


Layout 4:



Aircraft Parts Tree-

The Aircraft Editor contains three important areas: the Aircraft Parts Tree, Parameter window, and the Description pane.

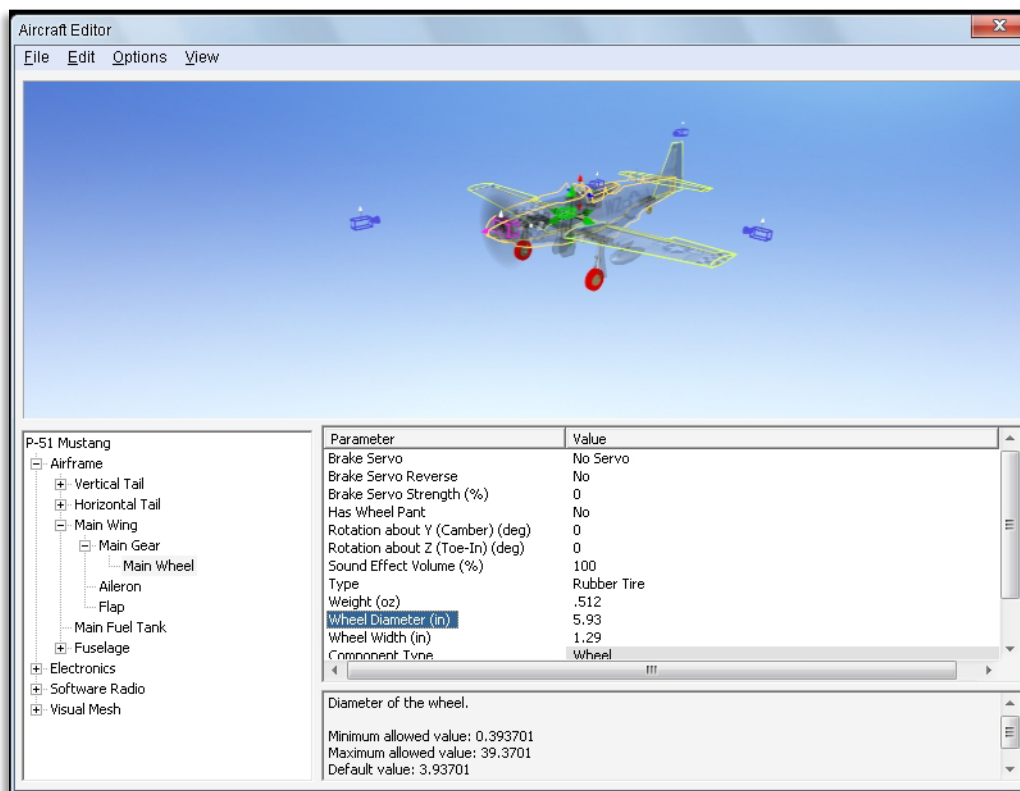


The Aircraft Parts Tree breaks down the entire list of aircraft components and radio data into an easy-to-use hierarchy.

The first item listed is the name of the aircraft you are currently editing, which is considered the root item for all other items listed here. Selecting it will offer a variety of common parameters that you can edit in the Parameter window. These include the description of the aircraft, Launch Method, Power Plant Type, Radio Type, and Aircraft Type.

Below the aircraft name there are additional options that allow you to customize the individual parts of the aircraft. You also have the ability to modify the electronics and radio program for the aircraft.

Each part belongs to a higher component, or parent, with the root being the highest component. In return, it's possible that the part itself also has children parts that belong to it. For example, if you wish to edit the wheel diameter on the P-51, you will find it under the following path in the Aircraft Parts Tree:



- ➔ P-51 Mustang - root of the aircraft, found at the top of the Aircraft Parts Tree list
- ➔ Airframe – Contains all the physical parts of the aircraft, such as wings, fuselage, etc.

- Main Wing – One of many physical parts found in the Airframe
 - Main Gear – The Main Gear on the P-51 attaches to the wing, therefore, is listed under the Main Wing part.
 - Main Wheel – Finally, you'll see the wheel component which, understandably, is found under the Main Gear part.

Once the Main Wheel is selected, the Parameter window will change to show all parameters available to the Main Wheel. You'll notice that one of these parameters is wheel diameter.

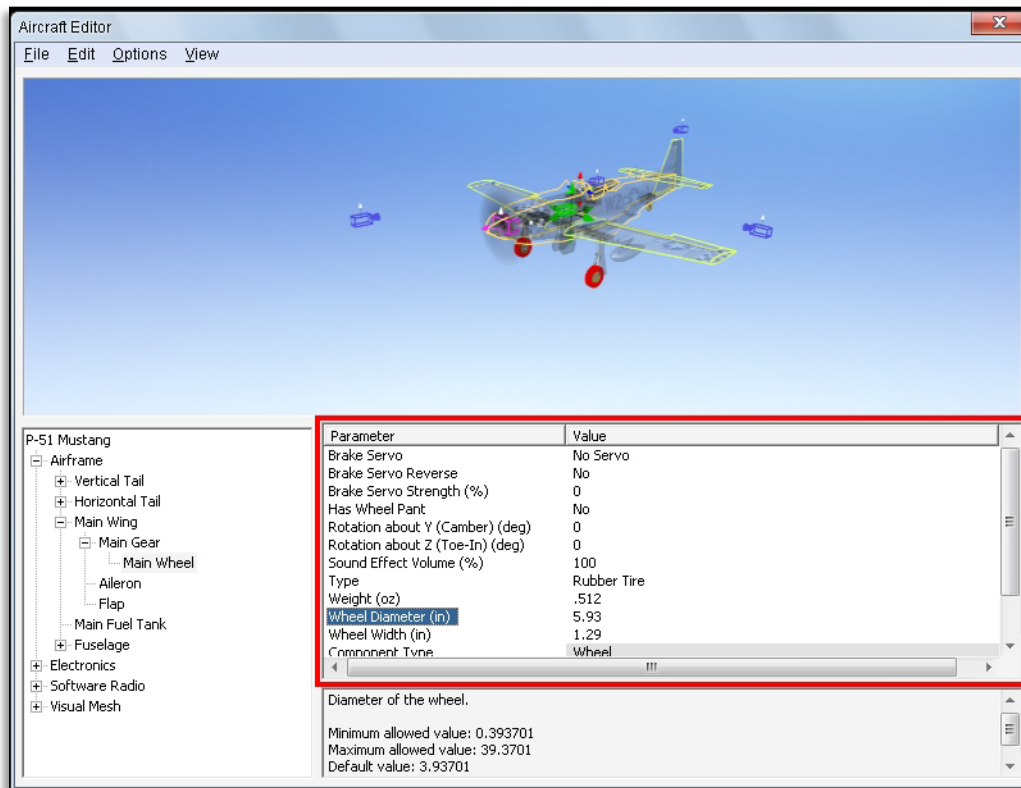
All other parts are found and modified in much the same way. However, if you are unsure as to the location of a part, an easier way to access the part is to click on the desired item in the Preview screen on the top half of the window. For example, if you want to modify the parameters for the horizontal tail of the P-51, simply click on that portion of the image. You'll notice that the Horizontal Tail is now selected in the Aircraft Parts Tree.

Preview Screen-

As mentioned above, to quickly find the part in the Aircraft Parts Tree for modification, you can simply click that part in the Preview screen itself. At times, you'll notice that the part you want to click might be hidden behind another section of the aircraft. If you find yourself in this situation, click and drag the mouse cursor around the Preview screen. This will rotate the aircraft image around, so you may view it from different angles. You may also use the scroll wheel on the mouse to zoom in and out for a closer look at the section you are working on.

Parameter Window-

The final component of the on-screen layout is the Parameter window. This window will list all the parameters available for the currently selected part in the Aircraft Parts Tree.



Clicking on the parameter will allow you to view a description of its use in the Description pane directly below the Parameter window. This will also allow you to modify the currently selected parameter.

Adding and Removing Components-

There are times when you may want to add a new component to the aircraft. The first step is to determine the location for the new part. For example, if you were to add flaps, it makes more sense to add them to the main wing, than to the fuselage.

After determining a location for the new part, you can add it in one of two ways. Select the new part from the **Edit** menu then right-click on the component to which you are adding the new part. Again, if you were adding flaps, right-click on the **Main Wing** component, then select **Add Control Surface**.

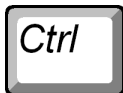
Removing a component works in much the same way. In the Aircraft Parts Tree, select the component you wish to remove and then select **Delete Component** from the **Edit** menu. You can also accomplish the same thing by right-clicking on the part to remove and selecting **Delete Component**.

More Information-

The Aircraft Editor may seem a little overwhelming at first. The best way to become familiar with the editor and its related functions is to simply use it and start experimenting. RealFlight does not allow you to customize the stock aircraft. If you want to make a change to one of the stock aircraft, you will be forced to save it under a new name. Therefore, you always have the stock aircraft to default to should the need arise.

Our online forums and swap pages provide a great source of information and assistance from other RealFlight users. These pages may be found at:

www.knifeedge.com/forums



Quick Edit...



This window allows you to make quick, simple changes to the aircraft without opening the full Aircraft Editor. Often times, you may feel that simple changes, such as the degree in the rudder deflection are all you need to refine to make an aircraft fly more like your model. Instead of working through the complexity of the Aircraft Editor, you may make the change rapidly using Quick Edit.

When you click on **Quick Edit...** the following window appears:

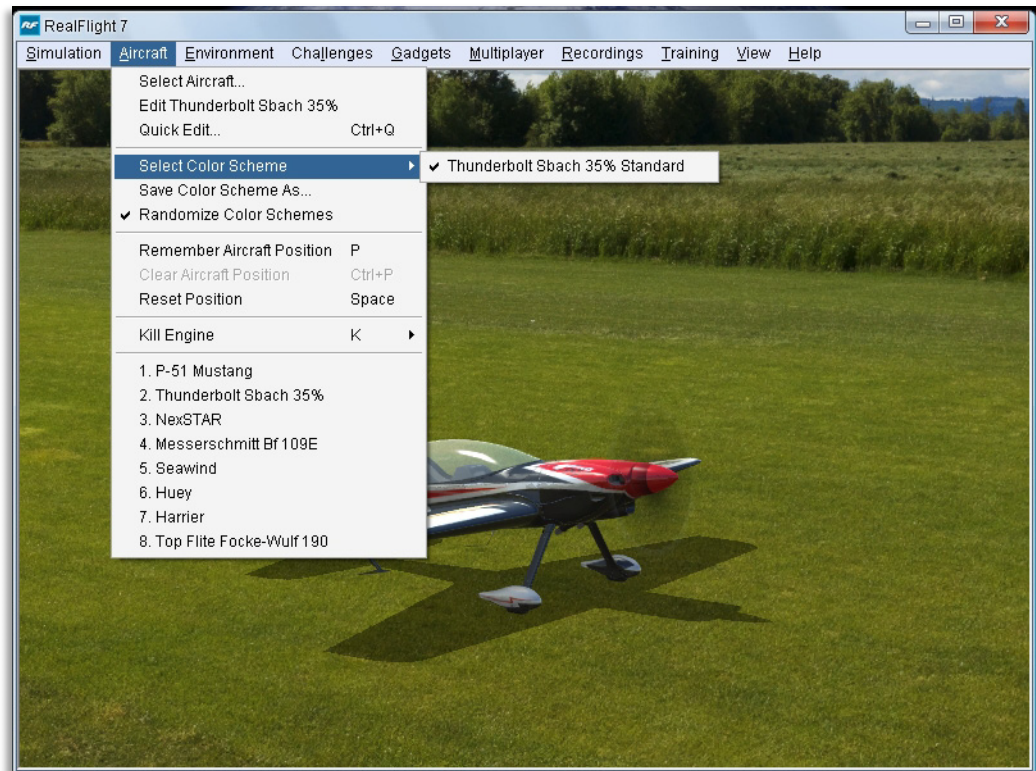


To make such simple refinements to the respective aircraft, click the **Aircraft** menu followed by **Quick Edit**. The Quick Edit dialog will appear, showing the adjustment options.

Changes made through the Quick Edit will make a copy of the aircraft and save it as a custom aircraft with "(Quick Edit)" appended to the name.

Select Color Scheme

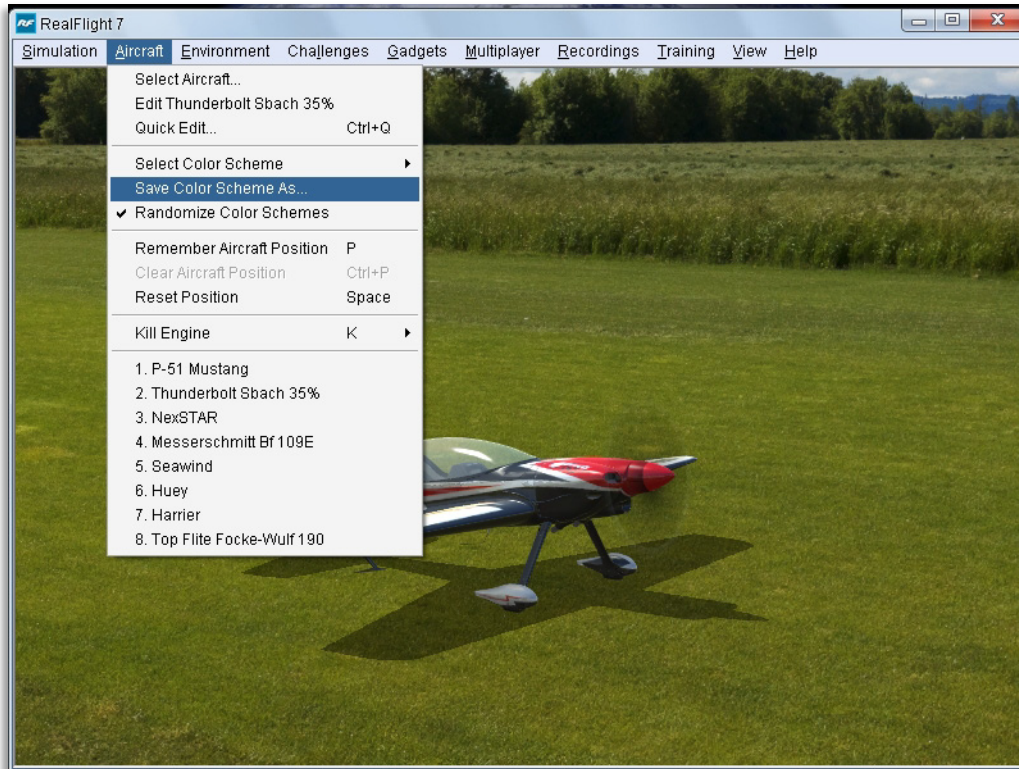
This menu item allows you to choose an alternative trim scheme (if available) for the current aircraft.



To view the alternative color schemes, click the **Select Color Scheme** menu item. To select an alternate trim scheme, click the desired selection in the value box. Alternatively, you may use either the Up/Down arrow keys on the keyboard, or the mouse to select the desired scheme option. If utilizing the arrow keys, press **Enter** to finalize the selection. The new trim scheme will appear immediately on the aircraft. Please note: if only one scheme appears in the pull-down menu, alternative schemes are not available for this aircraft.

Save Color Scheme As...

This menu item is used to create an editable version of the currently selected trim scheme.



RealFlight 7 allows you to create a custom paint/decals scheme for your aircraft. The color schemes you create are limited only by your imagination.

However, only individuals that own and know how to use a third-party bitmap editing program such as Adobe® Photoshop® should attempt to create a custom color scheme. Your editor must be able to read and edit Targa (".tga") files.

To create a custom color scheme, click the **Save Color Scheme As...** menu item. Enter the desired name in the dialog box that appears. The location of the file will appear in the lower left corner of the RealFlight screen.

To access the file that contains the custom color scheme, open the My Documents folder. Next, open the **RealFlight 7** folder followed by the **Vehicles** folder. A number of folders are available here; open the folder called **Color Schemes**. This will bring up all of the custom color schemes that have been stored in RealFlight. The name of the aircraft will precede the name that you have selected for your custom color scheme. Click on the file for which you wish to modify the trim scheme.

DO NOT ALTER THE NAME OF THIS FILE, AS REALFLIGHT MAY NOT BE ABLE TO CORRELATE THE COLOR SCHEME WITH THE AIRCRAFT.

Once you have finished editing and saving your color scheme, you will probably want to see the results of your work. There are two ways that you can do so. One is to use the Select Color Scheme menu, which is found within the Aircraft menu. Simply click on the color scheme that you have just edited, and RealFlight will reload the color scheme onto your aircraft and reset the aircraft. Within seconds, you are ready for flight with your new color scheme.

Alternatively, access the Aircraft Editor (see section Edit Current Aircraft on page 118). Within the aircraft editor, look for Reload Color Scheme which is located in the Options menu. Clicking this will reload the color scheme, showing any changes you have made to the aircraft. You can disable the wireframe using the Options menu to improve your view.

While looking in the Color Schemes directory for your new color scheme, you may also notice a “.color scheme” file with the same name as the “.tga” file. This file can be opened in a text editor such as Notepad. Within the file, you will find six values to edit: Specular, Reflectivity, Power Specular Off, Power Specular On, Power Reflective Off, and Power Reflective On.

Specular - A multiplier for the overall specularity of the aircraft. Specular=1 is neutral, Specular=0 disables specular highlights.

Reflectivity - A multiplier for the overall reflectivity of the aircraft. Reflectivity=1 is neutral, Reflectivity=0 disables reflections.

Specular highlights vary from fully off to fully on as the specular power of each piece of the aircraft goes from the value Power Specular Off to Power Specular On.

Reflections vary from fully off to fully on as the specular power of each piece of the aircraft goes from the value Power Reflective Off to Power Reflective On.

Tips for Color Schemes-

- A quick and easy way to change a color scheme is to replace one color with another. Photoshop has a command that can easily do this called, “Replace Color”.
- Make sure you save the file as 32 bit TGA files, so that the Alpha Channels are preserved (See below).
- You are only allowed a single Alpha Channel.
- Do NOT alter the resolution of the image.

- Other formats (JPG, BMP, etc) are not allowed.

Alpha Channels-

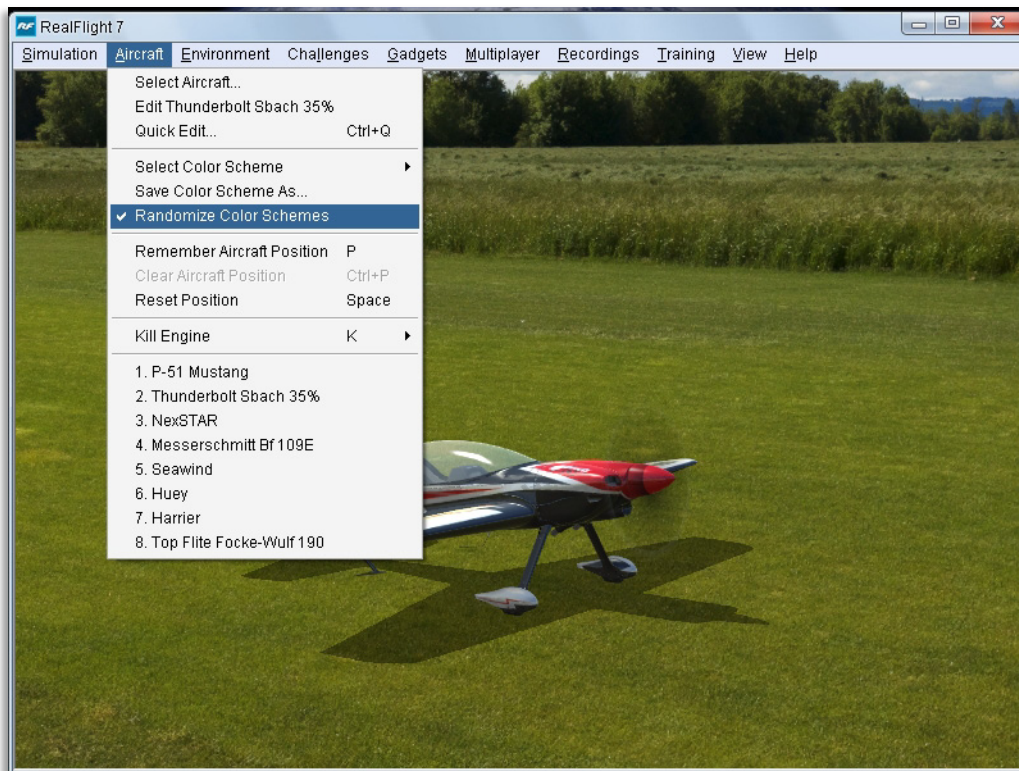
Almost all of the color schemes for the aircrafts incorporate an Alpha Channel, which defines what areas of the color scheme are opaque and what areas are transparent. White portions of the alpha channel will be 100% opaque and Black portions of the alpha channel will be 100% transparent. Shades in-between will be partially transparent.

Consult the image editor's manual to determine how to use Alpha Channels.

Please note: RealFlight uses TGA files instead of the BMP format. This is because BMP formats do not support alpha channels.

Randomize Color Schemes

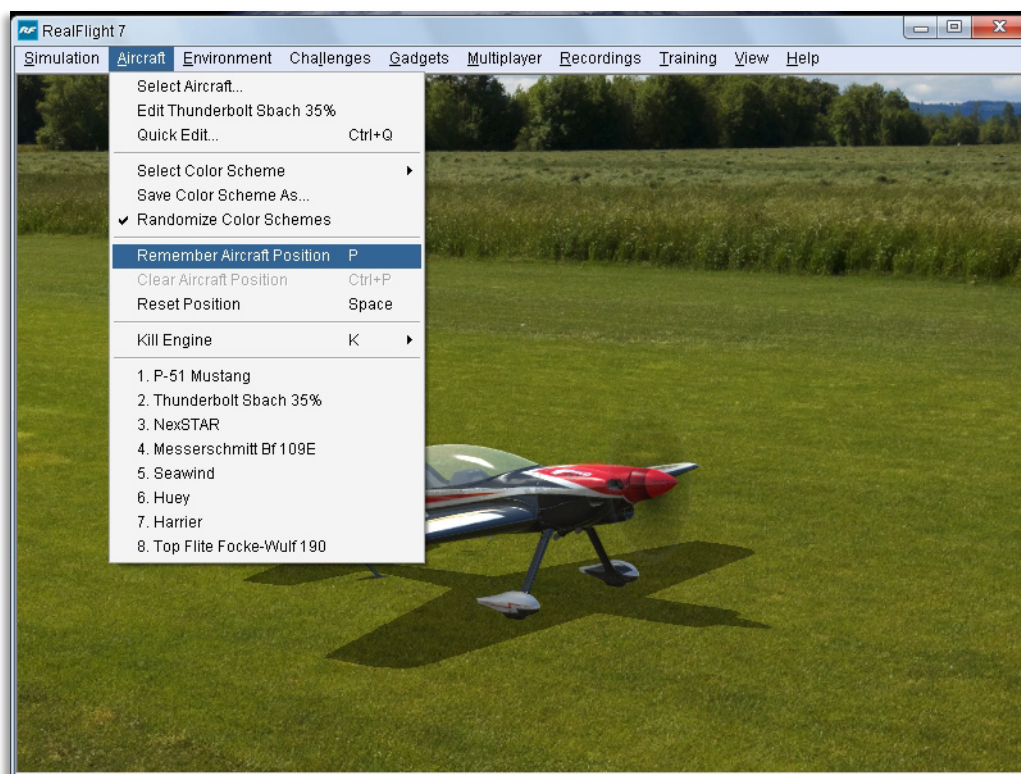
When this menu item is checked, RealFlight will randomly choose a color scheme for the selected aircraft, if multiple schemes are available. Uncheck this menu item to disable this feature.





Remember Aircraft Position

The Remember Aircraft Position menu item saves the current position of the aircraft. When you reset the aircraft, it will return to the same position (speed, attitude, heading, etc.). This feature is ideal for practicing maneuvers, such as an autorotation in a helicopter.



To activate this menu item, click the **Remember Aircraft Position** menu item when the aircraft is in the desired location and altitude.

Each time the aircraft is reset, it will begin flight from the saved location.

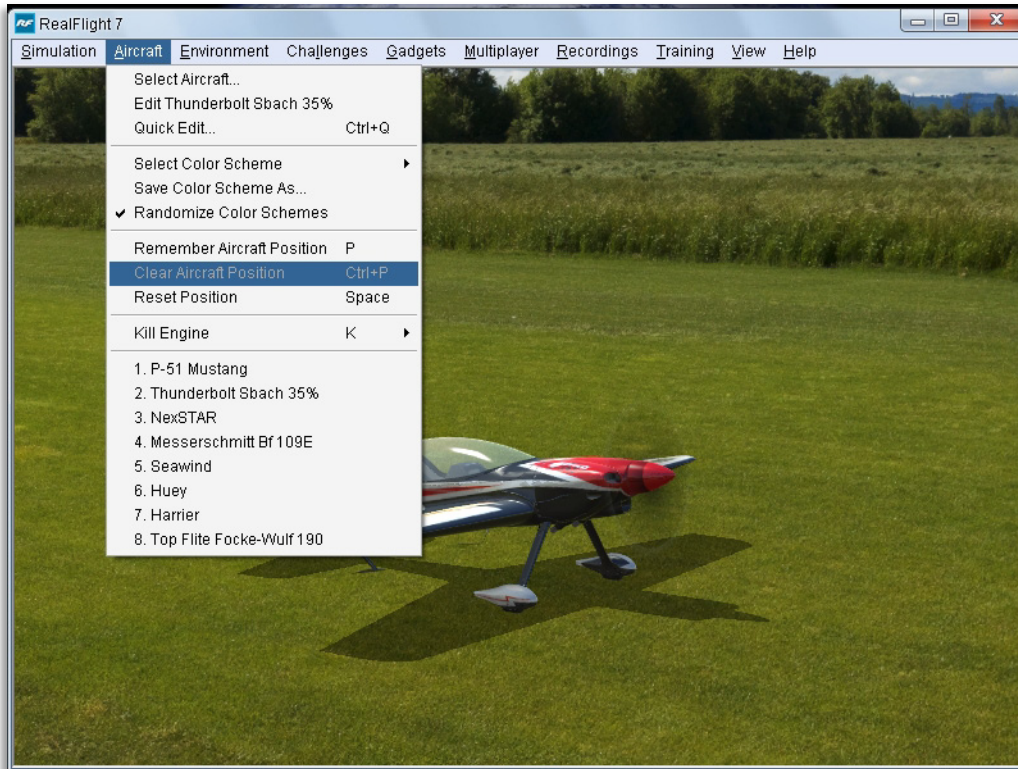
Please note: The saved position is only temporary. If you select another airport, aircraft, or if you exit the simulation and restart, you will need to save the desired position once again.

Ctrl

Clear Aircraft Position

P

This menu item clears the position saved in the Remember Aircraft Position without exiting the simulation, changing flying sites, and/or aircraft.



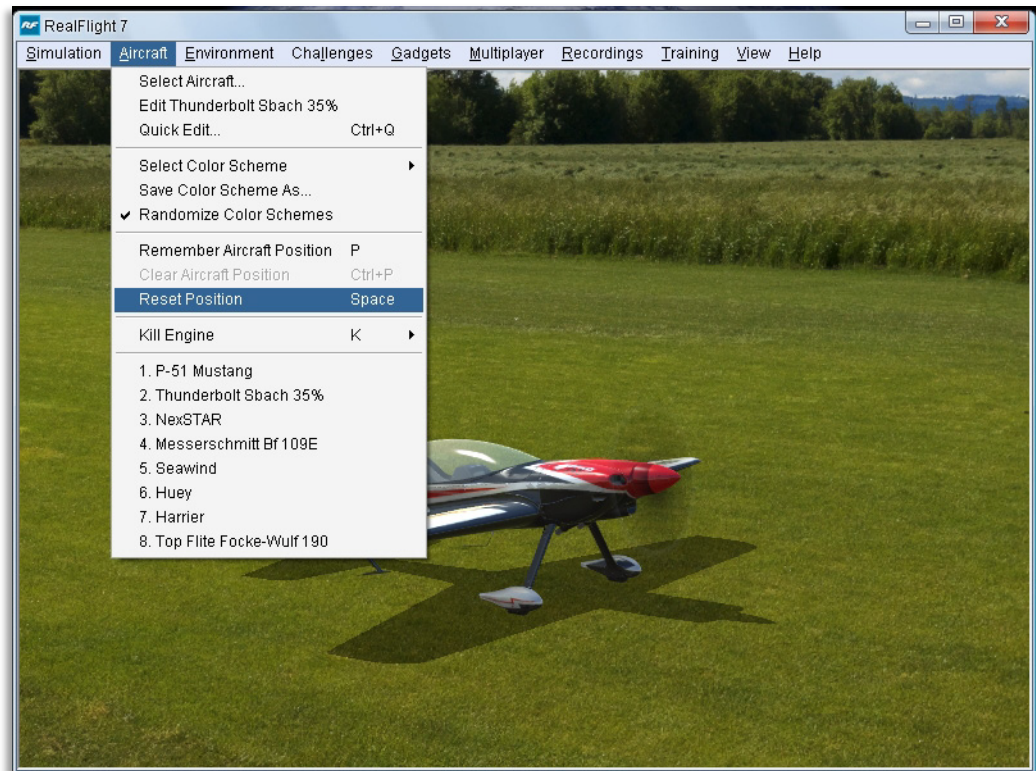
To do so, simply click the **Clear Aircraft Position** menu item. When the aircraft is reset, it will return to one of the default starting positions.



Reset Position

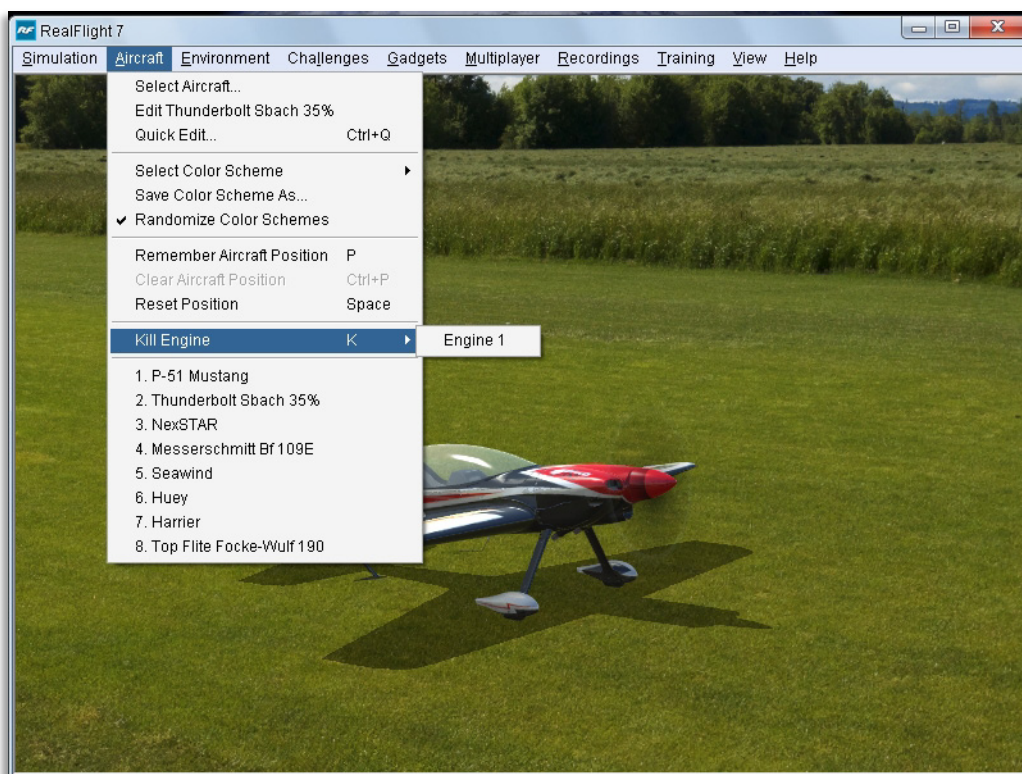
There are three ways to reset the aircraft to its takeoff position:

1. Press the **Reset** button on the InterLink Elite controller. This is probably the fastest and simplest method.
2. Press the keyboard's space bar.
3. Click the **Reset Position** menu item.



K Kill Engine

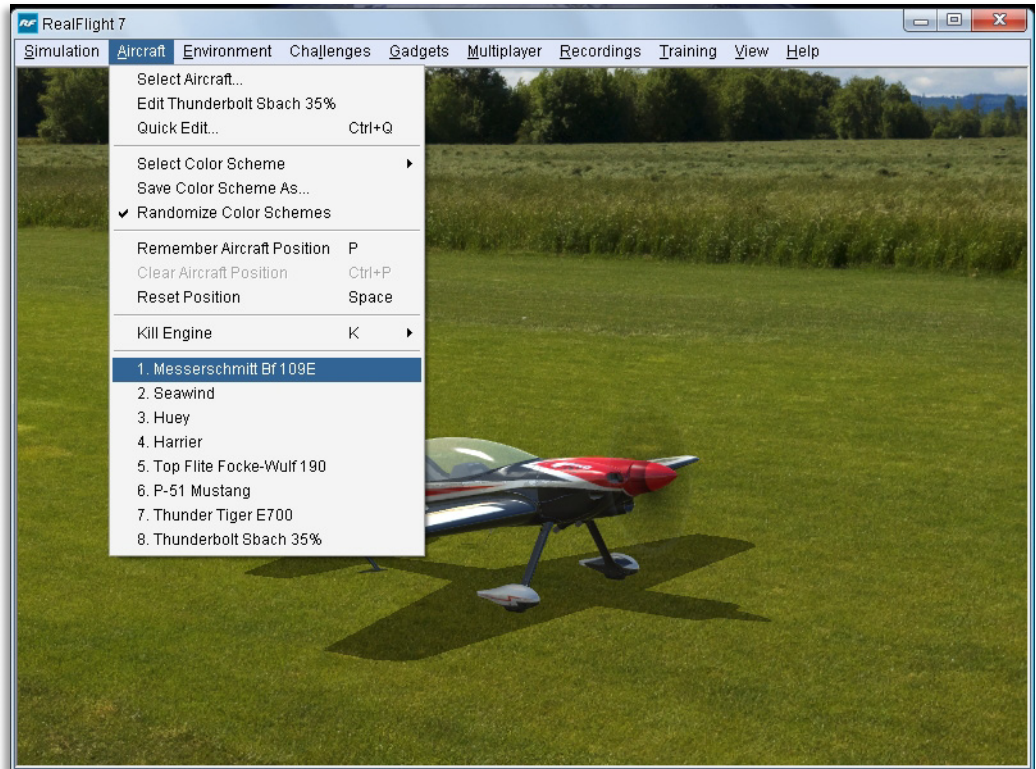
Click on this item to instantly stop the motor from running. This is useful when you are practicing dead-stick landings in airplanes and practicing autorotation for helicopters.



If the aircraft has multiple motors, the sub-menu will allow you to select which motor to kill. Alternatively, pressing **K** on the keyboard, or selecting **Random** will kill one of the motors at random.

Aircraft MRU

The final items in the Aircraft menu indicate the most recently used aircraft. The MRU shows only the eight most recently selected aircraft.



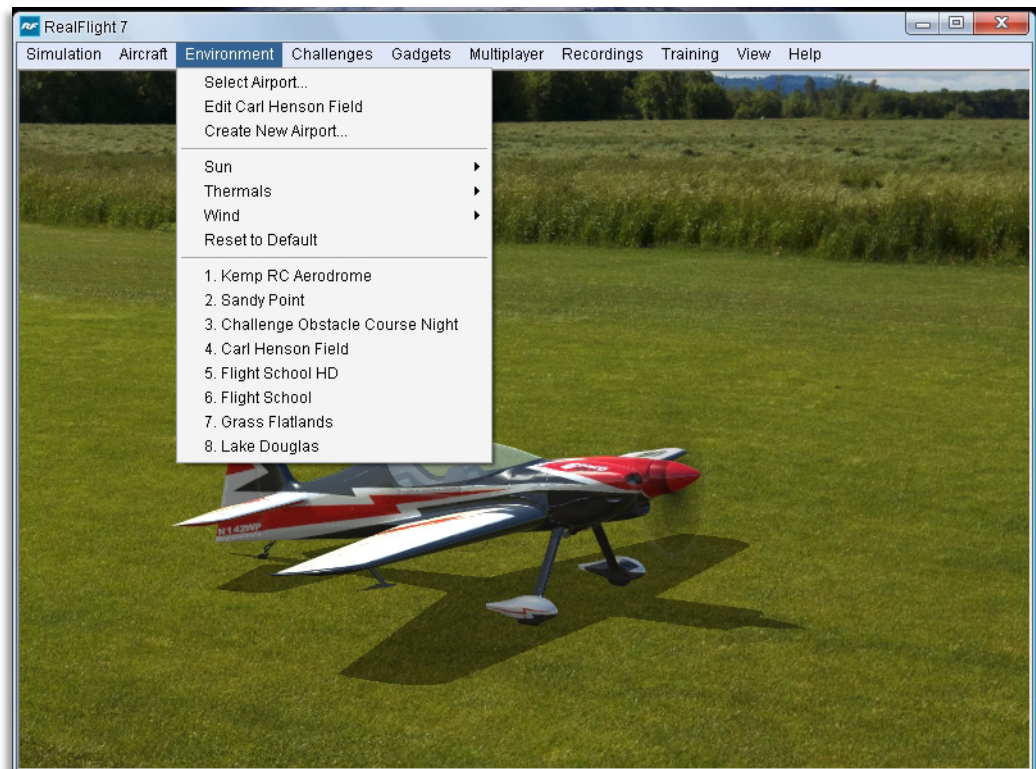
You can load an aircraft by selecting it from this list. This shortcut allows you to switch between your favorite aircraft without using the Select Aircraft dialog.

The Environment Menu

Allows access to a variety of environment-related features, functions and options.

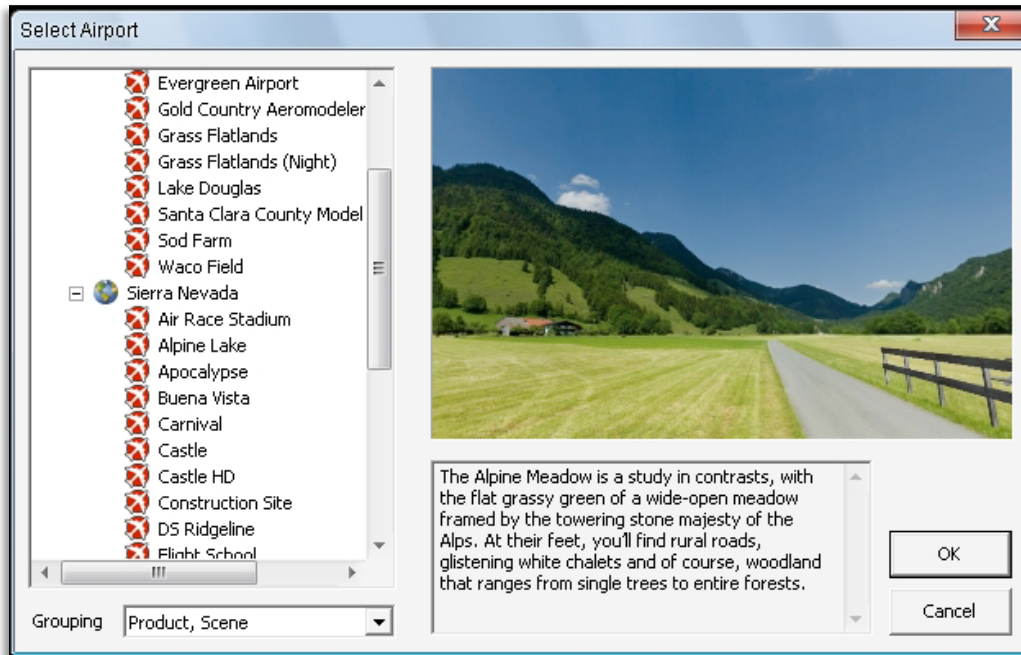
The Environment menu gives you access to many scenery related features, such as changing flying sites, or adjusting weather related items.

Clicking the Environment menu will open the drop-down menu as illustrated in the following screen shot.



Select Airport...

When you click on **Select Airport...** the following dialog appears:



RealFlight 7 offers two different types of flying sites: 3D and PhotoField. PhotoField, as the name suggests, are flying sites created from photo imagery. 3D flying sites are, again as the name suggests, sites rendered in a 3-demisional environment. If the PC is running slowly at a 3D flying site, try selecting a PhotoField site.

This dialog lets you choose the flying site that you wish to use for your flight. Each location offers its own unique characteristics and challenges.



Change airports simply by using the InterLink Elite. Press the **Menu/Select** button, then, using the **Data Lever**, move down one tab and press the **Menu/Select** button again. This will bring up the Select Airport QuickSelect dialog window. If you wish to filter the airport list, simply press and hold the **Cancel** button. Then, using the **Data Lever** and the **Menu/Select** button, you can choose a filter from the selection listed.

You can continue using the **QuickSelect** button in this dialog to select a new airport, or press **Reset** to resume flying without making any changes.

The list on the left of the dialog box displays all of the flying sites available to you. If you have created or downloaded any flying sites, those sites will also be visible here.

The flying sites are listed in files and folders in accordance with the software from which they were loaded. For example, if you have installed Expansion Pack 7, the sites from this disc will be listed alphabetically, beneath the Expansion Pack 7 folder. You can change how the airports are organized, by selecting one of the options under the Grouping drop-down selection box. The options are:

Product, Scene: As explained above, airports are first grouped into folders by the product in which they are contained. Within each group, they are then grouped further by scene.

Product: Airports are grouped by product alone.

Scene: Airports are grouped by scene alone.

None: Airports are not grouped into folders at all. Rather, they are listed alphabetically.

Click the **[+] (plus)** or the **[-] (minus)** symbol to reveal or hide the airports within these folders. To select an airport, click on the name of the airport at which you wish to fly.

The rotating image on the right side of the screen provides you with a preview of what to expect at the desired location. The airport information pane below the terrain map contains a description and pertinent information regarding the highlighted airport.

Have some fun while you're in the Select Airport dialog. Using the mouse, click and drag the preview screen to point the camera angle to your choosing. To resume rotating automatically, right-click the preview screen.

When you are satisfied with your selection, click **OK** to return to your flight using the new airport selection. The **Cancel** button will return you to the simulation at the previously selected flying site.

Movement Modes-

If applicable to the respective airports, RealFlight 7's Movement Modes allows you to explore the scenery without an aircraft. Movement is not possible at PhotoField airports.

To select a Movement Mode, press the **'Q'** key on your keyboard. You can press the **'Q'** key repeatedly to cycle through the available modes: Walk, Fly, or Hover.

Walk mode simulates the effect of you, the pilot, physically walking across the field, complete with sound effects. The Fly mode allows you to move through the air and position the camera anywhere that you desire.

Once you have entered the desired Movement Mode, use the **W**, **S**, **A** and **D** keys on your keyboard to control the movements. If you wish to increase the speed of your movement, press and hold the **Shift** key at the same time you are using the **W**, **S**, **A** or **D** key.

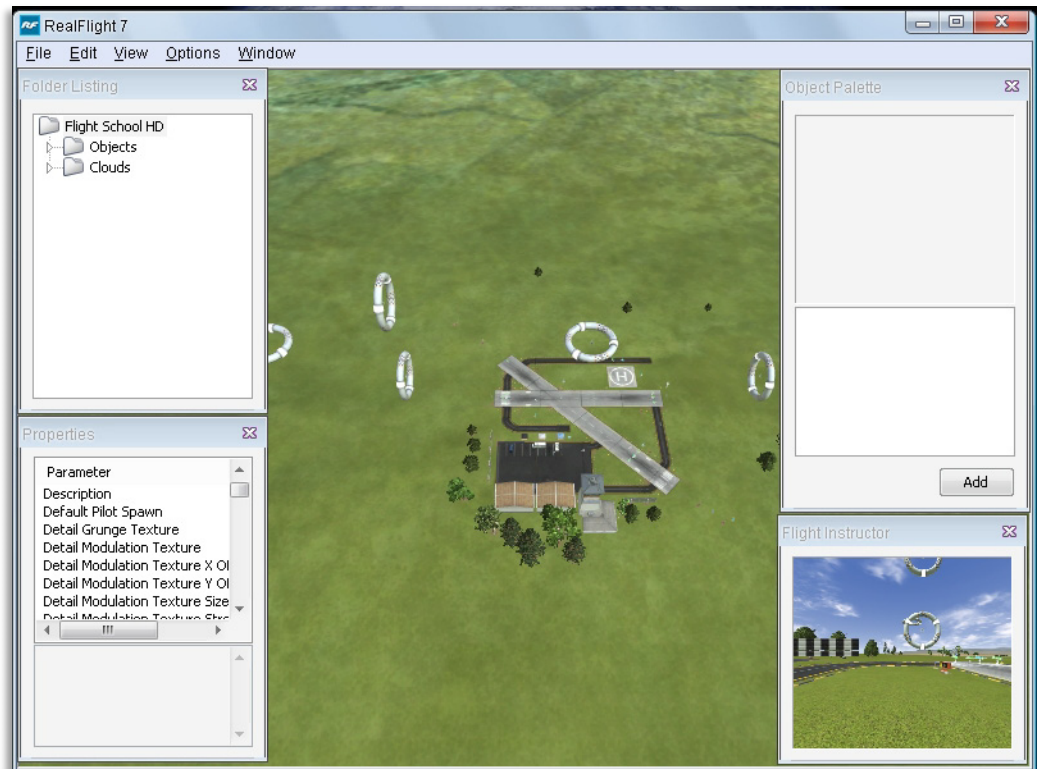
The mouse wheel controls the angle or height at which you traverse the scenery. To increase the altitude, roll the wheel away from you. This is known as the Hover Mode.

You may also control the zoom levels during your travel. Press the **[+]** (**plus**) key to Zoom In and the **[-]** (**minus**) key to Zoom Out. The **Backspace** key resets the zoom level to its default value.

Edit *Current Airport...*

RealFlight 7 offers unparalleled freedom to edit flying sites. You can add and remove objects, alter their location, rotate, and even resize items. It is also possible to alter the atmospheric or lighting conditions at the various flying locations. The first several times you access the airport editing function, the possibilities might seem daunting. It will require some getting used to before you are comfortable with this feature and its related functions. The best way to do so is to simply dive in and experiment.

To modify the currently selected flying location, click the **Simulation** menu followed by the **Edit <Current Airport>...** menu item, where <Current Airport> is the name of the airport you have loaded at the moment. This activates RealFlight 7's FlexiField flying site editor, with the currently active airport loaded and ready to edit.

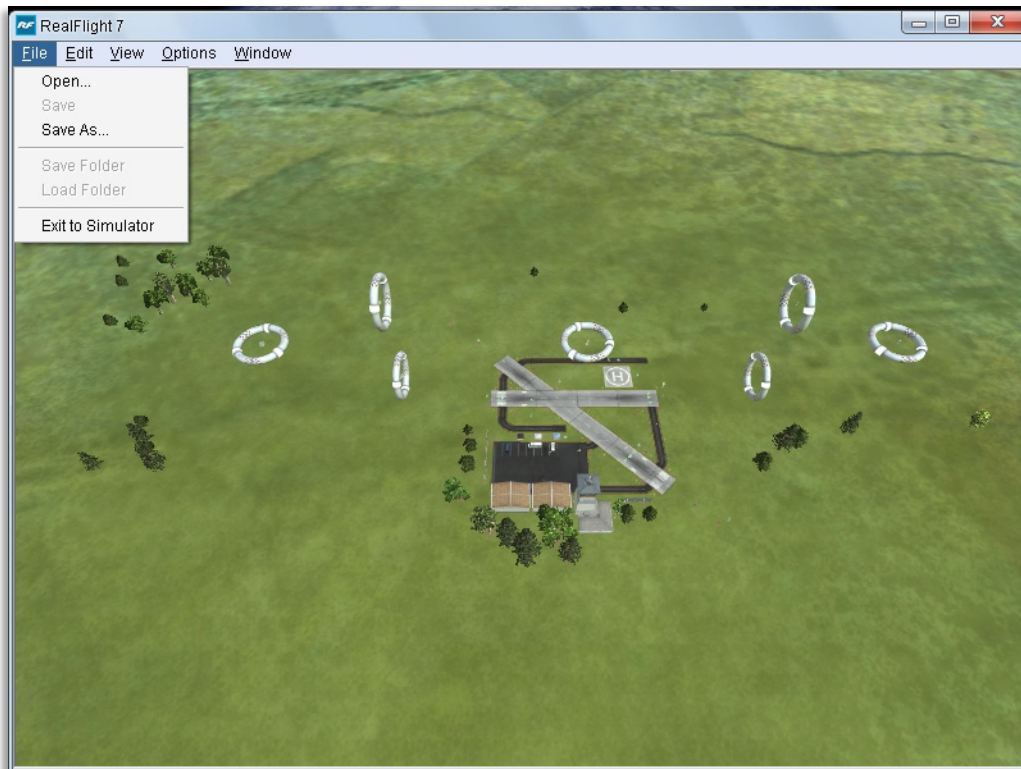


Airport Editor Menus-

Selecting the Edit Current Airport option activates the screen shown above.

File Menu-

This menu and its menu items are used to manipulate and control the various folders and related items in the airport editor.



Open-

This menu item is used to open existing and edited airports. Selecting this menu item opens the Select Airport dialog.

Save-

This option becomes active once you have renamed and saved the edited airport. Prior to doing so, this option remains inactive and grayed out.

Save As-

Upon completion of the airport editing, click this menu item to save the modifications. You will be asked to type in a name for this new airport. Once you have renamed the airport, click **OK** to accept the new name. The airport will now appear in the airport listings.

Save folder-

This option allows you to select an entire sub-folder in an airport and save it as a new file. For example, it is possible to select the entire "Objects" sub-folder in RealFlight Ranch and save it on a disc.

To save a folder, highlight it, click on the File menu and select **Save Folder**.

Alternatively, you can right click on the existing folder and select **Save Folder**. This brings forth a dialog that allows you to determine the new folder's name, as well as the location where it will be saved.

Load Folder-

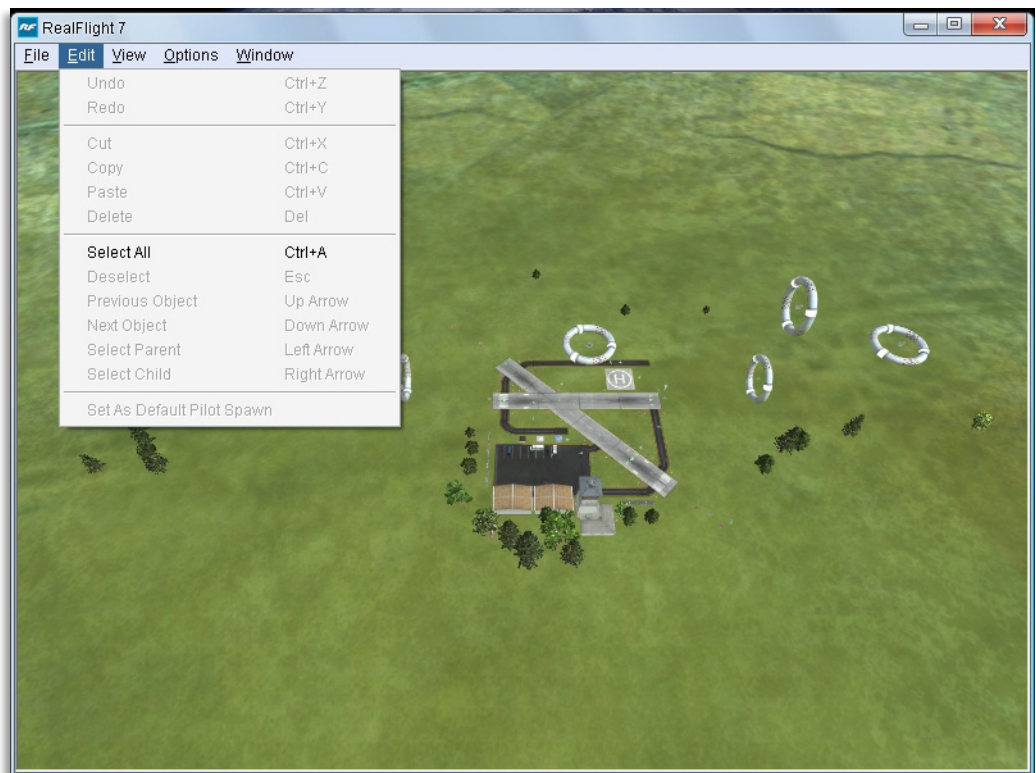
This option allows you to load a folder from the saved folders. To do so, first highlight a destination folder, click on the File menu and select **Load Folder**.

Exit to Simulator-

Use this option to close the Airport Editor and return to the simulation. If you have not made any changes to the airport, you will return directly to the simulation. If you have unsaved changes, a message box will ask for confirmation before returning to the simulation.

Edit Menu-

This menu may be used for some simple editing functions in the selected airport.



Undo-

Select this to undo the last change you made in the airport editor.

Redo-

Choose “Redo” to repeat the last action you undid with the “Undo” command.

Cut-

Select one or more objects at the airport and choose “Cut” to remove the selected objects. The objects are stored temporarily in RealFlight’s memory and can be pasted back into an airport.

Copy-

Like the Cut option, “Copy”, will store the selected objects in RealFlight’s memory allowing you to later paste it into an airport. Unlike Cut, the selected object will remain at the current airport.

Paste-

If any objects have been cut or copied, choose “Paste” to add them to the current airport.

Delete-

“Delete” will remove the selected objects from the airport without copying them to RealFlight’s memory. They cannot be retrieved later.

Select All-

This menu option will select all objects at the airport you are currently editing.

Deselect-

Choosing this menu option will deselect any airport objects that might be selected at the moment. If no objects are selected, “Deselect” will remain grayed out.

Previous Object-

If any airport object is currently selected, choosing “Previous Object” will select the preceding object in the folder list.

Next Object-

If any airport object is currently selected, choosing “Next Object” will select the next object in the folder list.

Select Parent-

All objects belong to a group or parent. To select the parent that the current selected object belongs to, choose “Select Parent”.

Select Child-

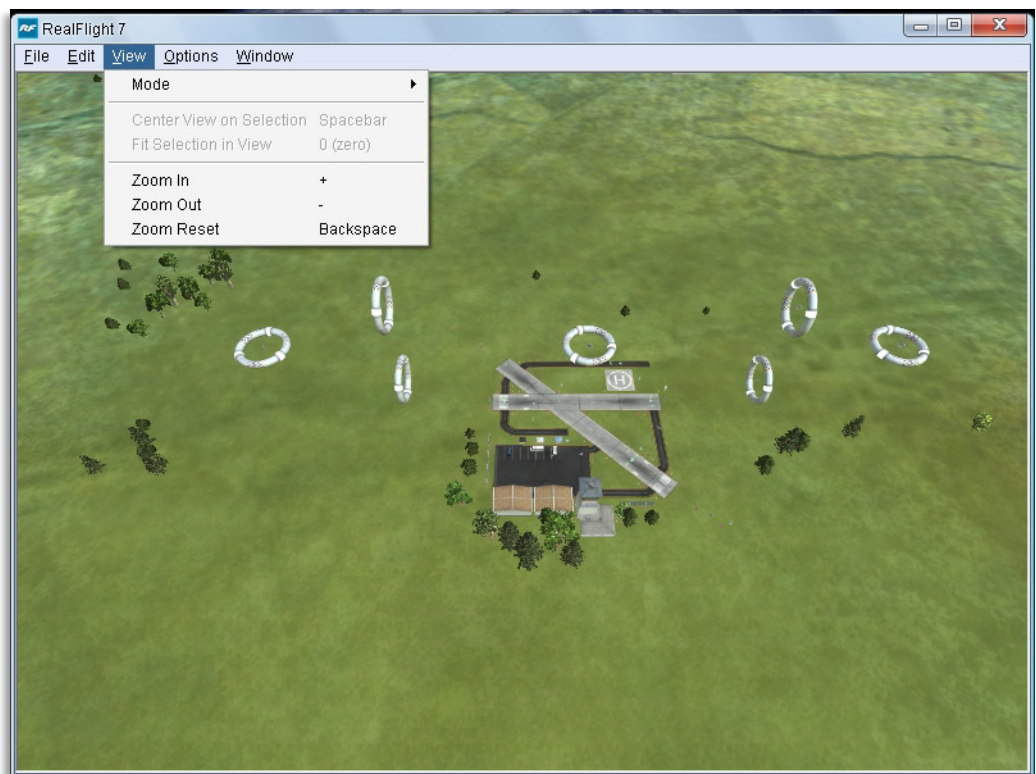
If a group is currently selected, choose “Select Child” to select the first object listed in that group.

Set As Default Pilot Spawn-

Choose a pilot spawn and click this menu option to set it to the default spawning point. This point will be the default camera position each time you load the current airport.

View menu-

This menu allows you to modify your view of the airport while editing it.



Mode-

The Mode menu is utilized to alter the camera perspective when viewing the scene. There are four distinct view modes in RealFlight 7: Fly Camera, Pan Camera, Pivot Camera and Normal Camera. These modes, as well as the methods to access them, will be discussed in depth in the sections that follow.

Fly Camera-

The Fly Camera option allows the camera to function just like the Movement Mode in the simulation. See page 147 for more details.

There are several ways to access the Fly Camera mode. The first, and probably the easiest, is to press the **'V'** key on your keyboard. You may also right click on the scene and select Fly Camera from the menu box that appears. The final method is to select Fly Camera through the View menu and Mode sub-menu item.

To exit the Fly Camera feature, right click in the editing view and select the desired option from the menu box that appears. You can also exit this mode by hitting the **'Z'** key, which returns you to the normal viewing mode.

Pan Camera-

The Pan Camera option allows the camera to shift the vantage point on the selected scenery.

There are several ways to access the Pan Camera mode. The first, and probably the easiest, is to press the **'C'** key on your keyboard. You may also right click on the scene and select Pan Camera from the menu box that appears. The final method is to select Pan Camera through the View menu and Mode sub-menu item.

To exit the Pan Camera feature, right click in the editing view and select the desired option from the menu box that appears. You can also exit this mode by hitting the **'Z'** key, which returns you to the normal viewing mode.

Pivot Camera-

The Pivot Camera mode pivots or rotates the camera around a particular object or location.

There are several ways to access the Pivot Camera mode. The first, and probably the easiest, is to press the **'X'** key on your keyboard. You can also right click on the scene and select Pivot Camera from the menu box that appears. The final method that may be used is to select Pivot Camera View menu in the Mode menu item.

To exit the Pivot Camera feature, right click in the editing view and select the desired option from the menu box that appears. You can also exit this mode by hitting the **'Z'** key, which returns you to the normal viewing mode.

Normal Camera-

This mode returns the camera to its normal, or default perspective.

There are several ways to access the Normal Camera mode. The easiest, is to simply press the **'Z'** key on the keyboard. Alternatively, you can right click in the editing view and select Normal Camera from the menu box that appears. Finally, you may select Normal Camera through the View menu and Mode menu item.

Center View on Selection-

This option centers the vantage point on a particular object. This is useful for repositioning, resizing, rotating, etc.

If you have not selected an object from the Folder Listing, or highlighted an object in the scene, this option will remain inactive or grayed out. If, however, you have made a selection or highlighted an object, there are several ways to select the Center View on Selection option.

Simply right click on the selected object or folder in the Folder Listing and select Center View on Object. Alternatively, in the scene, right click on the highlighted object and select the Center View on Selection from the options listed. The final option is to use the View menu and select the "Center View on Selection" option.

Fit Selection in View-

This option is utilized to ensure that your selection fits in the view. For example, if your zoom magnification is at an extremely high level, the object may not completely fit on the screen. This feature ensures that it will.

To access the Fit Selection In View, right click on the highlighted object in the scene and select the Fit Selection In View from the options listed. You can also use the View menu and select the Fit Selection In View option.

Zoom In-

Click this menu item to magnify or zoom in on the selected item. Alternatively, you may magnify the view or zoom in on the selected item by pressing the **[+] (plus)** key on the keyboard. Each time you press the **[+] (plus)** key or select the **Zoom In** menu item, the zoom level increases incrementally.

Zoom Out-

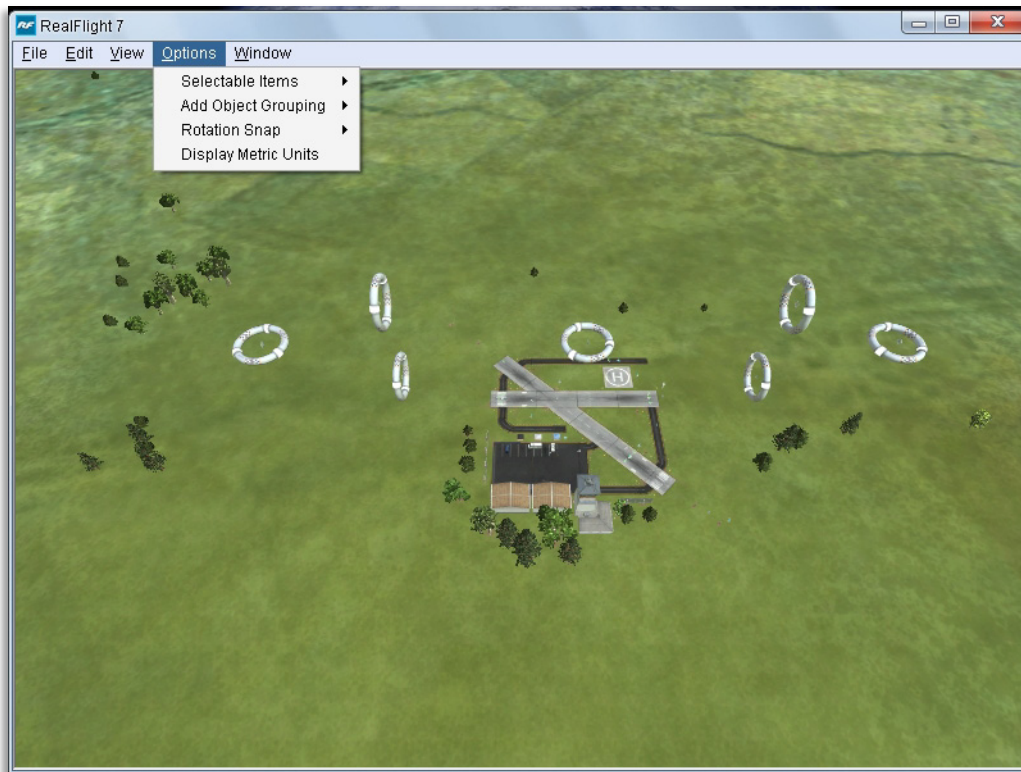
Click this item to reduce the magnification, or zoom out of the current view. Alternatively, press the **[-] (minus)** key on the keyboard. You may zoom out via RealFlight 7's menu. Each time the **[-] (minus)** key or the **Zoom Out** menu item is pressed or selected, the view will decrease incrementally.

Zoom Reset-

This menu item resets the view to the default magnification. Alternatively, you may also press the **Backspace** on the keyboard to reset the zoom to its default value.

Options Menu-

The Options menu allows you to adjust the behavior of many of the airport editor's functions.



Selectable Items-

The Selectable Items menu determines whether a particular type of object may be clicked and selected on-screen.

To toggle the ability of selecting a type of item, simply mouse click on the desired listing in the pull-down menu. This is useful when there are many objects clustered in a small area and you want to select just one of them. For example, suppose that an airport has a tight cluster of trees with a dirt pile in the middle and you want to select the dirt pile, it may be easier to first, turn off the tree selection. This will allow you to easily select the dirt pile without the trees getting in the way.

Add Object Grouping-

The items available for addition in RealFlight 7 are all grouped or organized accordingly. This menu item determines the way they are grouped in the Object Palette window.

Product, Type, Name-

Selecting this option causes the objects in the Object Palette to be displayed by the Product, then by the Type, and finally by the Name. That is, objects are first listed within the product in which they appear (e.g., RealFlight 7, Expansion Packs, etc.). Within the product, the objects are then classified by Type (e.g., Buildings, Trees, etc.). Once you've selected the Product and Type of object that is desired, the objects are then listed alphabetically by Name.

For information on adding objects and how to use the Object Palette, please refer to the Object Palette section of this manual.

Type, Name-

This option causes the objects in the Object Palette to display by the Type and the Name designations only. They are not sorted by the Product in which they appear. Objects that appear in RealFlight 7, Expansion Packs, etc. will be included in one extensive listing.

This option is useful if you are unsure as to which product includes a particular object.

Name-

Selecting this option causes the objects to be listed in alphabetical order by their name designations (e.g., Barn). This listing is extensive as it includes all of the objects available to you.

This option is useful if you are unsure as to which product contains the object, or if you are unsure as to the type of object that you wish to utilize. It also offers a rapid overview as to the type and number of objects available to you.

Rotation Snap-

When rotating an object on the flying site, you have the ability to control the amount of rotation with the Rotation Snap. There are four snap settings that may be utilized in the editor to provide quick orientation settings for placing objects.

None

The object rotates without any restrictions. This is useful for making minor refinements to object placement.

45 Degrees

The object will rotate 45 degrees each time this option is selected. This is useful for making large changes to object position.

15 Degrees

The object will rotate 15 degrees each time this option is selected.

5 Degrees

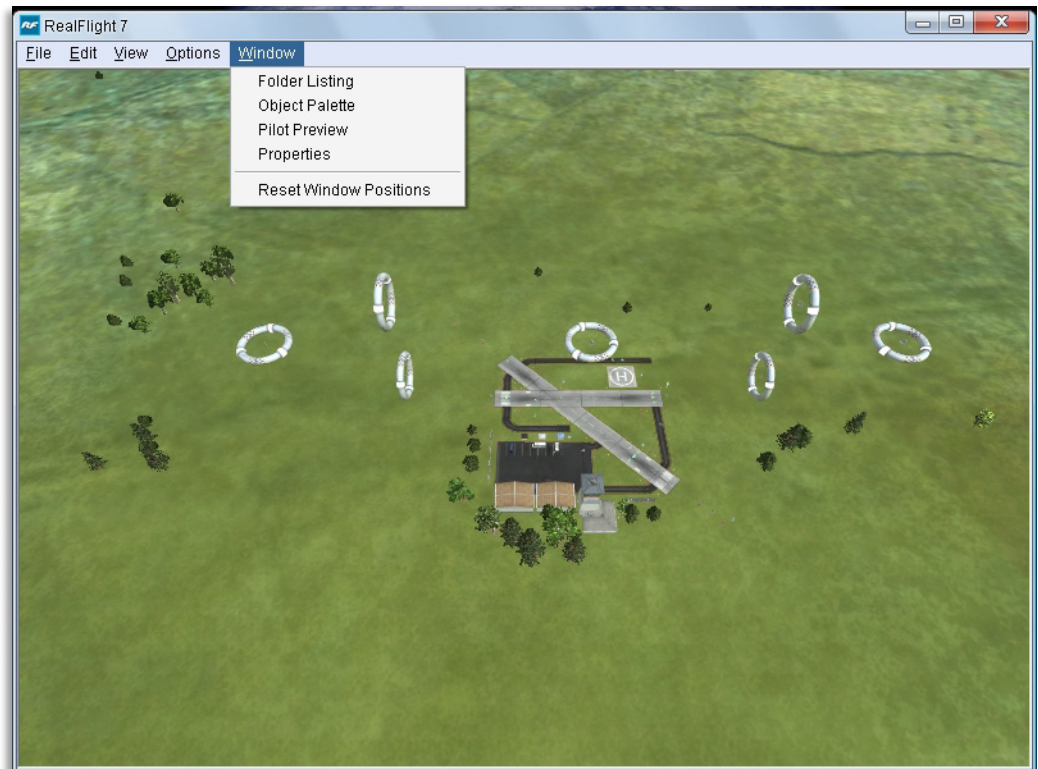
The object will rotate 5 degrees each time this option is selected.

Display Metric Units-

Click this item with your mouse to switch the measurement indicators in the Properties pane from SAE (feet, inches, pounds) to metric (meters, centimeters, kilograms).

Window Menu-

This menu item activates or eliminates items from the display or window. For example, if you were to click the Properties item in the pull-down menu, this would eliminate the Properties window from the screen.



Folder Listing-

This listing includes all of the folders available in the airport editor. Selecting this item from the pull-down menu will toggle the presence of the Folder Listing dialog.

Object Palette-

The Object Palette includes the complete selection of objects available in editing an airport. Selecting this item from the pull-down menu will toggle the presence of the Object Palette dialog.

Pilot Preview-

Selecting this item from the pull-down menu will toggle the presence of the Pilot Preview dialog.

Properties-

Selecting this item from the pull-down menu will toggle the presence of the Properties dialog.

Reset Window Position-

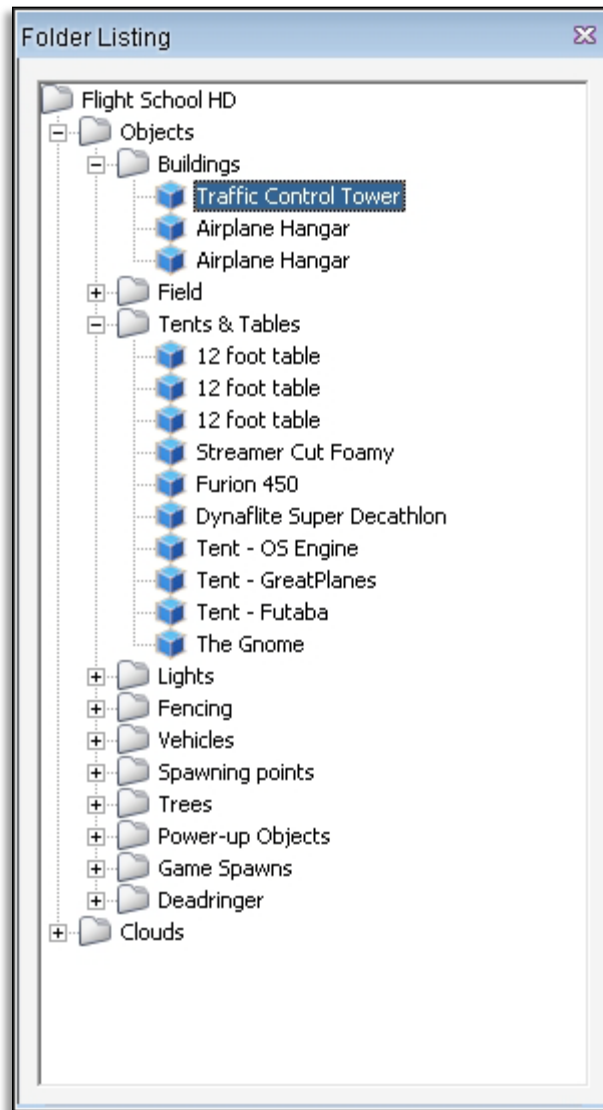
This menu item resets the positions of the airport editing windows back to their default locations. Additionally, if you have removed any of the default windows, they will return to the screen at this time.

Utilizing the Editor

Opening the airport editor reveals four distinct windows. For the purpose of clarity, we will examine each window individually. It is, however, important to note that these windows interact with one another.

Folder Listing Window-

The Folder Listing window consists of the folders and items (objects) that comprise the currently selected airport.



To determine what items are contained within the Objects and Clouds folders, click on the **[+]** (plus) or double-click on the name itself (e.g., Objects). Doing so brings up the various objects and sub-folders that are contained within the folder.

As denoted by the **[+]** (plus) symbols, these folders, in turn, also have another level. Again, to open these respective levels, click on the **[+]** (plus) icon or double-click the folder name.

Alternatively, clicking on an object in the scene will highlight the respective object. It will also open the folder that contains the object. The converse is also true; clicking the folder or object in the Folder Listing menu will highlight the respective item as well.

If you wish to move an object from one folder to another, mouse click and hold the object to be moved. Next, drag the object to the desired location (folder) using the mouse and release. The object will be listed at the bottom of the folder.

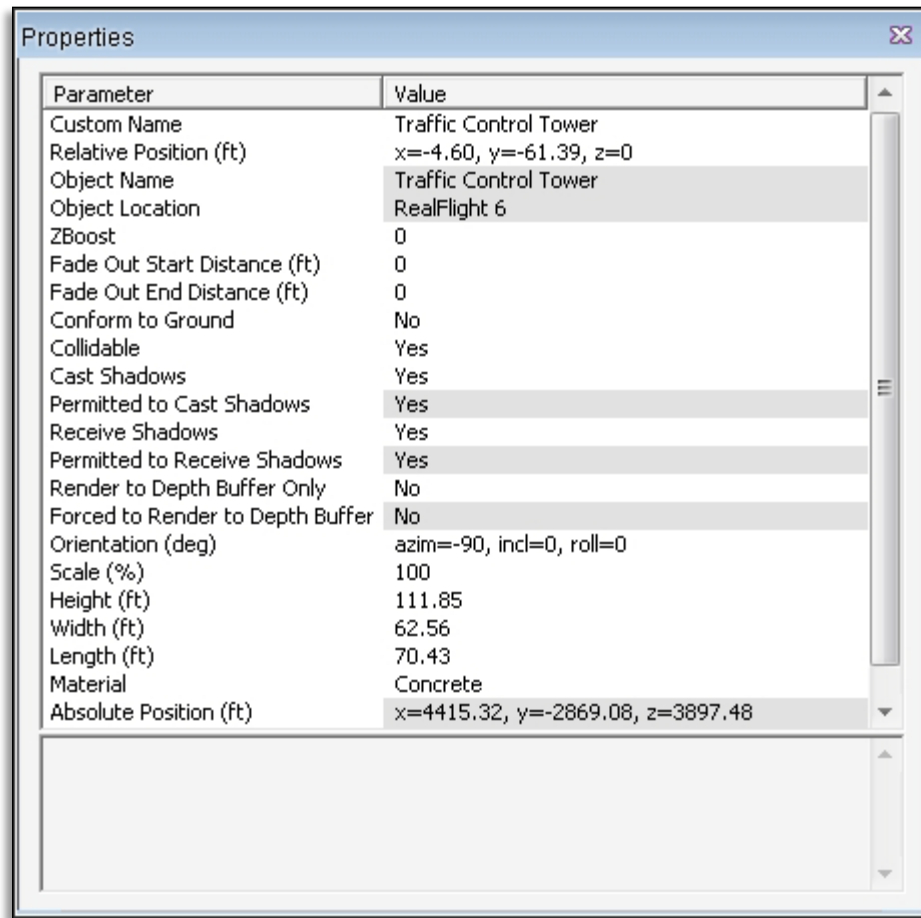
Please note: This action removes the object from the original folder.

You may use either of two methods to delete an object from the folder. First, you can highlight the object or sub-folder in the Folder Listing and press the **Delete** key on the keyboard. Second, with the object or sub-folder highlighted, right click and select the **Delete Object** pull-down option.

Properties Window-

The Properties window indicates the detailed information for the item highlighted in the Airport Editor window. The contents of the Properties window may vary depending upon the selection in the Folder Listing window.

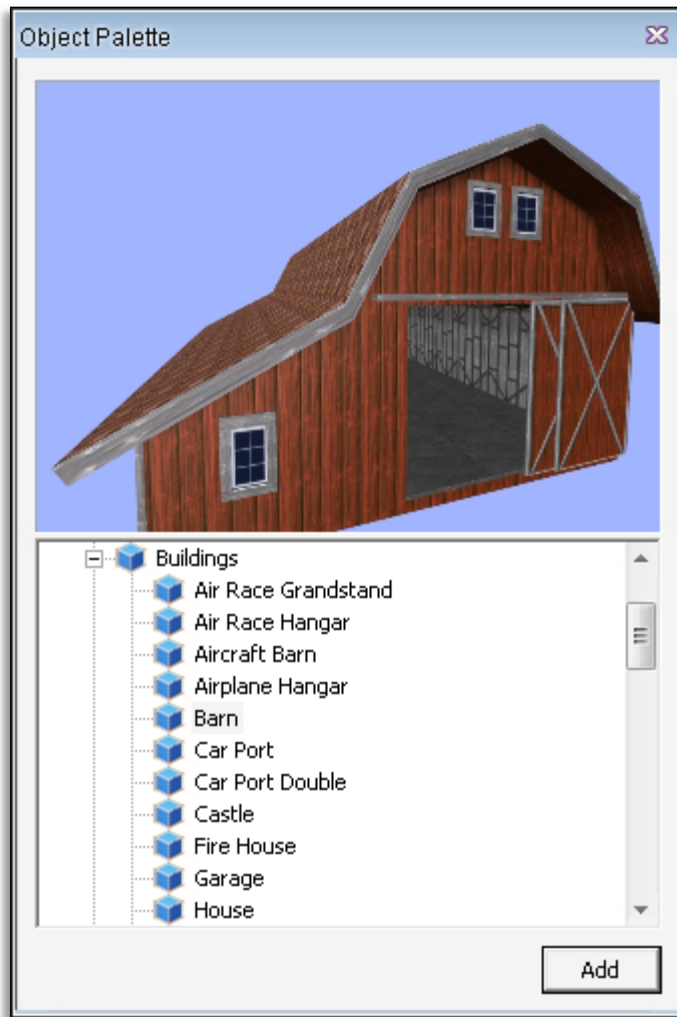
The example below indicates what is displayed if the flying site's root or top-level folder is highlighted. Regardless of what is selected, the Properties are all very similar in nature and in their method of modification.



An asterisk to the left of an item indicates that it has been modified. Right clicking the item will bring up the Restore Original Value or Set to Default Value options.

Object Palette Window-

The Object Palette window is used to add a new object or objects to the airport. The object window consists of two separate sections: the preview box in the top section of the window, and the objects list in the bottom section.



All objects are grouped according to their root directory. Within the root directory, the grouping is further refined. For example, you will find all available benches in the Benches, Chairs, and Tables group. This, of course, assumes that you are utilizing the Product, Type, or Name as determined by the Add Object Grouping Selection in the Options menu.

Each object group is preceded with a [+] (plus) and an icon. The [+] (plus) indicates that there is another expansion level, or selection, available to you. Clicking on the [+] (plus) or double-clicking the respective root directory name (e.g., RealFlight 7) will bring forward the pull-down menu of the items contained within the specified folder.

For example, if you wanted to add a bench to the current airport, take the following steps:

1. Click on the **[+]** (**plus**) icon in front of the Benches, Chairs and Tables group (or, double-click the group name itself). This reveals the next expansion level.
2. From the expansion list, select the **'Bench'** object. The selected object appears in the preview box.
3. Click the **Add** button, which adds the object to the scene.

You will find additional information pertaining to object placement, positioning, etc., in the Properties section of this chapter, which follows.

You may use several available methods to change the location of an object in the airport. To use the drag and drop method, click on the object to highlight it, as shown below. Once you have highlighted the object, press and hold the mouse button. Move the mouse to the desired location, then release the button to drop the object in the new location.

With the object highlighted, right click the mouse elsewhere in the scenery. This brings up a pop-up menu with several options. To move the selected object, point the mouse to the location that you desire and click the **Move Here** option.

RealFlight 7 also allows you to easily replicate the selected objects. To do so, hold the 'Ctrl' key down, click and hold the mouse button and use the mouse to drag the object to a new location. You will see that the original object stays in place. Release the mouse button and the 'Ctrl' key to drop the new item in place.

Once you have added an object to the airport, you can modify it freely. Refer to the Properties Window – Object Selection section for information on how to do so.

Pilot Preview-

This window provides you with the ability to view the scene from the pilot's perspective. It is very useful when editing PhotoField airports.



The number of pilot perspectives available varies dependent upon the selected scene. For example, RealFlight Ranch offers: Runway Center, Runway End and Helipad as the viewing options. To select from these options, open the Control Objects in the Folder Listing. Use the up/down arrow keys on the keyboard or the mouse to select the desired perspective.

It is also possible to modify the selected vantage points. For example, you may Zoom In and Out, or simply scan the horizon. Note that in order to modify the vantage point, the Pilot Preview window must be the active window. To ensure that the Pilot Preview window is the active window, simply click on, or in, this window.

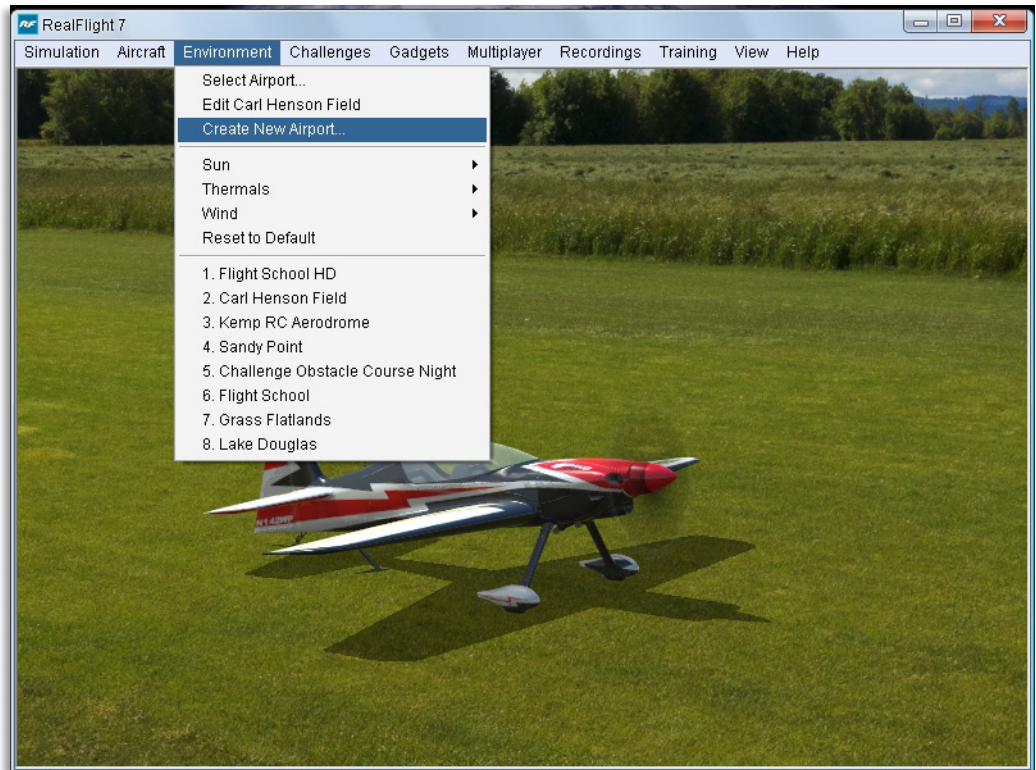
To zoom in, press the **[+] (plus)** key on the keyboard. To or zoom out, press the **[-] (minus)** key on the keyboard.

In most cases, you can also use the scroll wheel on the mouse to zoom in and out on the scenery.

RealFlight also allows you to scan the scene. To do so, press and hold the mouse button. Moving the mouse will shift the scenery.

Create New Airport

This menu enables you to create an entirely new airport, starting with a fresh canvas. The FlexiField flying site editor provides you with virtually unlimited editing options, limited only by your imagination.



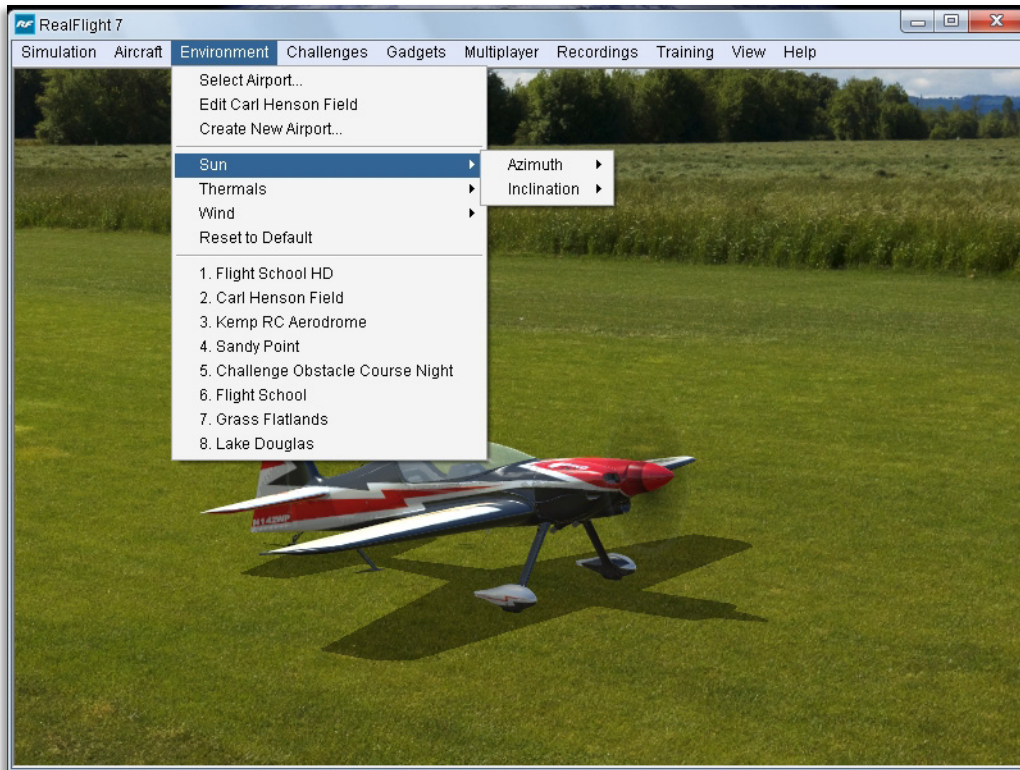
The options available to you when creating an airport are identical to those found in the section pertaining to the airport editor described previously. As such, we will avoid duplicating these instructions. Instead, we encourage you to experiment with the options, settings, and choices as you see fit.

After you have finished creating your airport, click the **File** menu and save the airport. The airport name will appear in your custom airports folder in the RealFlight 7 directory.

Sun-

RealFlight 7 gives you the ability to adjust the position of the sun in the sky. By changing the Azimuth, you can rotate the sun around. Change the Inclination to adjust

how high in the sky the sun should be, or turn day into night by moving the sun below the horizon.



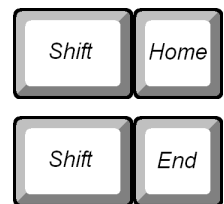
Please note, the sun settings are not applicable at PhotoField flying sites.

Adjusting the Sun Azimuth-

If you customize an airport and find that the sun is always in your flight path, adjusting the sun's azimuth is a good way to move it around the sky, out of your way.

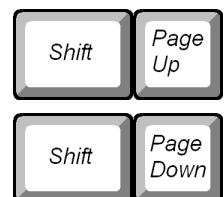
To adjust the azimuth, select the **Sun** menu. This will bring forth the **Azimuth** and **Inclination** options. Highlight the **Azimuth** menu item in the pull-down selections. To rotate the sun to the right, click **Increase**. Clicking **Decrease** will rotate the sun to the left.

When altering the azimuth, the simulation temporarily displays the new location in the lower left corner of the window.



Adjusting the Sun Inclination-

To position the sun higher in the sky, or set it below the horizon, modify the inclination.



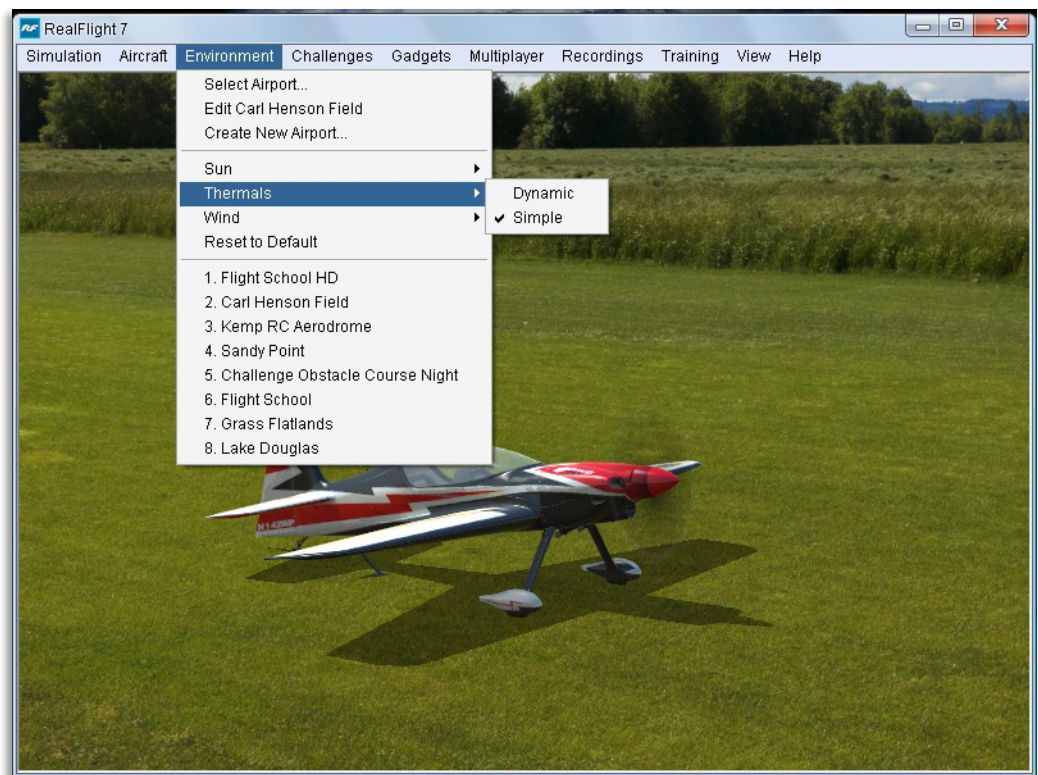
To adjust the inclination, select the **Sun** menu. This will bring forth the Azimuth and Inclination options. Highlight the **Inclination** menu item in the pull-down selections. To raise the sun higher in the sky, click **Increase**. Click **Decrease** to lower the sun, or to set it below the horizon to make it night time.

When altering the inclination, the simulation temporarily displays the new location in the lower left corner of the window.

At night time, RealFlight 7 will automatically enable lighting effects on the objects and aircraft that offer the lighting abilities.

Thermals-

Thermals add to the realism in the RealFlight environment. A thermal is a column of rising air that is hotter than the surrounding air. Thermals affect all aircraft, but they are most important to gliders and soaring aircraft, as thermals assist them in obtaining additional altitude.



RealFlight 7 offers two types of thermals.

Dynamic-

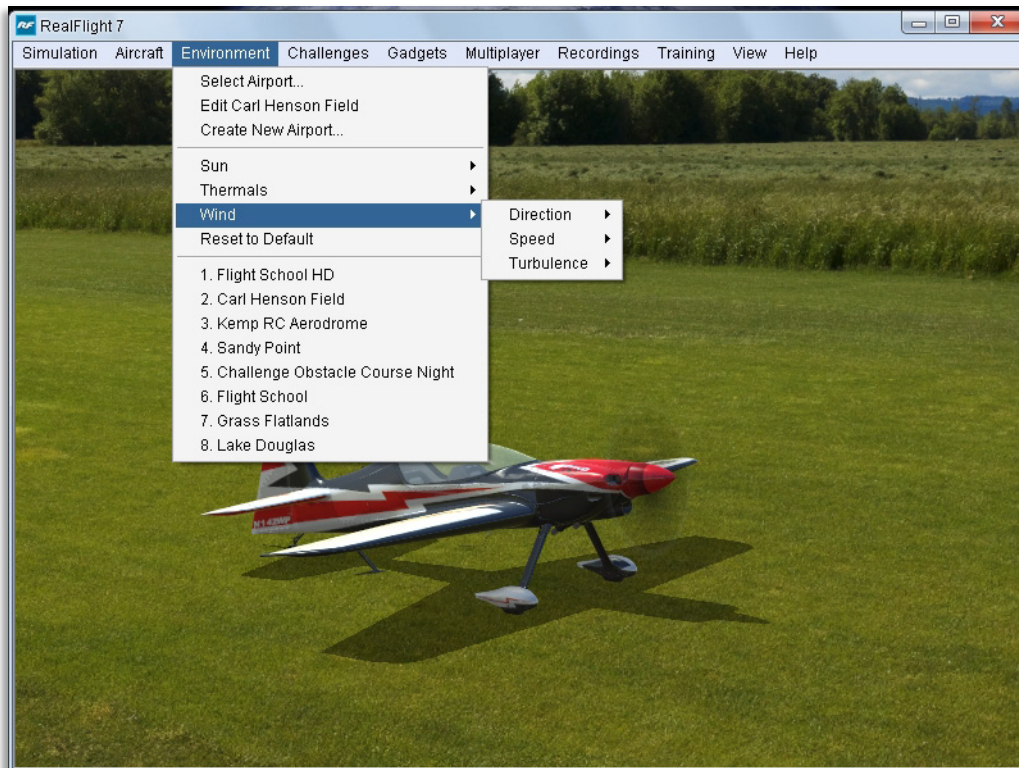
Dynamic thermals are most realistic. These thermals can appear anywhere in the environment, just as they would in the real world. The simulation will automatically generate thermals when the Dynamic setting is selected.

Simple-

Unlike dynamic thermals, these type of thermals are static or stationary and do not move around the environment. Only the thermals that were designed into the airport are active.

Wind-

RealFlight 7's TruFlo Wind Dynamics offers the most realistic wind model of any R/C simulator. Its components work together to capture this complex, ever-changing force with unmatched realism. Just as it would at the field, your model will encounter a variety of wind forces as it soars across the skies in RealFlight. Sailplane enthusiasts will appreciate the lifelike effect of the winds as they follow the drafts on the slopes and hills of RealFlight 7.



RealFlight offers you the ability to adjust the speed, direction, and turbulence of the wind. To access the Wind settings, click on the **Environment** menu, followed by the **Wind** menu item. Several methods may be utilized to adjust the wind speed and direction.



Adjusting the Wind Direction-

RealFlight 7 allows you to alter the direction (expressed in degrees) of the wind. This function is perfect for practicing crosswind landings.



Selecting the **Wind** menu item brings up the Speed, Direction, and Turbulence options. To adjust the wind direction, highlight the **Direction** menu item in the drop-down selections. To increase the degree of wind direction, click on the **Increase** option in the drop-down selections. Likewise, clicking the **Decrease** option lowers the degree of wind direction. The wind direction degree increases and decreases in 15-degree increments.

When altering the wind direction, the simulation temporarily displays the new wind direction, in degrees, in the lower left corner of the window.



Adjusting the Wind Speed-

Increasing the wind speed is an ideal way to learn to fly in less-than-perfect wind conditions that frequently occur at an R/C field. To adjust the speed of the wind, select the **Wind** menu. To adjust the speed of the wind, highlight the **Speed** menu item in the pull-down selections. To increase the speed of the wind, click on the **Increase** option in the pull-down selections. Clicking the **Decrease** option reduces the wind speed.



When altering the wind speed, the simulation temporarily displays the new wind speed in the lower left corner of the window.



Adjusting the Turbulence-

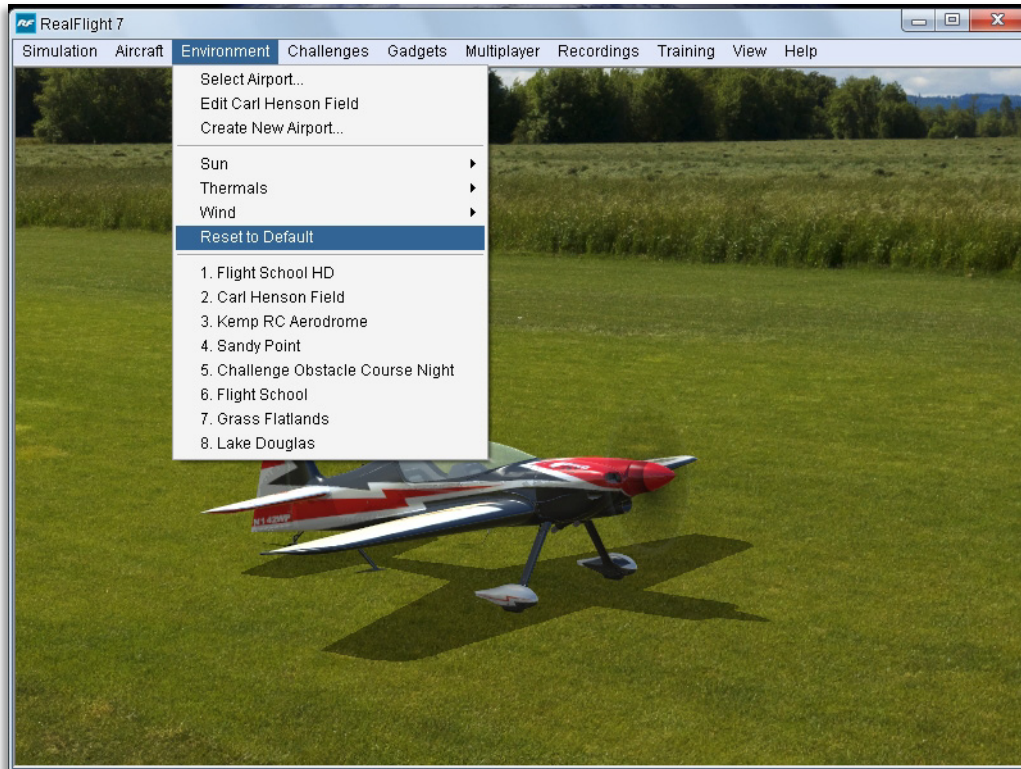
Increasing the turbulence is another ideal method for learning to fly in challenging conditions. Modelers and full-scale pilots alike will all agree that winds are not constant. This setting accurately reflects the lifelike effects of turbulence.



To adjust the turbulence, select the **Wind** menu, and highlight the **Turbulence** menu item in the pull-down selections. To increase the speed of the turbulence, click on the **Increase** option in the pull-down selections. Clicking the **Decrease** option reduces the turbulence.

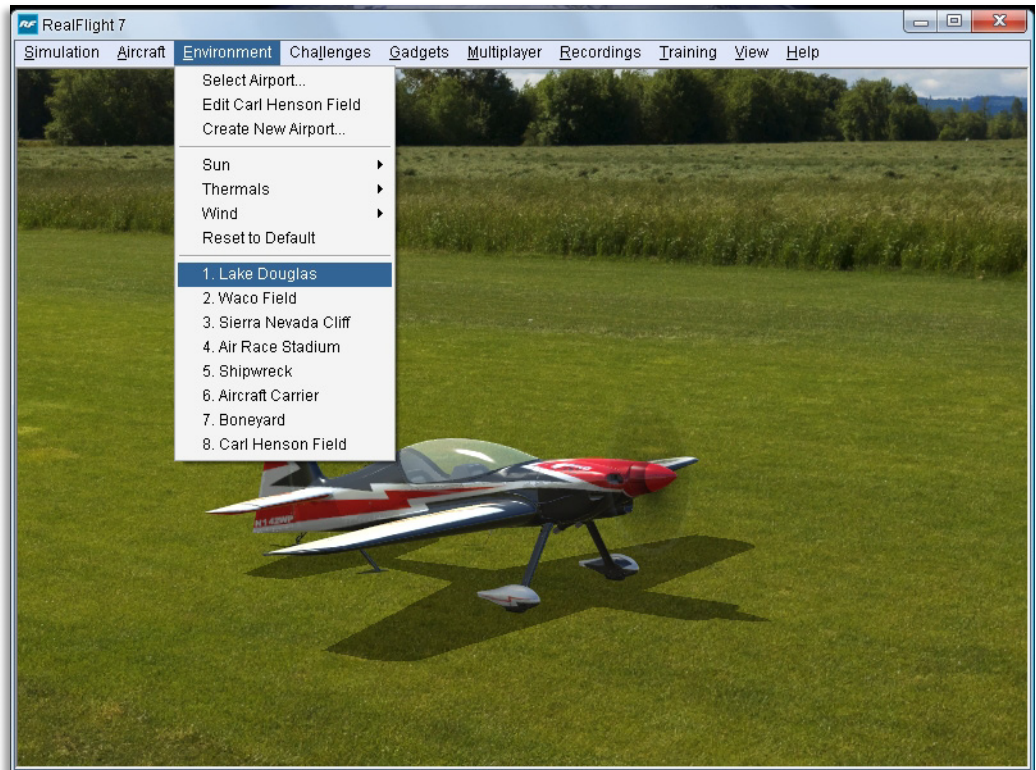
Reset to Default

Selecting **Reset to Default** will adjust all weather and environment parameters back to their default settings for the currently selected flying site.



Airport MRU

If you have previously selected an alternative flying location, or locations, you will note that it will appear on a list in the Simulation menu. This list is at the very bottom of the menu and is commonly referred to as a Most Recently Used, or MRU list. It is limited to the eight most recently selected locations. If you wish to fly at one of these locations, simply click on the respective location and it will begin loading.



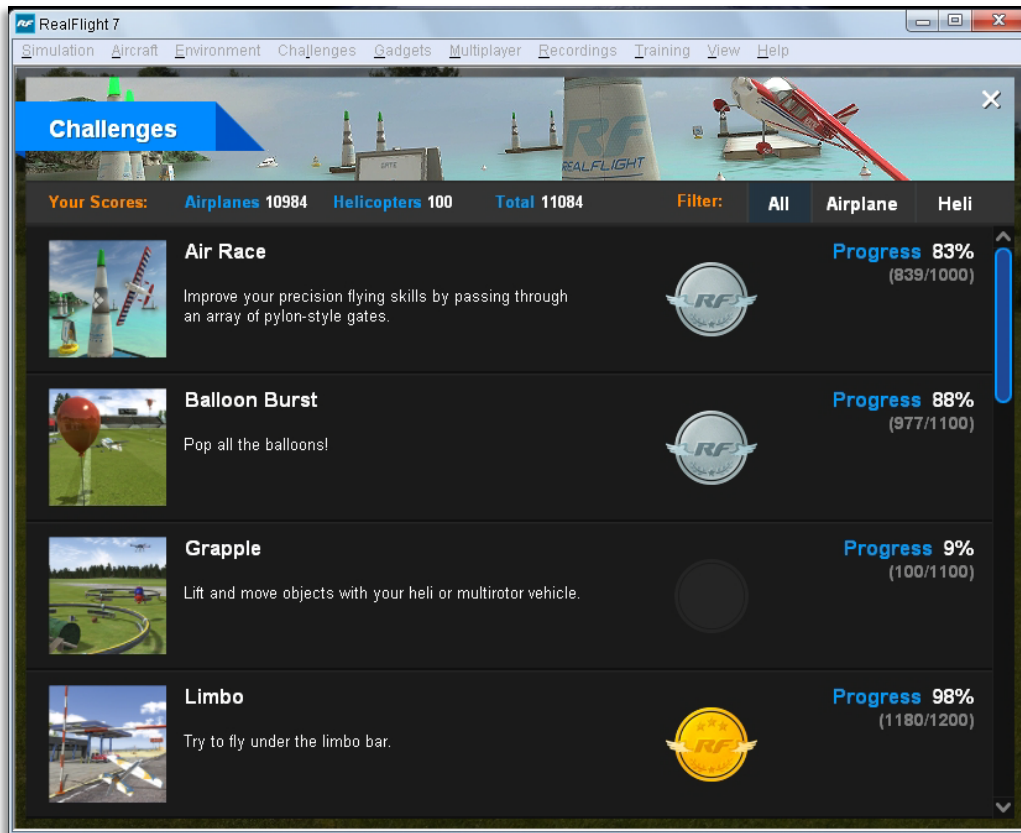
Challenges Menu

Test and improve your flying skills with exciting pilot challenges

The Challenges menu allows you to practice and improve your flying skills while adding some excitement and fun along the way. There are a variety of challenges available with rewards that unlock as you complete more difficult levels.



Clicking **Select Challenges** menu item will display the following screen:



Information and a number of options are available to you from this screen. The most obvious is the list of the different types of challenges available (Air Race, Balloon Burst, etc.). Displayed with each Challenge are any medals that you might have won, along with your progress.

Along the top, you will see your current score tally for Airplanes and Helis, as well as a total.

Filter-

In the upper right hand corner are filter options for the challenge list. If, for example, you wish to view only the challenges that require flying a helicopter, click **Heli** in the Filter section.

Air Race

Air Race challenges will put your aerobatic flying skills to the test while timing your proficiency. You will be given any number of gates that you must fly through.



As you improve, the level of difficulty increases. More gates, more aerobatic aircraft, and strict aircraft orientation through the gates will be added. Points are awarded based on the time it takes you to complete the course.

As you complete levels, more levels will become available. Scoring enough points may award you with a new medal, more challenges, or even more aircraft to fly in RealFlight.

Balloon Burst

Flying from a chase camera, you're required to pop all the balloons at the field. The faster you can do this the more points you will earn.



As more difficult levels become available, you may be required to fly different aircraft or forced to search for hidden balloons.

Grapple

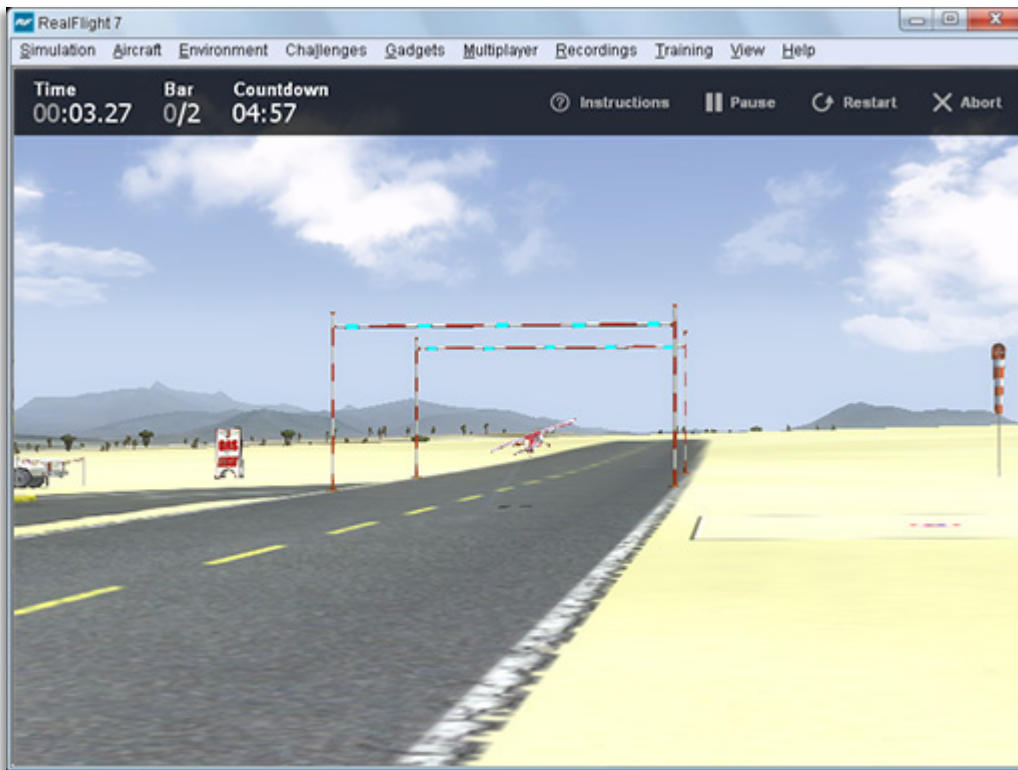
For those that wish to test their skills at flying rotor aircraft, the Grapple challenges are a must.



Using the Dual Rate switch on the InterLink Elite, or channel 5 on your radio, you will be able to pick up objects and release them. Each level will require different tasks for you to perform. Points are awarded based on how quickly you can complete each level.

Limbo

A true pilot isn't recognized until they can prove themselves with high speed low passes. The Limbo challenges can test who has the guts to get low and fast.



As you progress to more difficult levels, you may find objects in your way, more aerobatic aircraft to fly, or even inverted flight requirements. Like many other challenges, points are awarded based on the time it takes to complete each level.

Spot Landing

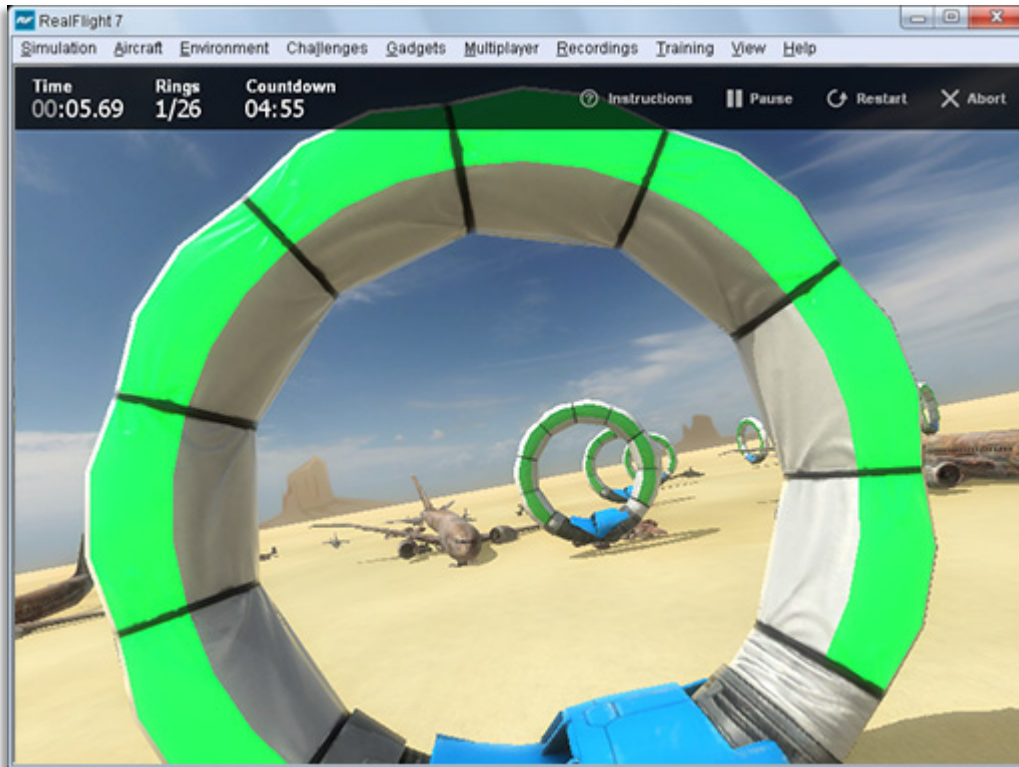
As the old saying goes, “Take-offs are optional, landings are mandatory.” How well can you land?



With the Spot Landing challenge, you must be able to land accurately on a target on the runway. The closer to the center of the target you land the more points you will be awarded.

Ring Race

For the real thrill seekers, try jumping into the cockpit and try your hand at Ring Race.



From the aircraft's point of view, fly through a course of rings. Each level requires quicker reactions from more aerobatic aircraft, on more difficult courses.

Like many of the other challenges, points are awarded by how quickly you can fly through the course.

During Flight

While competing in a challenge, a number of options are available to you. First, in the upper left corner is information pertinent to the current challenge. It will display your current time or the next gate for an Air Race.

Upper right hand corner of the screen are four buttons:

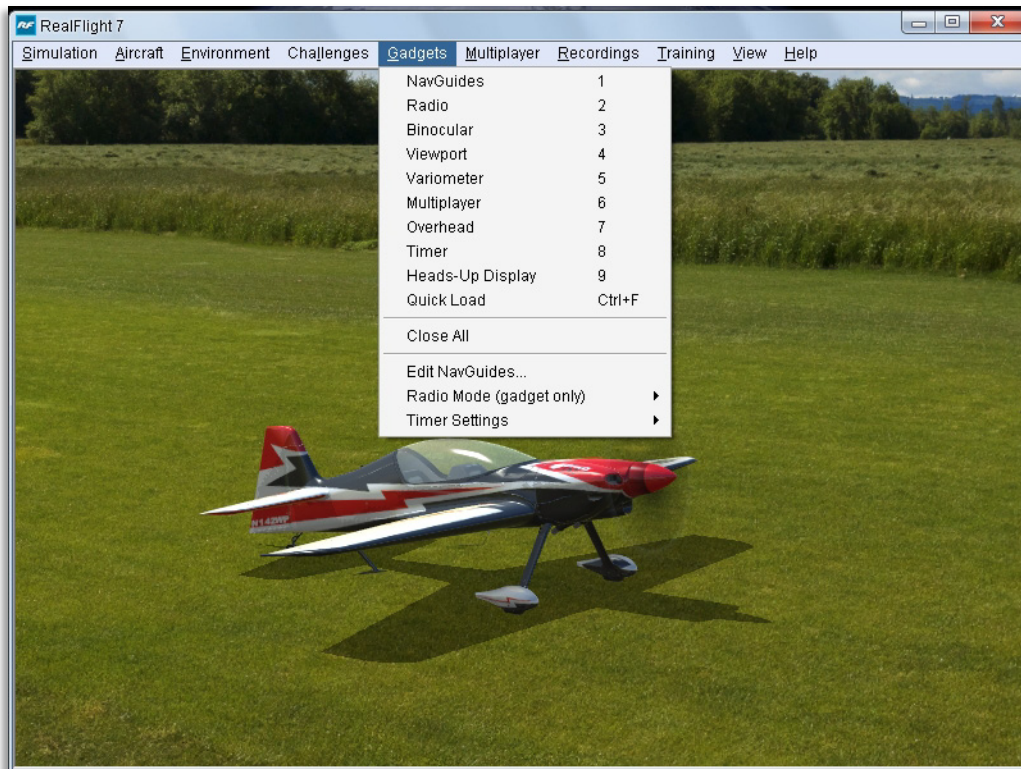
- Tutorial – This will display detailed information on how to complete the current challenge you are flying.
- Pause – As the name implies, this will pause your flight. Click the **Resume** button that is now visible to continue.
- Restart – Clicking this will return you to the Begin screen where you can view your current high score, description of the current challenge, or return to the level selection screen.
- Abort – If you wish to end the challenge and return directly to the level select screen, click **Abort**.

Gadgets Menu

Determine the method of control, map the channels to your liking, and calibrate the controller.

The Controller menu allows you to select the method of control, calibrate the controller, and map the channels for your desired method of control for RealFlight 7.

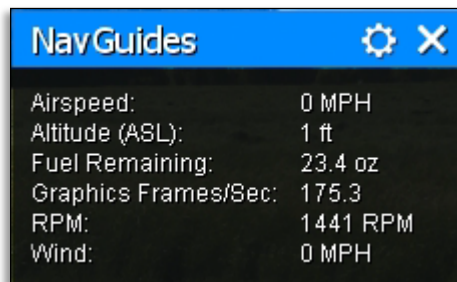
A Gadget is an on-screen display that provides you with information pertaining to a certain aspect of your simulation. To access the Gadgets menu item, click the **Gadgets** menu title. This will open the list of available gadgets for the simulation.



1

NavGuides

A NavGuide is an on-screen display that allows you to view some basic information pertaining to your aircraft. If you wish to alter the contents of the NavGuide, please refer to the Edit NavGuides... section later in this chapter.



To access the NavGuides, click the **Gadgets** menu title, followed by the **NavGuides** menu item.



You may also load the NavGuides using the InterLink Elite with the QuickSelect buttons. Press the **Menu/Select** button. Then press down twice on the **Data Lever** until the NavGuides tab is highlighted. The NavGuides tab looks like an aircraft gauge. Press the **Menu/Select** button again to activate the NavGuides. Repeat these steps to remove the NavGuides from the screen.

When the NavGuides are active, an overlay screen will appear on your display. This screen displays the NavGuides information to you.

If you do not wish to view this information, double-click on the **title bar** of the display box. This hides the information. To view it once again, simply double-click the **title bar**.

Clicking the **Gear** icon in the title bar will open the NavGuide settings and options. See page 198 for more information.

Clicking on the **'X'** in the title bar of the frame will remove it from the screen, entirely.

Items included by default in the NavGuides are the following:

Altitude (ASL)-

This option displays the altitude for the respective aircraft above sea level. Even though the aircraft may be taxiing on the runway, the altitude may reflect hundreds or thousands of feet, if applicable.

Heading-

This option displays the heading of the aircraft. The heading is displayed in degrees, as they would appear on a compass. "0" degrees is North, "90" degrees is East, "180" degrees is South and "270" degrees is West.

Airspeed-

This option displays the airspeed of the aircraft.

RPM-

This option indicates the current revolutions per minute, or RPM's, for the engine.

Graphics Frames/Sec-

This is an abbreviated version of Frames per Second, or FPS. While the data displayed is not relevant to your aircraft, it is used to provide you with feedback on how your computer is performing at any given time. The higher the frames per second, the smoother the simulation will appear.

Wind-

This option displays the current wind speed at the flying site.

2

Radio

The on-screen radio display is useful for many facets of flight. For example, when used in conjunction with Virtual Flight Instruction, this allows you to see real-time control input from the professionals. Observing the link between controller movements and aircraft performance will advance your knowledge and understanding of a maneuver.



To access the Radio, click the **Gadgets** menu title, followed by the **Radio** menu item.



You may also load the Radio using the InterLink Elite with the QuickSelect buttons. Press the **Menu/Select** button. Then press down three times on the **Data Lever** until the Radio tab is highlighted. Press the **Menu/Select** button again to activate the on-screen Radio. Repeat these steps to remove the Radio from the screen.

If you click the on-screen radio, the entire viewport is displayed, including the title bar.

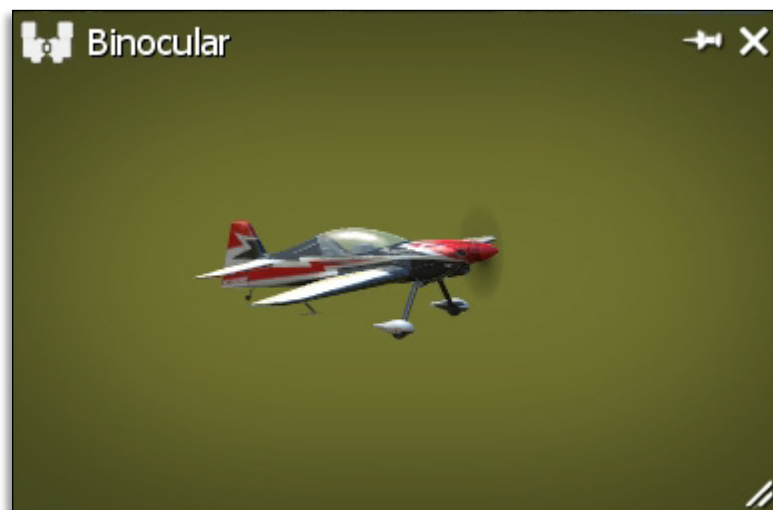
To resize the viewport, position the cursor over the lower right corner of the viewport's frame. Using the mouse, drag the frame according to your wishes. If you drag it downward, the vertical size of the viewport will increase. Dragging the frame to the right or left increases or decreases the width of the viewport respectively.

Clicking on the 'X' in the title tab of the frame removes it from the screen.

3

Binocular

The Binocular option will show a perfectly zoomed aircraft, as if you were looking through a pair of binoculars. The background of the viewport box becomes transparent. This provides a visual indicator alerting you that you are using "binocular vision."



The Binocular option is a great way to see the control surfaces on an aircraft that is too far away to see in the main view. Although not realistic, it does help to see the effects of control input.

The Binocular view will automatically hide when the aircraft is close enough to be seen in the main window. The Binocular icon will be visible to indicate that this gadget is still active. The view will reappear when the aircraft flies off into the distance. If you wish for the Binocular view to remain on the screen permanently, simply click the thumbtack button in the gadget's title bar.

To access the Binocular menu item, click the **Gadgets** menu title. Next, click **Binocular**.



You may also load the Binocular viewport using the InterLink Elite with the QuickSelect buttons. Press the **Menu/Select** button. Then press down four times on the **Data Lever** until the Binocular tab is highlighted. Press the **Menu/Select** button again to activate the Binocular viewport. Repeat these steps to remove the Binocular viewport from the screen.

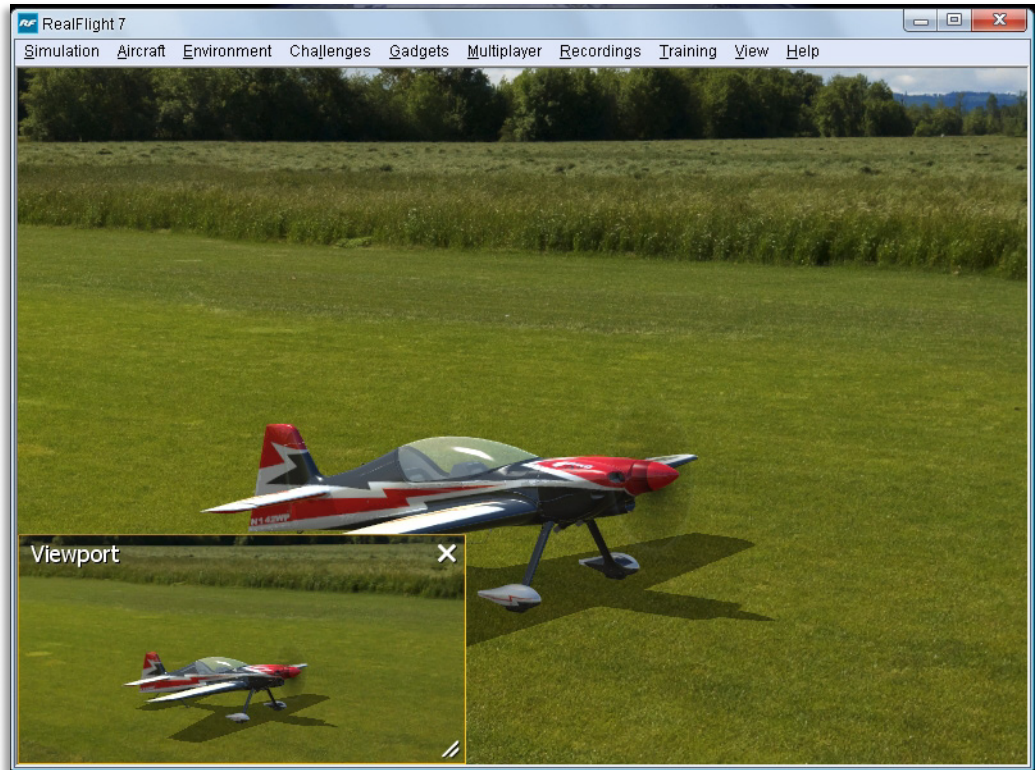
To resize the viewport, position the cursor over the arrow indication found in the lower right corner of the viewport's frame. Click and hold on the arrow. Using the mouse, drag the frame according to your wishes. If you drag it downward, the vertical size of the viewport will increase. Dragging the frame to the right or left increases or decreases the width of the viewport accordingly.

Clicking on the 'X' in the title tab of the frame removes the frame from the screen.



Viewport

The Viewport menu item allows you to open up a smaller window to you can adjust independently from the main simulator screen. This works much like a picture-in-picture features found on many TVs.



Once you create a new viewport, you can resize or reposition it by dragging with your mouse. You can also fully adjust all the viewport's properties (zoom level, vantage point options, etc.), independent of any properties of the main window.

To access the Viewport menu item, click on the **Gadgets** menu. Then select **Viewport**.



You may also load the Viewport using the InterLink Elite with the QuickSelect buttons. Press the **Menu/Select** button. Then press down five times on the **Data Lever** until the Viewport tab, pictured with a computer monitor, is highlighted. Press the **Menu/Select** button again to activate the Viewport. Repeat these steps to remove the Viewport from the screen.

To change the vantage point options and features, use the commands found in the View menu. Ensure that the viewport you wish to modify is the active viewport, or the modifications will not take effect. Alternatively, you may click the left or right arrows that appear at the bottom of the Viewport. This options appears when you move the

Note that some camera angles are not available at PhotoField airports. The Viewport will display static if these cameras are chosen. To utilize these camera angles, switch to a flying site that is not a PhotoField.

Clicking on the 'X' in the viewport's title bar removes it from the screen.

5

Variometer

A variometer is an instrument designed to indicate the rate of climb or descent of an aircraft. The variometer is useful to pilots flying powered aircraft so they can ascertain that level flight is maintained. This is useful during turning maneuvers. Glider pilots typically make the most use of a variometer, to help determine the areas of rising or sinking air currents.



To access the Variometer, click the **Gadgets** menu title, followed by the **Variometer** menu item.

The variometer available in RealFlight also offers an audio indicator, much like the real instrument. As the rate of climb increases, the pitch in the audio tone will increase, as well. The opposite holds true, as the descent of the aircraft increases, the pitch in the audio tone decreases accordingly.

If you wish to turn off the audio queues, click the button with the **speaker symbol** in the lower right corner on the variometer. To turn the audio back on, click the button once again.

The variometer in RealFlight 7 is split into two parts. The left side of the variometer includes a status meter which indicates whether the aircraft is ascending, descending or maintaining level flight. If the bar is in the green, the aircraft is rising. If it is in the red, then the aircraft is descending. If it remains stationary in the middle, the aircraft is maintaining its altitude. The farther the bar moves from the center, the faster the change in altitude. On the right, there are three readouts that offer the following information:

- Rate – This indicates the rate of change in altitude.
- ASL – This shows the altitude above sea level.
- AGL – This indicates the altitude above ground level.

Clicking the Variometer viewport will display the title bar and frame. Clicking on the 'X' in the title tab of the frame removes the frame from the screen.



Multiplayer

This gadget enables the Scoreboard, which offers a wealth of information about all the players connected to the multiplayer session, as well as details on the current game (if one is in progress).

For more information about the Scoreboard, see page 226.



Overhead

To help you track your location relative to the airport, use the Overhead gadget. This gadget, as the name suggests, gives you an overhead view of the airport with a small airplane picture representing your aircraft.



During multiplayer sessions, the Overhead gadget will show the location of all players. The color of the airplanes will match the color chosen in the Pilot Profile.

Note that the Overhead gadget is not available at PhotoField airports.

8

Timer

The Timer gadget is a simple stop watch to offer timing functions. This is especially useful for sailplane pilots that wish to time the duration of their flights.



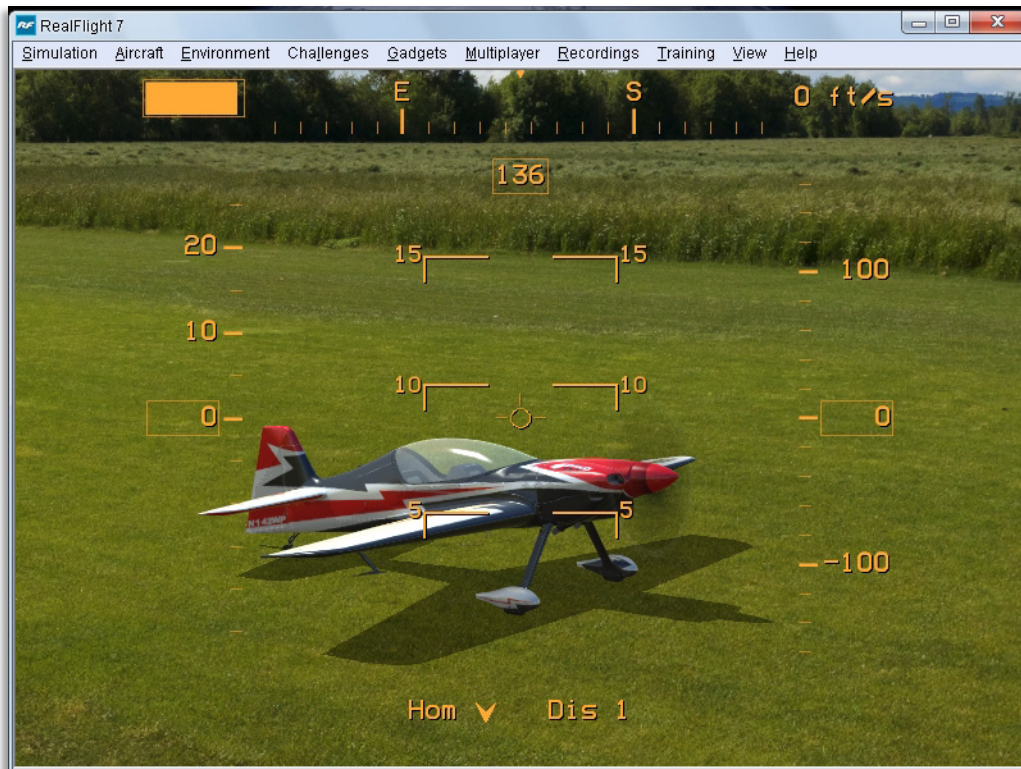
Clicking the Start/Stop button on the gadget will start and stop the timer. Reset will set the timer back to zero.

You may also change how the timer starts and stop. See *Timer Settings* below for more details.



Heads-Up Display

The Heads-Up Display (HUD) projects an FPV (First Person Video) or combat jet-like display over the screen that provides useful data in real time.



Information displayed by location on screen:

- Upper left – Fuel Remaining
- Top center – Heading
- Upper right – Variometer; rate of climb or decent.
- Left side – Airspeed
- Center – Pitch ladder, showing the aircraft's pitch and roll in relationship to the horizon.
- Right side – Altitude
- Bottom center – Direction and distance to your starting location.

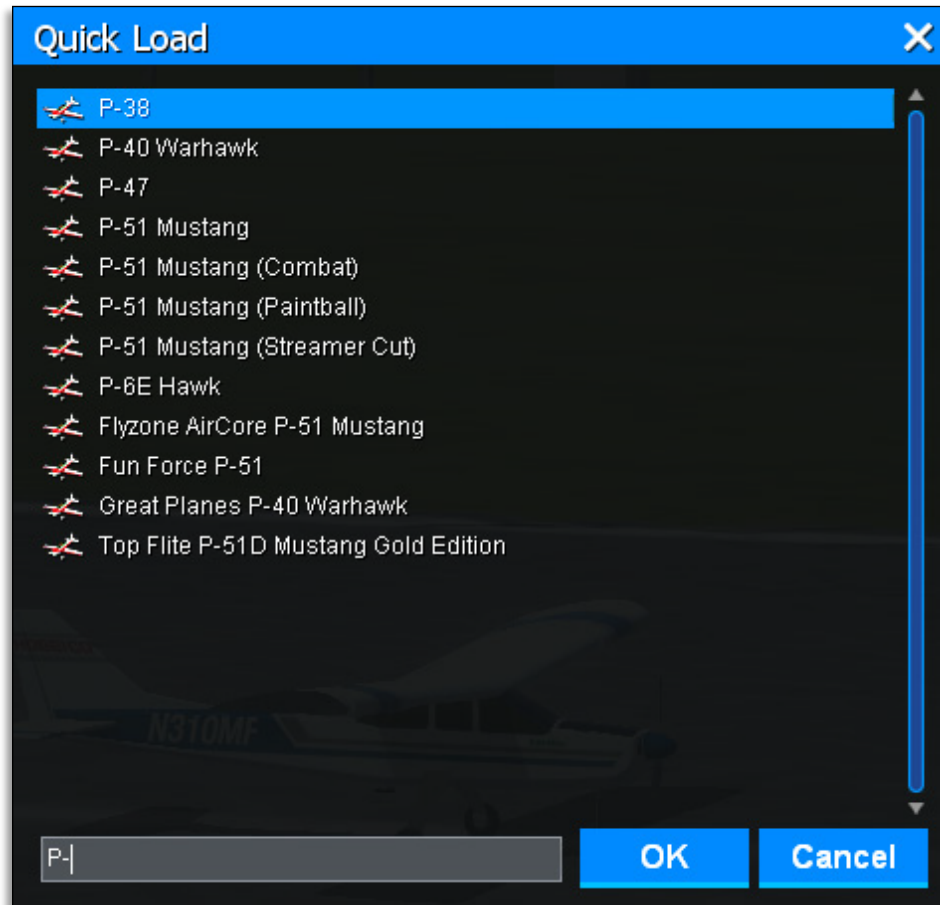
While the HUD can be displayed at any time, it's most useful when flying from the cockpit or nose views.

Ctrl

Quick Load...

F

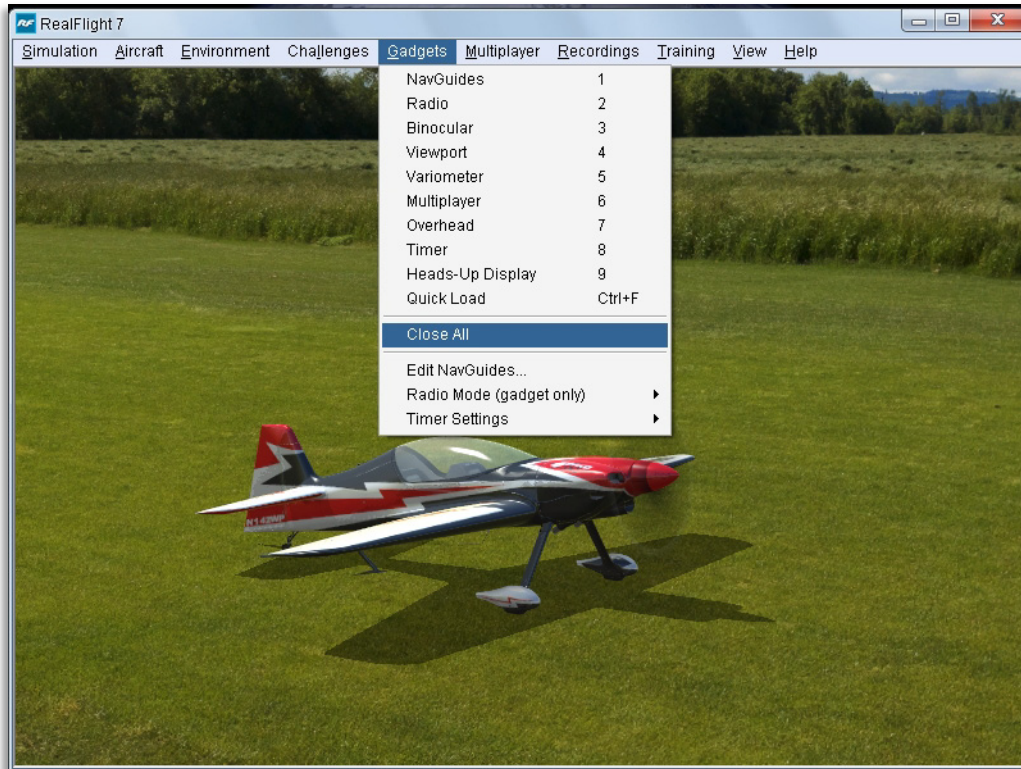
The Quick Load gadget allows you to rapidly search and select a new aircraft or flying site. Select **Quick Load** from the Gadgets menu, or press 'Ctrl + F' to display the following gadget:



To begin your search, begin typing the name of the aircraft or airport you wish to load. As you type, any aircraft or airport that is installed (including Expansion Packs) that match what you type will begin to appear. The more precise the search word, the narrower the selection of rows available. Select the aircraft or airport you wish to load, and then click **OK**.

Close All

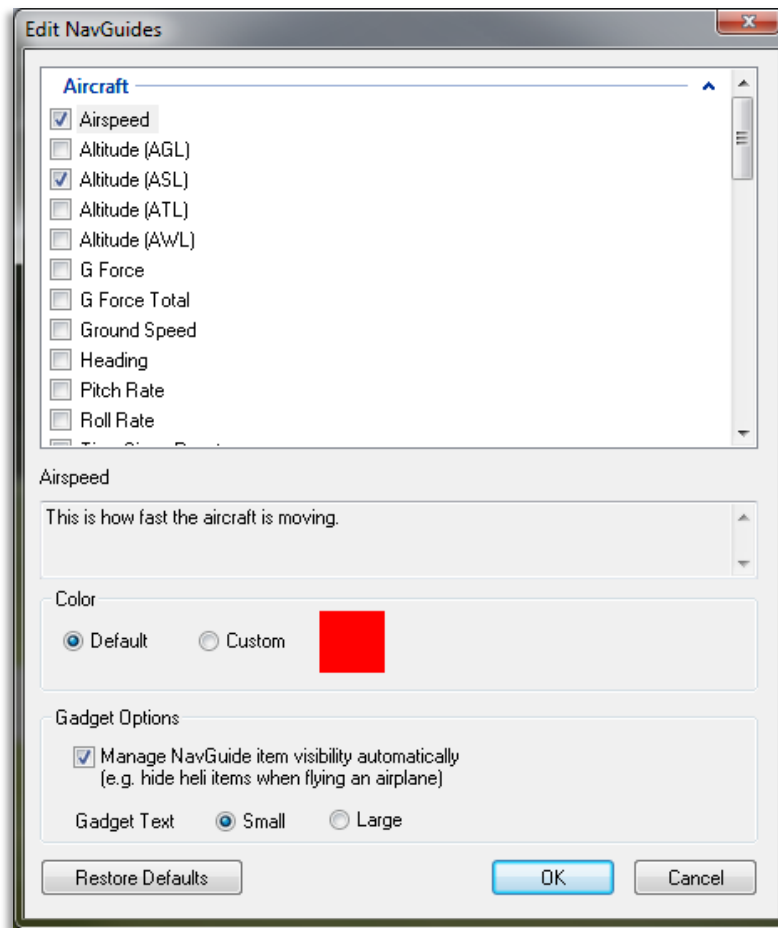
This menu item closes all open gadgets. It offers the user an easy method to clean up the screen without having to close each gadget separately.



Edit NavGuides...

This menu item allows you to modify the data displayed in the NavGuides box.

To access the Edit NavGuides feature, click the **Gadgets** menu title, followed by the **Edit NavGuides...** menu item.



Modifying the NavGuides-

To add any of the options from the top list to the NavGuides display, click in the checkbox next to the respective item.

The pane below the list of the Edit NavGuides dialog box contains a description of the item when selected.

The NavGuides available are listed in the following table:

Option	Description
Aircraft: Airspeed	Check this item to display the current airspeed of the aircraft.
Aircraft: Altitude (AGL)	Check this item to display the current altitude of the aircraft above ground level.
Aircraft: Altitude (ASL)	Check this item to display the current altitude of the aircraft above sea level.
Aircraft: Altitude (ATL)	Check this item to display the current altitude of the aircraft compared to the terrain below. This option does

	not account for water.
Aircraft: Altitude (AWL)	Check this item to display the current altitude of the aircraft above the body of water at the airport.
Aircraft: G Force	Check this item to display the gravitational load of the aircraft is experiencing as felt by the pilot.
Aircraft: G Force Total	Check this item to display the gravitational load of the aircraft is experiencing in any direction.
Aircraft: Ground Speed	Check this item to display the current ground speed of the aircraft.
Aircraft: Heading	Check this item to display the current heading of the aircraft. This heading is displayed in degrees, as they would appear on a compass. "0" degrees is North, "90" degrees is East, "180" degrees is South and "270" degrees is West.
Aircraft: Pitch Rate	Check this item to display the current rate of pitch for the aircraft.
Aircraft: Roll Rate	Check this item to display the current rate of roll for the aircraft.
Aircraft: Time Since Reset	Check this item to display the amount of time that has elapse since the last time the Reset button has been pressed.
Aircraft: X Position of Aircraft	Check this item to display the current X position of the aircraft.
Aircraft: Y Position of Aircraft	Check this item to display the current Y position of the aircraft.
Aircraft: Yaw Rate	Check this item to display the current rate of yaw for the aircraft.
Engine: Battery Remaining	Check this item to display the remaining capacity in the battery pack.
Engine: Current Draw	Check this item to display the amount of current that the motor is draining from the battery pack.
Engine: Energy % Remaining	Check this item to display the amount of fuel or battery charge remaining, as a percentage.
Engine: Fuel Remaining	Check this item to display the amount of fuel remaining.
Engine: Motor Efficiency	Check this item to display the efficiency of the electric motor.
Engine: Power In	Check this item to display the amount of power being transferred to the electric motor.
Engine: Power Out	Check this item to display the amount of power being generated by the engine.
Engine: RPM	Check this item to display the RPM's of the engine. Please note: This measurement does not take into account any gear reduction which might be utilized.
Engine: Voltage	Check this item to determine the voltage across the electric motor.
Environment: Wind Direction	Check this item to display the direction that the wind is blowing.
Environment: Wind Speed	Check this item to display the velocity of the wind at the

	current time.
Environment: Wind Updraft	Check this item to display the velocity of the wind in the upward direction.
Helicopter: Main Rotor RPM	Check this item to display the current main rotor RPM of the helicopter.
Helicopter: Tail Rotor RPM	Check this item to display the tail rotor RPM of the helicopter.
Pilot: Distance to Aircraft	Check this item to display the current distance from the pilot to the aircraft.
Pilot: Field Of View	Check this item to display the field of view angle for the main window.
Pilot: Height (AGL)	Check this item to display the height of the pilot above the surface below, water or ground.
Pilot: Height (ASL)	Check this item to display the height of the pilot above sea level.
Pilot: Height (ATL)	Check this item to display the height of the pilot above the terrain, not including any body of water.
Pilot: Height (AWL)	Check this item to display the height of the pilot above the body of water at the airport.
Pilot: Look Direction	Check this item to display the compass direction in which the pilot is looking.
Pilot: Zoom Magnification	Check this item to display the amount of zoom being utilized; 1 is equivalent to normal eyesight.
System: Graphics Frame Rate	Check this item to display the number of times the screen updates per second.
System: Physics Frame Rate	Check this item to display the number of times the physics system updates per second.

Color-

This setting allows you to adjust the Color for the selected item when displayed in the NavGuide gadget. To select an alternate Color, first click the Custom option, and then click on the color swatch. This will open the color palette dialog and you may choose an alternate color for the item.

For example, highlight the Graphics Frame Rate in the NavGuides listing. Next, click the color swatch and select the desired color. The Graphics Frame Rate will now be indicated in the desired color.

Gadget Options-

The Gadget Options panel found at the bottom of the Edit NavGuides dialog affects all checked NavGuide options, not just the currently selected item.

Some NavGuide items are not relevant to the aircraft you are flying. For example, **Fuel Remaining** is not pertinent to an electric aircraft. In this case, you might check both **Fuel Remaining** and **Battery Remaining**, and then check the box labeled **Manage NavGuide item visibility automatically**.

RealFlight will then automatically hide the NavGuide item from the gadget that doesn't relate to the currently selected aircraft.

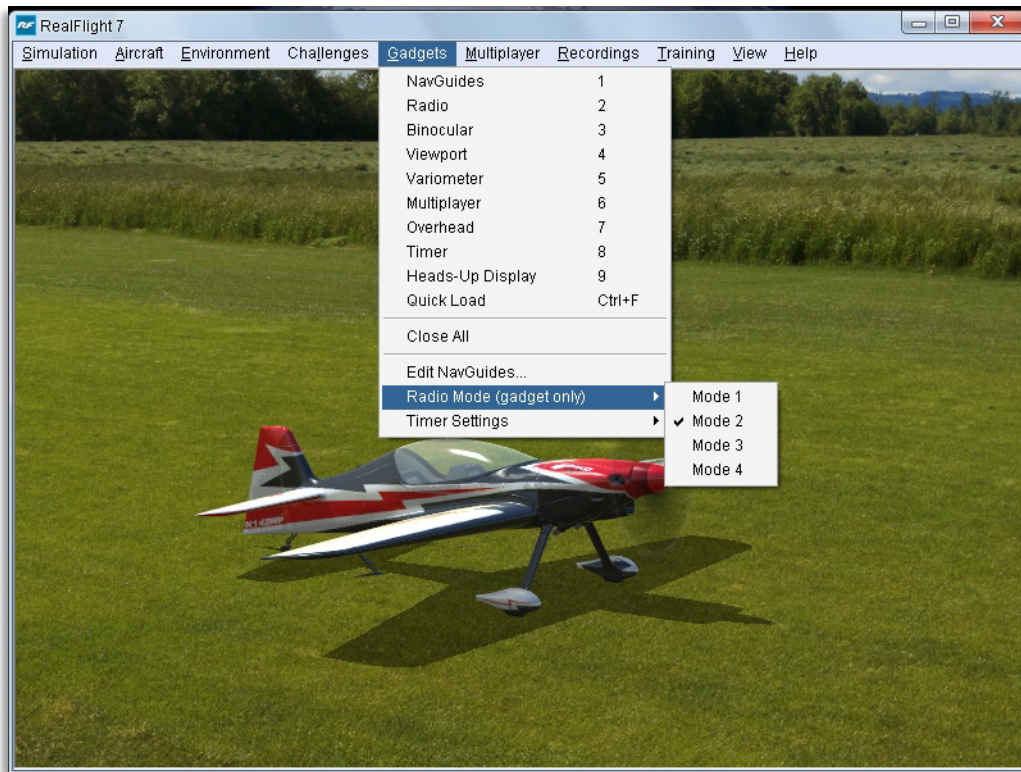
As the name suggest, the Gadget Text allows you to set the font size of the text on the NavGuide to either Small or Large.

Restore Defaults-

The **Restore Defaults** button returns all NavGuides to their default values and options.

Radio Mode (gadget only)-

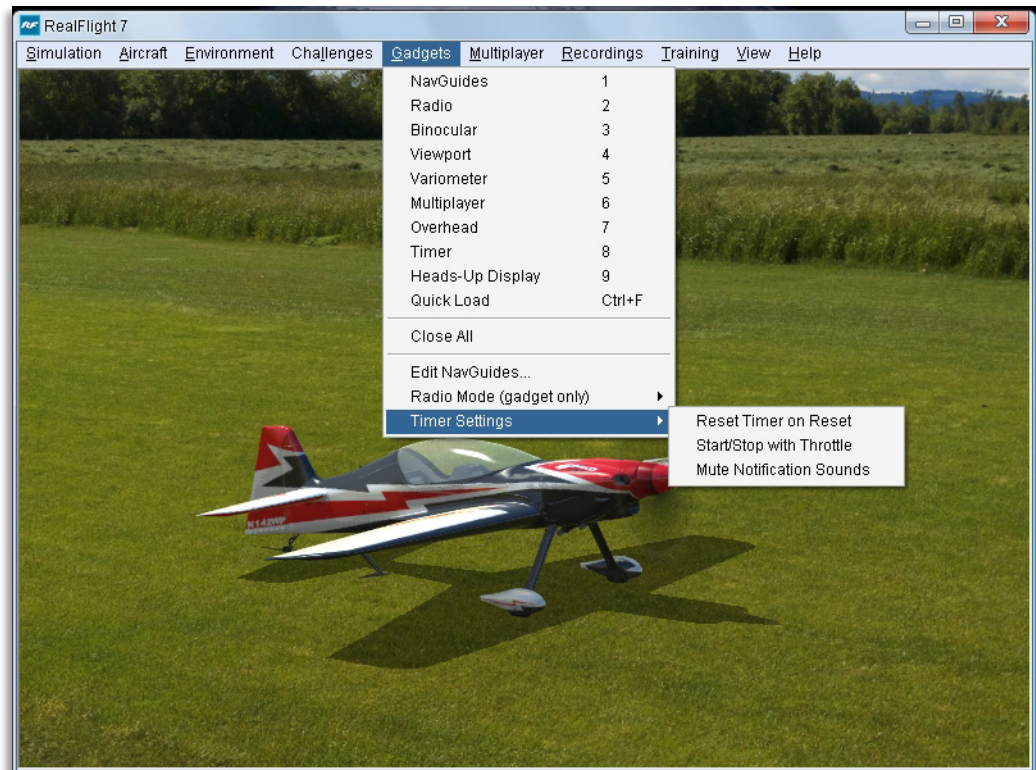
This option allows you to change the Mode in which the on-screen radio is displayed. For example, if you prefer to fly with the throttle and rudder on the left stick, and ailerons and elevator on the right stick, then you fly Mode 2. Some modelers prefer Mode 1. In this mode, the left stick controls the rudder and elevator; the right stick controls the throttle and ailerons.



Whichever mode you fly, you will want the on-screen radio to match. Select **Radio Mode (gadget only)** to show the list of available radio modes. Click the mode that is appropriate for you.

Timer Settings-

This option allows you to change how the Timer gadget operates. Instead of manually clicking the Start/Stop or Reset buttons with the mouse, it is possible for RealFlight to control these for you by linking them to the InterLink controller.



- Reset Timer on Reset – When enabled (a checkmark will appear next to the menu item), the Timer gadget will reset to zero whenever you reset the aircraft.
- Start/Stop with Throttle – With this enabled, the Timer gadget will start when the throttle is increased. When the throttle is at idle, the Timer gadget will stop.
- Mute Notification Sounds – Enable this menu option if you would like the Timer gadget to eliminate timer sounds.

Multiplayer Menu

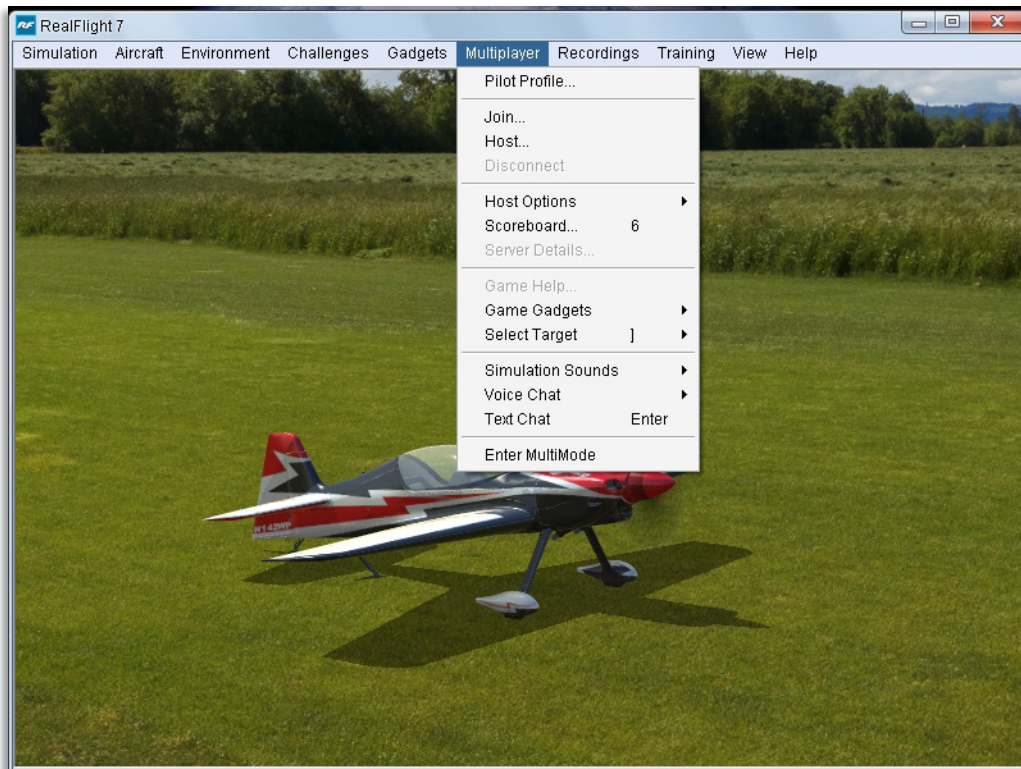
*Fly with friends, at the same computer,
or over the internet.*

The Multiplayer option allows you to fly with many other RealFlight 7 users. These pilots can be across the street, around the block, or around the world!

There are two ways to link up with the additional pilots: via a LAN (Local Area Network), or over the internet. In order to do so, you will need a TCP/IP connection either through your LAN or an ISP (Internet Service Provider).

Every session requires someone to serve as host. The host initiates the multiplayer session. When the Host starts a session, other participants may join in.

The Multiplayer menu allows you to access a variety of multiplayer-related features, functions, and options. Clicking the **Multiplayer** menu brings forth a pull-down menu which will look similar to the following screen shot:



Some of these items will be grayed out or disabled if they do not apply to the current situation. For example, you cannot disconnect unless you are currently connected. As such, the Disconnect menu item is grayed out unless you are in a multiplayer session.

When you participate in a multiplayer session, the menu commands you will access depend on whether you are the host or whether you opt to join someone else's session. These commands also depend upon whether you already have a specific session you want to join.

It is possible to participate in a public session using our List Server. The List Server is a publicly available list of open RealFlight 7 sessions. Currently, we provide the List Server to all RealFlight 7 owners, free of charge. The List Server allows you to participate in multiplayer sessions with other RealFlight 7 users anywhere in the world.

IMPORTANT INFORMATION ABOUT THE LIST SERVER: At the time of this writing we are providing the List Server service on a trial basis. This service may be modified, interrupted, or cancelled at any time without notice. In particular, we make no guarantee about the reliability of this service. To use this service, you may need to obtain product updates. Mention of the List Server in this manual on your RealFlight DVD does not imply that this service will be available at the time you purchase this product. Moreover, we reserve the right to bar any individual user, or all users at individual IP addresses or

domains, from using the list server at our discretion. Abusive behavior, for example, will not be tolerated.

Important Multiplayer Connectivity Tip: Port Forwarding-

If you are connected to the internet behind a router (cabled or wireless) or software firewall, you may need to open up access to a certain range of port numbers before RealFlight can successfully connect for multiplayer game play.

Please Note: If you are unfamiliar with how to set up port forwarding on your router device and/or software firewall product(s), please refer to the supporting documentation (installation guide, user's manual, etc) that came with the networking hardware or software you are using, or you may also try contacting the manufacturer's technical support for those products.

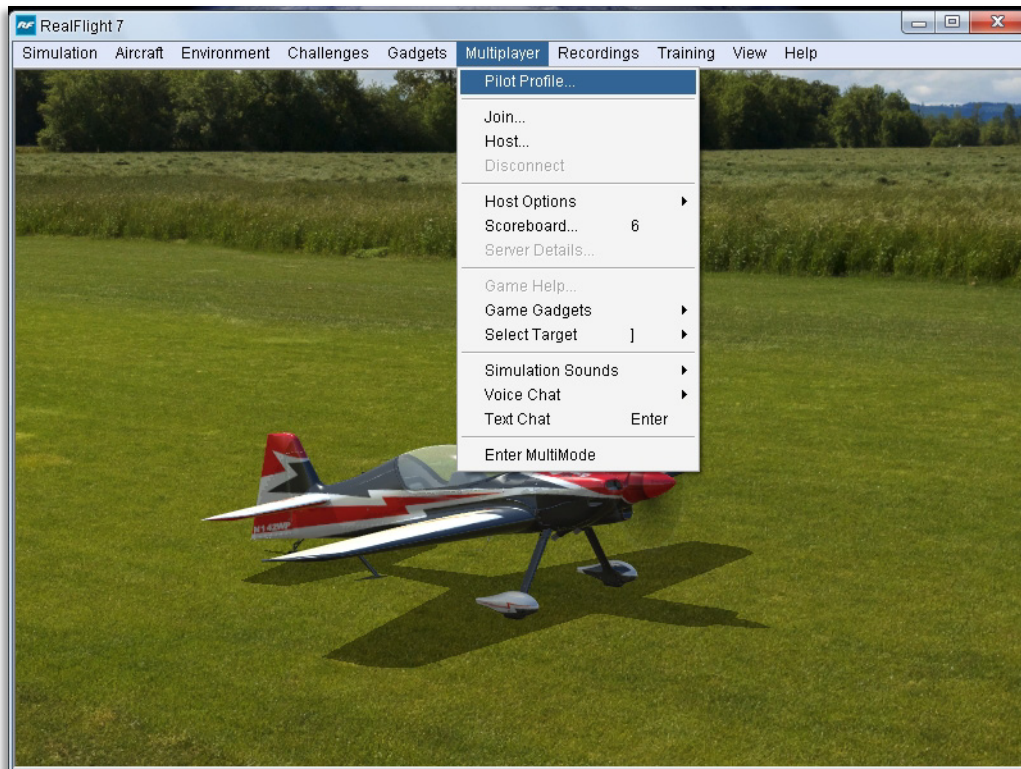
For RealFlight 7 multiplayer gaming, by default the following port ranges must be forwarded to the client IP under the UDP traffic protocol:

61234-61241

You may adjust this range in the RealFlight 7 Settings dialog window. See section Base Internet Port- on page 105.

Pilot Profile

The Pilot Profile allows you to customize the information about yourself. This information is available to other pilots during multiplayer sessions.



The Pilot Profile will also display the first day you ran RealFlight 7 (shown as your License Date), and keep track of the number of days, hours, and minutes you have spent flying the simulator (shown as Hours Logged).



The items that you may change for the Pilot Profile are as follows:

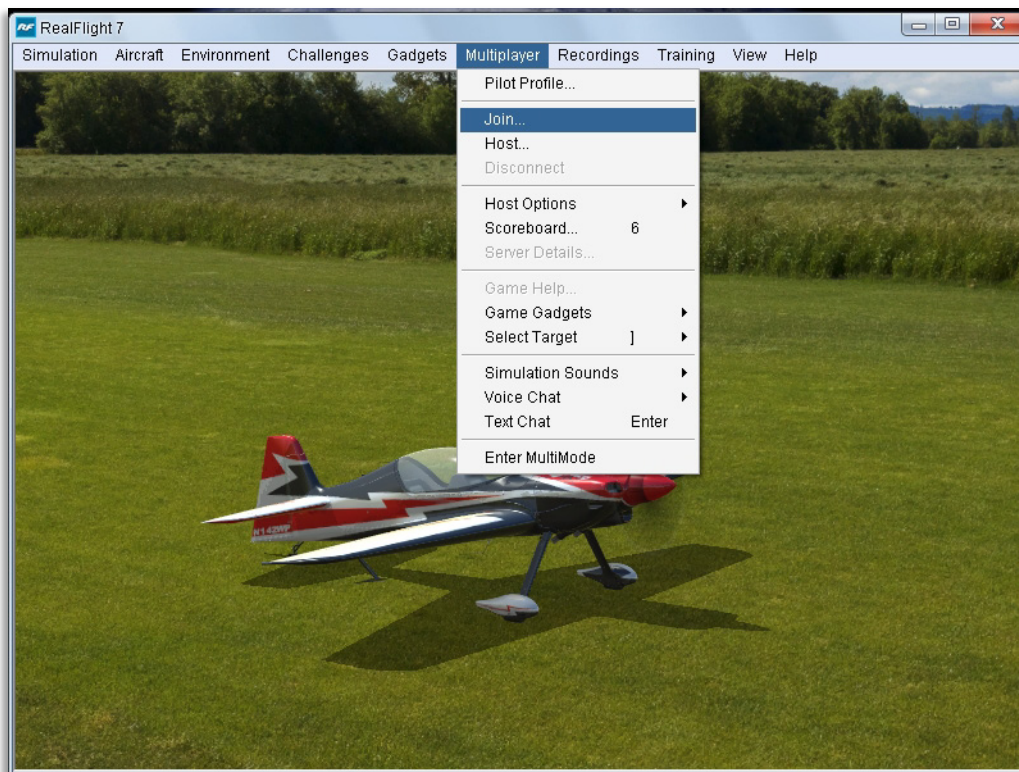
- Avatar – The image on the left hand side of the profile is your avatar. An avatar is a graphical representation of one’s self commonly used on the internet. RealFlight allows you to choose from a variety of avatars in your Pilot Profile. To do so, click on the avatar to display arrows at the bottom of the image. Clicking either arrow will cycle through the different avatars that are available. To select an avatar, click **Apply**. Alternatively, click **OK** to exit the Pilot Profile.
- Name – RealFlight also allows you to select a name for use in the simulation. Click the field below the Name label and type the name you wish to appear.
- Location – RealFlight 7 also allows you to enter your location. Click the field under Location to edit this information.
- Favorite Color – Click either arrow next to the color to pick your favorite color. This color will be used for your avatar background, streamers, and paintballs during multiplayer sessions.
- Tagline – Edit this field to display a short line about yourself, or use it to taunt your fellow pilots.
- Additional Information – The field at the bottom allows more room to add any additional information you wish to share.

As noted previously, the Pilot Profile is visible to other pilots during multiplayer sessions. Do not enter any personal information in the Pilot Profile that you are not comfortable sharing with other pilots.

Upon completing the Pilot Profile, click **OK** to retain these settings and close the window.

Join

This option allows you to participate in a Multiplayer session without being the Host of the session yourself.

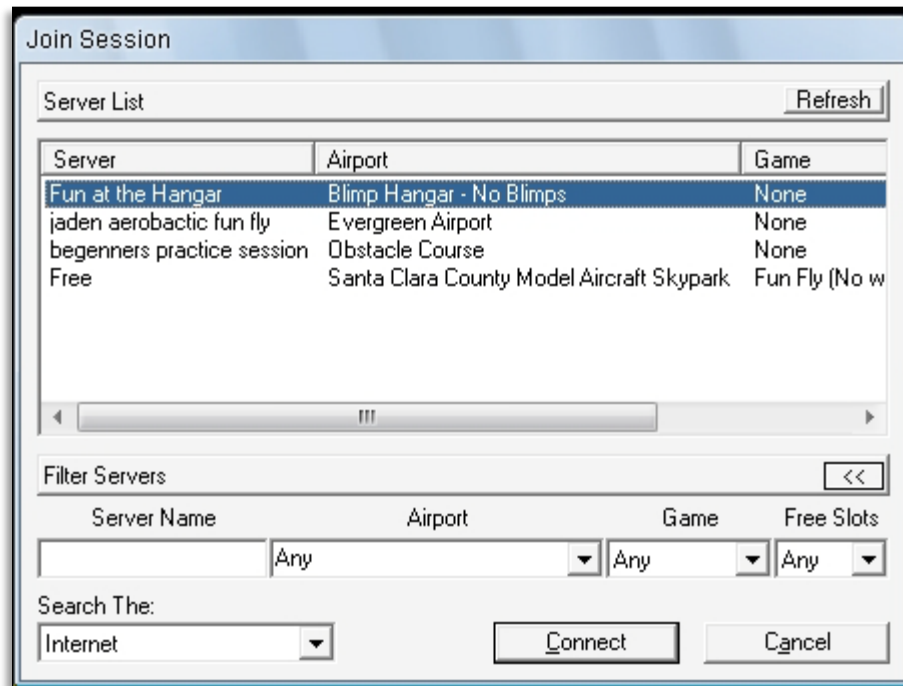


To access the Join... menu item, click on the **Multiplayer** menu followed by the **Join...** menu item.

Before you can join a session, you will need a network connection.

Join Session-

This dialog allows you to select the multiplayer session that you wish to join. It also provides a variety of information pertaining to the various sessions available.



Server-

The Server column displays the names of all available sessions. If you have not searched for (and found) a session, this column will remain blank.

Airport-

This column shows the currently selected airport being utilized by the host.

Game-

If there is a game in progress, this column shows the game that is currently running.

Players-

This column indicates how many players are participating in a given multiplayer session. It also indicates the maximum number of participants allowed for the session. The host determines the number of allowable participants.

Latency-

Latency is the amount of time it takes a packet of information to travel from its source to the destination. The larger the number, the slower the information travels. High latency can result in sluggishness and “lag” while running the simulation. As such, you will want to avoid sessions where the latency number is high.

Search Function-

The bottom left corner displays a drop-down selection box indicating the location that you wish to search for multiplayer sessions. At your discretion, RealFlight 7 will search the List Server (Internet) or the Local Network (LAN) for multiplayer sessions.

To determine the Search area, click the down arrow. This activates the pull-down selections. Click on the location that you wish to search.

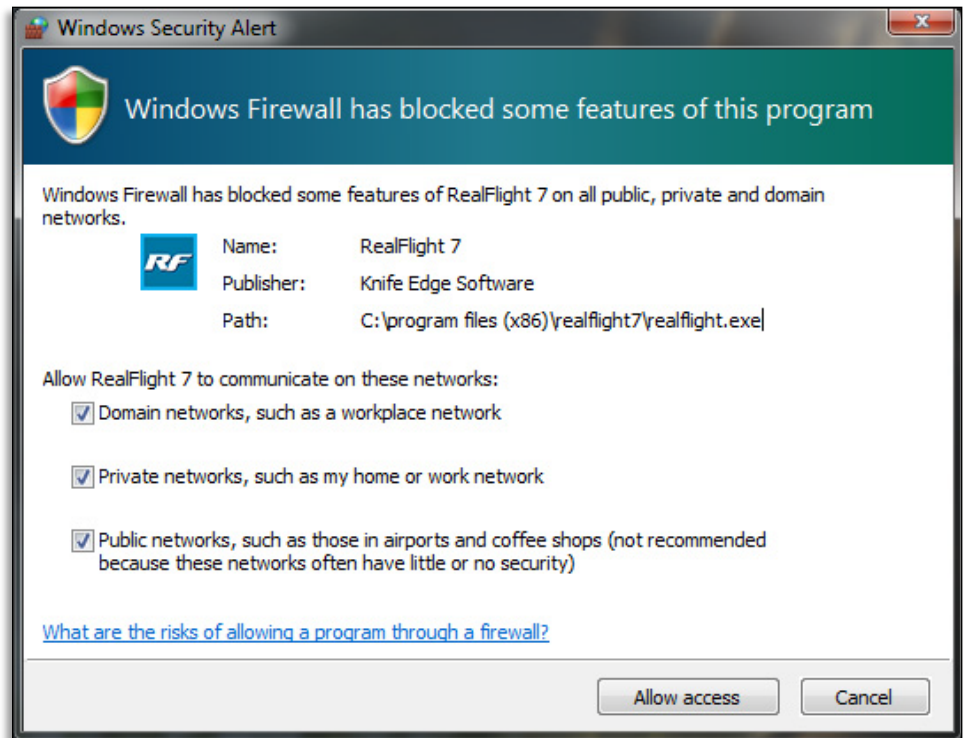
After making your selection, RealFlight will automatically search for multiplayer sessions at the desired location. When the search completes, the available sessions and information appear in the server list dialog box above. To select one of these sessions, click on the respective session and then click **Connect**. Alternatively, you may double-click on the Session Name to join.

Please note: If a multiplayer session is private, RealFlight 7 will ask for a password in order to join. If you know the password for the session, enter it now.

Refresh-

To repeat the search of multiplayer sessions, click the **Refresh** button located in the upper right corner of this dialog window.

Also, if you are using an updated version of Windows XP (Service Pack 2 or later), Windows Vista or Windows 7, you may have Windows Firewall installed and running. If this is the case, Windows Firewall warning dialog may appear (similar to that shown below) the first time you use the Search function. You must select the Unblock or Allow Access option in order to allow RealFlight 7 to continue searching.



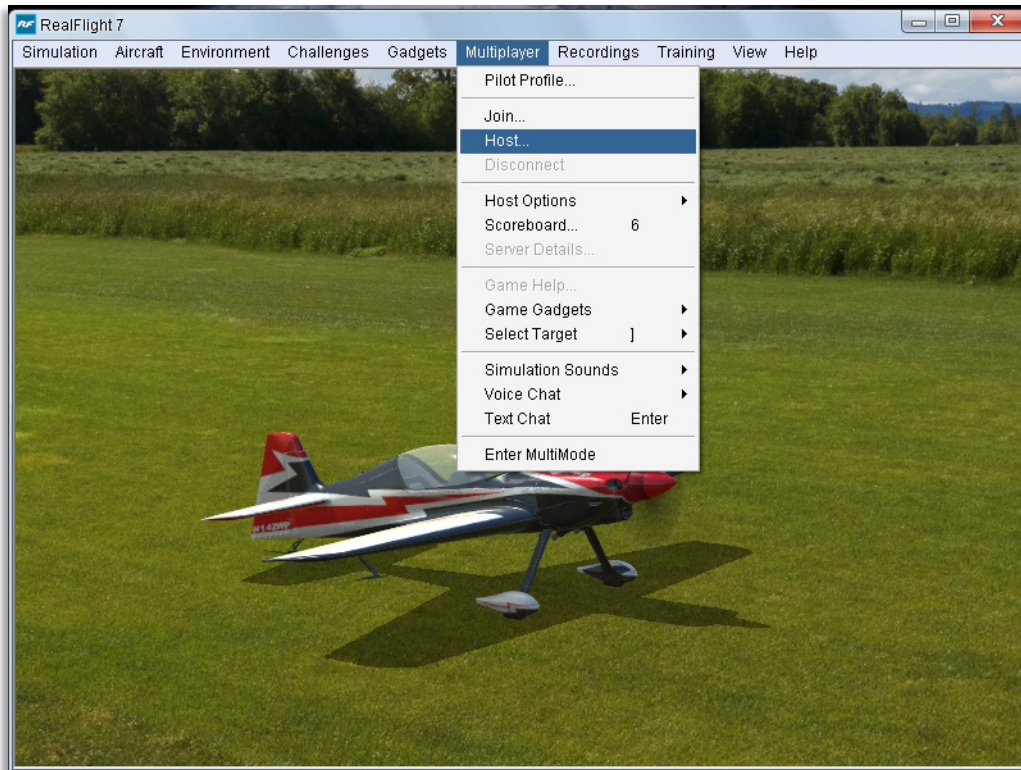
Filter Servers-

Below the List Server is an option to filter your search results. If a large number of multiplayer sessions are listed, you may want to narrow your search results to quickly and easily find the session you wish to join. Filter options include:

- Server Name – If you know the name of the session you wish to join, type it in this field.
- Airport – If you wish to participate at multiplayer sessions only at certain airports, you can select that airport from this drop-down.
- Game – Like the Airport option, if you wish to find sessions running a particular event, you may select it from this drop-down.
- Free Slot – Use this drop-down to select sessions that have a certain amount of open player slots.

Host

Every multiplayer session requires one participant to function as the host. If you are the host, you will be the one who starts the session. The host is also the one who starts and ends the events.



Once you have started the session, other players may join in as they wish. Unless you opt to make your session private, the session will be open to all RealFlight 7 owners searching for multiplayer events.

To access the Host... menu item, click on the **Multiplayer** menu followed by the **Host...** menu item.

Host Information-

The Host Information allows you the ability to name your multiplayer session. You can also choose the maximum number of pilots and whether or not to make your multiplayer session public or private.



Session Name-

Using the keyboard, enter the name of the session that you will be hosting.

Please note: This is the name of your session, not necessarily your personal name. In fact, you might find it useful to use a descriptive name such as “3D Fun Fly.” This is particularly useful when other participants are searching for a session to join.

Max Players-

To adjust the maximum number of players allowed in your session, click the down arrow.

Currently, a multiplayer session may not have more than 32 members. If the host computer is somewhat slow or has a poor internet connection, you may want to limit the number of participants. We suggest 8-16 players for typical residential internet connections.

Publish To-

This option allows you to choose how other people will find and connect to your multiplayer sessions. There are two options available.

- Internet – This option will publish your session on the RealFlight List Server, so anyone in the world can connect to you.
- LAN – Short for “Local Area Network”, choose LAN if you wish to host a multiplayer session on your local home or work network. For others to join, they must also connect from the same local network. This option will not list your session on the RealFlight List Server.

With the Host Information dialog window open, you may click the **Advanced Hosting Options** arrows for additional options. Some of these options are also accessible from the Multiplayer menu, after the multiplayer session has already been started.

Password Protection-

Should you wish to host a private multiplayer session, you may choose to set a password to prevent others from joining. If you choose to do so, you will need to share this password with the people you want to join.

To enable and set the password, check the box to the left to activate the password field then, enter the desired password accordingly.

Use a Game List-

Check this box to enable the different Game List options. This will allow you to automatically run a Game List at the start of the multiplayer session. When enabled, the available options are:

Game List – This drop-down box shows all Game Lists available. If you want to manage or create a new customized list, click the “...” next to the drop-down.

Execute – This determines the order on which each contest is loaded in the Game List.

These options are also available from the Multiplayer menu if you wish to select them at a later time. For more information about Game Lists, turn to page 222.

Manage Ban List-

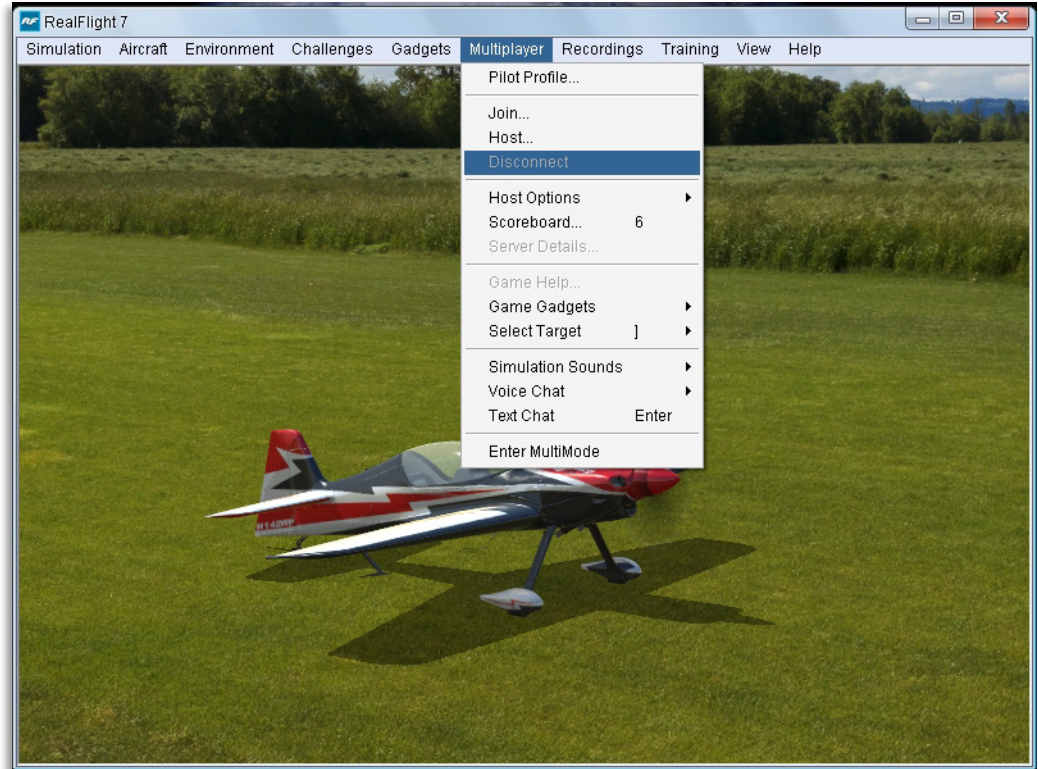
Click this button to display the Ban List dialog window. This option is also available from the Multiplayer menu. See page 225 for more information.

Port numbers-

If you are connected to the internet behind a firewall or a router, you might need to open up access to a certain range of port numbers. RealFlight 7 looks for an open port from 61234 to 61241 by default. For more information on how to open these ports, please refer to your firewall or router’s manual.

Disconnect...

This menu item is used to disconnect from, or exit, the multiplayer session.

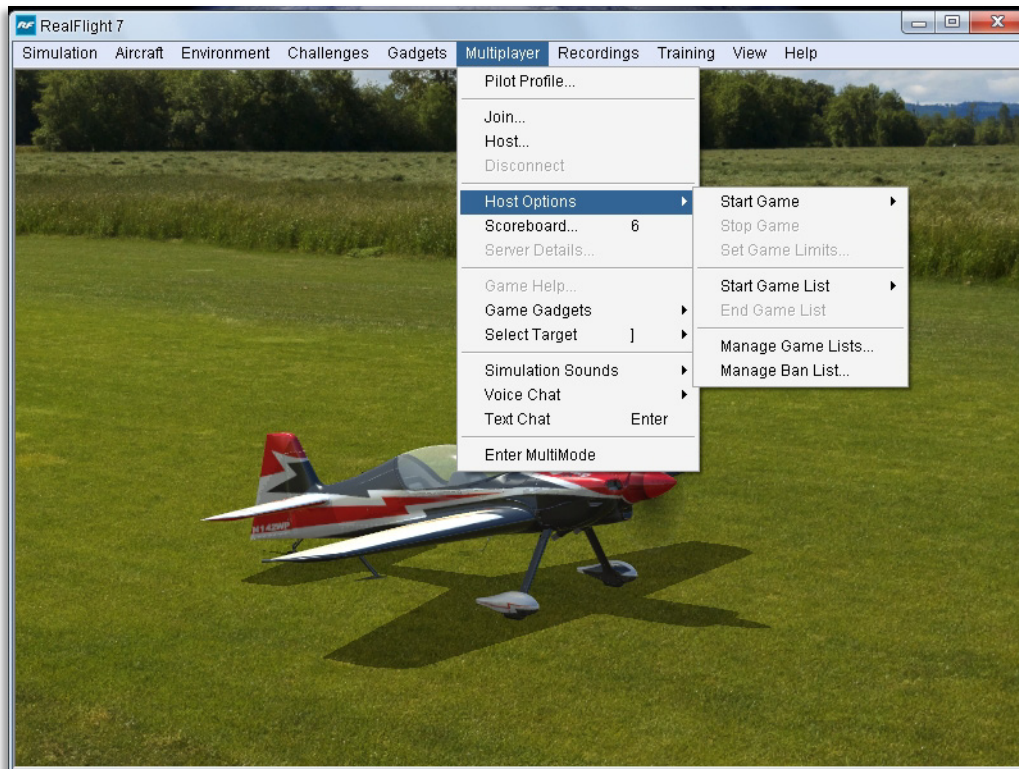


To access the Disconnect... menu item, click on the **Multiplayer** menu followed by the **Disconnect...** menu item.

Please note: If you are not currently participating in a multiplayer session, this item will be grayed out and will not be accessible.

Host Options

This menu option will open a sub-menu that allows the host of a multiplayer session a variety of options to start, stop, and manage events. Many of these menu items are not accessible unless you are currently hosting a multiplayer session.



Start Game-

To start an individual game at the airport currently loaded, select the event from the list that appears in this sub-menu. The options are:

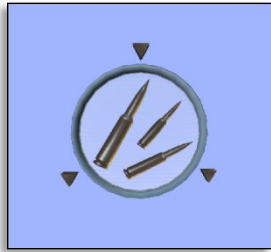
- Combat (Biplanes) – Full fledged combat with machine guns and rockets flying the Sopwith Pup.
- Combat (Jets) – Full fledged combat with machine guns and rockets; flying the L-39.
- Combat (Warbirds) – Full fledged combat with machine guns and rockets; flying the P-51 Mustang.
- Combat Aces (Warbirds) – A more challenging version of Combat.
- DeadRinger – Race to fly through all the rings (in any order), but don't get shot down in the process.
- Fun Fly – An open event without any weapons or scoring involved.

- Hardcore Combat (Biplanes) – Like the Combat event, but with limited ammo and bonuses. You can only shoot from the cockpit camera flying the Sopwith Pup.
- Hardcore Combat (Warbirds) - Like the Combat event, but with limited ammo and bonuses. You can only shoot from the cockpit camera flying the P-51 Mustang.
- Paintball (Biplanes) – Fly combat, shooting paintballs in the Sopwith Pup.
- Paintball (Warbirds) – Fly the P-51 Mustang and shoot paintballs at your opponents.
- Rocket Wars (Foamies) – Fly the Multiplex Parkmaster and battle each other shooting rockets.
- Streamer Cut (Biplanes) – Fly the Sopwith Pup in traditional R/C combat with streamers.
- Streamer Cut (Foamies) – The traditional R/C combat with streamers, flying the Multiplex Parkmaster.
- Streamer Cut (Jets) – Take to the skies in the L-39 and try to cut your opponent’s streamer.
- Streamer Cut (Warbirds) – Like the other streamer cut events, only this time you will be piloting the venerable P-51 Mustang.

Power-Ups-

When a combat event is in progress, a number of Power-Ups will be available, scattered about the airport. These Power-Ups will benefit you by offering points, additional ammunition, fuel, and other items of interest. Not all Power-Ups appear at every game. For example, during a Streamer Cut game, you will not see Power-Ups that will replenish your ammunition, as it is not applicable.

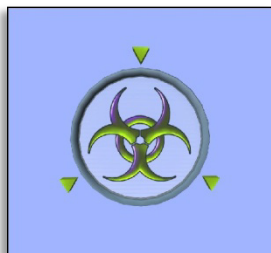
To acquire or activate the Power-Up, simply fly through it during the game. Some Power-Ups will affect you, while others will affect everyone else.



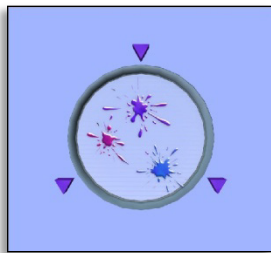
This Power-Up restocks your bullet ammunition.



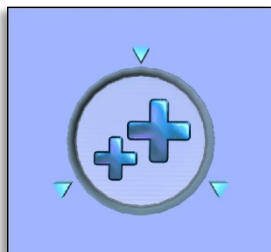
If you are running low on fuel or battery power, fly through this Power-Up.



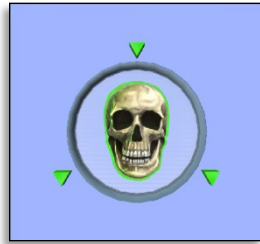
Flying through this Power-Up will only “infect” the other participants in the game, yet leave you unharmed. The effects vary depending upon the game. In Streamer Cut, for example, all streamers except for yours will be twice as long. If the event utilizes Paintballs, Guns, or Rockets, your opponents will be unable to fire. This is a temporary Power-Up.



During Paintball combat, if you are running low on ammunition, fly through this Power-Up to receive more paintballs.



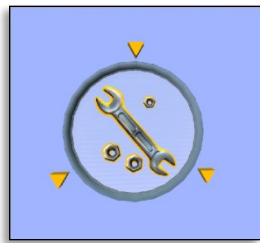
Fly through these Power-Ups to obtain bonus points. If you have negative points, these Power-Ups are useful to erase the deficit.



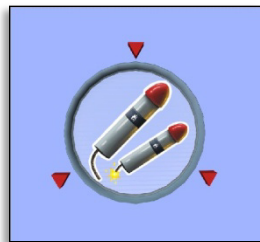
This is the one Power-Up to avoid at all cost. This Power-Up functions in reverse of the Infect Power-Up, whereby it harms you providing the advantage to your opponents.



You never know what you will receive with this Power-Up. As the name suggests, this Power-Up will randomly act like one of the other Power-Ups when you fly through it.



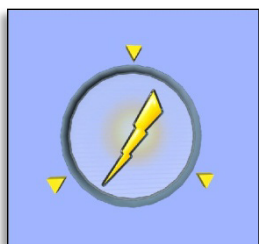
If your health is low during combat games with guns and rockets, fly through this Power-Up to repair your aircraft.



Restock the quantity of rockets by flying through this Power-Up.



For temporary immunity from your competitors, grab the Shield Power-Up. While this prevents your aircraft from obtaining damage from your opponents, the shield does not protect you from crashes.



Get the advantage over your opponents with the Speed Boost Power-Up. This will allow you to fly faster for a short period of time.



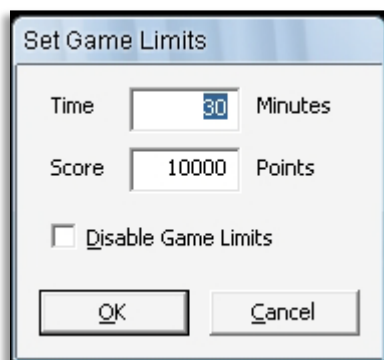
Don't be so quick to hit that Reset button if it is not required. Each time you reset during a combat event, you will lose 15 points. Resetting also eliminates any Power-Ups you might currently have.

Stop Game-

Select this to stop the currently running game. This option is only available if you are the host of the multiplayer session and are running a single game, not a Game List.

Set Game Limits-

Select this menu item to open a window that allows you to alter the game limits.



The game will end when one of the limits is met. For example, if you wish for the game to end when the first player reaches 100 points, enter “100” in the **Score** field. If you wish the game to continue indefinitely, click the check box labeled **Disable Game Limits**.

Start Game List-

This menu item will display all Game Lists available to the host. Selecting one will begin that list, allowing the host to compete and without having to worry about

changing the games or time limits. For more information about Game Lists, see Manage Game Lists below.

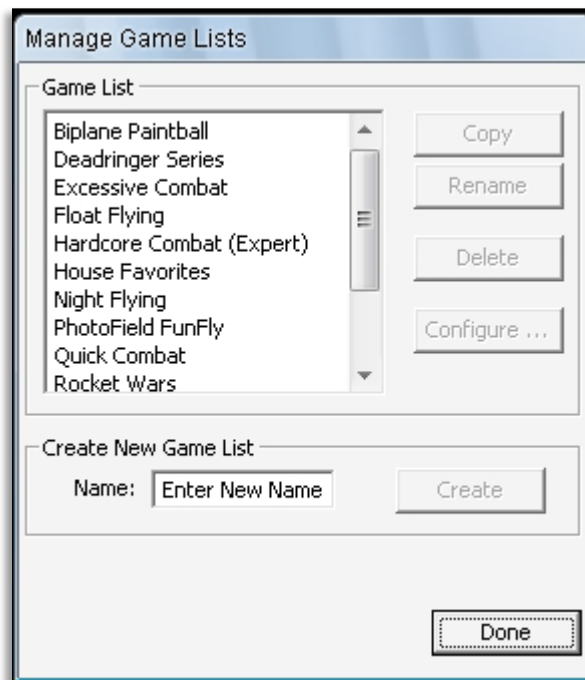
End Game List-

If you are current running a Game List and wish to cease this list, select this menu item.

Manage Game Lists...-

RealFlight 7 allows you to manage and run a list of events automatically giving you the opportunity to enjoy the competition without worrying about controlling the multiplayer session.

Clicking on this menu item will display the following dialog window:

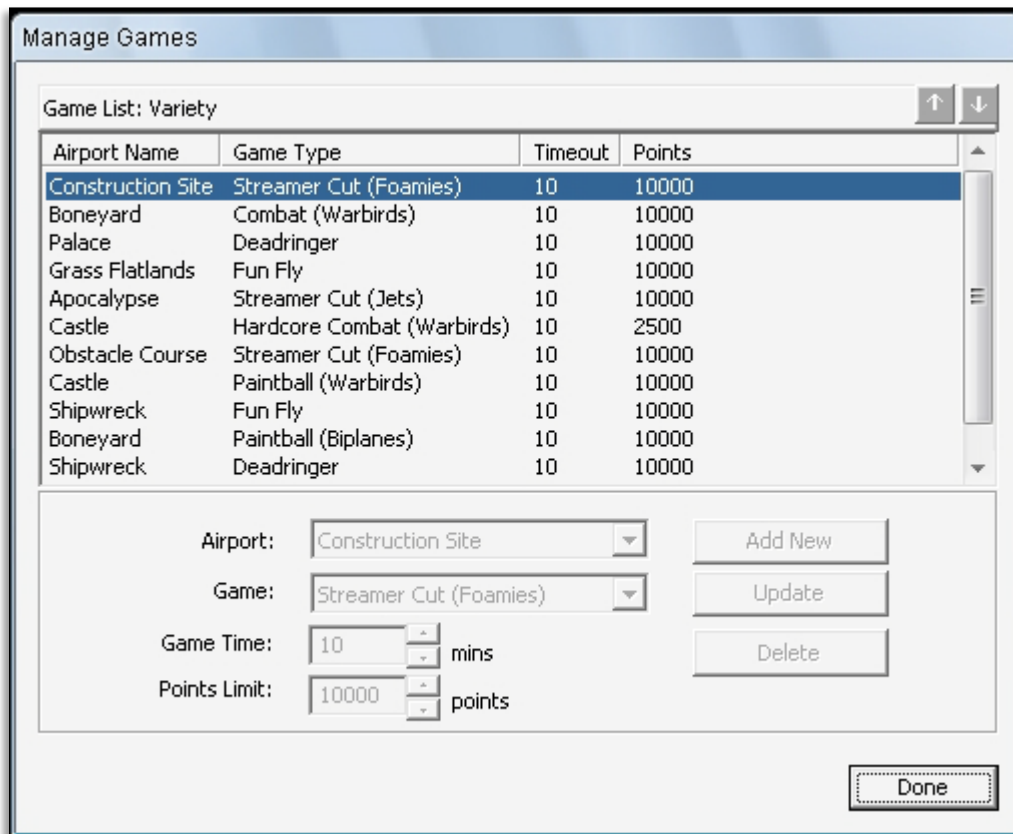


On the left side of this window, it will display the Game Lists available on your computer. A number of pre-configured Game Lists are included with RealFlight 7. To the right of this list are four buttons that have the following functions

- Copy – You are not able to modify the default Game Lists included with RealFlight. If you wish to make a change to one of these default lists, you must first make a copy of it. To do so, first select the **Game List** on the left then click the **Copy** button.

- **Rename** – If you wish to rename a Game List, first select it from the list on the left. Then click the **Rename** button. This button will be disabled if the selected Game List was a default list included with RealFlight 7.
- **Delete** – Click this button to delete the selected Game List. Like Rename, this option is not available for the default Game Lists included with RealFlight 7.
- **Configure ...** - To configure the contests, timers and other settings and options for the Game List, select it from the list on the left, then click the **Configure...** button. See below for an explanation on how to configure a Game List.

If you wish to create a completely new Game List from scratch, type in the name of the desired list at the bottom of the Manage Game List dialog window. Next, click **Create**. The new Game List will appear in the list above. You may now add contests and other options to this list. To do so, select the desired contest from the list, then click the **Configure...** button. The following window will appear.



The Manage Games dialog window allows you to add and configure individual games for the Game List. For each event, you have the option to select the airport, contest,

the amount of time spent at the game before switching to the next game, and the upper limit of points any player can reach before switching to the next game. You may also modify the order of these events.

Please note: These options are disabled for stock Game Lists that are included with RealFlight 7.

The main pane on this window indicates all games listed for the selected Game List. Each game will list the Airport at which it will load, the contest it will run, and the amount of time that remains in the contest before proceeding to the next game on the list. If you wish to change the order that these contests are loaded, select it from the list, then click either the up or down arrow buttons in the upper, right-hand corner.

There are three main functions available on this dialog window:

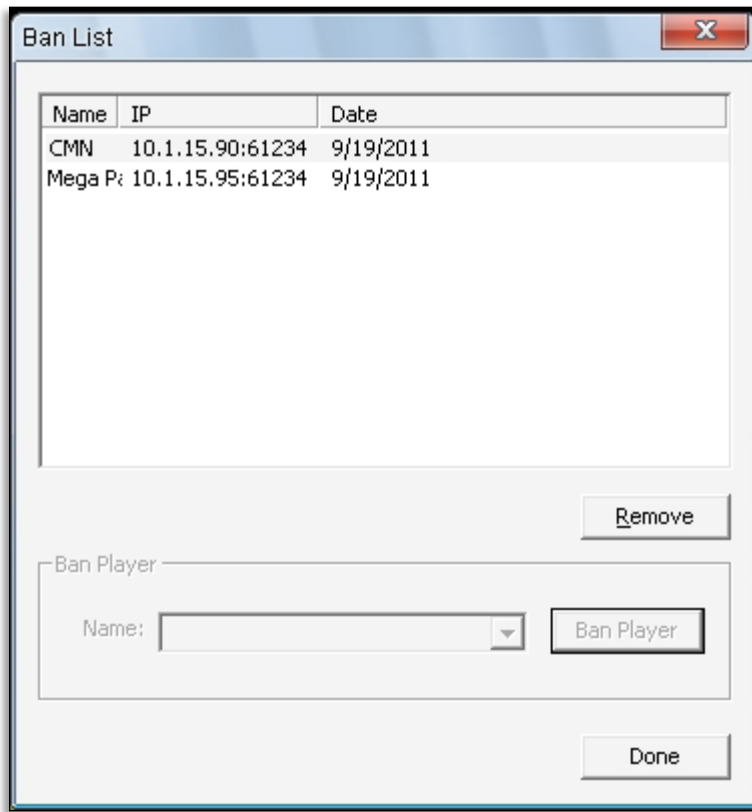
- **Add New** – To add a new game to the Game List, select the Airport and Game. If so desired, adjust the amount of time you wish the game to last. Next, click the **Add New** button.
- **Update** – This button enables you to make a change to a game that is already on the Game List. Select the desired game, and then choose your new settings for the Airport, Game and Game Time. Once you have made your changes, click the **Update** button. The Game List will reflect the new settings.
- **Delete** – Finally, if you wish to remove a game from the Game List, simply select it, then click the **Delete** button. The game will be permanently removed from the Game List.

Once you have configured your Game List, click the **Done** button. Your new Game List will now appear as a menu option under the Start Game List. See page 222 for more information about how to start a Game List.

Manage Ban List...-

RealFlight and the R/C community are a great group of people, all sharing a common interest. Unfortunately, there are times when some people choose not to abide by the host's rules or wishes, or will otherwise conduct themselves in an inappropriate manner during a multiplayer session. Rather than choking the stuffing out of them, we've taken a more peaceful, yet still equally effective approach, preventing them from ruining your fun. If you are hosting a public multiplayer session, where someone is not behaving in a way you feel is appropriate, you can choose to ban that person.

To do so, click the Manage Ban List... menu item to display the following dialog window.



To add a person to the ban list, select their name in the drop-down selection box at the bottom of the window, then click the **Ban Player** button. Their name, IP address of their computer and the current date will appear in the list above. This will prevent them from participating in the events that you are hosting now, and in the future.

If you later change your mind and wish to allow the individual to participate once again, you may remove someone from the banned list. To do so, simply select their name in the list then click the **Remove** button.

6

Scoreboard

The Scoreboard offers a wealth of information about all the players connected to the multiplayer session, as well as details on the current game (if one is in progress).

Target	Player	Points	Crashes	Ping
	John	485	1	21
	Kenny Tarmac	450	0	18
	Rogue Leader	395	2	0
	FTMONKEY	-610	14	14

Session Time: 0:00 Next Map: None/None



If a combat contest is currently in progress, you can show and hide the Scoreboard simply by pressing the **Menu/Select** button on the InterLink Elite controller. This allows you to display the Scoreboard without taking your hands off the controller and missing that well-placed shot.

The main area in the middle of the Scoreboard displays all players connected to the multiplayer session as well as a variety of useful information. This includes, from left to right:

- **Look At** – This function allows you to quickly change your camera point of view to look at the desired player's aircraft. To do so, simply click the icon to change your view. The icon will be highlighted next to the current player you

are looking at. If you are participating in a combat event, the Look At icon will be represented as a target. If you are simply participating in a multiplayer session, this icon will be represented as an eyeball.

- Pilot Profile – Situated between the Look At icon and the player's name is a small arrow and the picture of the avatar that player is using. Clicking the arrow will display that player's Pilot Profile. You may also double-click the desired player's name to display these contents.



Within the Pilot Profile, you will also notice four buttons along the right side of the Pilot Profile. They include:

- Hide/Show – This button will hide or show the selected player's aircraft on the screen.

- Mute/Unmute – As the name suggests, this button will mute or unmute the voice chat from this player only. Note that this does not mute your microphone.
 - Kick – Clicking this button will kick (remove) the selected player from the multiplayer session. This is only available to the host of the session. This will not ban a player from reconnecting.
 - Ban – This button will add the selected player to the Ban List and kick the player. Once this is done, this player cannot reconnect. This is only available to the host of the multiplayer session. See the Manage Ban List for more information about banning players.
- Player – This column, as the name suggests, show the player’s name.
 - Points – The Points column will show the points for all players in the current game. This list will automatically order itself, so that the player currently winning will be listed first. Second place is next, and so forth.
 - Crashes – Look to this column to find out how many times a player has crashed during a combat event.
 - Ping – At times, this column can be very important. It displays, in milliseconds, the amount of time data will travel between this player’s computer and the host computer. The lower this number, the better results you will have during multiplayer.

If there is a Game List in progress, more information is available at the bottom of the Scoreboard. At the lower left, it shows the remaining time left for the current event as well as the Point Limit. The lower right corner displays the airport that will be loaded for the next event in the Game List.

Server Details...

As the host of a multiplayer session, you may choose to edit the details of your server. This information will be displayed to each player as they join your session.



The title bar of the window displays the name of your multiplayer session. This information will be displayed in the server list and also in the Join dialog window when other players search for multiplayer servers.

The top portion of this window displays the host information. This includes the Host Name, or the name that you entered into your Pilot Profile. Also displayed here are the Current Game (if active) and the Current Airport. The Current Game and Current Airport will be displayed in the Join dialog window when other RealFlight users search for multiplayer sessions.

The lower portion contains information which you can edit in a separate file, called ServerMessage.txt, located on your hard drive. This file is located in the \RealFlight 7\Multiplayer folder within My Documents. If you make changes to this file, the information will be shared to all players that connect to your multiplayer session. Otherwise, if you leave the ServerMessage.txt file alone, making no changes to the default text, this screen will not be displayed to joining participants.

If you do not wish to see this screen, simply click the check box next to **Don't show this dialog again** and click **OK**.

Game Help...

The Game Help window is displayed to all participants at the beginning of a game.

Please note: This menu option is disabled if combat events are not currently in progress.

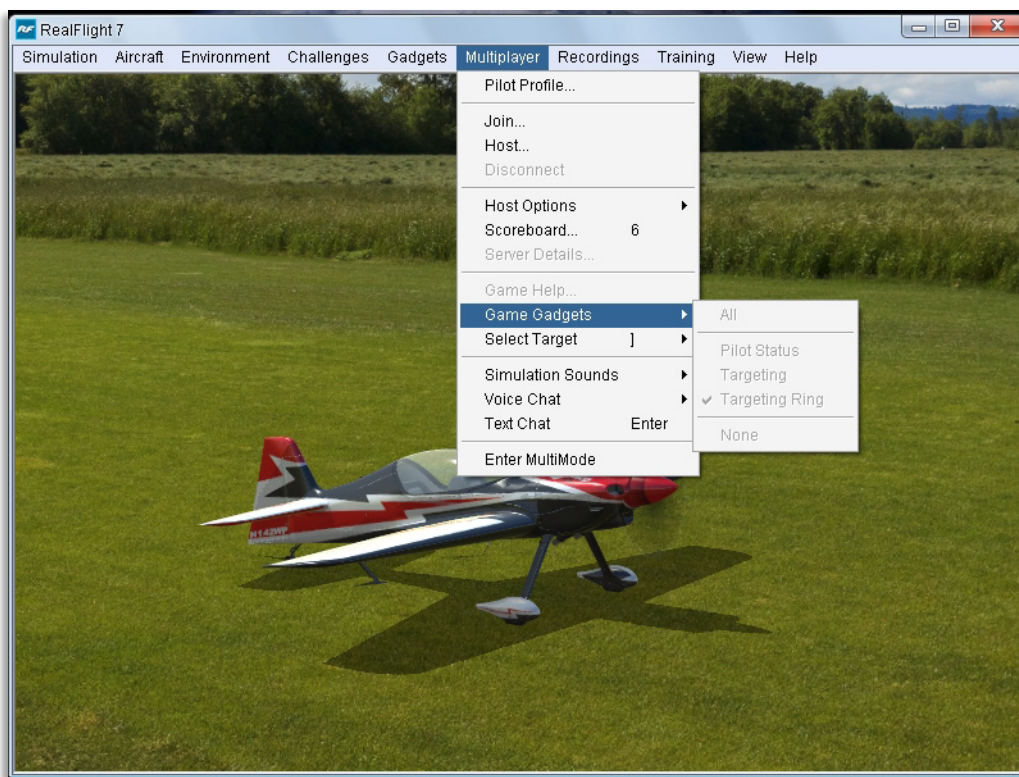


This window will explain how to play the current game, the scoring process, and provide you with other useful information to ensure you enjoy your experience. If you do not wish to see this screen, simply click the check box next to **Don't show this dialog again** and click **OK**. Note that this check box is independent for each game. For example, if you checked the box to hide the Game Help dialog from appearing

when the Combat (Jets) game was loaded, you will still see this dialog if the Streamer Cut (Foamies) game is loaded.

Game Gadgets

There are three onscreen gadgets that are only available during multiplayer sessions. Therefore, unlike other gadgets which are located in the Windows menu, you will find these under the Multiplayer menu. Selecting Game Gadgets from the Multiplayer menu will display five choices.



To display all of the Multiplayer Gadgets on the screen at the same time, click the **All** menu item. To remove all of the Multiplayer Gadgets, select **None**.

Alternatively, you may select each desired gadget individually. Each gadget offers unique information about the current game.

Pilot Status-

This gadget displays pertinent data regarding your current status. The name entered in the Pilot Profile will be noted at the top of the status display. The bottom of this gadget indicates your current score. The middle section displays a variety of progress

bars. The level of the progress bar will differ depending on the current status of the game, and the game you are playing. They include:



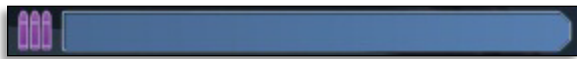
Fuel – Indication of the remaining fuel or battery power.



Health – In combat with guns and rockets, the health status determines whether your aircraft is destroyed or not. Nearby rocket explosions will cause some damage, where a direct impact will likely terminate your aircraft.



Paintball – This bar displays your remaining paintball ammunition.



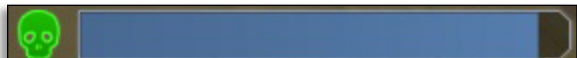
Bullets – This bar indicates the amount of ammunition you have remaining for the machine gun.



Rockets – Like Bullets and Paintballs, this progress bar displays the amount of rockets you have remaining.



Speed Boost – If you fly through a speed boost Power-Up, this progress bar will appear, showing you the remaining time left until the boost is depleted.



Poison – If you fly through a Poison Power-Up, or if another player flies through an Infect Power-Up, this bar will appear on your screen indicating the amount of time you have left until the infection wears off.



Shield – Flying through the Shield Power-Up will give you temporary immunity from all other players. This progress bar displays the amount of time left before you lose your shield.



Gun Temperature – During hardcore combat events, your guns can overheat and temporarily stop working. You must let them cool down before firing again. If this progress bar fills up completely, your guns have overheated.

Targeting-

The Targeting gadget displays the player you currently have selected as your target. The avatar for the intended target will appear with their name and score for the current game. Below this will show their Tagline from the targeted player's Pilot Profile.



The Targeting gadget also controls whether the targeting indicator (red triangle) will appear around the selected target's aircraft. This triangle only appears if the gadget is on screen and a player is selected. If no player is targeted, it will read “No Target Selected.”



While a game is in progress, the QuickSelect buttons take on new functions. If the targeting gadget is enabled, pressing the **Cancel** button will cycle through the different modes for the Targeting gadget, including:

- Activating the gadget and targeting the last player you had selected as a target.
- Leaving the gadget on the screen, but deactivating the current target; no players are targeted
- Removing the gadget altogether. No players are targeted when the gadget is removed.

Note that when you reset your aircraft, the Targeting gadget may select a new player depending on the targeting settings. See page 106 on how to select the method which the Targeting gadget will operate each time you reset.

Targeting Ring-

The Targeting Ring, when activated, will appear directly in the middle of the screen. This heads-up gadget helps you locate your currently targeted opponent during combat events.

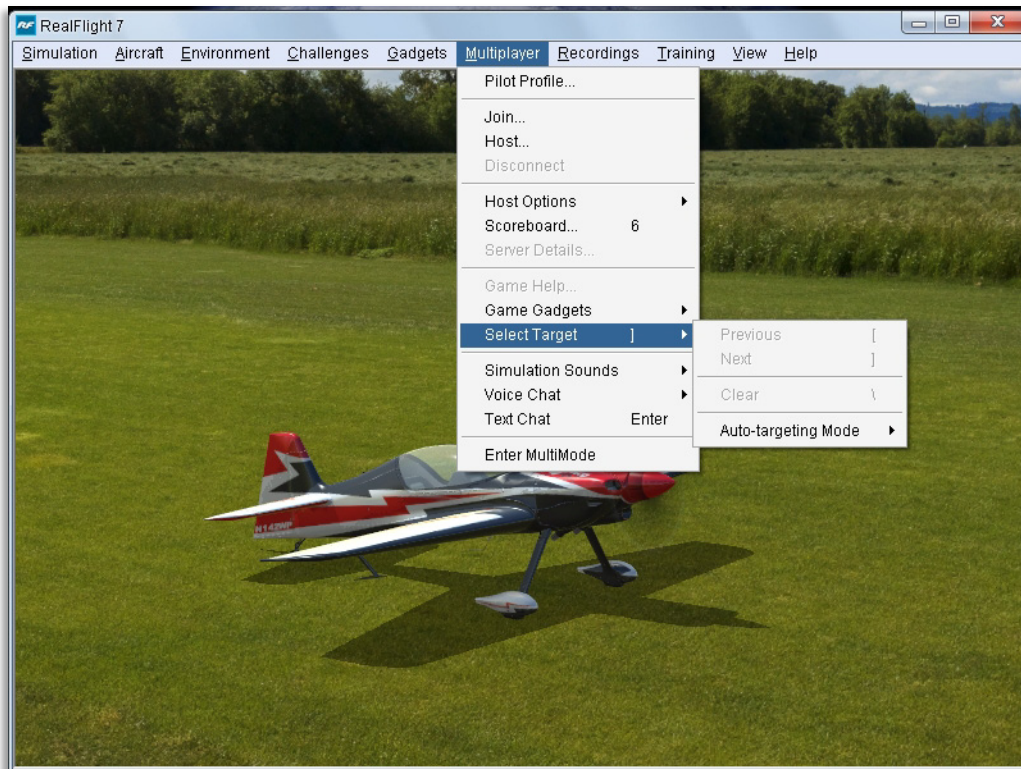


When displayed, an arrow will appear on the outer perimeter of the circle. This indicates the direction of the targeted aircraft. Note that the arrow will not be displayed if the aircraft appears within the perimeter of the Targeting Ring.



Select Target

The menu items located in the Select Target menu allows you to select amongst the connected players as a target. Clicking **Previous**, or **Next** will cycle through the players accordingly. Alternatively, you can press the '[' or ']' keys on the keyboard.



To deactivate the current target so that no players are targeted, simply choose **Clear** from the menu, or press ‘\’ on the keyboard.



During combat events, you can quickly cycle through different targets using the InterLink Elite QuickSelect buttons. Simply press up or down on the **Data Lever** to select different opponents.

Auto-targeting Mode-

This sub-menu allows you to set how RealFlight chooses your target during multiplayer events. This takes affect after each reset of the aircraft. The options available:

Disabled – RealFlight does not change the targeted player. This allows you to have full control of the targeting system.

Leader – RealFlight will target the player with the highest score. If this happens to be you, then RealFlight will select a player at random.

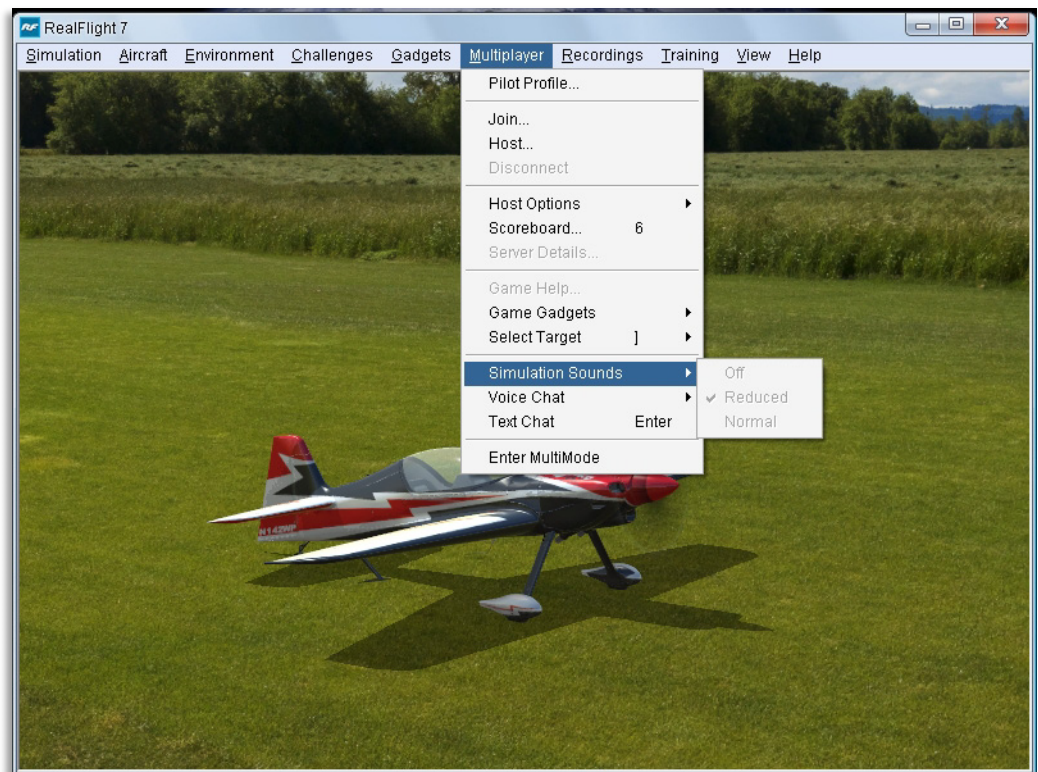
Random – RealFlight will randomly select a player to target.

Smart – All players with a higher score than yourself will be selected somewhat randomly. The player with the highest score and the player that most recently damaged you will have a higher chance of getting selected.

Threat – This option will target the last player which caused damage to you.

Simulation Sounds

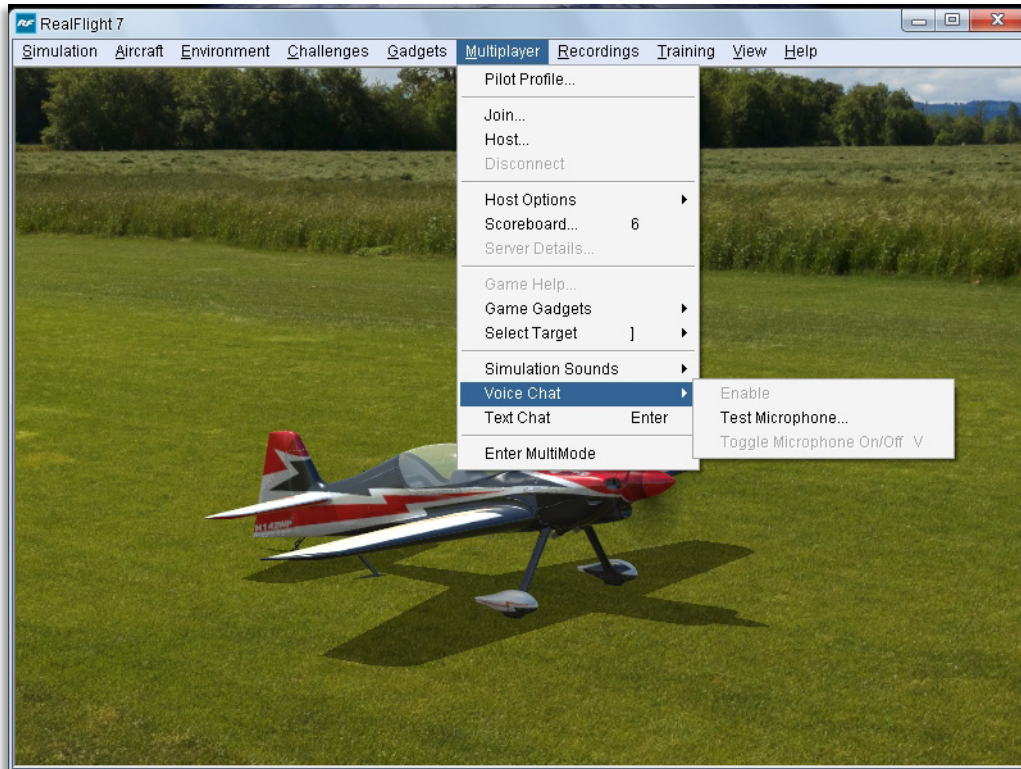
During multiplayer sessions, you may wish to turn down, or off, the sounds generated by the simulator, including engine sounds. This will allow you to better hear and understand other players using voice chat.



By default, RealFlight 7 will set the Simulation Sounds to **Reduced**. At this setting, you will still be able to hear all of the sounds, including engine noises and crashes, but at a lower volume. Select **Off** to turn off all simulator sounds. If you prefer that all sound settings remain the same in multiplayer sessions as they do offline, select the **Normal** menu item.

Voice Chat

With a microphone plugged into the computer, RealFlight allows you to talk to other players in a multiplayer session, as if everyone was sitting in the same room.



Three options are available when choosing Voice Chat from the Multiplayer menu.

Enable/Disable-

Choose this menu item to either disable or enable voice chat. When disabled, you will not be able to send or receive voice chats.

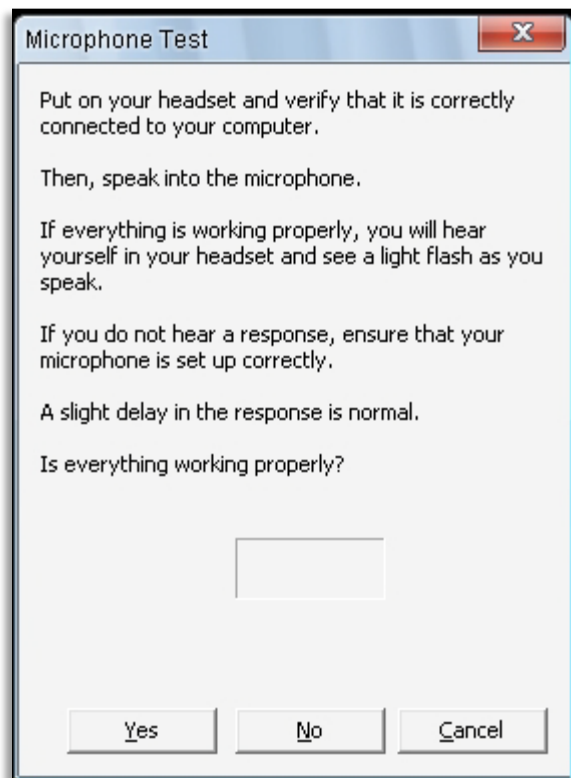
Test Microphone...-

This menu item will bring up a small dialog window, which will allow you to test the microphone connected to your computer. Follow the on screen instructions to test the microphone.

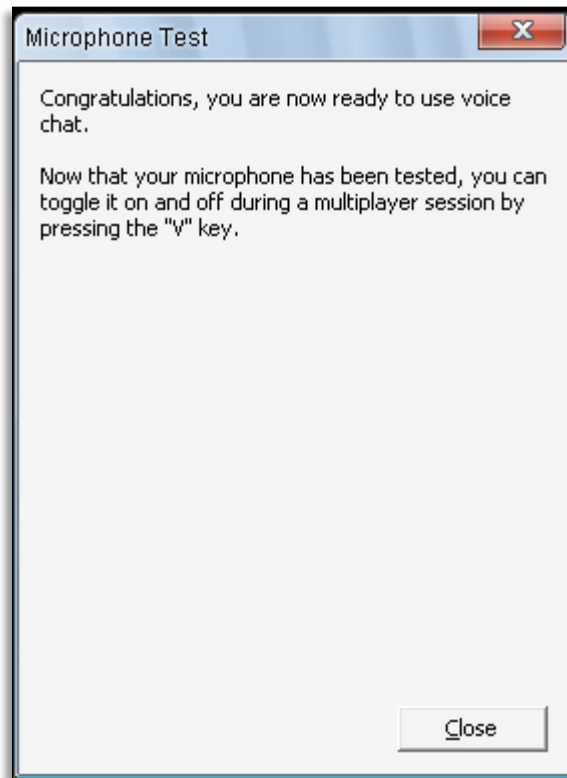


Select the button that best matches your setup. If you are using a microphone and speakers, we suggest turning the speaker volume down or off. Otherwise, audio feedback could be sent to all participating pilots, making voice chat difficult for all players.

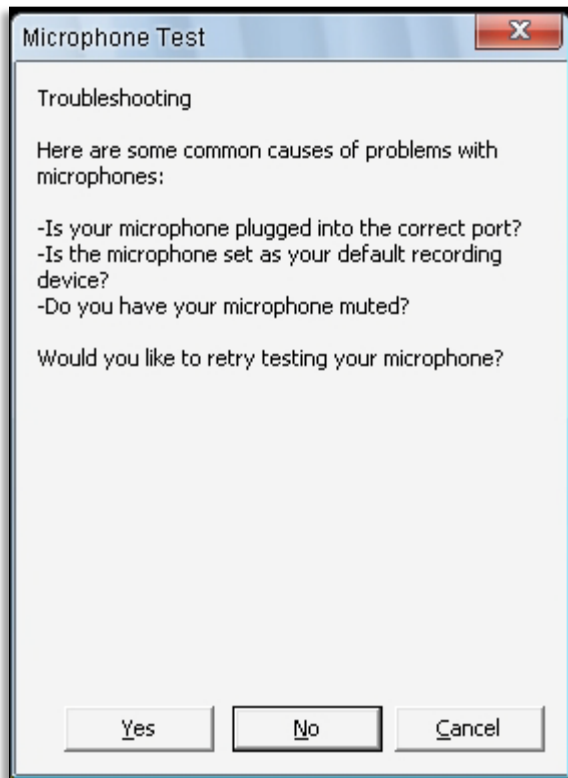
Once you have selected your setup, the following dialog will appear to test the microphone.



Follow the on-screen instructions. If your microphone test is successful, click the button labeled **Yes**. Doing so will display the following.



Clicking **No** on the microphone test dialog will display the following screen with troubleshooting tips.

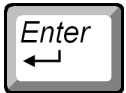


Please note: If you are having difficulties setting up your microphone, please refer to your computer user manual for proper set up.



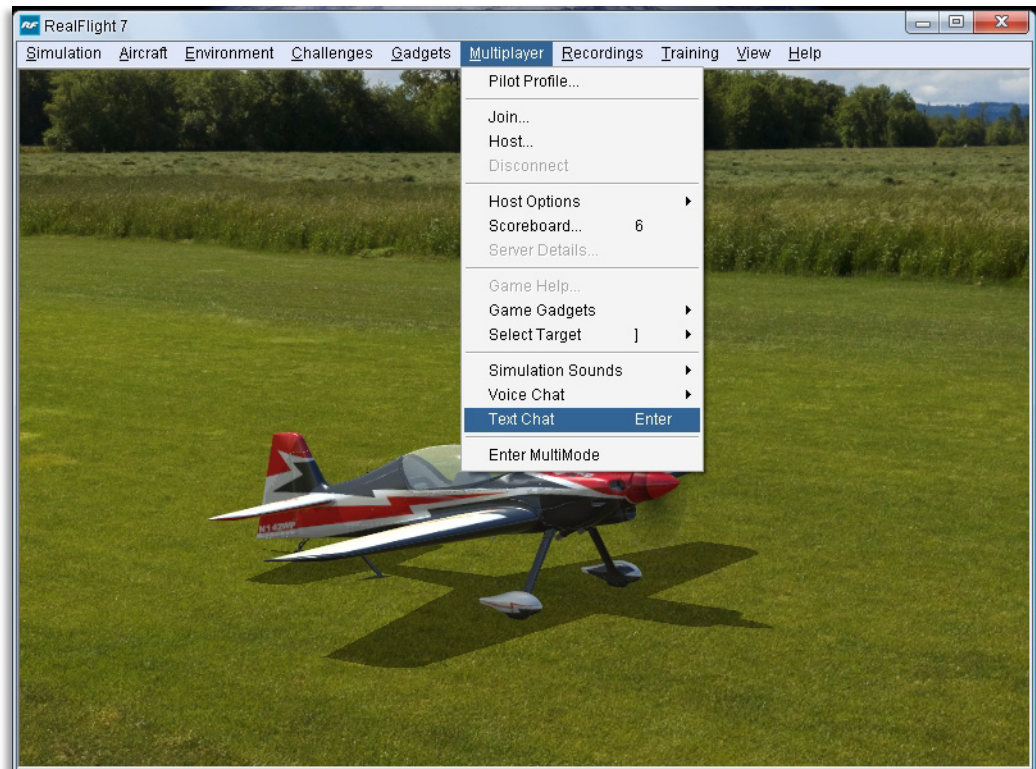
Toggle Microphone On/Off-

This option will turn on or off your microphone, so other players cannot hear you. You will still be able to hear other players. Alternatively, you can press 'V' on the keyboard to toggle the microphone on or off.



Text Chat

During Multiplayer sessions, you may want to chat with other participants. Doing so is as simple as typing a message, much like popular instant messenger programs.



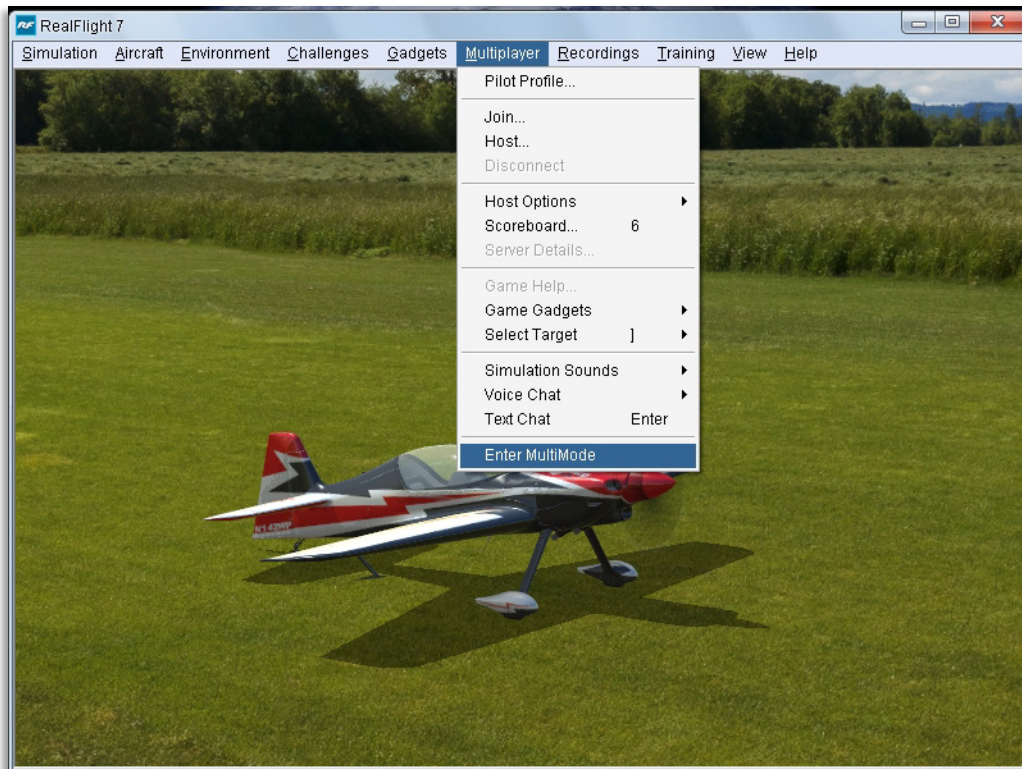
To send a chat message, press the **Enter** key to bring up the Chat field at the bottom of the screen. Using the keyboard, type the message you wish to send. Press the **Enter** key again on the keyboard to send the message.

Please note: All messages are viewable by all participants. RealFlight 7 does not offer private chat.

Any messages received from other participants will appear at the bottom of the screen.

Enter MultiMode

MultiMode allows you to fly with another pilot on the same PC; with each pilot controlling his or her own aircraft. This feature is ideal for offering personal flight instruction, practicing formation flights, or simply for chasing one another across the skies.



To access the MultiMode menu item, click on the **Multiplayer** menu followed by the **Enter MultiMode** menu item.



MultiMode will split the screen either horizontally (default) or vertically. You can change this option in the Settings window. Simply click the **Simulation** menu followed by **Settings**. On the left side of the Settings screen that appears, choose **Multiplayer**. On the right, you can adjust the **MultiMode Screen Layout** – select either Horizontal or Vertical.

All options available in RealFlight are also available in MultiMode. The difference is most will function on half of the screen that currently is active. To determine which half has the focus or is active, look for the yellow outline. To change focus, click the half that doesn't have the yellow outline. You'll notice the focus changes when you do.

For example, if you are flying in MultiMode with a horizontally split screen, you might notice that the yellow outline is around the top half. If you want to change the aircraft for the person flying on the bottom half of the screen, first click that half of the window, so it has the focus or is the active screen. Next, select an aircraft following the normal procedure.

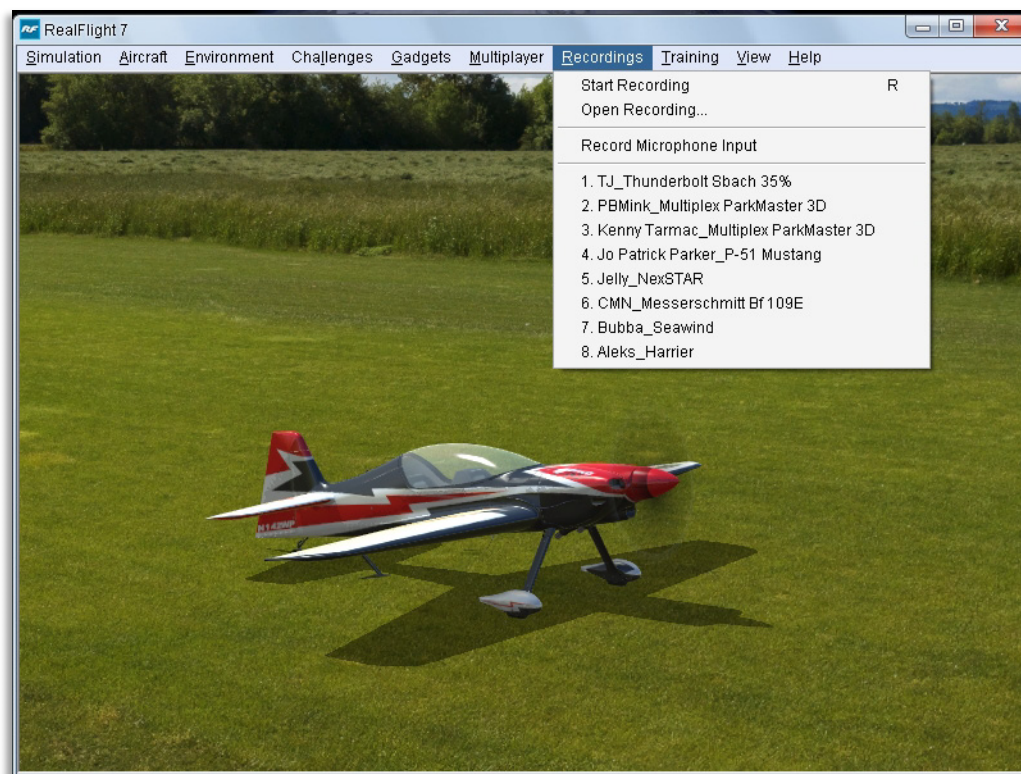
To exit MultiMode, select **Exit MultiMode** menu item under the **Multiplayer** main menu.

Chapter 11

Recordings Menu

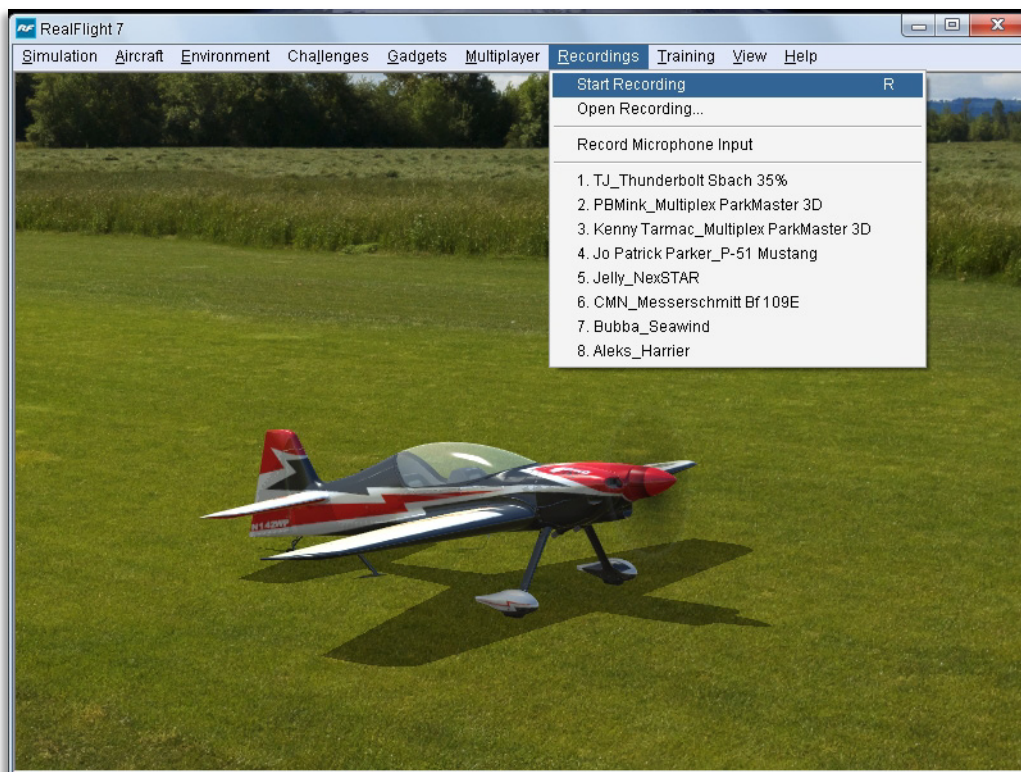
Save and play back RealFlight memories.

The Recordings menu is used to start and stop recordings to assist you in your R/C ventures. RealFlight 7 also allows you to record your flights for later playback – complete with audio voiceovers. You can even share your flights with friends and fellow pilots.



Start Recording

Click on the **Recording** menu followed by the **Start Recording** menu item. RealFlight 7 will start recording your flight immediately. An on-screen message will confirm that the recording has started.



RealFlight will continue recording your flight until you select the **Stop Recording** menu item or press **'R'** again to stop recording.

Stop Recording

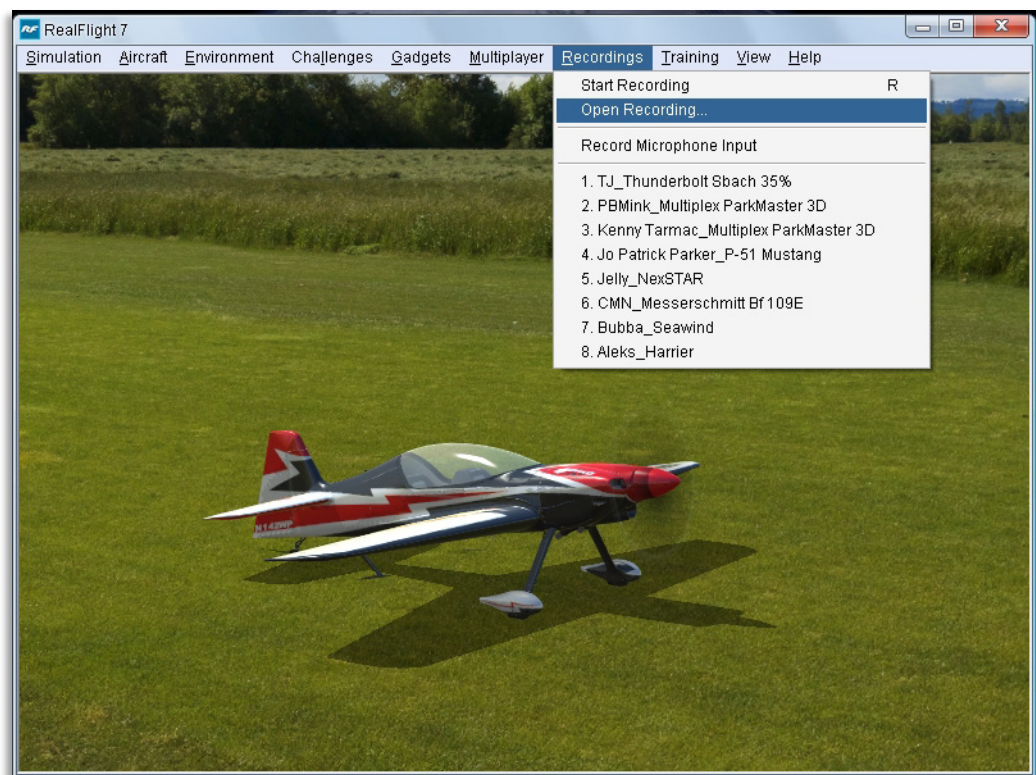
The Stop Recording menu item is not visible until the Start Recording menu item activates. To stop the recording of your flight at any time, click the **Recording** menu title, followed by the **Stop Recording** option. RealFlight 7 will stop recording at this time. RealFlight 7 automatically saves all recordings for playback later. For information on how to delete a recording, please see the Open Recording... section which follows.

When RealFlight 7 stops recording, an on-screen message appears which indicates the default name of the recording that has just been completed. For information on how

to change the name of a recording, please see the Open Recording... section which follows.

Open Recording...

This menu item allows you to access the recording files. It also allows you to perform a variety of modifications to the files such as renaming them or deleting them. To access the recordings, click the **Recording** menu title followed by the **Open Recording...** menu item.



To open a recording, click on the file name. Next, click on the **Open** button. Alternatively, you may double-click on the file. Regardless of which method you use, this will start RealFlight's Playback Gadget. For more information on the Playback Gadget, please refer to the information below.

If you wish to rename the recording, simply right click on the respective recording, select rename from the drop-down menu and rename the file.

To delete a recording, right click on the recording file and select **Delete** from the pull-down list.

Playback Gadget-

When you open a recording, RealFlight 7's playback gadget appears on the screen. This gadget allows you to control the playback of the recordings using simple mouse commands. It features DVD-like controls that start, stop, and pause the playback. It is also possible to modify the playback gadget.



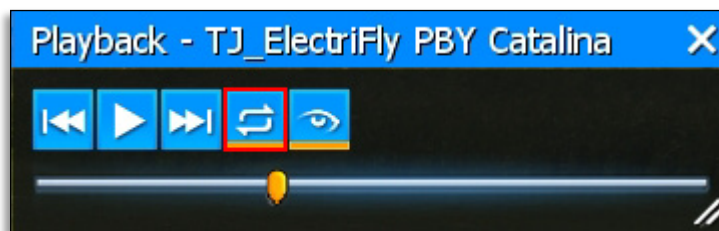
If you do not wish to view the playback information, double-click the **title bar** of the display box. This will hide the information. To view it once again, simply double-click the **title bar** again.

To resize the playback gadget display, position the cursor over the lower right corner of the frame. Using the mouse, drag the frame according to your wishes. Dragging the frame to the right or left increases or decreases the width of the gadget, respectively.

Clicking on the **X** in the viewport's title tab removes it from the screen and exits the playback.

Loop Play-

The arrows that form a circle cause the recording to loop (i.e., play continuously). The continuous loop is activated when the arrows are illuminated. To stop the looping, click on the loop button again.



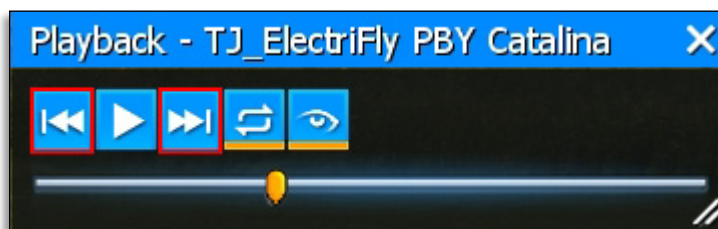
Look at Recording-

Click on the 'eye' to look at the respective Recording. This causes the camera to treat the recording as its target object, rather than your aircraft. If you are looking at a different aircraft than the recording and wish to watch the recording, click the 'eye' button.



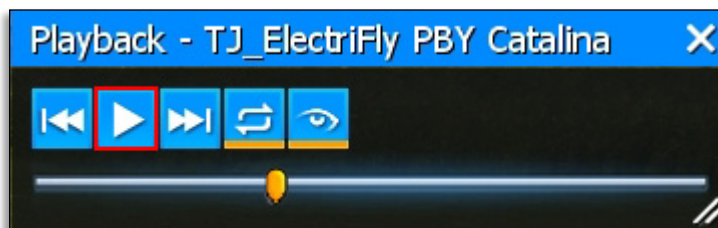
Left/Right Arrows-

The left and right arrows rewind (left) or fast forward (right) the recording. Alternatively, you may click on the position indicator, hold the mouse button and drag the indicator to the desired position.

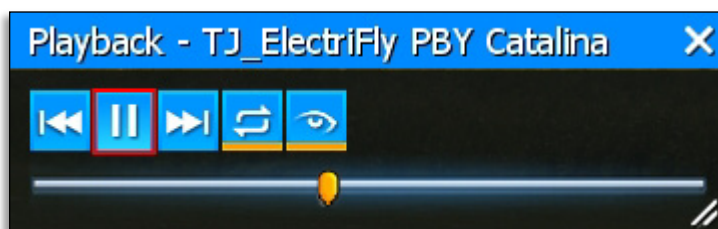


Playback/Pause-

If the recording is paused, the playback button will be the single arrow pointing to the right. To resume playback of the recording, click this arrow.



If the recording is playing, the playback button will switch to a pause button. To pause playback, press this button. You may continue at any time by pressing the playback button once again.



Position of Recording-

The slider bar and position indicator are used to track the progress of the recording playback.

It is also possible to use the position indicator to select the point at which you wish the recording to begin playing. Using the mouse drag, position the slider bar to the position desired.

Record Microphone Input

RealFlight 7 also allows you to add your voice or other audio to the recordings. If selected, the Record Microphone Input menu item activates and allows you to record audio input to accompany your recording.



Adding your voiceover to the recordings is a fantastic way to create personalized training lessons. This feature presents you with the ability to create your own Virtual Flight Instructions that you can share with other RealFlight 7 owners around the world!

Recordings MRU

If you have previously selected a recording, you will note that it appears on a list in the Recordings menu title. Lists such as this are commonly referred to as Most Recently Used, or MRU lists. The MRU list is limited to the eight most recently selected recordings. If you wish to view one of these recordings simply click on the name of the recording and it will begin.



Training Menu

Practice makes perfect. RealFlight's Training Aids make practicing a little more enjoyable.

RealFlight 7 offers a number of training aids. These training aids are designed for modelers of all skill levels.

Helicopter pilots will benefit from the Heli Hover Trainer, Heli Autorotation Trainer, Heli Orientation Trainer and the helicopter Virtual Flight Instructions. The Heli Hover Trainer and Heli Orientation Trainer offer modelers the chance to practice their stick control and helicopter attitude recognition. With the Virtual Flight Instructions, R/C professionals offer audio and visual instruction on how to perform basic, intermediate and advanced maneuvers.

Airplane modelers will also benefit from the Takeoff Trainer, Landing Trainer, Airplane Hover Trainer, and the Virtual Flight Instructions.



Takeoff Trainer

The Takeoff Trainer offers a great way for first time pilots to learn the basics of taking off an airplane. With this trainer, you have the ability to adjust the wind settings, takeoff direction, and boundary widths to challenge your skills.



To start the trainer, click **Takeoff Trainer...** menu item from the **Training** menu. The trainer will start automatically.

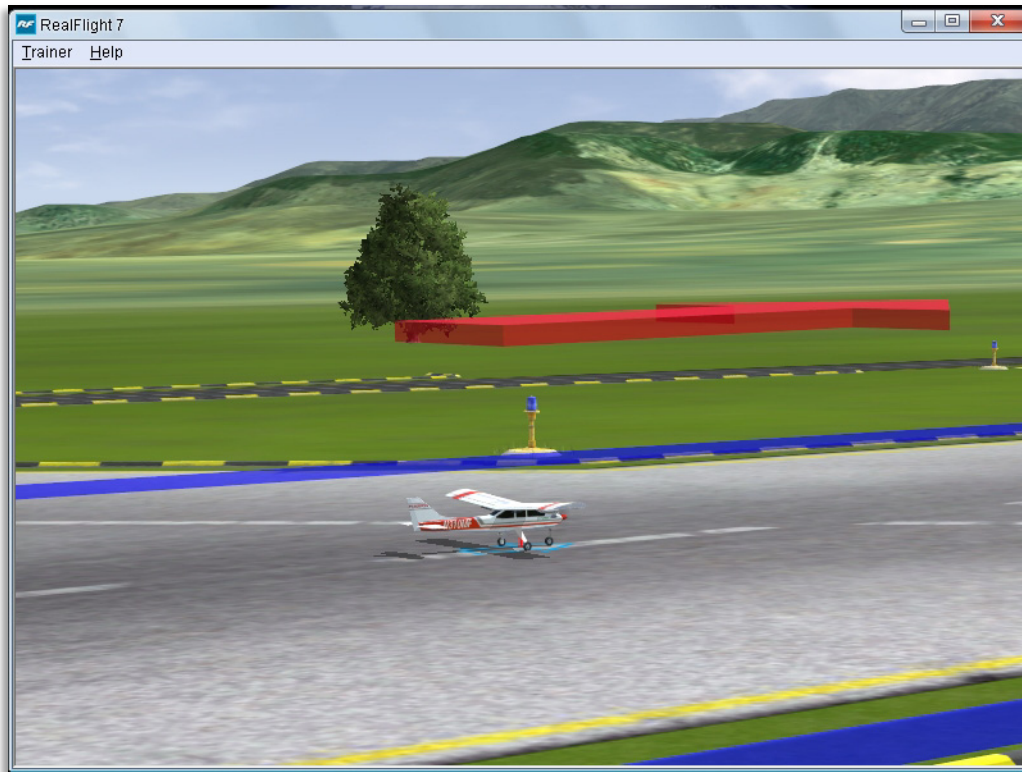
The Takeoff Trainer feature is based on RealFlight's Flight School flying site. As such, you'll notice that RealFlight automatically uses the Flight School airport. You'll see the NexSTAR trainer sitting at the end of the runway, awaiting your input.

A welcome dialog will first appear to explain the goals of this Trainer as well as offer a few tips. If you do not wish to see this dialog screen again each time you load this trainer, simply click the **Don't show this message again** checkbox at the bottom, then click **Close**.

Following the welcome dialog, the get ready dialog screen will appear. This screen will explain what you are required to do for this trainer. There is also a check list that you should follow before you proceed. If an item in the checklist is set in the proper position the Ready light will illuminate. Otherwise, the Ready light will be dim, and the function on the controller pictured to the left will blink indicating what needs to be done.

The get ready dialog is a great way to prepare for the trainer. Once you have successfully run through the trainer a few times and no longer wish to see this dialog, simply click the checkbox labeled **Don't show this message again** and then click **Go**.

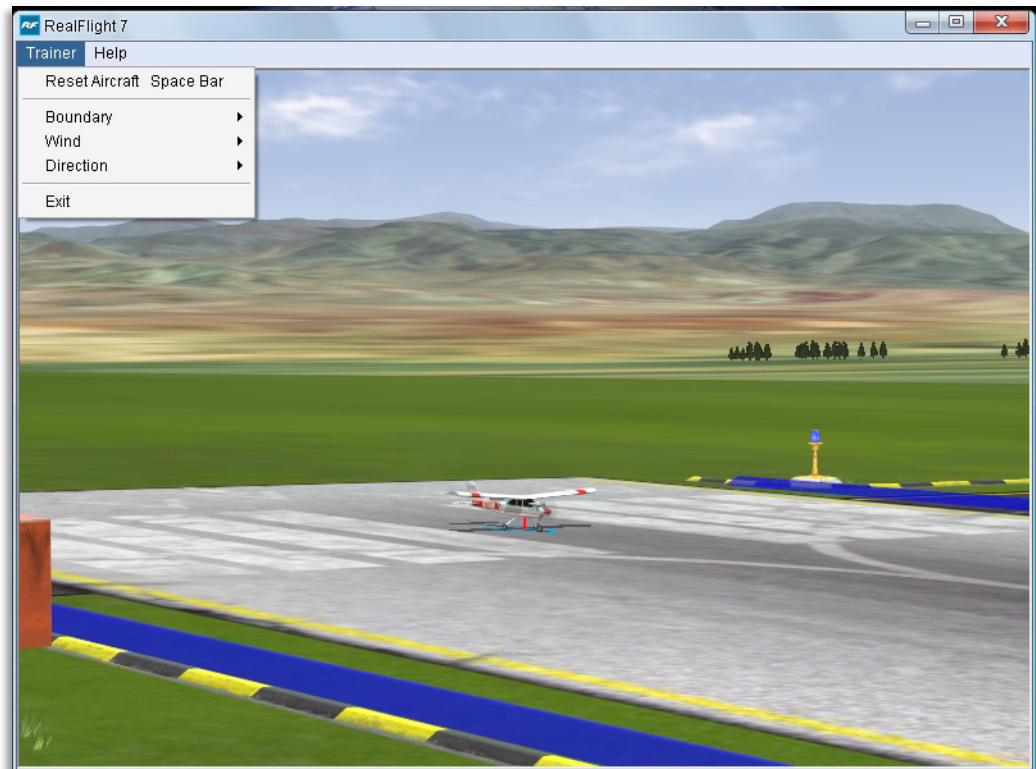
The goal is to takeoff as straight as possible down the runway, pulling back gently on the elevator. As you takeoff, you'll notice a number of arrows in the sky. These arrows indicate the path that you should follow. The arrows will appear red in color if you are on the correct path, blue if you are not.



You'll also notice the menus have changed, which we'll discuss here.

Trainer Menu-

The Trainer menu contains the following menu items:



Reset Aircraft-

If you crash or fly too far out of the boundary area, there are three ways to reset the aircraft:

1. Press the **Reset** button on the InterLink Elite controller. This is probably the fastest and simplest method.
2. Press the keyboard's space bar.
3. Click the **Reset Aircraft** menu item

Boundary-

The Boundary menu item allows you to change the perimeters of the runway. You must remain between the designated boundaries during takeoff. To change the size of the boundary, select the **Boundary** menu item from the **Trainer** menu. A sub-menu will appear with the following options.

- None – Eliminates the boundaries all together.
- Small – Creates a tighter boundary which is excellent training for practicing precise takeoffs.

- Medium – Creates a medium size boundary.
- Large – Creates a large boundary.

Once you select a boundary size, you'll notice two blue lines, one on either side of the runway. During takeoff, you must try to stay between these lines. As your airplane gets close to the boundary markers, the colors will change as a warning. If you get too close, they will turn red. Correct the flight path of your airplane so that you are more centered on the runway.

Wind-

Not every day can be an ideal day to fly. Every pilot must learn how to takeoff with different wind conditions. The Wind menu will allow you to adjust the direction of the wind. When you select the **Wind** menu item, the following options will appear.

- None – Turns the wind off to simulate a calm day.
- Crosswind Left – This will set the wind to blow from the left of the aircraft.
- Crosswind Right – This will set the wind to blow from the right of the aircraft.
- Upwind (Normal) – Upwind will set the wind to blow towards the nose of the aircraft.
- Downwind (Dangerous) – This will create a tail wind, making it more difficult to takeoff due to the decrease in airspeed.

Direction-

The Direction menu will allow you to change the direction in which you take off. For an R/C pilot, you don't have the luxury of sitting in the airplane, so you must learn how to control the airplane from any direction. Selecting the Direction menu will show the following options.

- Left to Right – Take off from the left side of the runway, heading to the right.
- Right to Left – Take off from the right end of the runway, heading to the left.

Exit-

If you wish to leave the Takeoff Trainer and return to the simulation, select the **Exit** menu item.

Help

If you wish to display the welcome and get ready dialog screens again, select **Show Training Dialogs** from the Help menu.



Landing Trainer

The old saying goes, "Take offs are easy, landings are the hard part." Once you master the Takeoff Trainer, the next step is to learn how to land, which is what the Landing Trainer is designed to do.



To start the Landing Trainer, click the **Training** menu, followed by the **Landing Trainer...** menu item.

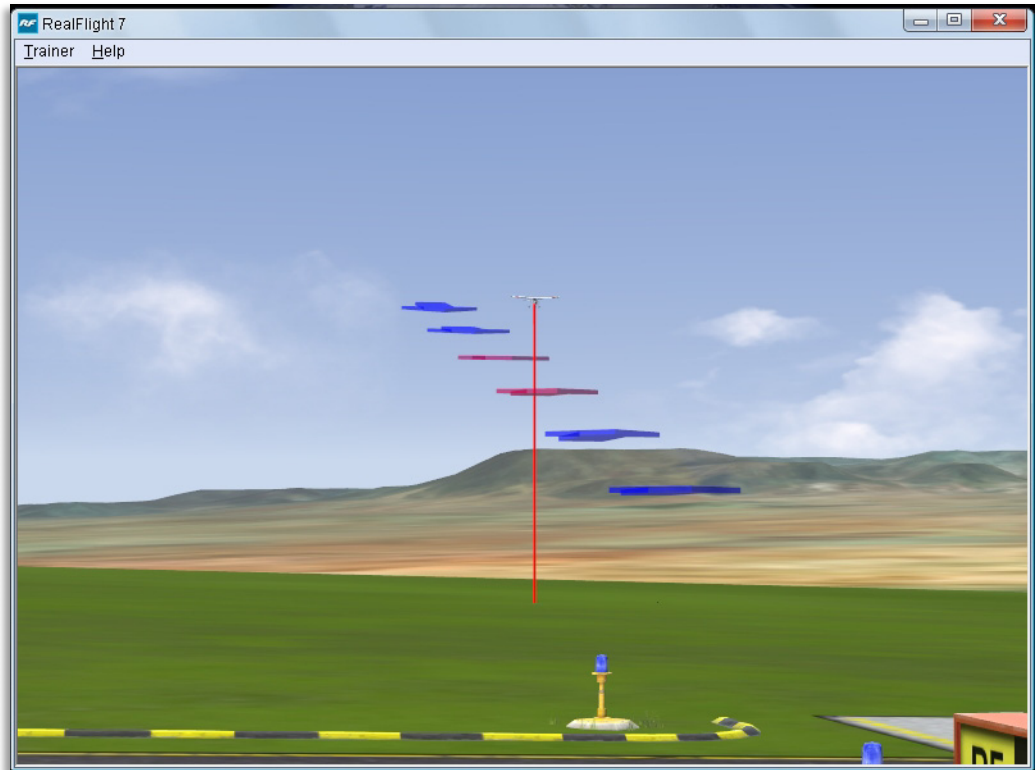
You'll notice that RealFlight switched airports to Flight School, if you were not there already. For this training session, you'll be piloting Hobbico's NexSTAR.

A welcome dialog will first appear to explain the goals of this trainer as well as offer a few tips. If you do not wish to see this dialog screen again each time you load this trainer, simply click the **Don't show this message again** checkbox at the bottom, then click **Close**.

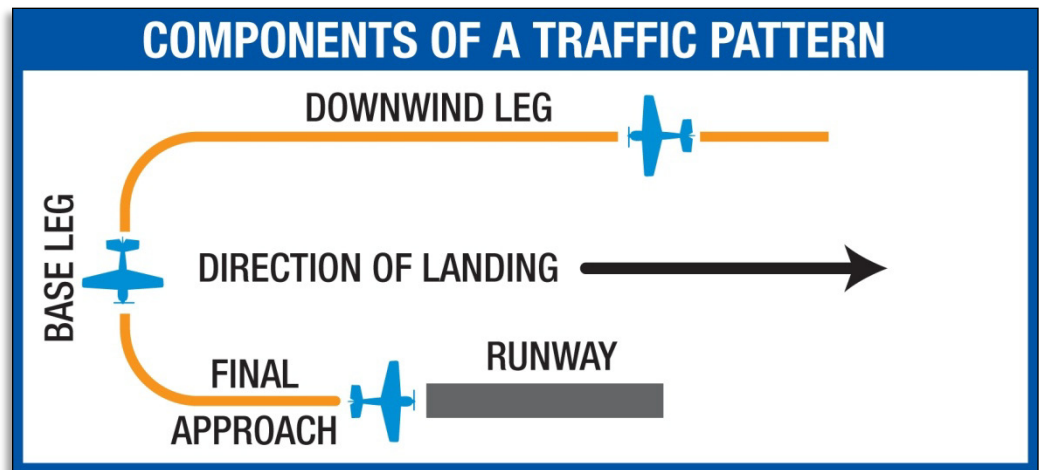
Following the welcome dialog, the get ready dialog screen will appear. This screen will explain what you are required to do for this trainer. There is also a check list that you should follow before you proceed. If an item in the checklist is set the Ready light will illuminate. Otherwise, the Ready light will be dim, and the function on the controller pictured to the left will blink indicating what needs to be done.

The get ready dialog is a great way to prepare for the trainer. Once you have successfully run through the trainer a few times and no longer wish to see this dialog, simply click the checkbox labeled **Don't show this message again** and then click **Go**.

You'll also have options, should you wish, to adjust where to start the landing, wind direction, and runway perimeters.



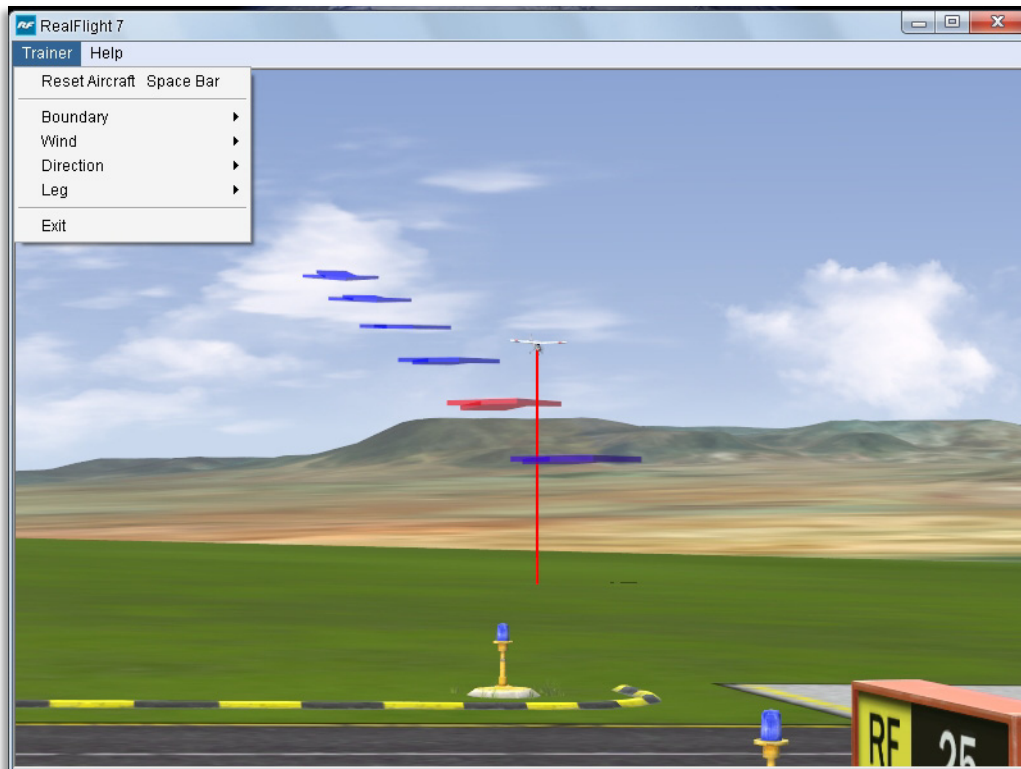
For landings, it's important to understand the different segments, or 'legs' during the approach to the runway.



When you start the Landing Trainer, you'll notice a new menu has appeared.

Trainer Menu-

The Trainer Menu contains the following menu items:



Reset Aircraft-

If you crash or fly outside the boundary, there are three ways to reset the aircraft:

1. Press the **Reset** button on the InterLink Elite controller. This is probably the fastest and simplest method.
2. Press the keyboard's space bar.
3. Click the **Reset Aircraft** menu item.

Boundary-

The Boundary menu item allows you to change the size of the runway path in which you must land between. To add, or change the size of the boundary, select the **Boundary** menu item from the **Trainer** menu. A sub-menu will appear with the following options.

- None – Eliminates all boundaries.
- Small – Creates a tighter boundary which is excellent training for precise landings.

- Medium – Creates a medium-sized boundary.
- Large – Creates a large boundary.

Once you select a boundary size, you'll notice two blue lines, one on either side of the runway. During your landing, you must try to stay between these lines. As your airplane gets close to the boundary markers, the colors will change as a warning. If you get too close, they will turn red. Correct the flight path of your airplane so that you are more centered on the runway.

Wind-

Every pilot must learn how to land with different wind conditions. In some respects, this can be more difficult than takeoffs, since you must learn how to deal with different wind conditions for each leg of the approach. The Wind menu will allow you to adjust the direction of the wind. When you select the **Wind** menu item, the following options will appear.

- None – Turns the wind off to simulate a calm day.
- Crosswind Left – This will set the wind to blow left across the runway.
- Crosswind Right – This will set the wind to blow from the right across the runway.
- Upwind (Normal) – Upwind will set the wind to blow towards the nose of the aircraft as you are on your final leg.
- Downwind (Dangerous) – This will create a tail wind during the final leg, making it more difficult to land due to the decrease in airspeed.

Direction-

It's important to learn how to land from any direction. This menu item will change the approach direction to learn the controls from a different angle. The choices that appear when you select the Direction menu item are as follows:

- Left to Right – This will set you up to land on the runway from the left end flying towards the right.
- Right to Left - This will set you up to land on the runway from the right end flying towards the left.

Leg-

The Leg menu item allows you to practice each leg or segment of the approach. The options are as follows.

- Downwind – This sets the aircraft up on the downwind side, or parallel to the runway. From here, you must fly the Downwind, turn to Base, and then the Final for the landing.
- Base – This sets the aircraft up for the Base leg of the approach. You must complete the Base leg and then turn to the Final leg prior to landing.
- Final – The Final leg will set you up for the landing.

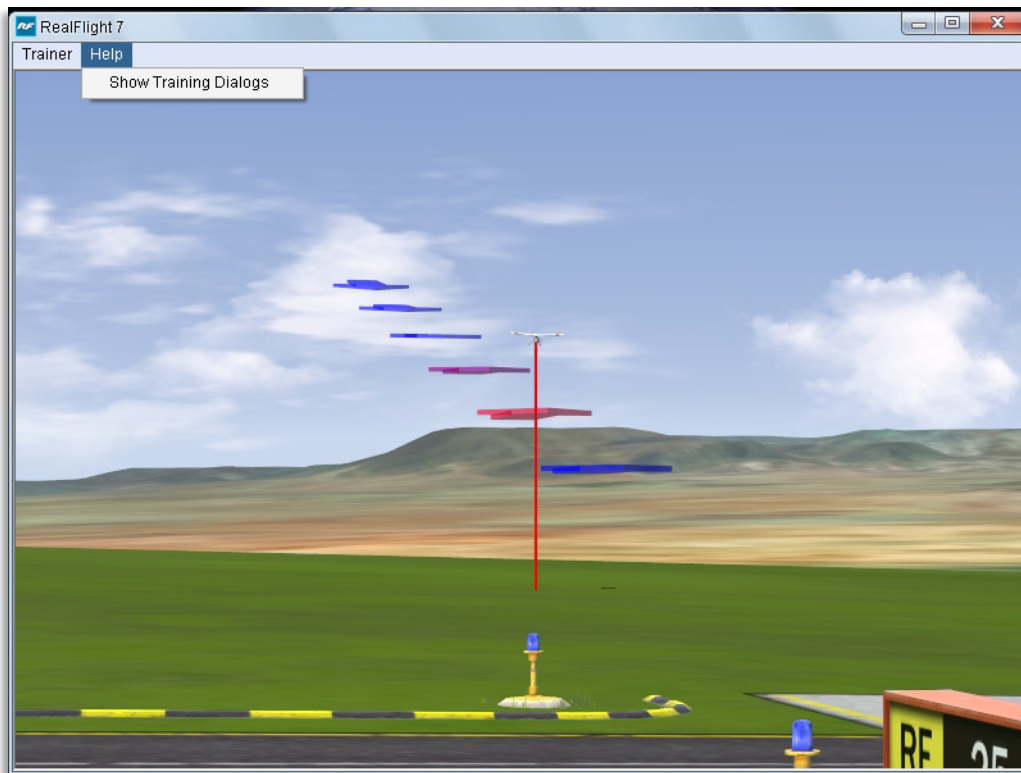
When the training lesson begins, the NexSTAR will be placed at the beginning of the leg you choose. Simply hit the **Reset** button on the InterLink Elite to begin flying.

Exit-

If you wish to leave the Landing Trainer and return to the simulation, select the **Exit** menu item.

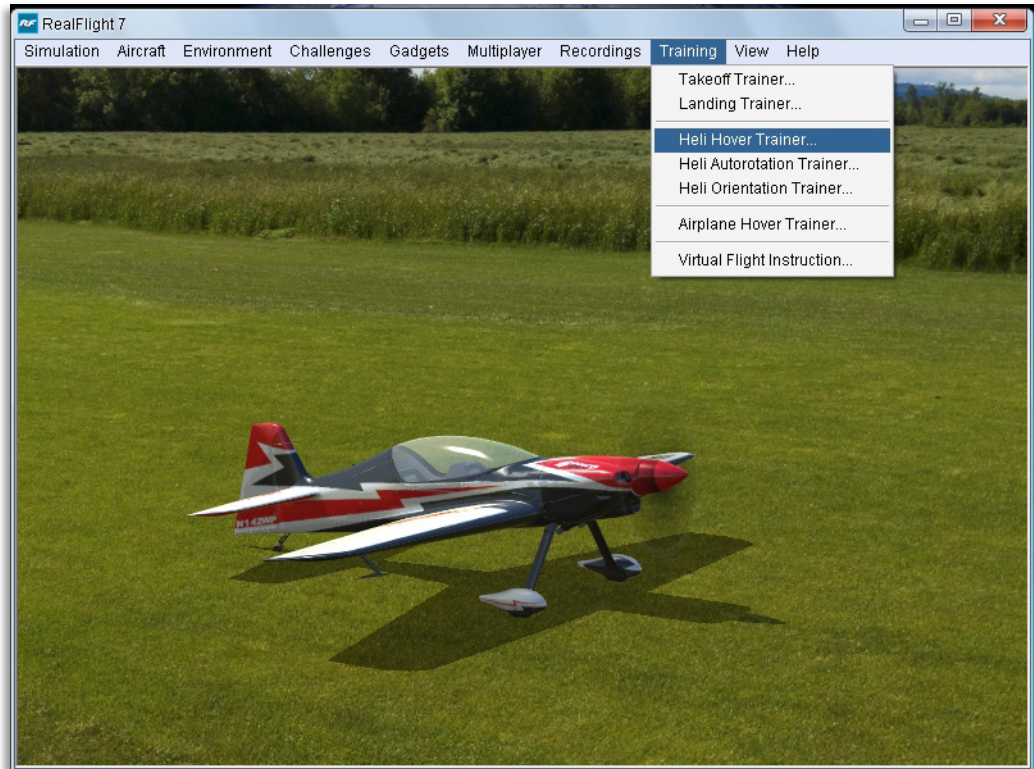
Help-

If you wish to display the welcome and get ready dialog screens again, select **Show Training Dialogs** from the Help menu.



Heli Hover Trainer

The Heli Hover Trainer offers you a great way to learn how to precisely control a helicopter in a hover. With the Heli Hover Trainer, you pick which channel, or channels you wish to control and RealFlight will take care of the rest for you. You'll also have options to determine the model's orientation, perimeter dimensions, and more.



To start the trainer, click **Heli Hover Trainer...** menu item from the **Training** menu. The trainer will start automatically.

A welcome dialog will first appear to explain the goals of this trainer as well as offer a few tips. If you do not wish to see this dialog screen again for each time you load this trainer, simply click the **Don't show this message again** checkbox at the bottom, then click **Close**.

Following the welcome dialog, the get ready dialog screen will appear. This screen will explain what you are required to do for this trainer. There is also a checklist that you should follow before you proceed. If an item in the checklist is properly adjusted, or correctly positioned, the Ready light will illuminate. Otherwise, the Ready light will be dim, and the function on the controller pictured to the left will blink indicating what needs to be done.

The get ready dialog is a great way to prepare for the trainer. Once you have successfully run through the trainer a few times and no longer wish to see this dialog, simply click the checkbox labeled **Don't show this message again** and then click **Go**.

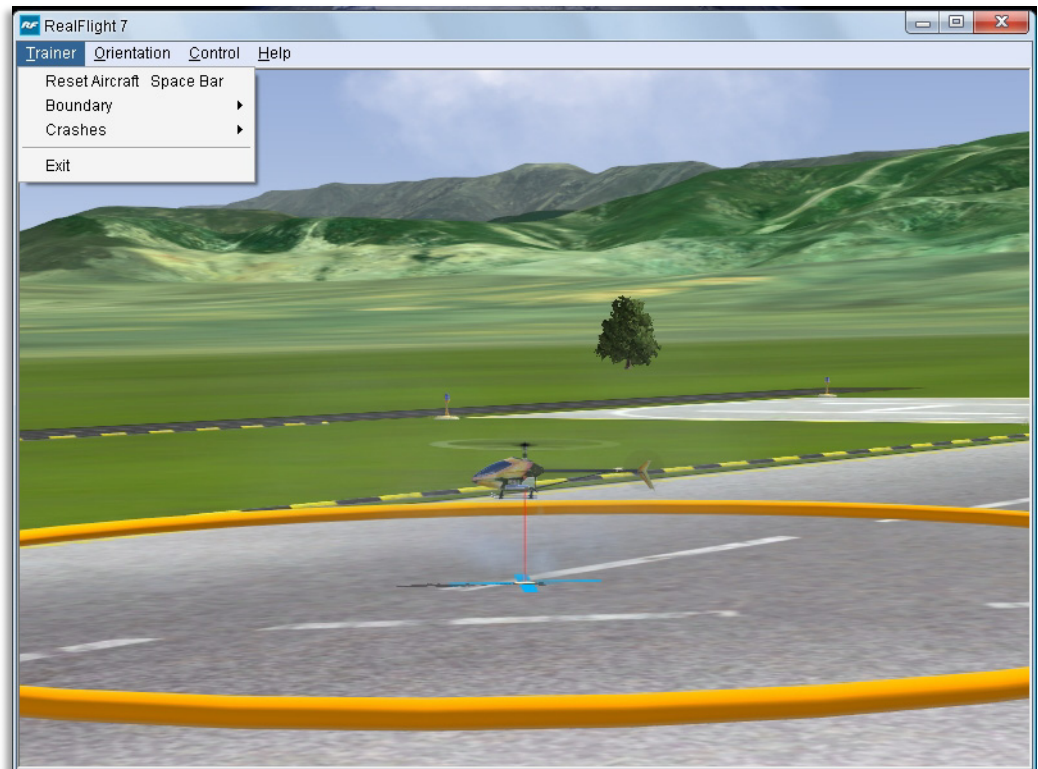
You'll notice a circle on the ground. This circle represents the training boundary. If your helicopter ventures beyond the boundary's outer perimeter, it will break apart and the session will begin once again. You'll also note an 'X' mark within the boundary. The smaller circle within the boundary's perimeters represents the true center of the boundary; the 'X' represents the current location of your helicopter. The goal is to control the helicopter in a stable hover, keeping it as close to the center of the circle as possible.



You'll also notice that the menu options have changed.

Trainer Menu-

The Trainer menu contains the following menu items:



Reset Aircraft-

If you crash or fly outside the circle, there are three ways to reset the aircraft:

1. Press the **Reset** button on the InterLink Elite controller. This is probably the fastest and simplest method.
2. Press the keyboard's space bar.
3. Click the **Reset Aircraft** menu item.

Boundary-

The Boundary menu item allows you to change the size of the circle, or eliminate it altogether. To change the size of the boundary, select the **Boundary** menu item from the **Trainer** menu. A drop-down menu will appear with the following options.

- None – Eliminate the boundary circle.
- Small – Creates a small circle.
- Medium – Creates a medium-sized circle.
- Large – Creates a large circle.

Crashes-

After a crash, RealFlight may automatically reset your helicopter for you, if so desired. This option is on by default. If you would prefer to turn this option off, select the **Crashes** menu item, then select the **Automatically Reset Aircraft**. If a checkmark appears next to this menu item, then this feature is activated. If the checkmark does not appear, it is not active.

If Automatically Reset Aircraft is enabled, you may adjust how quickly the reset happens. To adjust this delay, select the **Crashes** menu item followed by the **Reset Delay** menu item. Four options will be available to you:

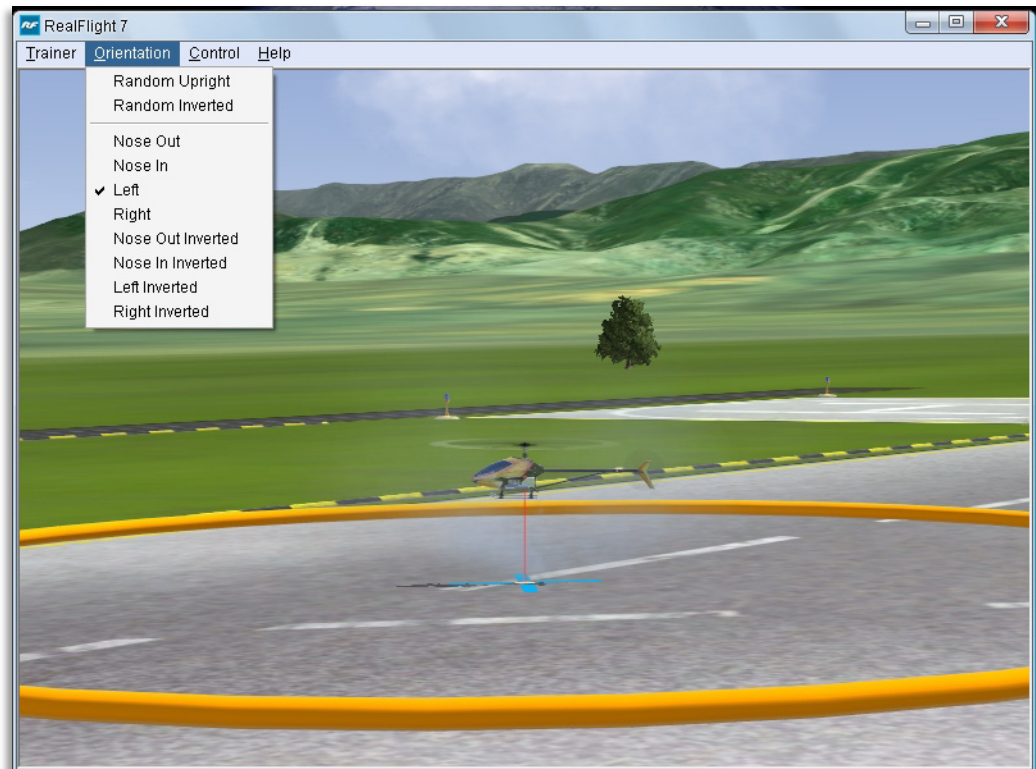
- None – No delay will be set. The aircraft will reset immediately.
- Short – The aircraft will reset approximately one second after it crashes.
- Medium – The aircraft will reset approximately three seconds after it crashes.
- Long – The aircraft will reset approximately six seconds after it crashes.

Exit-

If you wish to leave the Heli Hover Trainer and return to the simulator, select the **Exit** menu item.

Orientation Menu-

The Orientation menu allows you the option to select the position and attitude of the heli when the session begins or the helicopter is reset.

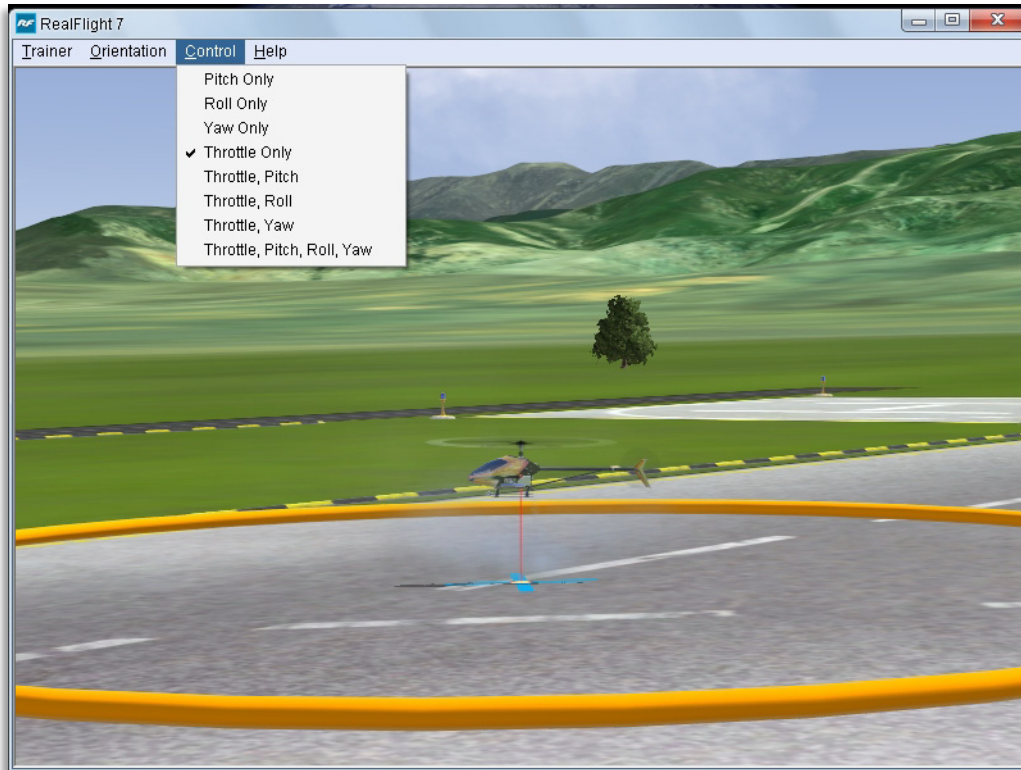


A checkmark will appear next to the currently selected orientation. The options available are:

- Random Upright – The heli will start in the upright position, but it will randomly face either to the right, left, nose out, or nose in.
- Random Inverted – The heli will start in the inverted position, but it will randomly face either to the right, left, nose out, or nose in.
- Nose Out – The heli will start upright, facing nose out. This option is the best selection for beginning heli pilots.
- Nose In – The heli will start upright, facing nose in.
- Left – The heli will start upright, facing to the left.
- Right – The heli will start upright, facing to the right.
- Nose Out Inverted – The heli will start inverted, facing nose out.
- Nose In Inverted – The heli will start inverted, facing nose in.
- Left Inverted – The heli will start inverted, facing to the left.
- Right Inverted – The heli will start inverted, facing to the right.

Control Menu-

The Control menu allows you to select which channel or channels you will control. All other channels are controlled by RealFlight, allowing you to learn just the controls you wish and adding more as you become more comfortable and confident.



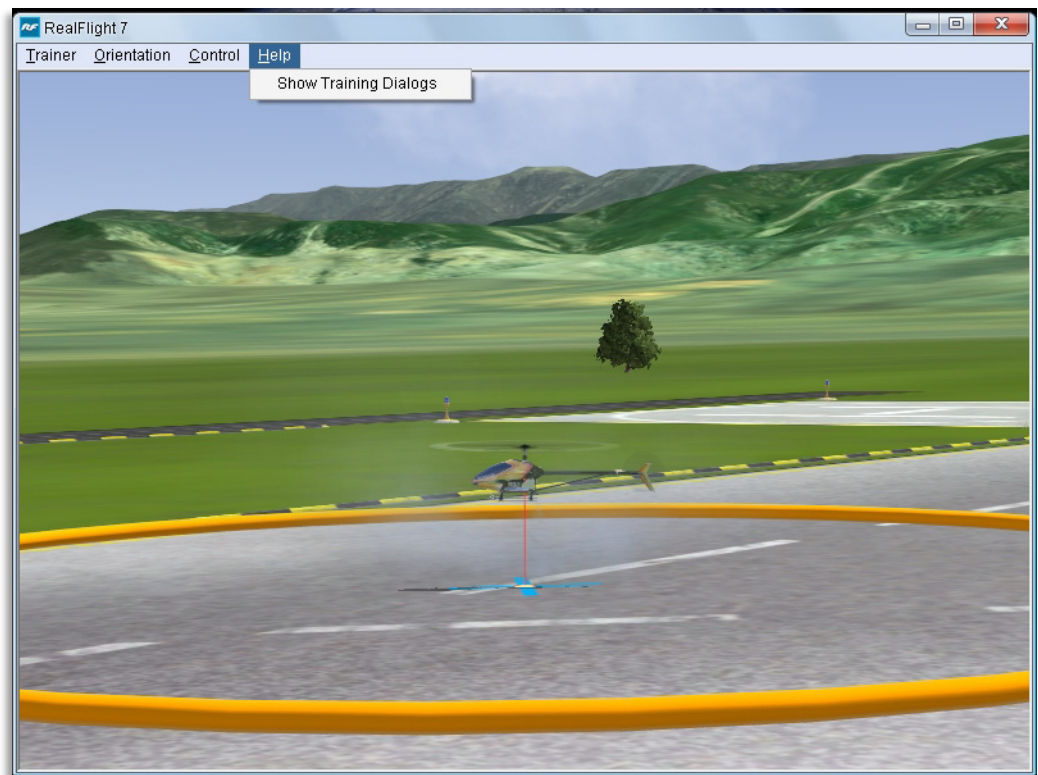
A checkmark will appear in the menu next to the currently selected item. Your options are:

- Pitch Only – You control only the pitch of the heli. RealFlight will control the roll, yaw, and throttle.
- Roll Only – You control only the roll of the heli. RealFlight will control the pitch, yaw, and throttle.
- Yaw Only – You control only the yaw of the heli. RealFlight will control the roll, pitch, and throttle.
- Throttle Only – You control only the throttle of the heli. RealFlight will control the roll, yaw, and pitch.
- Throttle, Pitch – You control both the throttle and pitch of the heli. RealFlight will control the roll, and yaw.

- Throttle, Roll – You control both the throttle and roll of the heli. RealFlight will control the pitch, and yaw.
- Throttle, Yaw – You control both the throttle and yaw of the heli. RealFlight will control the roll, and pitch.
- Throttle, Pitch, Roll, Yaw – You control all channels for the heli.

Help-

If you wish to display the welcome and get ready dialog screens again, select **Show Training Dialogs** from the Help menu.



Heli Autorotation Trainer

Every helicopter pilot will tell you that one of the most important things to learn is how to autorotate a landing should the engine ever fail. The Heli Autorotation Trainer offers you a great way to learn this maneuver.



To start the trainer, click **Heli Autorotation Trainer...** menu item from the **Training** menu. The trainer will start automatically.

A welcome dialog will first appear to explain the goals of this trainer and offer a few tips. If you do not wish to see this dialog screen again each time you load this trainer, simply click the **Don't show this message again** checkbox at the bottom, then click **Close**.

Following the welcome dialog, the get ready dialog screen will appear. This screen will explain what you are required to do for this trainer. There is also a checklist that you should follow before you proceed. If an item in the checklist is set, the Ready light will illuminate. Otherwise, the Ready light will be dim, and the function on the controller pictured to the left will blink indicating what needs to be done.

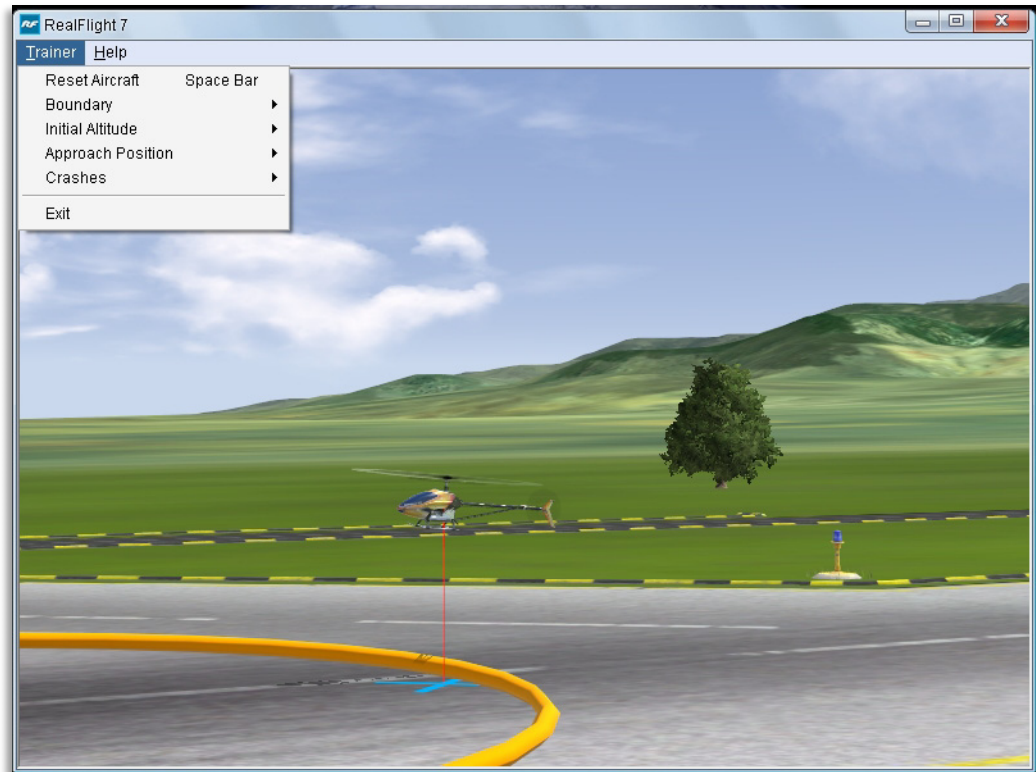
The get ready dialog is a great way to prepare for the trainer. Once you have successfully run through the trainer a few times and no longer wish to see this dialog, simply click the checkbox labeled **Don't show this message again** and then click **Go**.

You'll notice that the heli appears in the air with a line below it drawn towards the ground. On the ground is a boundary circle in which you must land.

You'll also notice the menus have changed, which we'll explain here.

Trainer Menu-

The trainer Menu contains the following menu items:



Reset Aircraft-

If you crash, there are three ways to reset the aircraft:

1. Press the **Reset** button on the InterLink Elite controller. This is probably the fastest and simplest method.
2. Press the keyboard's space bar.
3. Click the **Reset Aircraft** menu item.

Boundary-

The Boundary menu item allows you to change the size of the circle or eliminate it altogether. To change the size or the boundary, select the **Boundary** menu item from the **Trainer** menu. A drop-down menu will appear with the following options:

- None – Eliminates the boundary circle.

- Small – Creates a small circle.
- Medium – Creates a medium-sized circle.
- Large – Creates a large circle.

Initial Altitude-

This sub-menu item allows you to adjust the altitude which you will start the trainer. A low altitude will offer less time for you to make adjustments to your landing, however, it is good to practice emergency autorotations at all altitudes. There are three options available:

- Low – While a lower altitude offers less time for input, the inertia will have less time to diminish as well.
- Medium – Allows for a mid-level autorotation.
- High – The helicopter will start at a higher altitude. Thus, the pilot will have to compensate accordingly to ensure a safe autorotation landing.

Approach Position-

The Approach Position sub-menu allows you to adjust the initial location of the heli, from right to left, with middle directly in front of the landing zone. You may also choose Inverted from this sub-menu to practice maneuvering the heli back to right side up before landing during an autorotation.

Crashes-

After a crash, RealFlight may automatically reset your aircraft for you, if so desired. This option is on by default. If you would prefer to turn this option off, select the **Crashes** menu item, then select the **Automatically Reset Aircraft**. If a checkmark appears next to this menu item then this feature is activated. If the checkmark does not appear, it is not active.

If Automatically Reset Aircraft is enabled, you can adjust how quickly the reset happens. To adjust this delay, select the **Crashes** menu item followed by the **Reset Delay** menu item. Four options will be available to you:

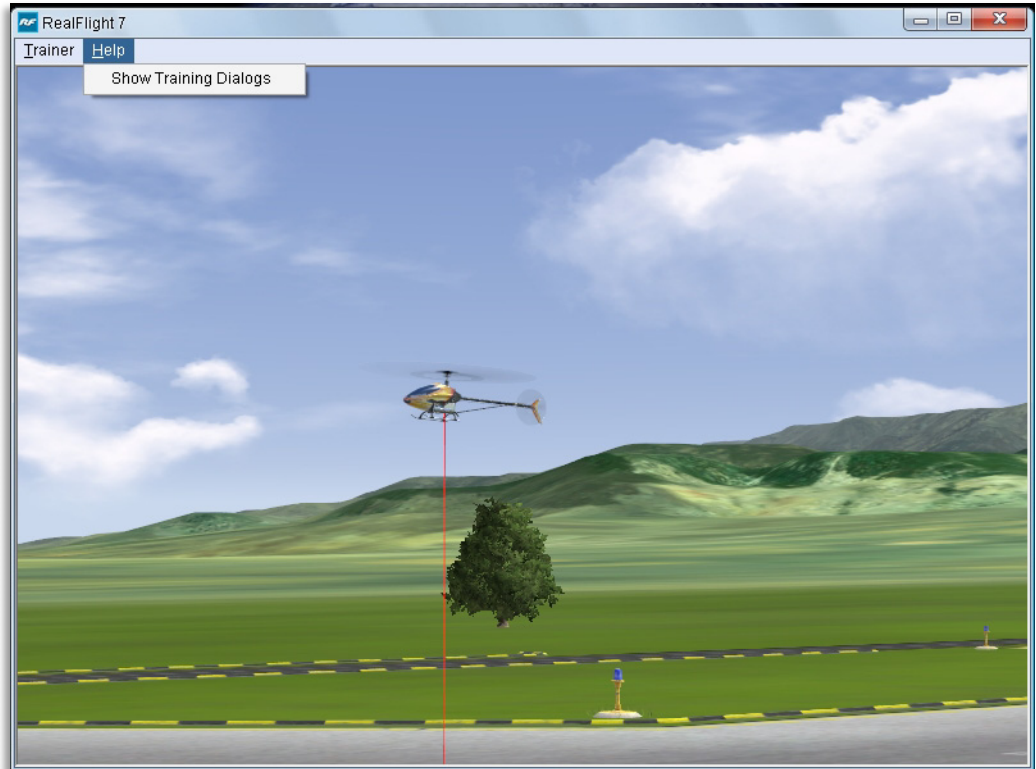
- None – No delay will be set. The aircraft will reset instantaneously.
- Short – The aircraft will reset approximately one second after it crashes.
- Medium – The aircraft will reset approximately three seconds after it crashes.
- Long – The aircraft will reset approximately six seconds after it crashes.

Exit-

If you wish to leave the Heli Hover Trainer and return to the simulator, select the **Exit** menu item.

Help-

If you wish to display the welcome and get ready dialog screens again, select **Show Training Dialogs** from the Help menu.

**Heli Orientation Trainer**

As you become more proficient with hovering a helicopter, you can test your skills with the Heli Orientation Trainer. The Heli Orientation Trainer challenges you to keep your helicopter in the same location as the trainer helicopter. As you succeed in doing so the trainer helicopter will move and the level of difficulty will increase.



To start the trainer, select the **Heli Orientation Trainer** menu item from the **Training** menu.

The Heli Orientation Trainer has a number of different levels, each with an increasing degree of difficulty than the previous. To pass a level you must hover your helicopter in close proximity to the trainer helicopter. As you do so, the trainer helicopter will turn from blue to red and the progress bar at the top of the screen will increase indicating that your task is nearly complete.



In the upper right corner, a countdown timer is visible. This is the remaining amount of time allotted for you to fill the progress bar and complete the task. If you fail to do so, both the timer, and the progress bar will reset to zero. You must begin once again.

The number displayed in the upper left corner indicates the number of locations the trainer helicopter will stop for the current level. It will also indicate how many of these locations you have completed. For example, if it displays 1/3, you have successfully completed one spot out of three for the current level.

As you advance to the next level, you may be responsible for controlling more channels, the allotted time might also decrease, and the trainer heli will stop in more locations. You might also experience any combination of these circumstances as the difficulty increases.

Heli Orientation Menu-

The Heli Orientation menu is the only menu accessible while the trainer is running. Two options are available in the Heli Orientation menu:



Select Level-

A drop-down menu will display the levels available to you. For example, if you have only progressed to Level 2, you will not be able to access Level 3 or higher in this menu.

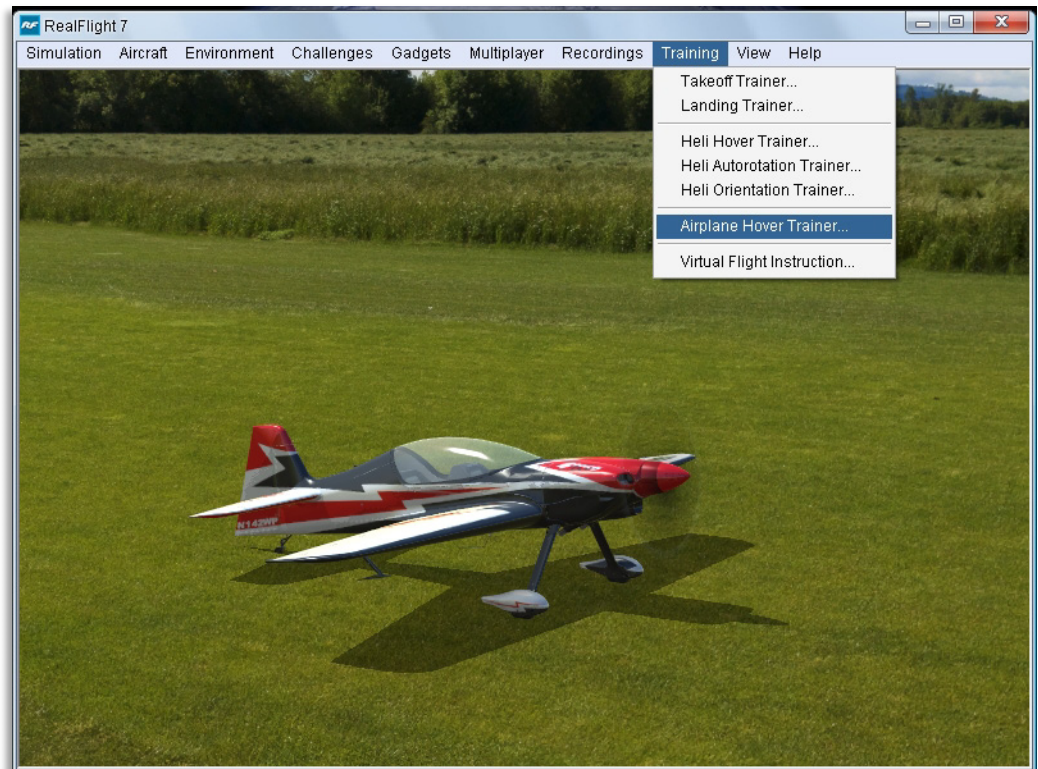
A checkmark will appear next to the level you are currently flying.

Exit-

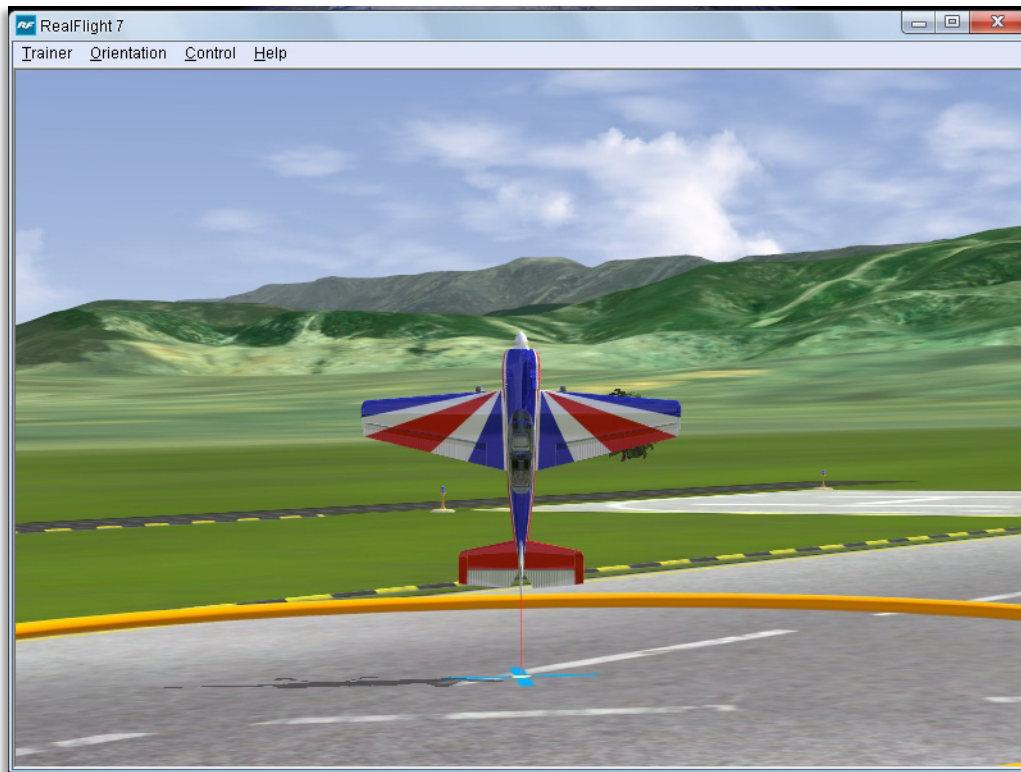
To return to the simulator, select **Exit** to leave the Heli Orientation Trainer.

Airplane Hover Trainer

The Airplane Hover Trainer offers you a great way to learn how to control an aerobatic airplane in a torque roll. With the Airplane Hover Trainer, you pick which channel or channels you wish to control. RealFlight automatically controls the rest.



To start the trainer, click the **Airplane Hover Trainer...** menu item from the **Training** menu. The trainer will start automatically.



A welcome dialog will appear to explain the goals of this trainer and offer a few tips. If you do not wish to see this dialog screen again each time you load this trainer, simply click the **Don't show this message again** checkbox at the bottom, then click **Close**.

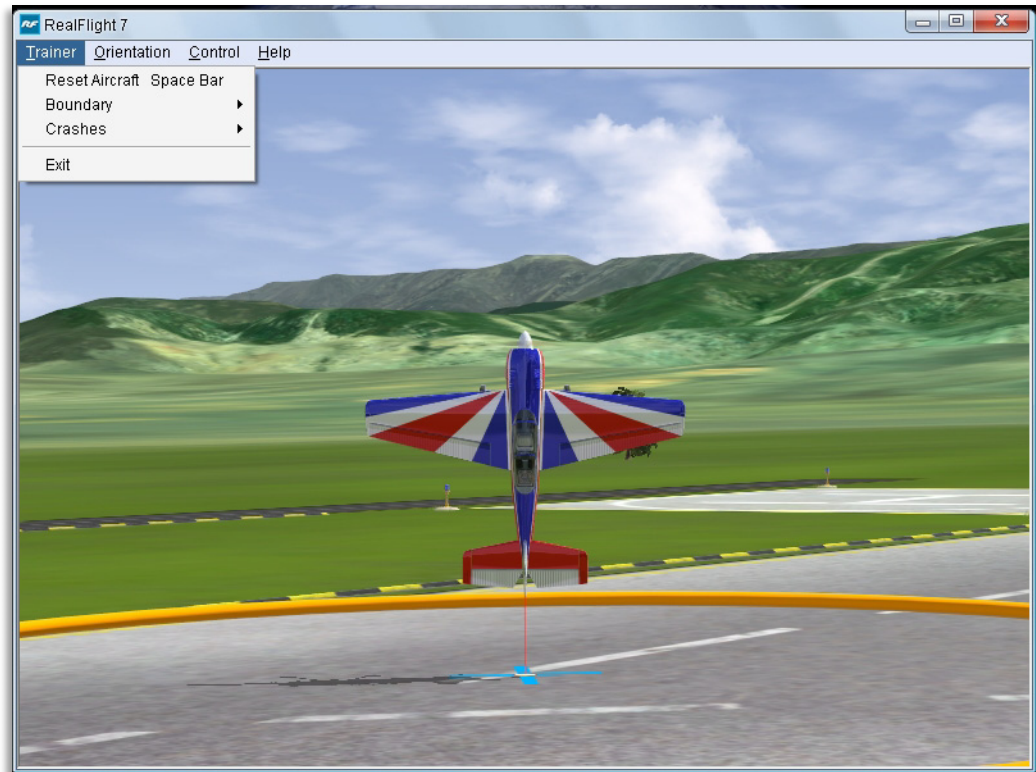
Following the welcome dialog, the get ready dialog screen will appear. This screen will explain what you are required to do for this trainer. There is also a checklist that you should follow before you proceed. If an item in the checklist is properly adjusted, the Ready light will illuminate. Otherwise, the Ready light will be dim, and the function on the controller pictured to the left will blink indicating what needs to be done.

The get ready dialog is a great way to prepare for the trainer. Once you have successfully run through the trainer a few times and no longer wish to see this dialog, simply click the checkbox labeled **Don't show this message again** and then click **Go**.

Once you are running the trainer, you'll notice a circle on the ground. This circle represents the training boundary. If your airplane ventures beyond this boundary, it will break apart and the session will begin once again. You'll also note an 'X' mark within the boundary that represents the current location of your airplane. The goal is to control the airplane in a stable hover; keeping it as close to the center of the circle as possible.

Trainer Menu-

The Trainer menu contains the following menu items:



Reset Aircraft-

If you crash or fly outside the circle, there are three ways to reset the aircraft:

1. Press the **Reset** button on the InterLink Elite controller. This is probably the fastest and simplest method.
2. Press the keyboard's space bar.
3. Click the **Reset Aircraft** menu item.

Boundary-

The Boundary menu item allows you to change the size of the circle, or eliminate it altogether. To change the size or the boundary, select the **Boundary** menu item from the **Trainer** menu. A drop-down menu will appear with the following options:

- None – Eliminates the boundary circle.
- Small – Creates a small circle.

- Medium – Creates a medium-sized circle.
- Large – Creates a large circle.

Crashes-

After a crash, RealFlight may automatically reset your aircraft for you, if so desired. This option is on by default. If you would prefer to turn this option off, select the **Crashes** menu item, then select the **Automatically Reset Aircraft**. If a checkmark appears next to this menu item then this feature is activated. If the checkmark does not appear, it is not active.

If **Automatically Reset Aircraft** is enabled, you can adjust how quickly the reset happens. To adjust this delay, select the **Crashes** menu item followed by the **Reset Delay** menu item. Four options will be available to you:

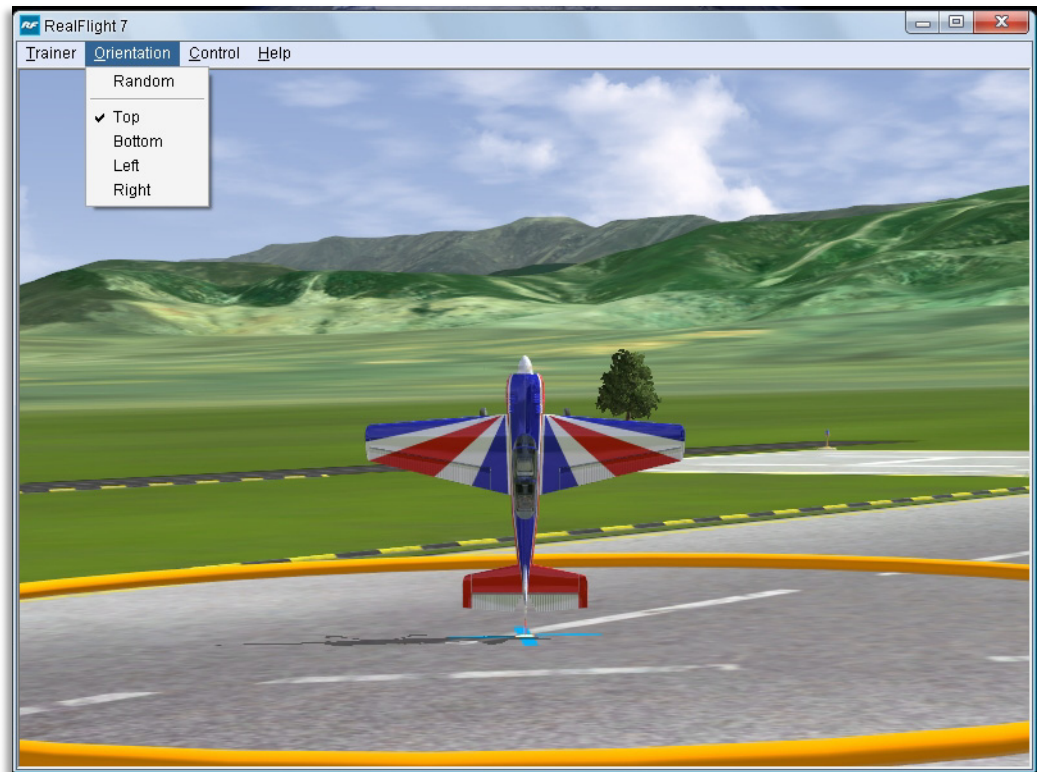
- None – No delay will be set. The aircraft will reset instantaneously.
- Short – The aircraft will reset approximately one second after it crashes.
- Medium – The aircraft will reset approximately three seconds after it crashes.
- Long – The aircraft will reset approximately six seconds after it crashes.

Exit-

If you wish to leave the Airplane Hover Trainer and return to the simulator, select the **Exit** menu item.

Orientation Menu-

The Orientation menu allows you the option to select the position and attitude of the airplane when the session begins or the airplane is reset.

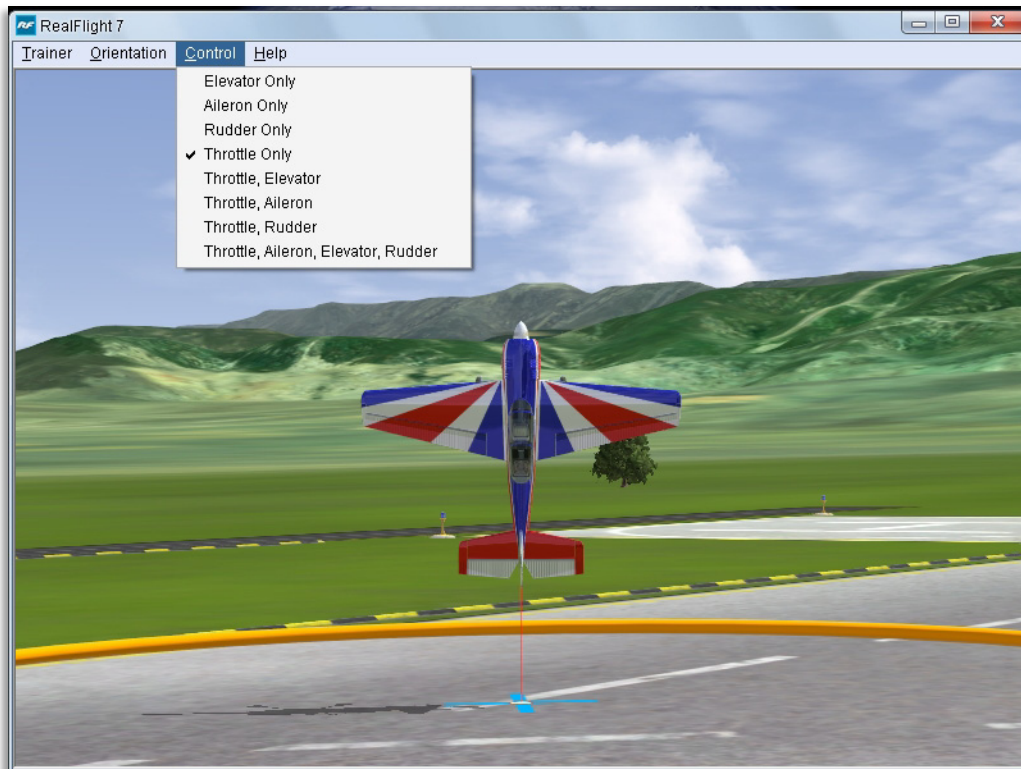


A checkmark will appear next to the currently selected orientation. The options available are:

- Random – The airplane will start in a random position, with the top, bottom, left side or right side facing you.
- Top – The airplane will start with the top of the aircraft facing you.
- Bottom – The airplane will start with the bottom of the aircraft facing you.
- Left – The airplane will start with the left side of the aircraft facing you.
- Right – The airplane will start with the right side of the aircraft facing you.

Control Menu-

The Control menu allows you to select which channel or channels to control. The remaining channels are controlled by RealFlight, allowing you to learn just the controls you wish and adding more as you become more comfortable and confident.



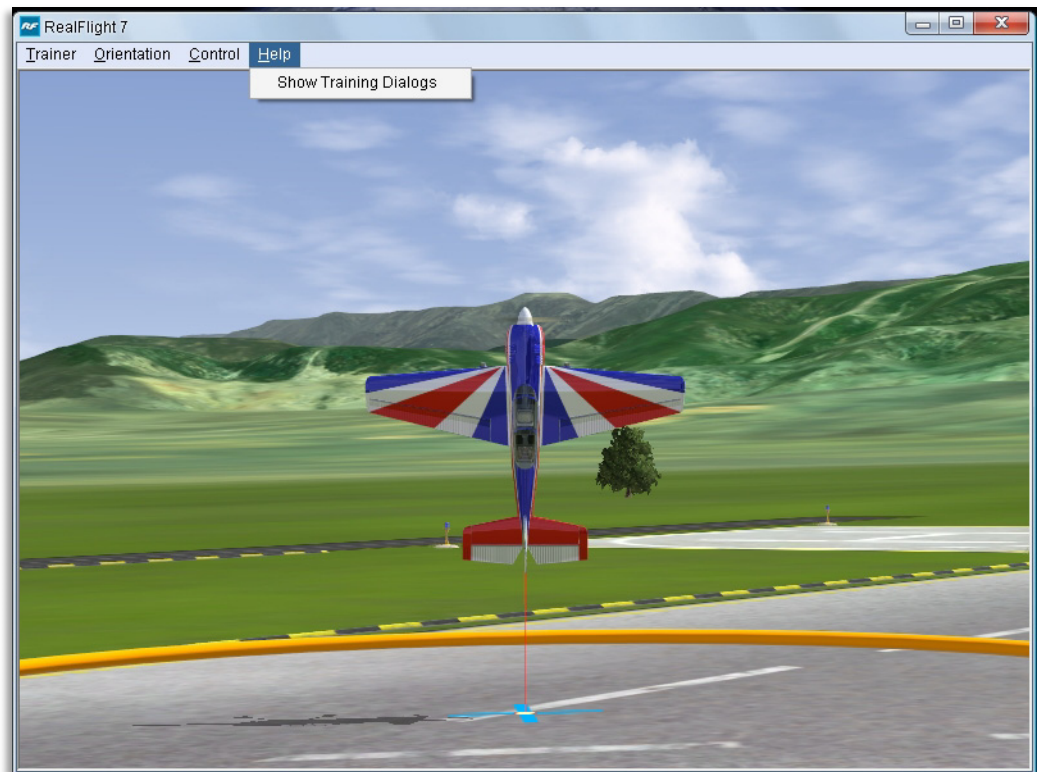
A checkmark will appear in the menu next to the currently selected item. Your options are:

- Elevator Only – Check this to control only the elevator of the aircraft. RealFlight will control the throttle, ailerons, and rudder for you.
- Aileron Only – Check this to control only the ailerons of the aircraft. RealFlight will control the throttle, elevator, and rudder for you.
- Rudder Only – Check this to control only the rudder of the aircraft. RealFlight will control the throttle, ailerons, and elevator for you.
- Throttle Only – Check this to control only the throttle of the aircraft. RealFlight will control the elevator, ailerons, and rudder for you.
- Throttle, Elevator – Check this to control the throttle and elevator of the aircraft. RealFlight will control the ailerons and rudder for you.
- Throttle, Aileron – Check this to control the throttle and ailerons of the aircraft. RealFlight will control the elevator and rudder for you.
- Throttle, Rudder – Check this to control the throttle and rudder of the aircraft. RealFlight will control the elevator and ailerons for you.

- Throttle, Aileron, Elevator, Rudder – Check this to control all four channels. You will not receive any assistance from RealFlight.

Help

If you wish to display the welcome and get ready dialog screens again, select **Show Training Dialogs** from the Help menu.

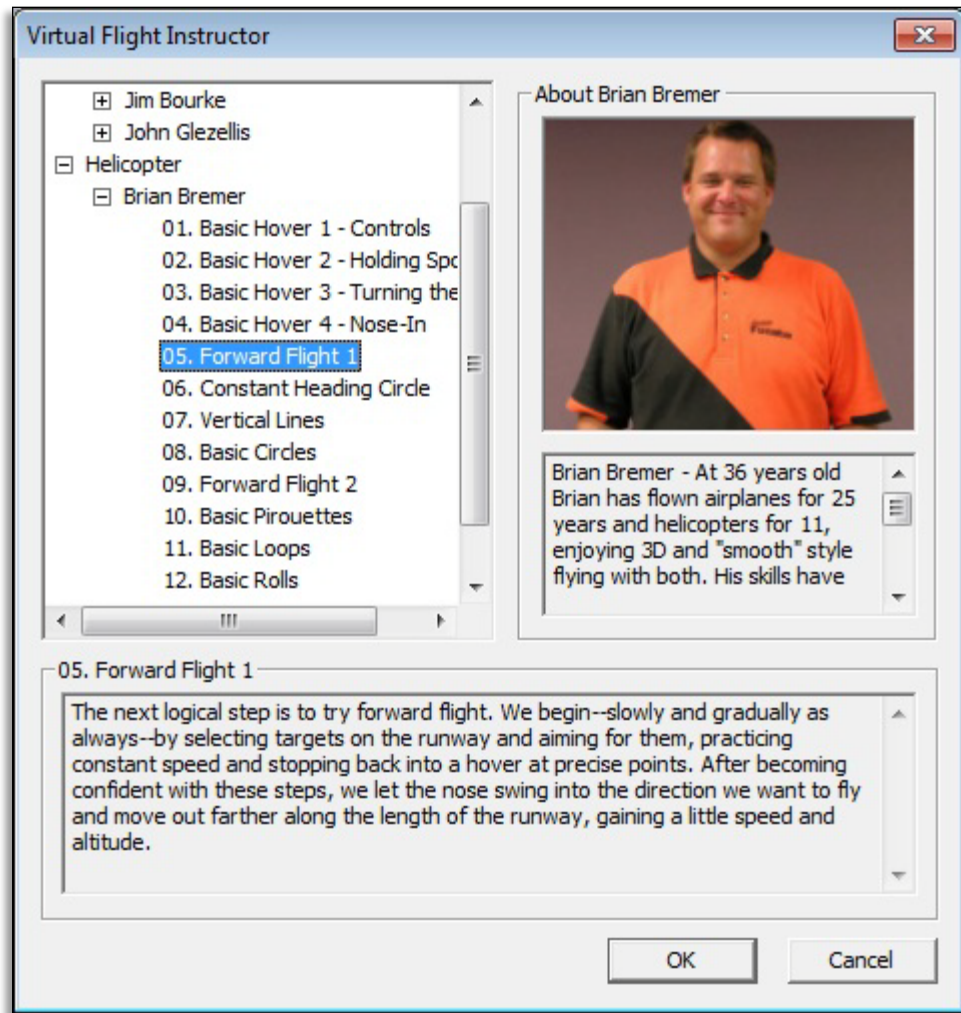


Virtual Flight Instruction

RealFlight 7 includes on-screen flight training from some of R/C's best pilots. John Glezellis, Jason Noll, Frank Noll Jr., Pete Niotis, Todd Bennett, Brian Bremer and Jim Bourke are your instructors, taking you through a variety of skill levels of R/C. There are basics for beginners and more advanced maneuvers for intermediate pilots. RealFlight 7 also includes instructions on how to perform some of today's hottest 3D flight maneuvers! RealFlight 7 includes voice instruction and an on-screen radio that shows the exact movements that the instructor is using. VFI is the perfect training tool for pilots of all skill levels.



To access the VFI menu item, click the **Training** menu followed by the **Virtual Flight Instruction...** menu item. Determine whether you wish to participate in a helicopter or airplane training session. Open the respective genre by clicking the **[+]** (**plus**) or double-clicking the listing. Next, select the pilot you wish to view. To select and begin your training, double-click the respective maneuver or highlight the maneuver and click **OK**.



By default, RealFlight 7's radio gadget appears on-screen. This digital transmitter is a visual guide to display the stick inputs, in real-time, utilized for the recordings. For additional information, please refer to the Radiogadget section on page 188.

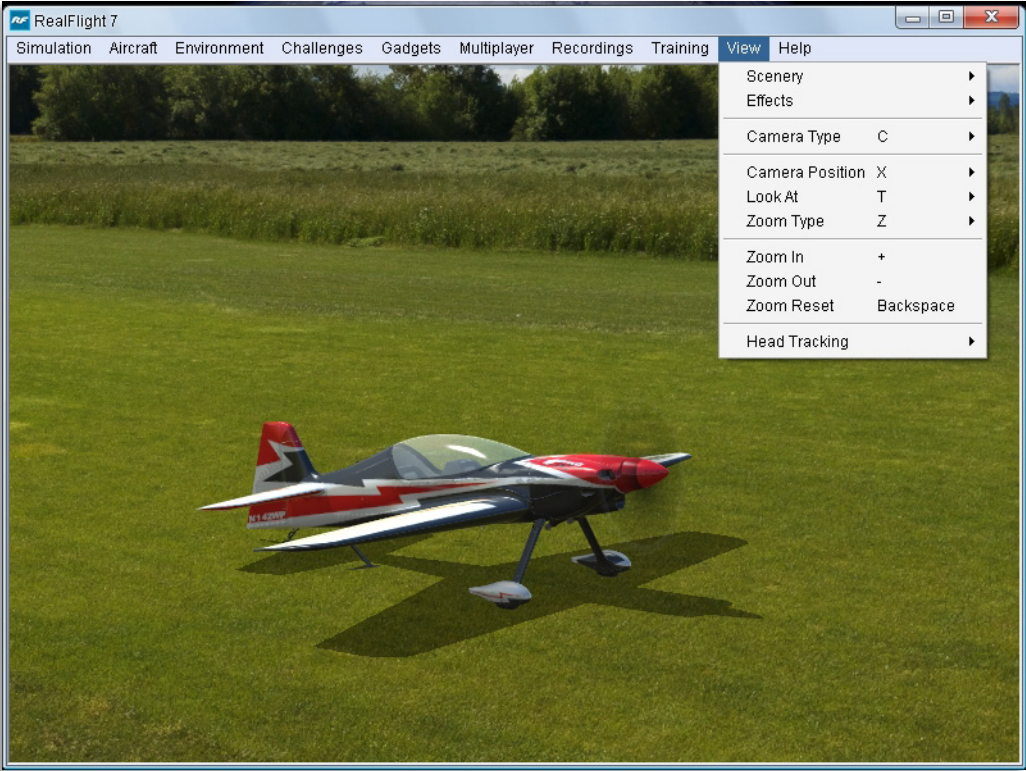


Chapter 13

View Menu

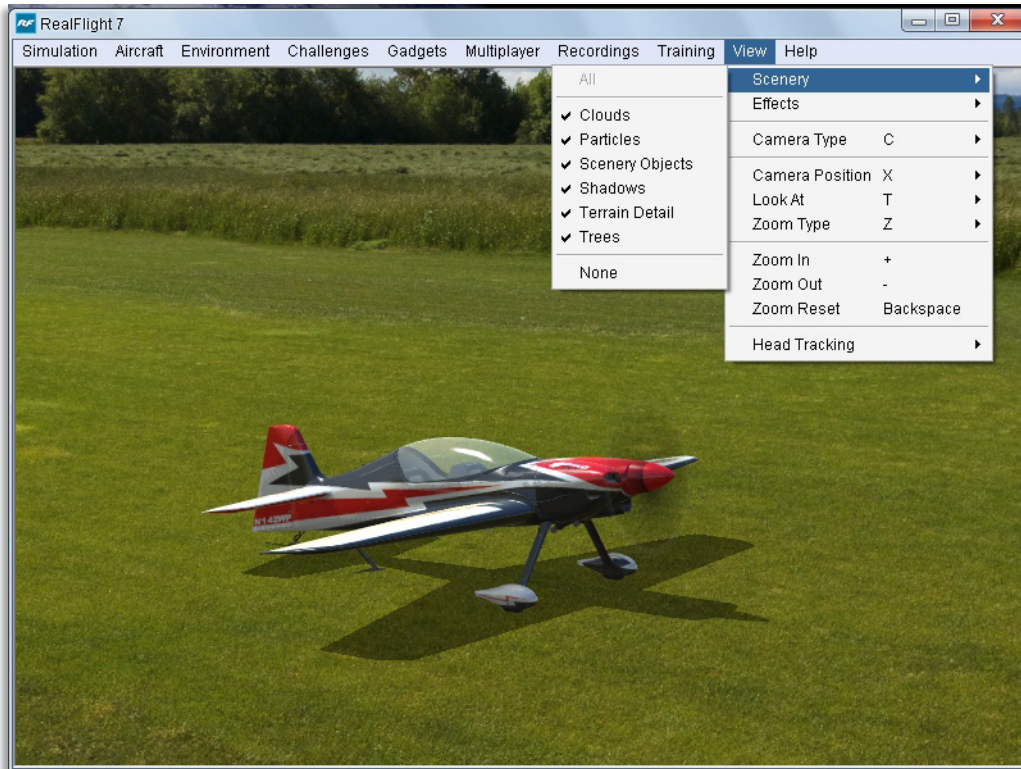
Adjust your vantage point, change your location, and more.

This menu allows you to adjust the various view-related features and functions of the simulation. The View menu adjusts what you are looking at and where you are looking from.



Scenery

The Scenery menu item is used to determine whether to show or hide scenery objects in the airport.

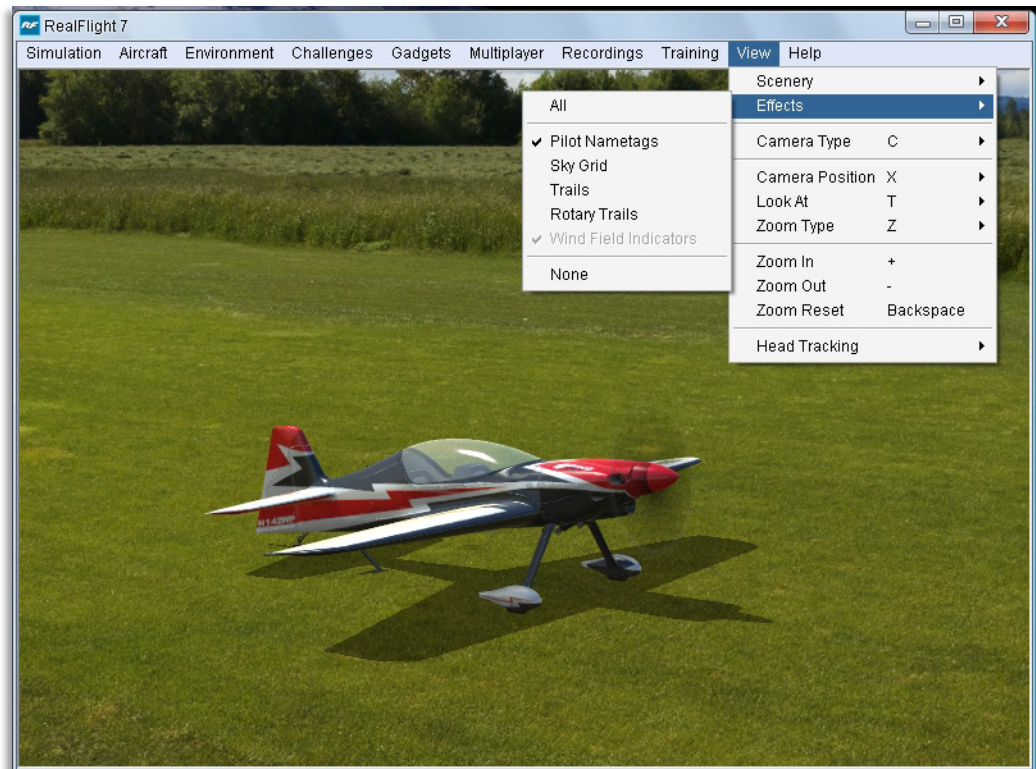


Selecting this item brings forth a pull-down menu with a list of items you can show (make visible within the simulation) or hide (remove from visibility). To show items, check them in the drop-down menu. To hide items, click on them to remove their respective checkmark.

If the frame rate slows dramatically, try eliminating some of the items listed in the Scenery sub-menu. This will improve the frame rate. To remove all items from the scene, click **None**.

Effects

The Effects menu item is used to determine whether to show or hide simulator enhancement objects in the airport.



Selecting this item brings forth a pull-down menu with a list of items you can show (make visible within the simulation) or hide (remove from visibility). To show items, check them in the drop-down menu. To hide items, click on them to remove their respective checkmark.

Pilot Nametags-

When multiple aircraft are flying, either from a multiplayer session, or when you are playing a recording, the pilot's name will follow the aircraft on screen. This indicator will appear on the edge of the screen if the aircraft is out of view, giving you a general direction on where to find that aircraft.

Unchecking this menu item will eliminate the Pilot Nametags from the screen.

Sky Grid-

As the name suggest, Sky Grid is a framework of lines that appear in the sky when activated. Modelers practicing precision aerobatic maneuvers will appreciate these lines as they will assist them in perfecting their routines.

To enable Sky Grid, click the **View** menu title, followed by the **Effects** sub-menu. Then, click the **Sky Grid** menu item.

Trails-

Trails, as the name implies, will create a trail or pathway through the sky depicting all facets of flight for the aircraft. This feature is very useful for F3A pattern pilots and F3 heli pilots as well as those modelers wanting to see how precise their maneuvers truly are.

Think you're a precision pilot? You might be able to fool the judges at a contest, but you can't change reality in RealFlight. With RealFlight's Trails feature, the pathway initiates from the wingtips of an airplane model and from the main rotorblades of a helicopter and remains in the sky for the duration of the flight, allowing modelers to thoroughly review their trail from start to finish. If you stray even a fraction from straight-and-level, or your loops aren't exactly round, the evidence is onscreen.

You will also find this feature very useful when used in combination with the Sky Grid feature mentioned above.

To enable Trails, click the **View** menu title, then the **Effects** sub-menu. Then, click the Trails menu item.

Rotary Trails-

Rotary Trails function similarly to the Trails feature, except it highlights the path of the prop of the airplane or main rotor of the heli; additionally, the rotary trails do not remain onscreen throughout the flight.

To enable Rotary Trails, click the **View** menu title, followed by the **Effects** sub-menu. Then, click the **Rotary Trails** menu item.

Wind Field Indicators-

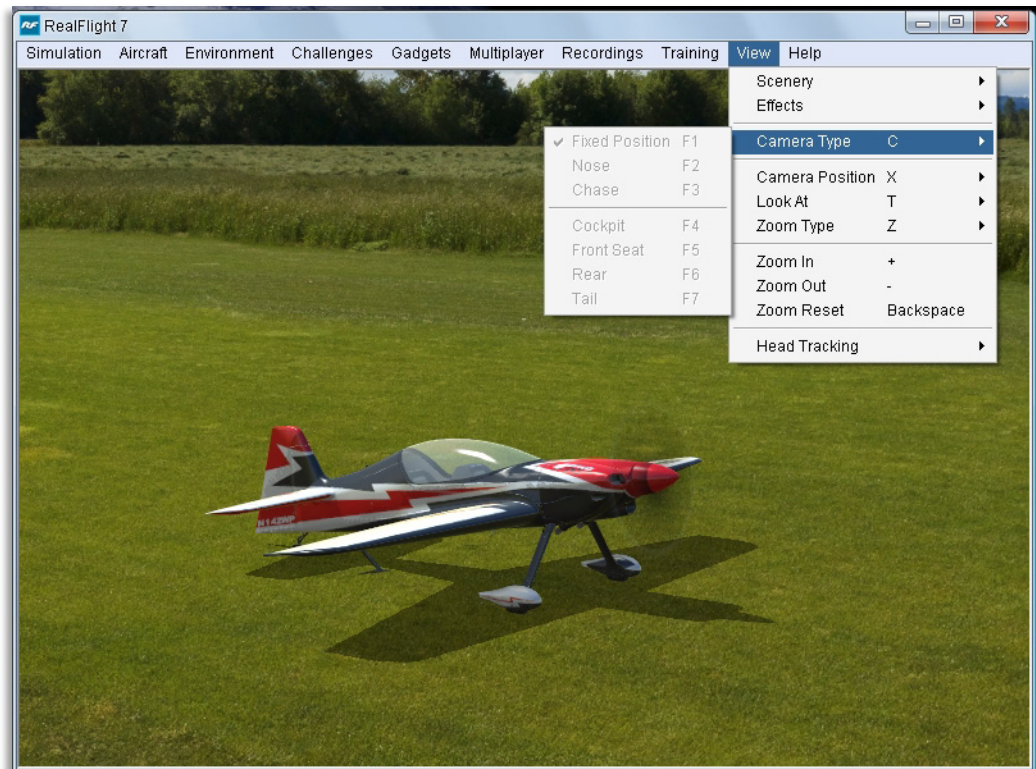
Flying at sites designed for practicing thermal and slope soaring flight, Wind Field Indicators will display where the updrafts are located and their direction. To practice real-world scenarios, you may wish to turn off these indicators.

To enable Rotary Trails, click the **View** menu title, followed by the **Effects** sub-menu. Then, click the **Wind Field Indicators** menu item.



Camera Type

The **Camera Type** menu item determines the Camera Type for the active viewport. Each viewport is independently adjustable. Select from a **Fixed Position**, **Nose** or a **Chase** view. If your aircraft is equipped with on-board cameras, they will be listed here as well.



To access the Camera Type adjustments, click on the **View** menu followed by the **Camera Type** menu item. Select your preferred view from the pull-down list.

Please note: Some airports do not allow Camera Type adjustments.



Fixed Position-

In this mode, the camera remains in a fixed, stationary position. The position is determined by the Camera Position setting.



Nose-

The Nose selection places the camera at the front of the aircraft looking forward.

To magnify the view or zoom in on the selected item, press the **[+] (plus)** key on the keyboard. Each time you press the **[+] (plus)** key or select the **Zoom In** menu item, the zoom level increases incrementally. Alternatively, you may select the **Zoom In** option from the **View** menu.

To decrease the magnification, or zoom away from the selected item, press the **[-] (minus)** key on the keyboard. Each time you press the **[-] (minus)** key or select the **Zoom Out** menu item, the zoom level decreases incrementally. Alternatively, you may select the **Zoom Out** option from the **View** menu.



Chase-

The Chase mode positions the camera behind the aircraft. The camera will follow the aircraft as it moves.

To magnify the view or zoom in on the selected item, press the **[+] (plus)** key on the keyboard. Each time you press the **[+] (plus)** key or select the **Zoom In** menu item, the zoom level increases incrementally. Alternatively, you may select the **Zoom In** option from the **View** menu.

To decrease the magnification, or zoom away from the selected item, press the **[-] (minus)** key on the keyboard. Each time you press the **[-] (minus)** key or select the **Zoom Out** menu item, the zoom level decreases incrementally. Alternatively, you may select the **Zoom Out** option from the **View** menu.

Onboard Cameras-

Depending on the aircraft, there may be additional cameras available on and around the aircraft, looking at a variety of different directions and perspectives. For example, the P-51 Mustang is equipped with three onboard cameras that include:

- Cockpit – This camera is placed inside the P-51 cockpit, looking forward, much like sitting in a real aircraft. This camera also includes some “intelligence”, moving and rotating based on the current aircraft motion or movement.
- Rear – This camera angle is positioned slightly above the nose of the airplane, looking rearward towards the cockpit and tail.
- Tail – Positioned at the top of the vertical stabilizer, this camera looks forward towards the nose of the airplane.
- Wing – Positioned at the tip of the port-side wing, looking back at the cockpit.

For example, during normal flight, the cockpit camera will try to predict and look in the direction the aircraft is likely to fly. If you were to fly a knife edge maneuver, the camera will look down towards the ground.

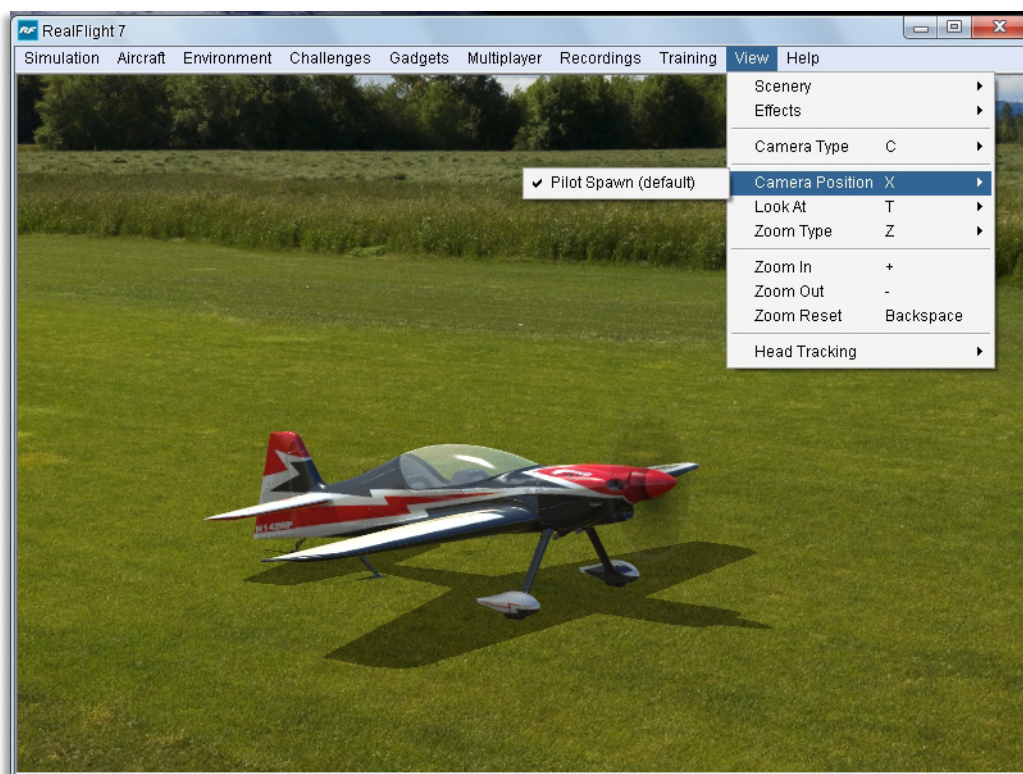
During combat events, this camera will attempt to look at the player you have targeted.

Onboard cameras can be added and modified much like other parts of the aircraft. Refer to page 118 in Edit Current Aircraft section for more information on how to edit RealFlight aircraft.



Camera Position

This menu item determines where the camera will be situated when view from the ground. Depending upon the airport selected, there may be one or more Pilot Spawn locations to use as camera positions.



RealFlight 7 automatically picks the default Pilot Spawn for the airport that you have loaded.

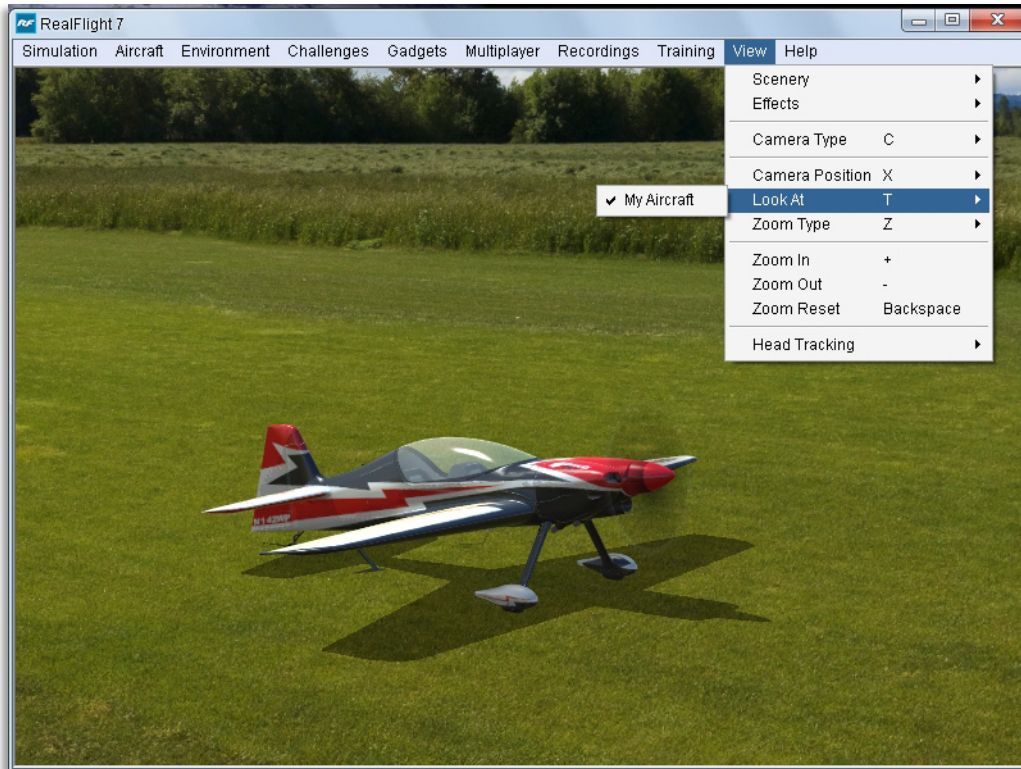
To change the setting, click on the viewport to you wish to modify. This becomes the active view in the simulation. To access the Camera Position adjustments, click on the **View** menu followed by the **Camera Position** menu item. Select your preferred view from the drop-down list.

You may also press the keyboard's **X** key to toggle through the available Camera Position options. If the airport has two pilot spawn locations, for example, pressing the **X** key will toggle back and forth between these two locations.



Look At

This menu item changes what the camera looks at. Usually you will want the camera to remain focused on your aircraft.

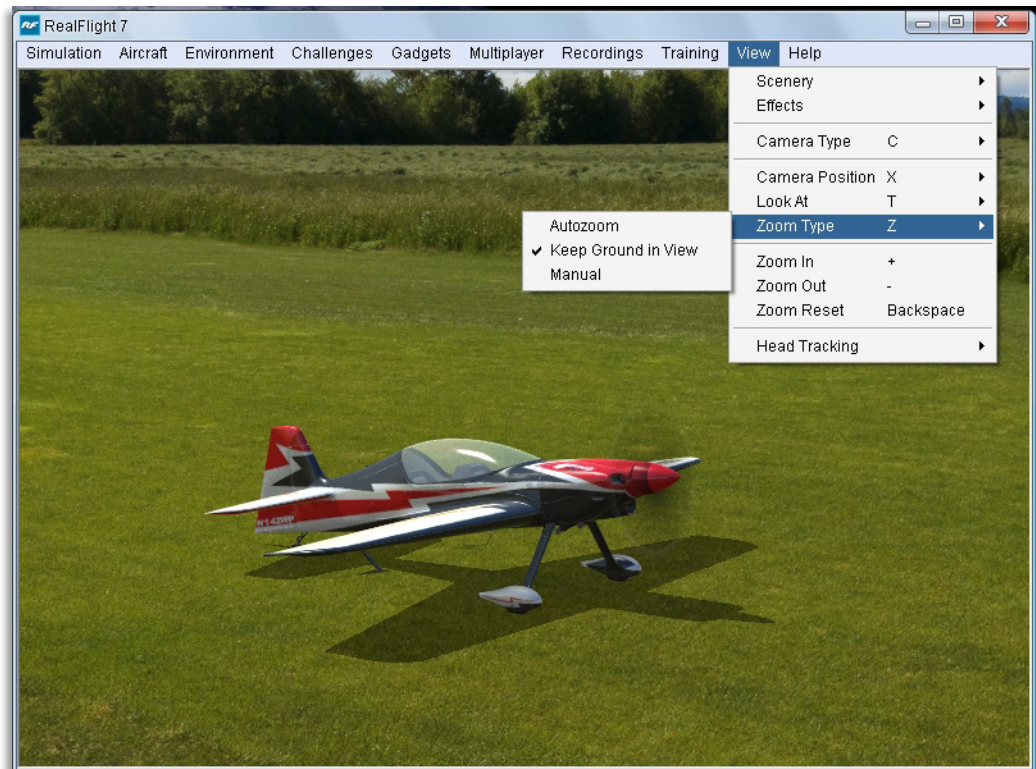


Click on the viewport that you wish to modify. This becomes the active view in the simulation. To access the list of things to look at, click on the **View** menu followed by the **Look At** menu item. Then select an item to look at. For example, if you are in a multiplayer or MultiMode session, the other players in the session will be listed in the popup menu. Select a player to look at his/her aircraft.



Zoom Type

The Zoom Type menu item allows you to change the type of zoom used in the simulation.



Click on the viewport that you wish to modify. This becomes the active view in the simulation. To access the Zoom Type menu item, click on the **View** menu followed by the **Zoom Type** menu item. Select the **Zoom Type** option that accomplishes your goal. You may choose between **Manual**, **Autozoom**, and **Keep Ground in View**.

Autozoom-

This zoom type adjusts the zoom range based on the distance of the aircraft from the pilot. The camera automatically zooms in as the aircraft gets further from the pilot and then automatically zooms out as the aircraft gets closer to the pilot.

Keep Ground in View-

This zoom type attempts adjust the camera so that the aircraft and the ground are always in view. This is the only zoom type that disallows zooming in and out.

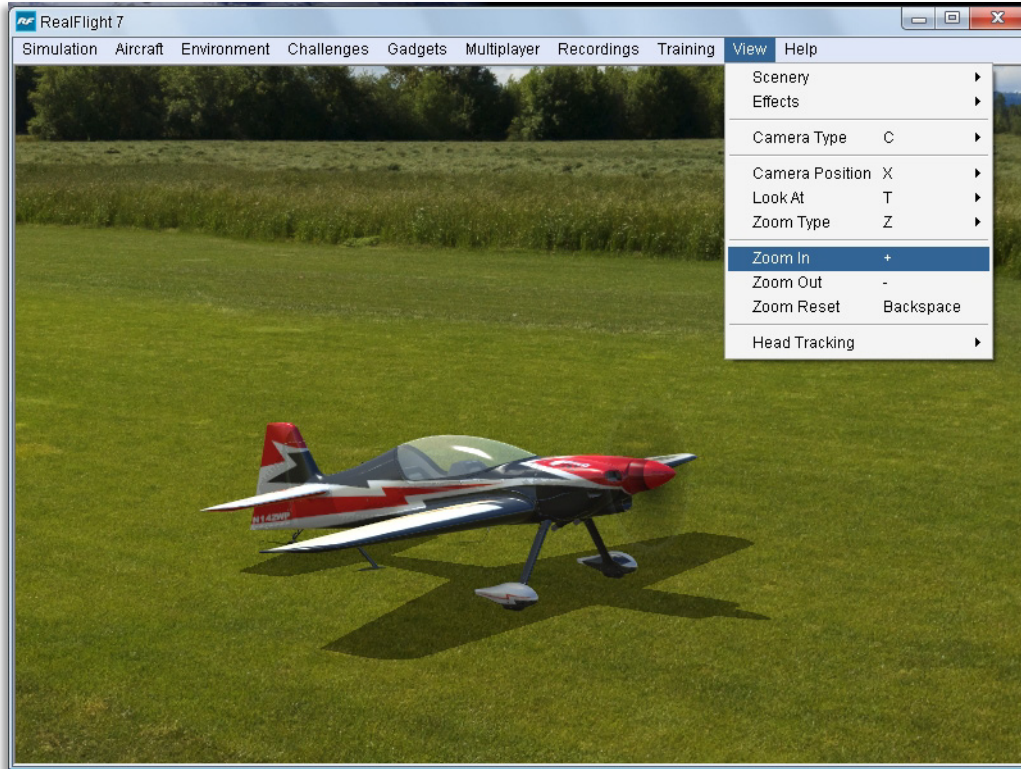
Manual-

This enables the standard view with zoom capabilities. See the *Zoom In* and *Zoom Out* sections below for more information.



Zoom In

Once you have selected the type of zoom that you desire, RealFlight allows you to customize it further by zooming in.

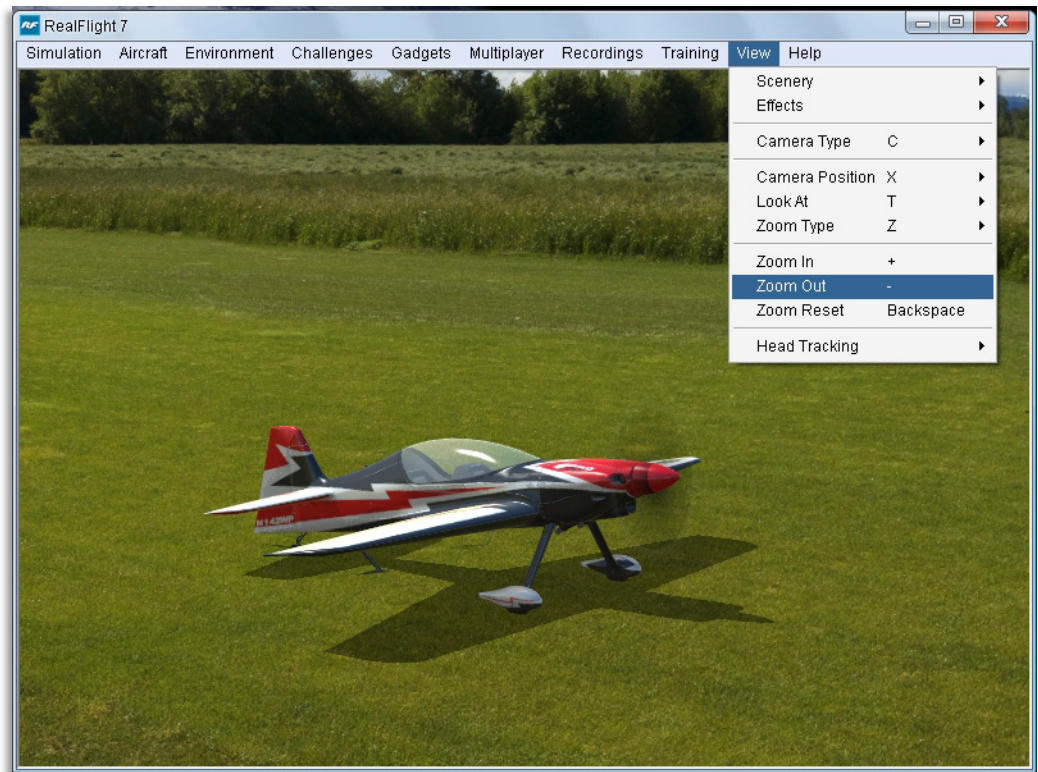


Click on the viewport that you wish to modify. This becomes the active view in the simulation. To access the Zoom In menu item, click on the **View** menu followed by the **Zoom In** menu item.



Zoom Out

Once you have selected the type of zoom that you want you can customize it further by zooming out. Zooming Out decreases the magnification.

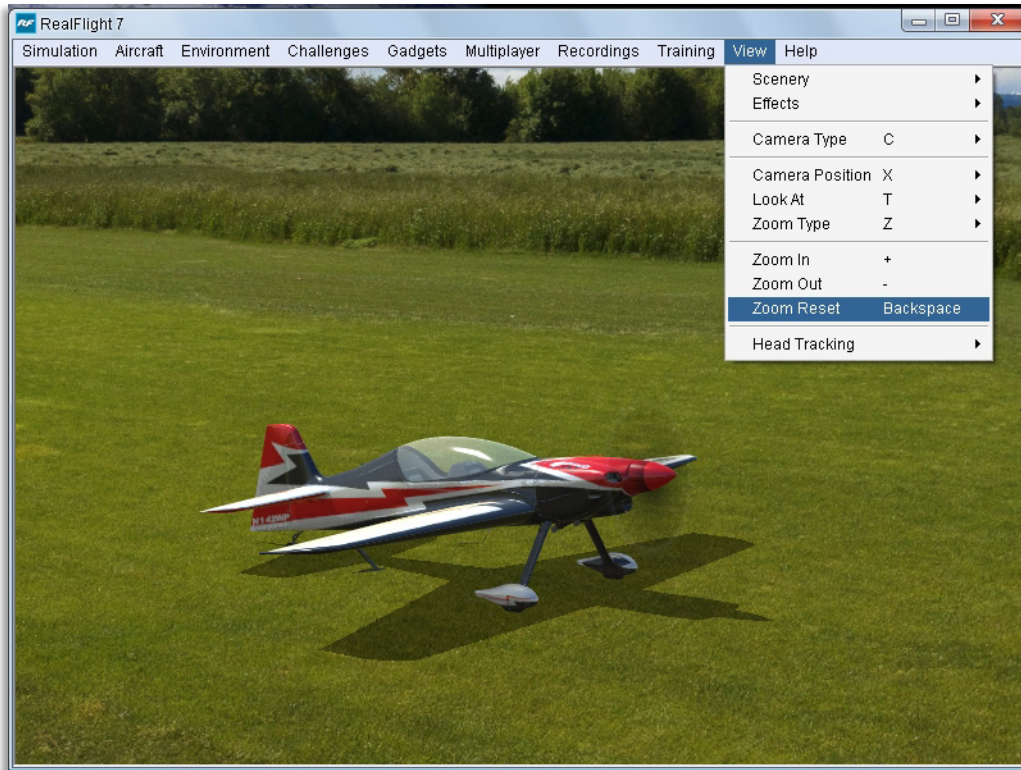


Click on the viewport that you wish to modify. This becomes the active view in the simulation. To access the Zoom Out menu item, click on the **View** menu followed by the **Zoom Out** menu item.



Zoom Reset

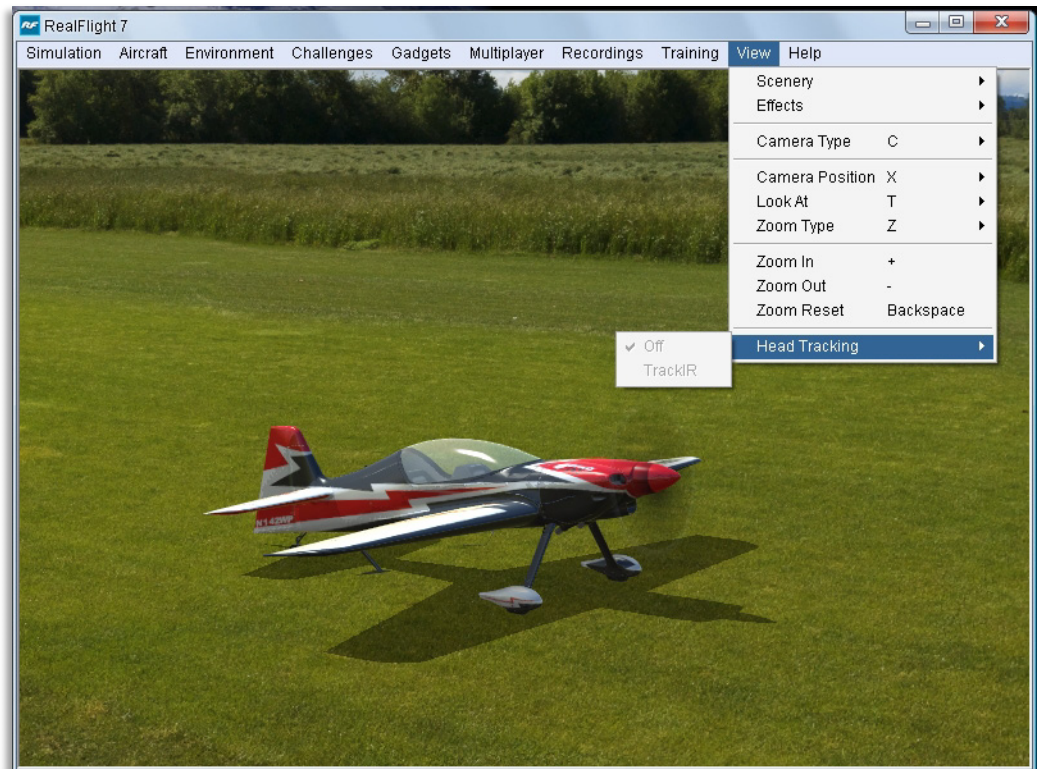
This selection resets the zoom magnification level to its default value. This is useful if you are zoomed way in or way out and want to return quickly to the default level of magnification.



Click on the viewport that you wish to modify. This becomes the active view in the simulation. To access the Zoom Reset menu item, click on the **View** menu followed by the **Zoom Reset** menu item.

Head Tracking

RealFlight 7 is compatible with TrackIR from NaturalPoint. With a TrackIR plugged into your computer, you can control the camera with the movement of your head as if you are at the field looking around.



For example, if you are flying at a high altitude and wish to line up with the runway, at a flying field you would look down briefly. With the TrackIR, you would do the same at your computer. With a small movement of your head, you can look down at the runway and back up to your aircraft.

For more information about TrackIR, and where to purchase one, visit NaturalPoint's website at:

<http://www.naturalpoint.com/trackir/>

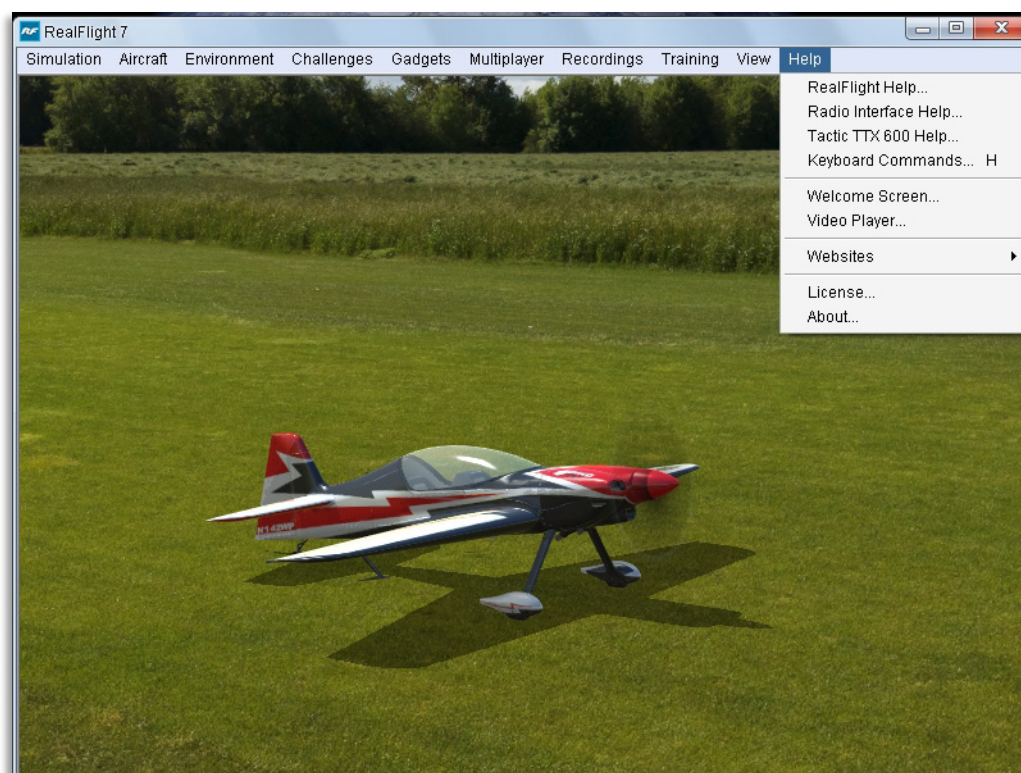
Chapter 14

Help Menu

When all else fails, ask for help.

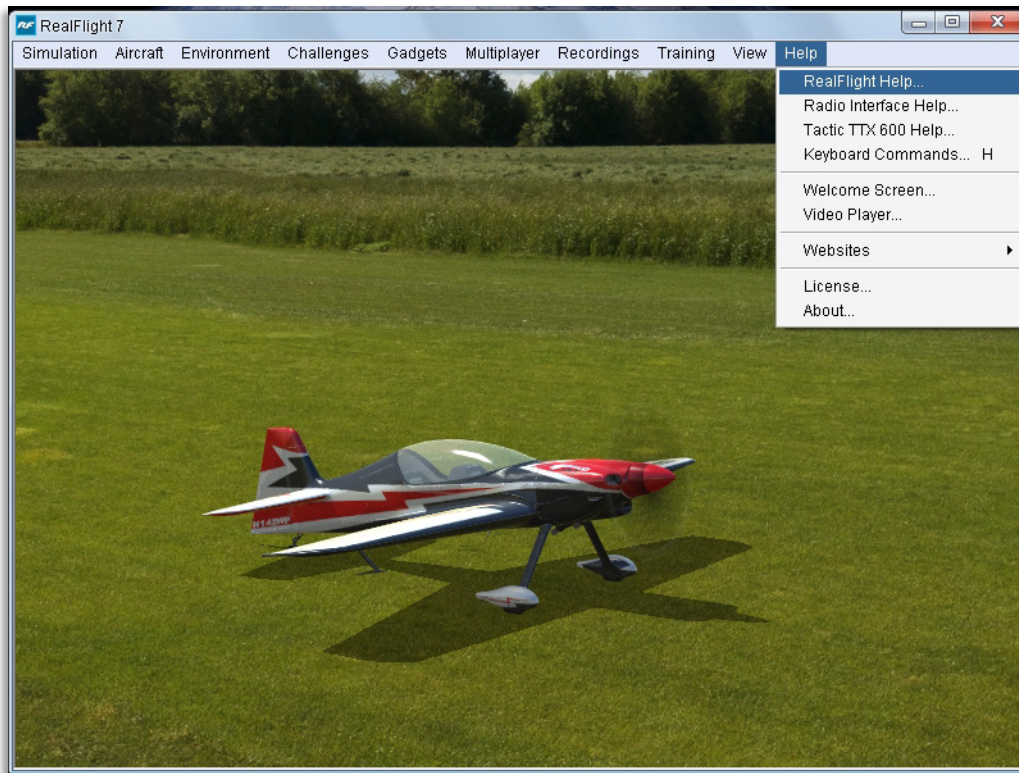
This menu provides you with miscellaneous assistance and guidance with a variety of simulator-related issues.

To access the Help files, click on the Help menu title.



RealFlight Help

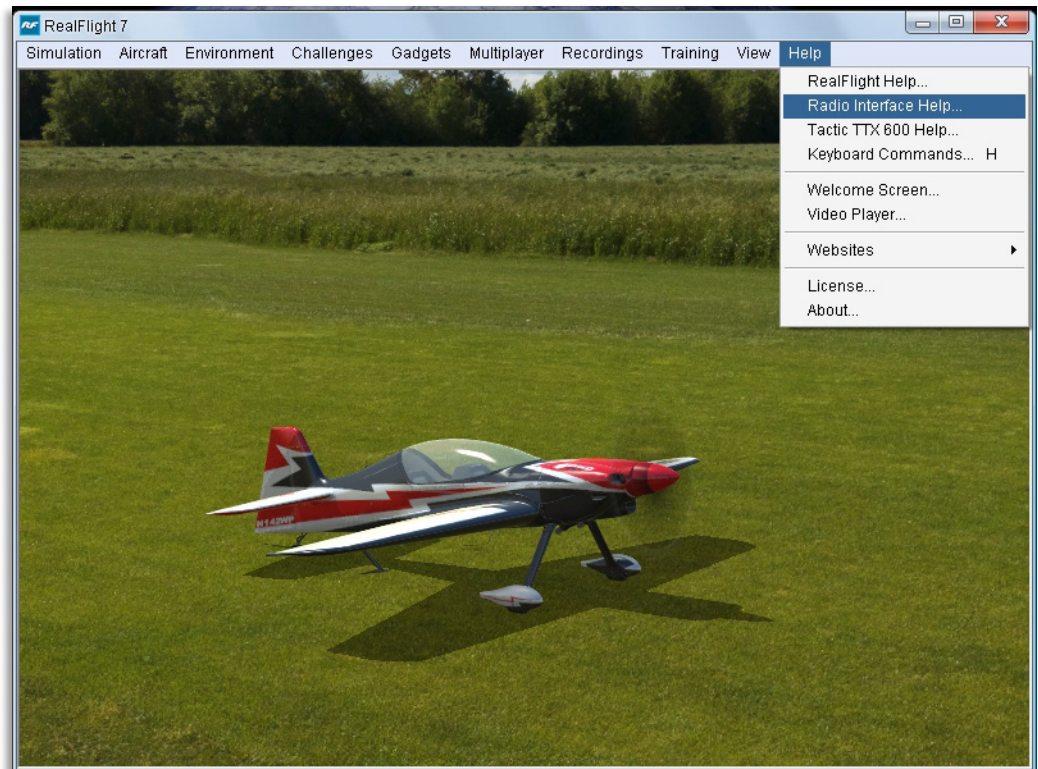
This menu item accesses RealFlight 7's manual which you are reading now.



To access the **RealFlight Help** file, click on the **Help** menu title.

Radio Interface Help

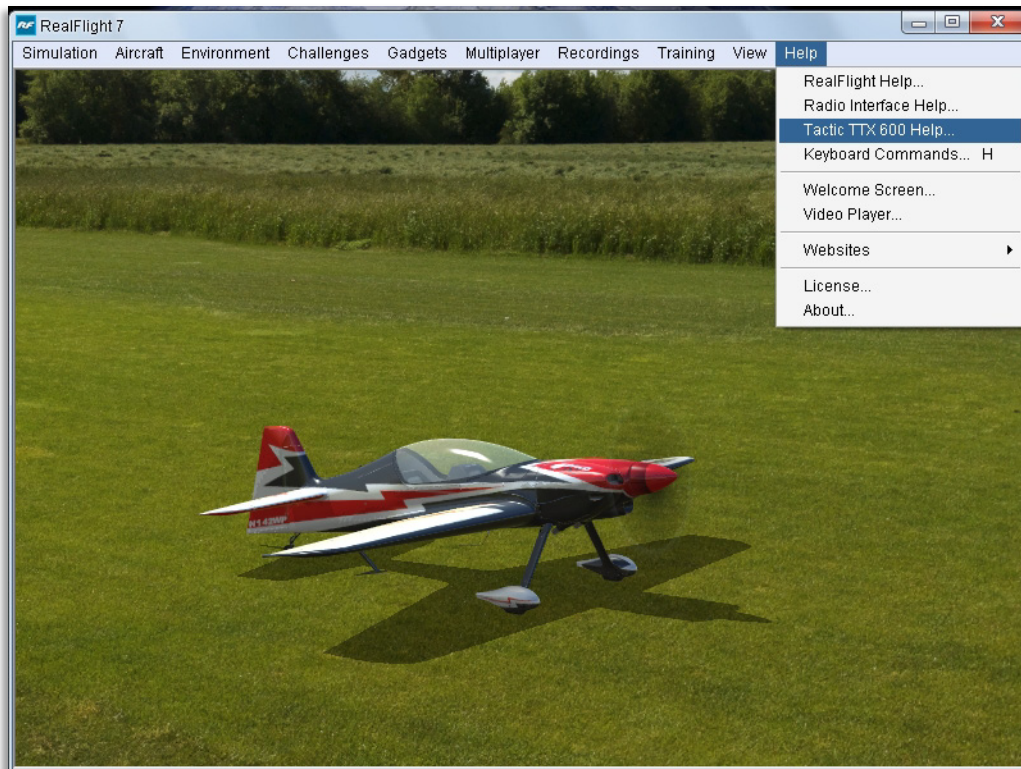
We understand that setting up RealFlight to function correctly with your real transmitter can be daunting the first time. To assist you with this particular task, we've provided a guide to walk you through this setup.



To access this guide, click the **Radio Interface Help** menu item.

Tactic TTX600 Help

Some versions of RealFlight include the Tactic TTX600 SLT radio. Along with the Radio Interface Help document, the Tactic TTX600 Help file continues with detailed setup instructions specifically for this radio.



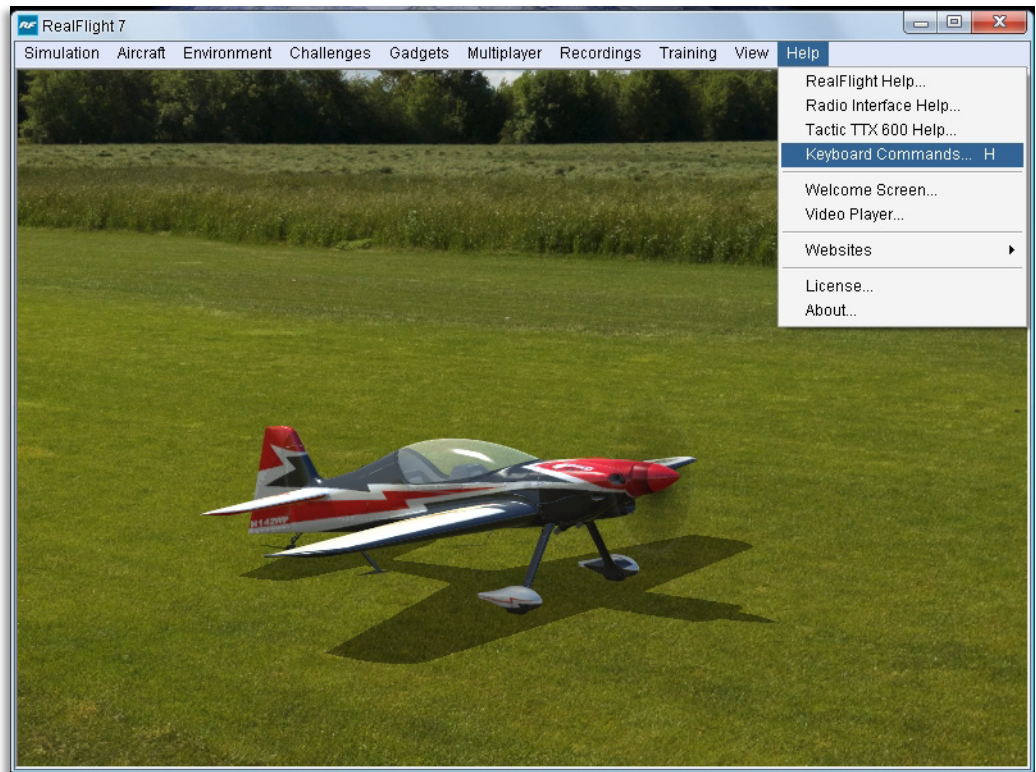
Access this document by clicking the **Tactic TTX600 Help** menu item.



Keyboard Commands

RealFlight allows you to access menu and other commands from your computer's keyboard. A key that directly invokes a command is called a “quick key” or “hot key”.

For example, pressing the **[+] (plus)** key on the keyboard's number pad incrementally zooms your view towards the aircraft. This is exactly the same result that arises if you select Zoom In from RealFlight 7's View menu item. Consequently, we say that the **[+] (plus)** is a hot key for the Zoom In command.



To access the Keyboard Commands, click the **Help** menu title, followed by the **Keyboard Commands** menu item.

The following overlay will appear:

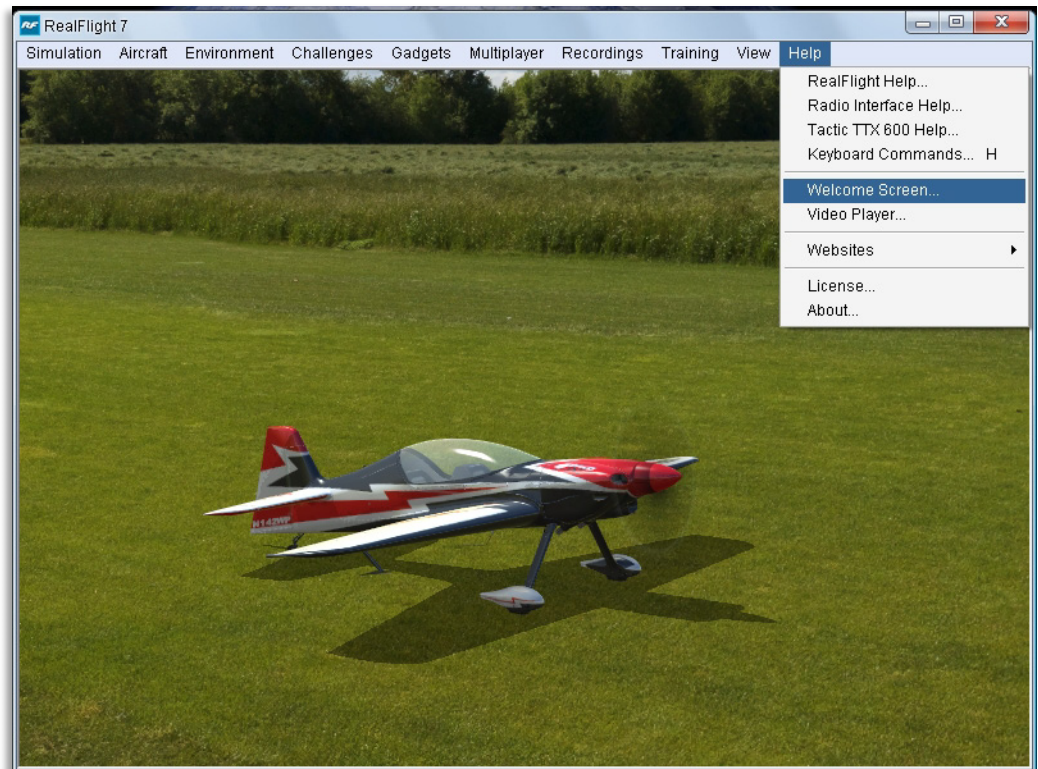


The Keyboard Commands screen contains all of the information pertaining to the hot keys. To view the entire list, drag the scroll bar on the right side of the Keyboard Commands screen down. Alternatively, this list is also contained on the back cover of the Installation Guide which accompanied this software.

Clicking on the 'X' in the title tab of the frame will remove it from the screen.

Welcome Screen

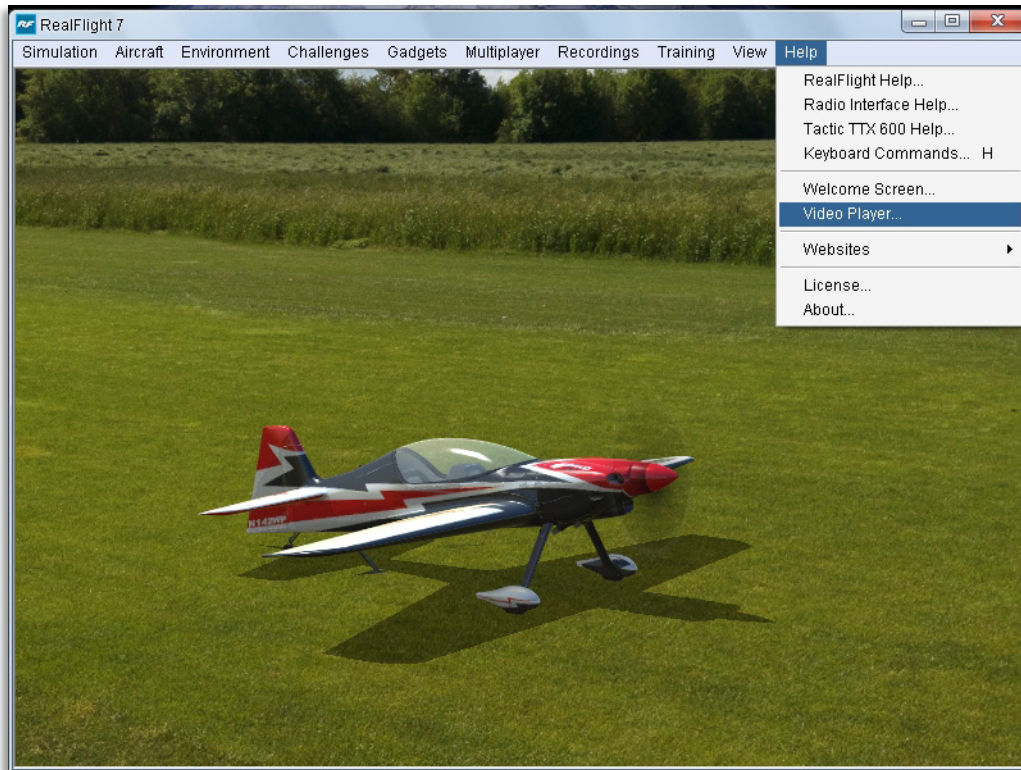
The Welcome Screen that appears when you first start RealFlight can be accessed at any time from this menu item.

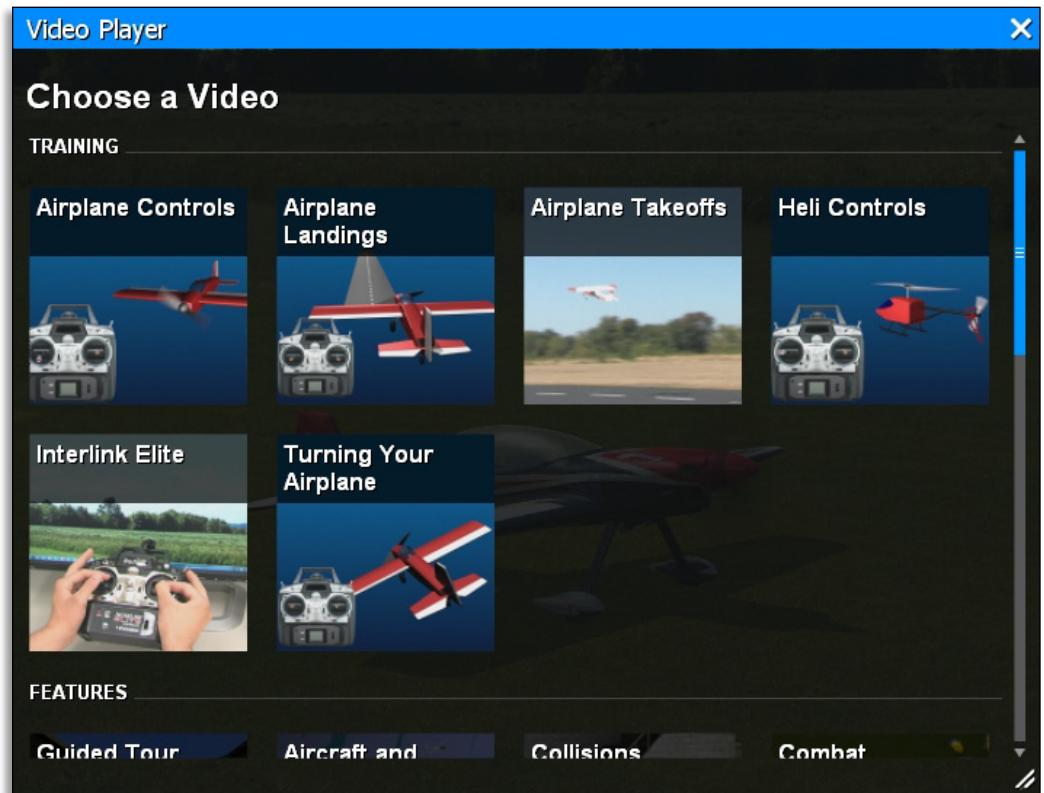


The Welcome Screen gives you the ability to change aircraft, flying sites or scenarios. You may also select a most recently flown aircraft, or open the video player window.

Video Player

RealFlight offers training videos to assist the first-time R/C pilot as well as videos to highlight some of the more popular features available. Selecting the Video Player menu item will display the following screen.





Clicking a thumbnail will automatically start that video. To return to the video selection screen, simply click the **Choose Another Video** button found at the lower right corner.

The Video Player is also accessible from the Welcome Screen.

Websites

This menu item contains direct links to the RealFlight related websites. Please ensure that you are connected to the internet before making your selection. The options include:



Great Planes-

Publishers of RealFlight 7. Visit this site for information pertaining to the many other Great Planes products available.

Knife Edge Software-

Developers of RealFlight 7. Visit the Knife Edge forums to share experiences and technical support with other RealFlight owners. The Knife Edge forums also play host to a wide variety of free, downloadable aircraft, trim schemes, flying sites and more.

RealFlight-

Visit the RealFlight website for more information about the RealFlight family of products, search the knowledge base for technical support, or for information on how to contact our support staff if you have questions.

Swap Pages-

If you have created your own aircraft, flying site or recording and would like to share it with the rest of the RealFlight community, you can do so at the RealFlight Swap Pages. Or, visit the swap pages to download hundreds of aircraft, flying sites, etc. to add to your RealFlight hangar.

License

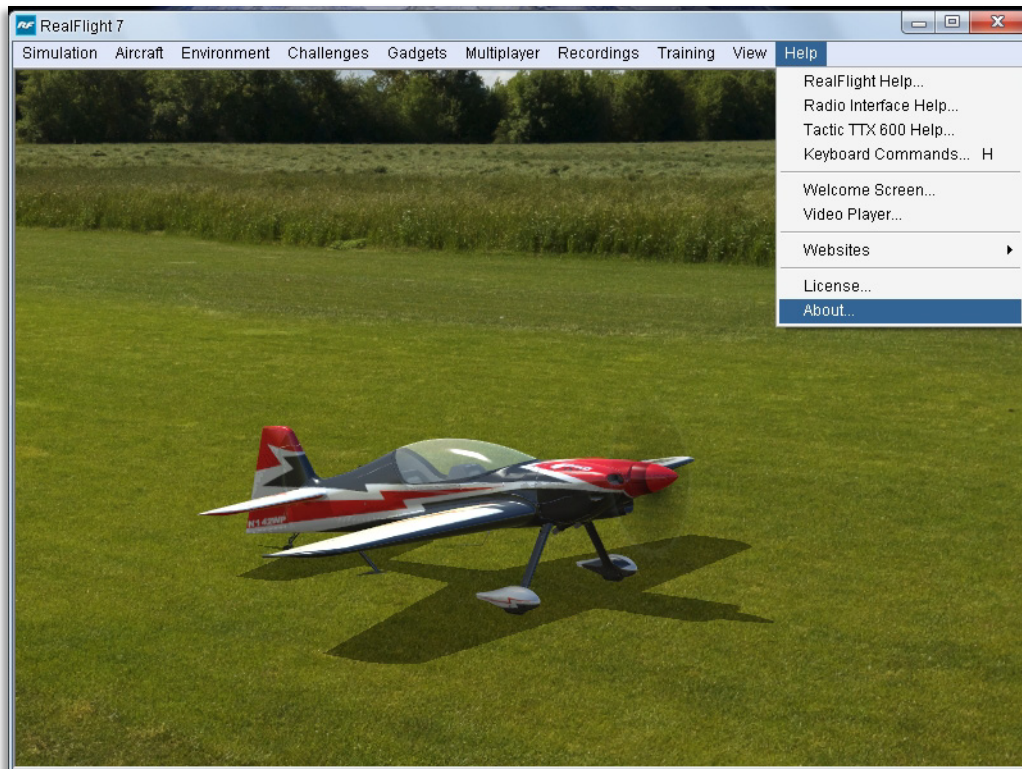
This menu item contains the End Users License Agreement (EULA) for the RealFlight R/C Flight Simulator. Please read it carefully.



Clicking on the 'X' in the title tab of the frame will remove it from the screen.

About

The **About...** menu item contains miscellaneous information pertaining to your software including your RealFlight serial number, InterLink Elite serial number and the version number of the software that you are currently operating.



Also seen in the About screen are the credits and names of the people that have worked together to bring you the world's most realistic R/C simulator, RealFlight 7.

Clicking on the 'X' in the title tab of the frame will remove the About window.

Basics of Flying

Understanding the fundamentals of radio control flying.

Before taking control of a transmitter, it helps to understand the basics of flight, and the functionality of the gimbals, sticks and switches to properly control the aircraft. This chapter reviews the basics of flying an airplane or a helicopter to help get you started down the right path.

Airplane Basics

Before you fly the plane, make sure all switches are in their off or low rates, positions. The switches may be assigned to different items depending on how you have configured your controller and which aircraft you are flying. If you are using your own transmitter to control RealFlight, please consult your transmitter owner's manual for more information.

The InterLink Elite features digital trim tabs which are more precise and offer trim memory within the simulation. Trim tabs are the small slider controls on the controller (two per controller stick). They "trim" the aircraft so that it flies straight and level. For example, if an airplane has a tendency to veer slightly downward, you may need to add a slight "up" nudge to the elevator. You can do this by sliding the elevator trim, a click or two at a time, towards the bottom of the controller.

Crashing-

Takeoffs are optional, but landings are mandatory. For any type of aircraft or flying, successfully landing an aircraft is a crucial skill to master.

The key to a perfect landing is undivided concentration. Pay close attention to the altitude, orientation, and speed of the aircraft as it approaches the runway. Should you happen to crash, use each crash as a learning experience to perfect your approach and the landing.

RealFlight has several tools to help you stay on top of things during approach and landing. See the “Landings” section below for some ideas.

Out at the field a crash might result in one or more of the following:

- Bruise your ego
- End flying for the day
- Cost you money
- Cost you time to rebuild
- Cause injury to yourself or a bystander
- Even win you a nice “best crash trophy!”

Of course, when you crash on the simulator, there is really no harm done. None, that is, except the bad habits you may acquire. We suggest that you take the crashes seriously and learn from each one. By doing so, you will be a better pilot out at the field.

Airplane Flight-

RealFlight 7 accurately simulates how R/C aircraft really fly. This allows you to practice R/C flight without worrying about expensive crashes. Additionally, RealFlight 7 is ideal for practicing new maneuvers and experimenting with various parameter adjustments.

It is important to remember, however, that a simulator will only help you learn to fly if you let it. Otherwise, it is just a game. Learning to fly R/C aircraft requires a commitment. One does not just grab the sticks and start dazzling the crowds. A methodical, patient approach will help you get the most out of this simulator.

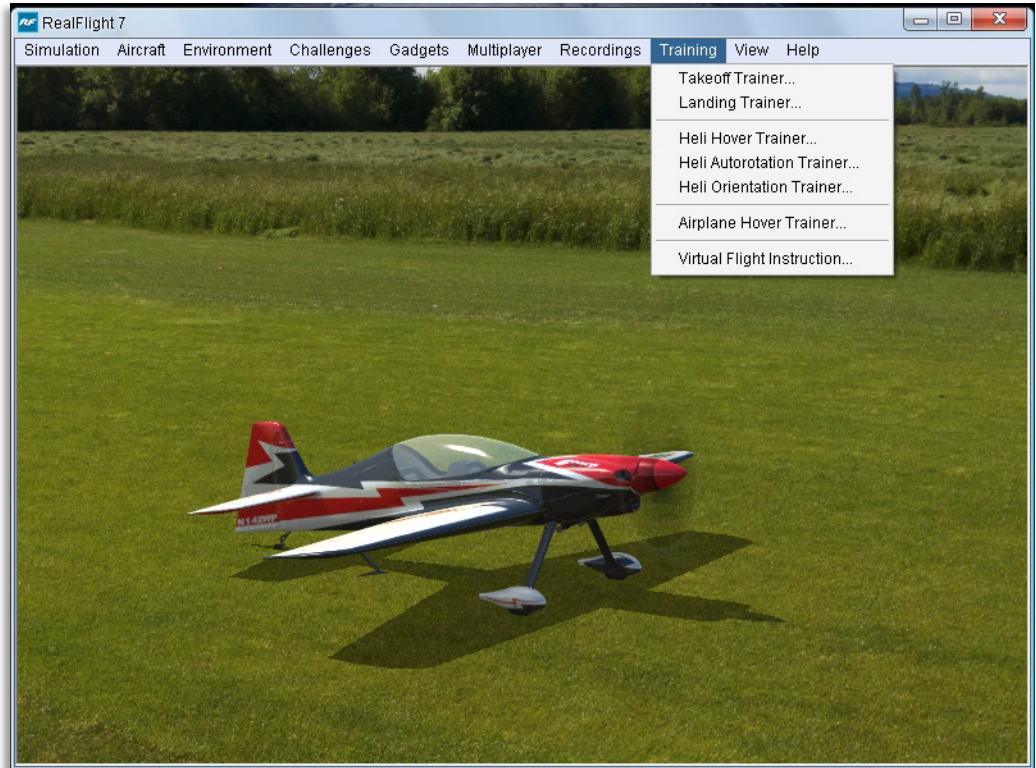
This section is not designed to teach you how to fly. However, it will help you enhance your experience with the simulator and obtain the most from your experiences.

Takeoffs-

When you are taking off, start with the throttle in low position and slowly increase throttle by pushing the throttle stick away from you towards the top of the transmitter until you are at about half speed. Stay in the middle of the runway (you can steer the plane using the rudder). When you have built up enough speed, gradually pull back on the elevator stick to climb off the runway. If the plane is tracking well, apply the rest of the power more quickly, climb out, and gain altitude.

Be careful not to veer off the runway. In a real plane, chances are that you would crash (or get stopped on the grass). Usually this means bent landing gear and a broken prop. If your plane has retracts, they could even be torn out of the wing.

For the best practice, it's recommended that you utilize the Takeoff Trainer available with RealFlight 7. For more information, see the



Takeoff Trainer section on page 256.



Landings-

It is very important to land on the runway, rather than veering off, or touching down before you reach the runway. Either of the latter usually produces a moderately expensive crash. If you “cartwheel” (wing tip hits the ground first), the wing can break, resulting in lengthy down time while you repair your airplane.

Start by aligning your plane parallel with the runway. Fly the approach normally, using your throttle to control the rate of descent. Try to land at the slowest speed possible. If your plane has flaps, use them to kill speed (but be careful; with flaps down your plane will try to pitch up and climb). If your plane has retractable landing gear, lower them. As you touch down, remember to keep your nose up!

RealFlight has several tools to help you practice landings.

- Gain experience through the Landing Trainer. It offers guidance and helps set you up for the perfect landing. See the Landing Trainer on page 261 for more information.
- During your approach, use the NavGuides to keep track of your speed, altitude, and distance above ground.

Aerobatics-

When you practice aerobatics, the three important steps are:

- Start the plane *straight and level*, in a controlled situation
- Perform the maneuver
- Return to a straight, controlled situation

Anyone can give it full throttle, jam the sticks in all directions and watch the plane tumble and roll. However, this is *not* what you will do out in the field. Do this and you will not have control of the airplane!

The key to properly performing the maneuver is in the setup. Doing so will allow you to cleanly finish and your experience will be more rewarding as well as more realistic.

Concentrate on making the maneuvers “clean and crisp.” If you are doing a roll, try to keep the plane on a straight line as you roll. If you are doing a loop, try to make a perfectly round circle.

If you want to practice aerobatics using RealFlight 7, try the Virtual Flight Instruction feature (accessible via the Training menu). The Virtual Flight Instruction feature provides a series of personal lessons taught by pros.

Throttle Management-

Avoid the temptation of giving the plane full throttle and keeping it there for hours at a time. This teaches you bad habits and makes even a good flier look like a rookie out at the field.

Many of the maneuvers require proper throttle management in order to make a maneuver look good. Loops, stalls, torque rolls, touch-and-goes are just a few examples. Try doing various maneuvers at differing speeds. Try performing a slow roll at medium throttle and keeping a perfectly straight line. This difficult maneuver will earn you more praise at the field than doing a full speed, full stick roll.

Rudder Management-

Most airplanes can (more or less) be effectively flown with just the elevator and ailerons. Good pilots will tell you that the proper use of the rudder is just as important, however. Many aerobatic maneuvers require excellent rudder usage.

Rudder control is especially important when landing in a crosswind. Pilots that cannot use the rudder usually land in the tall grass (embarrassing!). Pilots that do use the rudder can land on the numbers almost every time.

Helicopter Basics

A model helicopter is a very complicated machine, which operates on the same aerodynamic principles as its full-scale counterpart. These principles are quite complicated to explain and understand. However, it is not necessary to understand all the underlying aerodynamics in order to successfully fly a model helicopter (or a computer simulation).

The following will help you to better understand the basics of helicopter flight, and the relationship between control stick movements and the actions of the machine. Refer to these instructions often as you become more proficient.

Please note: The inputs below are shown using a Mode 2 transmitter.

Collective (Left Stick – Vertical Movement)-

The spinning main rotor blades, which act like rotating wings, lift the helicopter into the air. Changing the pitch (angle of attack) and speed of the blades, using the “collective” and throttle causes the helicopter to rise and descend vertically. Adjusting “collective” increases and decreases the blade pitch. The “throttle” control increases and decreases engine RPM. On a model helicopter, the collective and throttle controls are mixed electronically, and controlled by the throttle stick on the transmitter or controller.





Rudder (Left Stick – Horizontal Movement)-

To turn the nose of the helicopter left or right, change the tail rotor pitch (by using the “rudder” control). Changes in collective stick movement will require changes in the amount of rudder input to maintain the desired heading.





Cyclic Stick (Right Stick)-

The cyclic stick replaces the “aileron” and “elevator” controls found on a fixed-wing aircraft. “Cyclic” is the term given to the control of the main rotor that allows the helicopter to fly forward, backward, left and right. Forward cyclic stick movement causes the helicopter to pitch forward, left cyclic causes the helicopter to tilt sideways to the left, on so on. You move the helicopter forward or sideways using a *coordinated* movement of both the cyclic and collective control sticks. Moving the cyclic stick to the right, while simultaneously increasing collective, will cause the helicopter to move sideways to the right. “Rudder” control is used to maintain the heading.





Idle-Up-

A switch on the controller actuates a special function, known as “idle-up.” Idle-up offers an alternate throttle and pitch curve, different from the curves used for hovering. Idle-up is usually used for aerobatics, when the pilot wants engine power added when pitch is subtracted. For example, inverted hovering requires positive throttle and negative pitch. As such, pulling the collective stick back provides positive throttle AND negative pitch simultaneously.

Throttle Hold-

Another special function is known as the “throttle hold”. When activated, this switch sets your throttle to idle but allows the collective to function normally. This allows you to practice autorotations without shutting the engine off.

Gyro-

Any sudden change to the torque of the main rotor, such as a quick change in RPM or a wind gust, can cause the helicopter to turn unintentionally to an unwanted direction. An electronic device known as a gyroscope (gyro) is used to “monitor” and correct for this by giving commands to the rudder control to help stabilize the machine.

Gyros come in a variety of types, each with different features. A normal gyro will not return the helicopter to its former heading; it will simply dampen the unwanted sudden movement. We recommend you start by using the heading hold gyro instead; it will maintain course and keep the nose of the helicopter pointed in the desired direction regardless of outside forces.

Helicopter Flight

Hovering-

The machine hovers by adjusting the collective/throttle control to maintain altitude, the rudder to maintain heading, and minute adjustments to the cyclic controls to maintain location. Hovering is the most important aspect of helicopter flight to master, since every other movement of the machine begins and ends with a hover.

Forward Flight-

The helicopter moves forward by changing cyclic (moving the cyclic control forward). This causes the rotor head, and thus the helicopter to tilt forward, resulting in a forward thrust. As the cyclic increases, the collective must also be increased to maintain the desired flight path. As forward speed increases, the collective can be reduced slightly.

Backward Flight-

Backward flight is accomplished by moving the cyclic control aft, which causes the rotor head, and thus the helicopter to tilt backward. As the cyclic is moved aft, the collective must also be increased to maintain desired flight path. As backward speed increases, the collective can be reduced slightly.

Sideways Flight-

Moving the cyclic control left will cause the rotor head, and thus the helicopter to tilt left. Add collective and left rudder to cause the helicopter to “slide” sideways to the left. As speed increases, it will require progressively more rudder to maintain heading.

To move right, simply follow the same procedure, but reverse the cyclic and rudder movements (move cyclic right, apply right rudder).

Turning-

From forward flight-

Moving the cyclic control left, while applying a small amount of aft cyclic and feeding in left “rudder”, will cause the helicopter to make a coordinated turn to the left. Right movement of the cyclic and rudder sticks will cause the heli to turn to the right.

From a hover-

Use the rudder to rotate the nose of the helicopter in the direction you want.

Learning to fly a model helicopter is more difficult and challenging than any other genre of radio control modeling, but is also the most rewarding as you master the techniques required for sustained hover and forward flight. Computer simulation of model helicopter flight is an excellent tool for learning the basics and dramatically reducing the learning curve when you move on to the actual model itself.

RealFlight 7 Launcher

The RealFlight 7 Launcher is the gateway to simulator fun!

This item allows you to run the simulation, register and update the software, and much, much more.

To run RealFlight or to access the additional options, click the **RealFlight 7 Launcher** icon located on your desktop.



Run RealFlight

To start running RealFlight, double-click the **RealFlight 7 Launcher** located on your desktop. Next, click the **Run RealFlight** button. The simulation will begin loading the terrain, airport objects, textures, etc. Your simulation experience will begin as soon as the loading process completes.

Additional Options

Click on the **Additional Options** button to access a variety of useful RealFlight 7 information and miscellaneous functions.

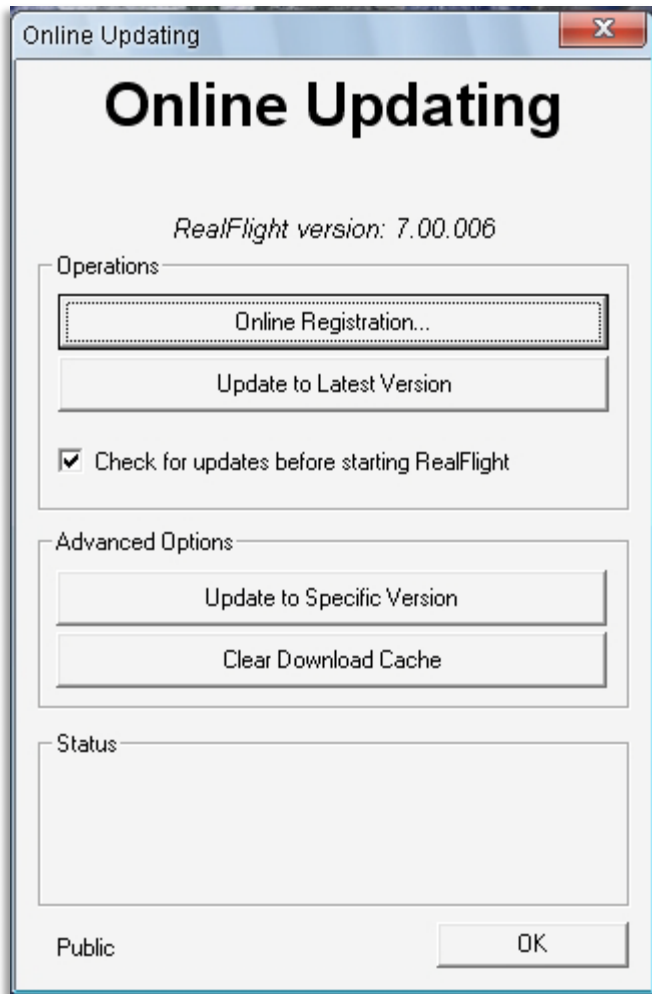


Restore Defaults-

Use this button to restore RealFlight 7's default settings. Doing so will NOT remove custom aircraft, flying sites, etc. Rather, it is designed to simply restore the factory default values and settings for the simulation.

Registration/Updates-

Use this button to register and update the software.



Online Registration-

This button allows you to register your copy of RealFlight 7. The registration information entitles you to complimentary technical support and free online updates.

Please enter all of the required information to complete the registration. If you forget your password, contact the Great Planes Software Support team. To do so, email them at rfsupport@greatplanes.com or telephone them at 217-398-8970 (option #1). They will confirm your identity, and reset your password.

RealFlight Newsletter-

Periodically, Great Planes will send out an electronic newsletter to customers that are subscribed. The newsletter includes information about new products, shows we are attending, tips and tricks and other useful items. If you wish to receive this newsletter check the box labeled **Yes, I want to receive the RealFlight newsletter via email.**

Hardware Information-

RealFlight 7 offers the option of automatically sending us information pertaining to your system hardware and settings when you register. If you leave the Send Hardware Information box checked when you register, RealFlight 7 will send us this information.

This hardware information will assist us in diagnosing any problems you may encounter later, should you need to contact Technical Support. Consequently, we suggest that you leave this box checked when registering.

This feature is optional. If you uncheck the box, RealFlight 7 will not send us any information about your system. Alternatively, you can view exactly what information RealFlight will send us before you decide. To view the information, click the **Technical Support** button on the main RealFlight 7 Launcher window. When the Technical Support page appears, click **Assemble System Information**.

Update to Latest Version-

After registering (you only need to register once), you may update to the latest version of the software. This will download all necessary files and correctly install the upgrade.

Click this button to update to the latest version of RealFlight 7.

Please note: Your PC must be connected to the internet in order to check for updates.

Check for Updates Before Starting RealFlight-

If you check this box, every time you run the RealFlight 7 software it will check to determine whether or not there is a more recent version of RealFlight 7 available to you. If a new version exists, RealFlight 7 will ask if you wish to download and install the newer build.

Please note: Your PC must be connected to the internet in order to check for updates.

Update to Specific Version-

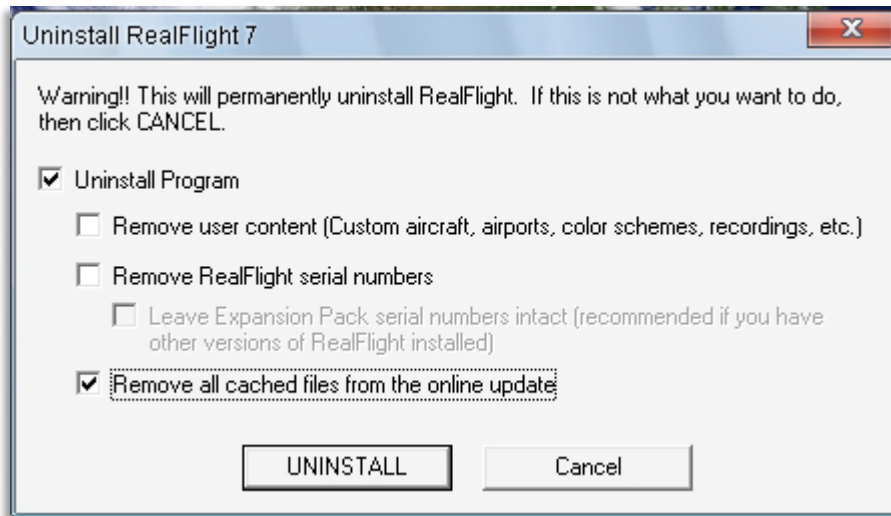
If you are experiencing difficulties with a version you have installed, this will allow you to retrieve a previous version of the software. If the previous version fixes your problem, please contact our technical support team at rfsupport@greatplanes.com and let them know about the difficulty encountered.

Clear Download Cache-

Occasionally, files may become corrupt during a download. If you are having difficulties with the online updates, remove all cached files using this option. Next, choose **Update to Specific Version** and then select the **Completely Refresh** option.

Uninstalling RealFlight-

Click the **Uninstall RealFlight** button to uninstall the software. The following dialog will appear:



The RealFlight 7 Launcher will remove all necessary RealFlight 7 files.

Uninstall Program-

Choose this option to uninstall only the RealFlight 7 program itself.

Remove user content-

Choose this option to uninstall any user files such as customized airports, customized aircraft, color schemes, etc. *Be careful with this option!* These files are unrecoverable after being uninstalled. You could lose a lot of your work by inadvertently uninstalling these files.

Remove Serial Numbers-

Choose this option to remove the serial numbers from your system. This will remove the RealFlight and InterLink serial numbers as well as your online activation. Since RealFlight Expansion Packs may also be installed on your computer for previous versions of RealFlight, you may wish to leave those serial numbers untouched. To do so, click the box **Leave Expansion Pack serial numbers intact**.

Remove All Cached Files From The Online Update-

Choose this to option to remove all cached download files from your system. If you uninstall these files, future downloads may take a little longer.

View Web Site-

Click the **View Web Site** to visit the RealFlight web site. A browser window will open for you and you will be automatically directed to the site.

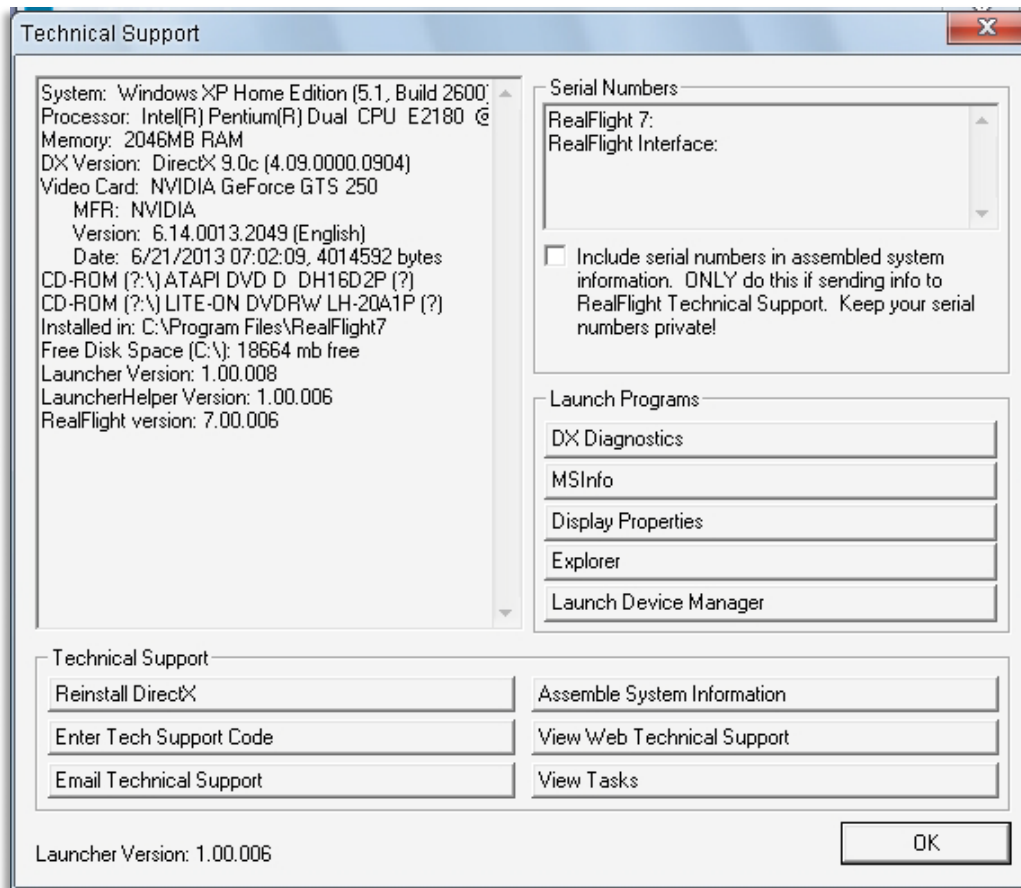
Please note: Your PC must be connected to the internet in order to view the RealFlight web site.

Read Help File-

Press the **Read Help File** button to bring up the manual, this document that you are reading now, for RealFlight 7.

Technical Support-

Press the **Technical Support** button to bring up technical support information pertaining to your system. If you encounter any difficulties with RealFlight, this information can help you to resolve the situation on your own, or may assist Great Planes' Support Staff to diagnose the problem.



System Information-

The pane on the upper-left portion of the window displays a list of the critical system information. Before you email technical support, or report a bug with the software, please be sure to cut and paste this information into your email. This will greatly assist them in diagnosing the difficulty.

Reinstall DirectX-

Choose this option to reinstall Microsoft's DirectX on your computer. Occasionally this will fix corrupted installations.

Enter Technical Support Code-

Choose this option to enter a technical support code. If you do encounter problems running RealFlight, our Technical Support team may supply you with a code to input here. Entering this code will help them diagnose or resolve your difficulty.



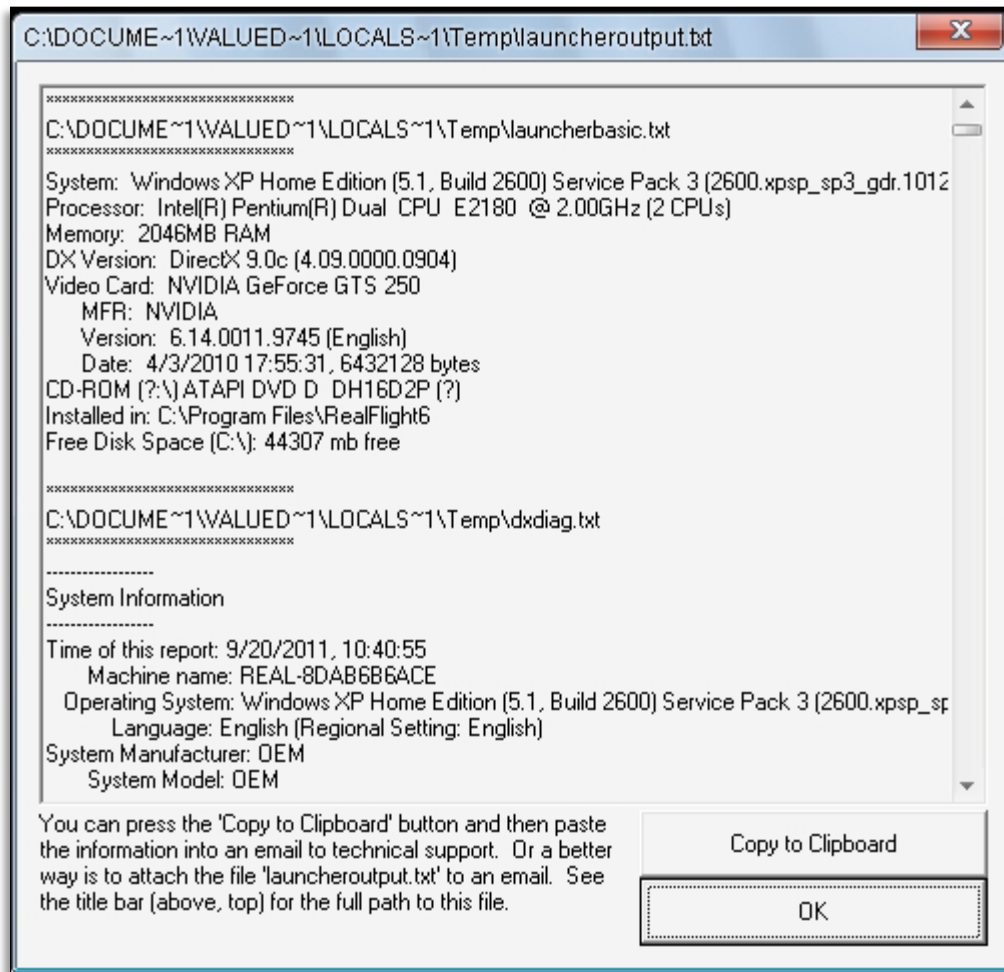
Email Technical Support-

This gives you the email address rfsupport@greatplanes.com to which you can email your difficulties. If you do email us, please be sure to attach the Assemble System Information output to your email.

You will receive an auto-reply message back confirming that Great Planes Support Staff received your email. If you do not receive the auto-reply message, please double-check that you sent your email to the correct email address.

Assemble System Information-

Choose this option to collect critical information about your system, and about your RealFlight settings. You may find this information useful if you try to troubleshoot problems on your own. Moreover, if needed you can cut and paste this information into an email to Great Planes Support Staff.



View Web Technical Support-

Choosing this option will open a browser window, and take you to a web site that contains the most up-to-date technical support information for RealFlight.

View Tasks-

This shows you a list of all tasks that are running on your computer. Some tasks can interfere with RealFlight 7 and may need to be closed.

Include Serial Numbers-

Check this box if you plan to assemble all system information to send to Great Planes Support Staff. If you are sending this information to anyone else, don't check this box. The serial numbers are unique to you, and should only be shared with Great Planes Support Staff.

DX Diagnostics-

This brings up Microsoft's DXDIAG utility. Using this utility can further help diagnose your system.

Please note: If you send us information about your system to help us diagnose a problem, please do not use DXDIAG to generate that information. Instead, use the “Assemble System Information” option. The “Assemble System Information” output file contains more information than the DXDIAG output.

MSInfo-

This option will run MSInfo. This will give you even more information about your system. This program is not always installed on a particular computer, but normally comes with programs such as Microsoft Office®.

Display Properties-

This brings up the display properties for your monitor. You can use this page to change the resolution of your desktop.

Explorer-

This button launches Windows Explorer. This Microsoft Windows utility can help you locate, move and back up your files.

Launch Device Manager-

This button launches the Device Manager. This Microsoft Windows utility will help you determine driver dates, as well as installing and updating video and sound card drivers.

If You Experience Difficulties

Tips and tricks for solving the more common problems.

The RealFlight 7 simulator is on the cutting edge of technology, and therefore operates using advanced hardware. Consequently, there is always the remote possibility you may experience a few slight difficulties. Should the need arise, we provide extensive resources to help.

Besides providing the best R/C simulator, we sincerely feel that we provide the best, most extensive product support of any R/C simulator. Since cards, drivers, and operating systems are always changing, we work hard to keep our support team up-to-date on the latest information available to ensure that you have the most enjoyable experience possible.

This section begins with a summary of the various sources of RealFlight 7 information including support and problem solving assistance. Then, we will show you some simple but powerful steps that can resolve or prevent most RealFlight 7 difficulties. Finally, if these steps fail to solve your difficulty, we will explain the most effective ways to acquire additional assistance.

How to Get Help and Information

As a RealFlight 7 user, you have access to an incredible amount of information about this product. Much of this information can help you resolve difficulties, or correctly access and use program features. Here is where you can find it:

- The manual. Most common RealFlight difficulties can be resolved by following the instructions in later sections of this chapter, however there is also additional information throughout other chapters that may be of assistance.

- Visit our product Knowledge Base at www.gpssoftware.com. This is a great resource and is an indexed, searchable collection of articles that describe solutions to almost every known situation with RealFlight and all of our other software products. In fact, this is the same information database used by our product support technicians.
- Visit the Knife Edge Software Message Boards at www.knifeedge.com/forums/. This is a place where owners of RealFlight and other Knife Edge products post questions, comments, and responses. Sometimes our product support technicians and product developers from Knife Edge post replies and announcements as well. You may find a thread that discusses the same difficulties that you are experiencing.
- Contact our Technical Support department by email at: rfsupport@greatplanes.com. Alternatively, our staff is also available via telephone or postal mail at:

RealFlight Technical Support
3002 North Apollo Drive
Suite #1
Champaign, IL 61822
Voice phone: (217) 398-8970 (Option 1)
FAX: (217) 398-7721

The product support teams are specially trained, and have many resources to help you resolve problems with RealFlight 7.

Before You Do Anything Else

If you are experiencing difficulties with RealFlight 7, you should always try the steps below first. These steps really do cure most problems our users experience. Even if you are not having a problem, these same steps often assist in the operation of both RealFlight and your computer.

- Update your video and sound card drivers (see instructions below).
- Update to the latest version of RealFlight 7.
- If these steps do not work, proceed to the next section.

Update Your Drivers-

Before you do anything else, you should make sure you have updated your video and sound drivers. A large number of difficulties encountered by RealFlight users can be cured by updating drivers.

A driver is a software program that controls your video or sound card. Each card manufacturer provides drivers for its own cards. To work correctly, RealFlight relies on your video and sound card drivers.

It is very important to use the latest available driver for your card. Card manufacturers frequently release updated drivers to fix problems that occur when the driver is used with programs such as RealFlight 7. The driver that came with your new computer, on your Windows disc, or on the disc included with the new card you bought, may not be the latest version.

If you do not know how to update drivers, you can find instructions in our Knowledge Base article *Q01-1038, How to Update Drivers*, at <http://www.gpssoftware.com/kb/q01-1038.htm>. This page will take you through the process step-by-step, and has links to driver download sites for most manufacturers.

Update to the Latest Version of RealFlight 7-

As we regularly release program updates, the difficulty that you are seeing may already be fixed in an update. Even if you just bought RealFlight, you should update to the latest version. It's free and only requires a few minutes of your time.

Run the DirectX Test Programs-

If you have updated your drivers and RealFlight to the latest versions and your problem persists, you should try to run the DirectX samples that come with RealFlight.

The DirectX samples (DirectDraw, Direct3D, Sound, etc.) are test programs written by Microsoft. These samples ship with DirectX, and are designed to check whether your DirectX installation, video/sound cards and drivers, etc., are working correctly. They should work on any DirectX 9 compliant driver.

Please note: These tests are not available with all versions of Windows.

These samples are found in the Technical Support area of the software. Click the **Technical Support** button followed by the **DX Diagnostics** button. Next, click either the **Sound** or the **Music** tabs, then the **Test DirectX Music/Sound** buttons. Once these tests have been completed, press the **Display** tab to access the **Test DirectDraw** and **TestDirect3D** buttons.

The most important tests are DirectDraw and Direct3D, both of which test your video card and driver. If you are having any graphics difficulty in RealFlight 7 (including RealFlight 7 "freezing" your system so that you have to reboot), look for the same

problem in these tests. If the problem occurs only after you have run RealFlight 7 for a long time, make sure to run the tests for a comparable length of time.

If your RealFlight 7 problem also occurs in Billboard, the problem lies with your video driver, not RealFlight 7. To resolve the problem, try finding updated drivers for your card (see above). If the problem still occurs with the latest drivers, you will need to report this problem to the card manufacturer. Be sure to tell them that you tested the card by using Billboard.

Please note: In rare cases, a newer video driver may have more problems than a previous version. After exhausting all other options, you might try obtaining an older driver from the manufacturer to eliminate this possible cause as well.

If You Need Additional Assistance

You have updated drivers and updated RealFlight 7, your system successfully runs the DirectX sample programs, and you are still having problems. What next?

As a first step, we suggest checking our Knowledge Base at www.gpssoftware.com. This is an easy to use, searchable database of known problems and solutions for RealFlight, RealRace, and our other software products. This is the same database that our Product Support technicians use when helping customers. We constantly update the knowledge base to address new problems as we discover them. In many cases, you will be able to find an article that gives clear, concise instructions for resolving your difficulty.

You may also want to check the Knife Edge Message Boards at www.knifeedge.com/forums/. This is a place where owners of RealFlight and other Knife Edge products post questions, comments and responses about problems. You may find a discussion thread about the problem you are experiencing.

You can also contact Technical Support at Great Planes via email at rfsupport@greatplanes.com.

IMPORTANT. If you do contact Technical Support, you can help us enormously by providing detailed information about your computer system. Since your problem may only occur on a particular video or sound card, particular driver version, etc., we may need this information to help us diagnose your problem. To compile your system information, use the **RealFlight 7 Launcher**. Click the **Additional Options** button. Next, click the **Technical Support** button, followed by the **Assemble System Information** button. This will create a file called “c:\launcheroutput.txt”, which contains your system information. Attach this file to an email and send it to us at rfsupport@greatplanes.com.

Examples of Common Problems and Solutions

If You Don't See Your Problem in This Chapter-

This chapter contains a few examples of common difficulties and concerns that RealFlight users have experienced.

Remember that we can never provide a complete list of difficulties and solutions in a program manual. That's because RealFlight - and the computers, cards, and drivers it uses - are constantly evolving. As such, we maintain a detailed Knowledge Base at www.gpssoftware.com. By keeping our Knowledge Base online, we can provide you with the latest information about resolving any difficulties that might arise. If you don't see your difficulty described in this chapter, please check the Knowledge Base.

In this chapter, we've simply tried to pick a very short list of the most asked about issues.

My computer "freezes" when I run RealFlight-

Sometimes, you may also notice sound skipping or repeating, or a computer reboot while flying. To resolve this type of problem, you must update the drivers for your video and sound cards. *This is very important.* Card manufacturers regularly update their drivers to fix this type of problem. Even the driver that came with your new computer may not be the most recent.

Sometimes a card manufacturer will offer a choice between a "recommended" driver, and another driver (often called "special purpose", "alternate", or "beta" driver). If RealFlight 7 "freezes" with the "recommended" driver, try using the alternate driver instead.

If you are sure that you are using the latest drivers, and have followed all the other steps in the previous section (update RealFlight 7, test DirectX) and are still having difficulty with your computer locking up while running RealFlight, please contact Great Planes Technical Support.

Improving RealFlight 7 Performance-

During installation, RealFlight 7 analyzes your computer's hardware specifications. RealFlight 7 then tries to optimize its configuration to best take advantage of that hardware, and achieve the best possible performance.

However, if the performance is less than you desire, you can adjust some of RealFlight 7's settings to improve the simulation speed and frame rate:

- Ensure that the drivers for the video and sound cards are up-to-date.
- Turn off all other programs, especially virus checkers and network applications (such as Instant Messengers) while running RealFlight 7. Use **CTRL-ALT-**

DELETE and check the Task Manager to verify that nothing else is running in the background.

- Reduce the texture, water, shadows and other graphics quality in RealFlight. This can have a profound effect on cards that do not have a high texture memory. See the Settings section starting on page 78 for more information.
- Eliminate the items shown in the simulation. To do so, access the **View** menu title then, access the **Scenery** menu item. Click an item, type to remove it from the simulation. It may be necessary to eliminate several items before performance meets your expectations.
- Reduce the number of open Gadgets and Viewports. Click the **X** on each Gadget or Viewport that you wish to close.

Other Common Problems-

Here are some other things you may want to watch for:

- Check the DVD for scratches or blemishes. Even minor scratches or fingerprints can cause random problems that appear to be program bugs.
- Verify that all other programs are closed prior to starting RealFlight 7. RealFlight works best when it is the only program running.
- If all else fails, try rebooting your computer occasionally, Windows may become unstable after prolonged and continuous use. A simple reboot may clear up any difficulty.

Transmitter Modes

Throughout world, pilots will fly using radios in different Modes. The Mode refers to the transmitter's gimbal stick assignments which determine the flight mode of your controller. There are two main modes of control. Mode 1, mostly used in Europe and Mode 2 which is the predominant method of controlling aircraft.

Mode 1-

A controller which is designated as Mode 1 means that it contains the throttle and aileron on the right stick. The left stick will, therefore, control the elevator and rudder.



Elevator



Rudder



Throttle



Aileron

Mode 2-

A controller which is designated as Mode 2 will have the left stick controlling the throttle and the rudder. Conversely, the right stick will control the elevator and the ailerons.



Throttle



Rudder



Elevator



Aileron

Convert Mode 2 to Mode 1

The RealFlight InterLink Elite is primarily offered in the Mode 2 configuration. If you wish to convert your InterLink controller to Mode 1 for use with RealFlight, please following these directions.

Tools Required-

- Medium Phillips-head screwdriver
- Hemostats (preferred), or needle nose pliers

Instructions-

Please read all instruction carefully before you begin this conversion. Great Planes will not accept responsibility for incidental damage to your InterLink controller or personal computer as a result of failure to adhering to these instructions properly. Please control Software Support prior to performing this conversion if you have any questions about this procedure.

1. Make sure your InterLink Elite controller is completely disconnected from your computer. Failure to do so could result in permanent damage to your InterLink Elite controller and/or your computer.
2. Remove the four screws from the rear of the controller, remove the case rear half, and lay the controller face-down on your workspace.

3. Remove the silver metal ratchet lever and screw from the gimbal on the right-hand side. Rotate the metal ratchet 180 degrees, so the screw hole is now on the bottom right side of the gimbal, and the ratchet end is now pointing upward nearest the switch on the top right side, and resting on the ribbed surface of the gimbal. Line up the lever's hole over the plastic mounting stud on the gimbal, insert the screw and tighten to a snug fit (making sure the lever maintains proper alignment over the ribbed area of the gimbal). **DO NOT OVERTIGHTEN**, as the plastic gimbal may become easily stripped.
4. On the right-hand gimbal, notice there is an arm and spring type lever mounted vertically along the inner-left side of the gimbal, the spring attached at the lower end to a plastic mounting stud. This arm and spring assembly must now be moved to the left-hand gimbal. Using pliers, gently pry the head of the spring upwards off of the plastic arm. Now remove the spring and arm from the gimbal (this may require slight maneuvering of the parts to get them out from behind the main body of the gimbal). **NOTE:** Pivot the arm outward, then slide to the side to remove it from the gimbal.
5. Looking at the left-hand gimbal from the back, on the inner-right side, notice a similar arm and spring mounting lugs as were on the other gimbal, except the spring lug is now on the top end and the pivot arm lug is on the bottom end. Take the arm just removed from the other gimbal, insert the pivot end onto the round pivot lug on the lower inside part of this gimbal and rotate the arm upward over the gimbal. Insert the spring down into the gimbal so the loop on the opposite end hooks onto the plastic lug located on the inside top-end of the gimbal. Once hooked, gently pull the opposite end of the spring outward and loop it over the end of the plastic arm. If any questions arise to the assembly of the arm and spring, refer to the arm already in place on the bottom of the gimbal, as they are assembled in the same manner.
6. Both gimbals are now in the Mode 1 configuration. No alteration of any wires is necessary. Reinstall the rear of the case onto the front half, care that no wires are pinched between the two case halves. Reinstall the four case screws.

Configure RealFlight-

Once you have made the changes to your InterLink controller, you will now need to make some minor changes in RealFlight to match your controller's configuration.

First, adjust the channel mapping by editing the InterLink Profile. See Select Controller section on page 51 for more information about his process.

Last, make sure the on-screen Radio Gadget is also switched to Mode 1, found under the Gedgets menu. See Radio Mode on page 202 for more details.

Glossary

180-Degree Turn

R/C Term

This basic flight practice starts with a takeoff, and then demonstrates 180 degree turns on a flight path parallel to the runway.

360-Degree Turn

R/C Term

In this practice, you will learn to fly the aircraft in a complete circle (360-degree turn). This maneuver is a great way to learn control inputs for turns while maintaining a constant radius and altitude.

3D Acceleration

Computer Term

3D rendering requires a huge number of calculations. Modern computers offload many of these calculations to the video card, rather than performing the calculations directly on your computer's CPU. This speeds up the simulation and allows for faster frame rates, thereby increasing the realism of the simulation.

ATV

R/C Term

Amount of servo travel. For instance, 50% ATV would mean the servo's maximum travel is 50% of its physical limit.

AccuModel

RealFlight Term

RealFlight 7's AccuModel aircraft editor offers the most powerful, most flexible aircraft editor ever released in an R/C simulator.

Active View

RealFlight Term

The active view is the view that is affected by the commands in the View menu. Only one view at a time is active. You can make a view active by clicking on it with the mouse. When you want to control a view's properties, you must first make it the active view.

Advanced Flight Recorder (AFR)

RealFlight Term

This feature allows the pilot to not only view prerecorded maneuvers, but also allows them to record their own. During the playback of maneuvers, the pilot has the ability to select from a number of different options such as fast forwarding, rewinding, looping, speeding up, and slowing down the recordings. These recordings may also be sent to others via the Internet. The pilot can also activate an on-screen transmitter to watch the stick inputs for each pre-recorded maneuver.

Adverse Yaw

R/C Term

The tendency of an airplane to yaw in the opposite direction of the roll. For instance, when right aileron is applied, the airplane yaws to the left, thus opposing the turn. Adverse yaw is common in trainer type airplanes having flat bottom wings. It is most noticeable at slow speeds and high angles of attack, such as during takeoffs and when stretching a landing approach. Caused by the unequal drag of the upward and downward deflection of the ailerons, this undesirable trait can be minimized by setting up the ailerons with Differential Throw or by coordinating the turns, using the aileron and rudder controls simultaneously.

Aileron

R/C Term

Hinged control surfaces located on the trailing edge of the wing, one on each side, used to provide control of the airplane about the roll axis. The control direction is often confusing to first time modelers. For a right roll or turn, the right hand aileron moves upward and the left hand aileron moves downward. The movements are reversed for a left roll or turn.

Airfoil

R/C Term

A surface (such as a wing or propeller blade) with a shape that produces a force perpendicular to its motion called lift.

Airframe

RealFlight Term

A term used to describe the general components of an aircraft when using RealFlight 7's AccuModel aircraft editor. For example, selecting the airframe will call up the fuselage, wing(s), and tail of an airplane.

Angle of Attack

R/C Term

The angle that the wing penetrates the air. As the angle of attack increases so does lift and drag, up to a point.

Arm

R/C Term

In this context, the arm is the distance from the point of the application of a force to the axis of rotation. If you press down on the tip of a wing, for example, the arm is the distance from the point where you are pressing to the root of the wing.

Auto-Play

Computer Term

A Windows feature that automatically detects when a CD or DVD is inserted and runs the specified program on that disc.

Autorotation

R/C Term

A maneuver in which the pilot attempts to bring the helicopter in for a landing without power from the engine. The momentum of the spinning rotor blades is enough to slow the helicopter prior to landing.

Autorotation Event

RealFlight Term

An event where players attempt to autorotate onto a target (similar to Spot Landing). Each player takes a turn. Players collect different point amounts based on landing location. The Autorotation Event works for helicopters only. The Deadstick Event is for airplanes.

Avalanche

R/C Term

The Avalanche is a loop with a snap roll at the top of the loop. This snap roll must be centered at the top of the loop.

Bloom Effect

RealFlight Term

The effect creates a feathering of light around brighter objects, giving it a more realistic look. This is more noticeable at brightly lit airports around aircraft that are lighter in color.

Camera Lag

RealFlight Term

This parameter determines how quickly or slowly the camera (your view of the aircraft on the screen) reacts to the aircraft's movements.

Channel Mapping

RealFlight Term

This term describes the ability of RealFlight 7 to alter the mapping or input of the servos to accurately reflect the actual controls from an R/C controller.

Chat

RealFlight Term

This is a real-time communication between two or more RealFlight 7 users which is conducted via the PC. RealFlight 7's multiplayer feature enables a public chat if so desired.

Child/Children Item(s)

RealFlight Term

In many of RealFlight 7's selection windows, items are displayed in a hierarchy format. An item that belongs to a higher group, or parent, is considered the child item.

Chord

R/C Term

The chord of a wing or surface is the width of the surface. A wider chord offers increased lift. However, a wider chord also generates more drag when the aircraft rolls.

CG

R/C Term

CG is the abbreviation for the phrase Center Of Gravity. This is the point at which the aircraft balances fore to aft and side-to-side. The location of this point is crucial to how the aircraft reacts in the air. For airplanes, a tail-heavy plane will be very snappy, but generally unstable and susceptible to frequent stalls. Conversely, a nose-heavy plane will tend to track better and be less sensitive to control inputs, but will generally drop its nose when the throttle is reduced to idle. This makes the plane more difficult to land, since it takes more effort to hold the nose up. A nose heavy airplane will have to come in faster to land safely.

Collective

R/C Term

A mechanism on a helicopter that changes the pitch of the main blades, thereby allowing the helicopter to ascend or descend accordingly. This is the control that adjusts the pitch of the rotor blades.

Collision Detection

RealFlight Term

RealFlight 7 sports the most advanced collision detection modeling ever used in an R/C model simulation. It blankets the entire aircraft, ensuring accurate modeling of the aircraft when it collides with objects and items within the simulation.

Coning

R/C Term

When a helicopter hovers, the blades form a slight "cone" when viewed from the side. The Coning effect is caused by the balance between lift and centrifugal forces on the blades.

Console
RealFlight Term

The Console (found by pressing the ~ key on the keyboard) allows for command line functions used by advanced users. For example, type “loadaircraft huey” will switch the current aircraft to the Huey helicopter.

Control Surface
R/C Term

Generally defined as the portion of the airfoil that moves. Examples include ailerons, elevators, rudders, flaps, and spoilers.

Controller
RealFlight Term

A device used to control an aircraft in RealFlight. RealFlight 7 ships with the Great Planes’ USB InterLink Elite Controller by Futaba. This device can be used as a standalone controller, or as an interface to use your own R/C transmitter.

Cuban Eight
R/C Term

Model enters in level flight, pulls to complete 5/8s of a loop to the 45 degree down line, completes 1/2 roll, pulls to complete 5/8s of a loop to the 45 degree down line, complete 1/2 roll to complete 3/8s of a loop to level flight.

Cyclic
R/C Term

For helicopters, this refers to the tilting forward and back (pitch), or tilting sideways (roll) of the helicopter. To do this, the angle of attack of the main rotor blades is changed during rotation, creating different amounts of lift at different points in the cycle.

Data Lever
RealFlight Term

RealFlight 7’s InterLink Elite has the ability to make on-screen selections, or quickly look at the windsock or ground. This can be done with the Data Lever, located at the bottom right-hand corner of the InterLink Elite controller.

The Data Lever can also be used in conjunction with the Rewind feature to seek forward or backwards through the timeline of the flight.

Deadstick
R/C Term

A term used to describe unpowered flight (glide) when the engine ceases operation.

Depth of Field

Computer Term

The depth of field (DOF) is the portion of the screen that appears sharp, while all other objects appear out of focus. In RealFlight, depth of field can add more depth perception to your computer monitor, which is flat.

Dihedral

R/C Term

The V-shaped bend in a wing. Increasing the dihedral usually enhances the aerodynamic stability of an airplane, and helps the rudder to control both the roll and yaw axis. This is why some trainers and sailplanes require only three channels of radio control (i.e., they have no ailerons).

Direct Control Interface

RealFlight Term

This is a method for using your own radio to completely control the aircraft. This usually means you have a separate radio program on your radio for each aircraft that you want to fly in RealFlight 7 with this method. All mixing and radio functions are performed on your radio and RealFlight simply passes the values directly to the aircraft servos. This is in contrast to the Joystick Emulation Interface.

Direct3D Technology

Computer Term

A Microsoft DirectX technology used to render the 3D image when you have a graphics accelerator card. It works best on faster computers.

DirectX

Computer Term

A technology created by Microsoft that controls graphics and sound operations.

Dithering

Computer Term

A method of removing and/or simulating colors that may not be available to the graphics processing unit.

Down Thrust

R/C Term

This is the downward angle of the engine in relationship to the centerline of the airplane. Down Thrust helps overcome the normal climbing tendency of flat bottom wings.

Driver
Computer Term

A software program that controls a card (e.g., video or sound card) in your computer. Card manufacturers usually provide drivers as well. Card manufacturers frequently update their drivers to fix bugs or to make their cards compatible with new software and hardware. You can often find an updated driver for your video or sound card by visiting the card manufacturers web site and following links to “Drivers,” “Support,” “Downloads”, or “Upgrades.”

Edit NavGuides
RealFlight Term

A NavGuide is a gadget that displays continuously updated information about your aircraft. The Edit NavGuides dialog is used to customize the NavGuides gadgets.

Elevator (Maneuver)
R/C Term

The Elevator is a maneuver in which the aircraft is made to stall completely with a large amount of elevator throw. The aircraft will descend almost vertically much like an elevator. To perform the Elevator, make sure that you have sufficient altitude, dive the aircraft vertically toward the ground and pull full up on the elevator stick.

Elevator (Control Surface)
R/C Term

Hinged control surface located at the trailing edge of the horizontal stabilizer, which provides control of the airplane about the pitch axis and causes the airplane to climb or dive. The correct direction of control is to pull the transmitter Elevator control stick back, toward the bottom of the transmitter, to move the Elevator upward, which causes the airplane to climb. Move the Elevator in the other direction to dive.

Endpoint Adjustment
R/C Term

This radio feature adjusts the length of servo travel in one direction (a single channel will have adjustments for two endpoints). For example, if your aircraft rolls faster one way than the other, endpoint adjustments can correct the problem.

Exponential
R/C Term

A feature commonly found on computer radios that desensitizes the servo when the sticks are close to the neutral position. The further the stick’s position from center, the faster the control response.

Figure 8
R/C Term

This is an excellent maneuver to learn perspective and orientation of the aircraft from all angles. Use the ailerons and elevator to turn the aircraft left and right. Use the elevator to ensure that the aircraft maintains a constant altitude, forming an '8' in the sky.

Flap
R/C Term

For Airplanes: hinged control surface located at the trailing edge of the wing inboard of the ailerons. The Flaps are lowered to produce more aerodynamic lift from the wing, allowing a slower takeoff and landing speed. Flaps are often found on scale models, but usually not on basic trainers.

For Helicopters: Flapping is an up-and-down motion of the main rotor blade's tip. With a "dual-damped" head, both blades are able to Flap independently. With "solid axle" heads, moving one blade up causes the other to move down.

Flapping Head
R/C Term

This describes a type of rotor head in which the two blades are not connected directly. Each blade is independent of the other, usually resulting in a helicopter with smoother performance.

Flare
R/C Term

The point during the landing approach in which the pilot increases the amount of up elevator to smooth the touchdown of the airplane.

FlexiField
RealFlight Term

FlexiField is the most advanced flying site editor ever unveiled. It presents the modeler with the ability to adjust the flying site in virtually any manner desired. The user can add trees, selecting the type, size, and color; add, move, size, and orient buildings, walls and other scenery objects; position and orient the runway; even choose the amount and type of lighting at the flying site.

Flight Failures
RealFlight Term

RealFlight 7 authentically recreates common difficulties that may be experienced at your local flying site. Practicing with flight failures enabled, is a good way to practice for emergencies.

Flight Playback Gadget
RealFlight Term

A gadget that lets you control playback of flight recordings using mouse actions.

Float Fly
R/C Term

The ability to takeoff and land a radio controlled aircraft from water.

Flybar Paddles
R/C Term

These are the short blades on the end of the flybar. Available in a variety of weights and airfoils, these paddles assist the main blades in producing lift, etc.

Flybarless
R/C Term

As the name suggests, a flybarless aircraft is a helicopter that does not incorporate a flybar in the rotorhead design. Rather the helicopter uses an electronic stabilization device that electronically replaces the flybar.

Four-Point Roll
R/C Term

These maneuvers are very similar to a slow roll with the exception of a hesitation at either $\frac{1}{4}$ of the roll or at $\frac{1}{8}$ of the roll. It is important to remember to use rudder and elevator to keep the aircraft flying in a straight line.

Frame Rate
Computer Term

Frame Rate is the number of times per second that RealFlight creates a different picture to display on your monitor. Frame rate is determined by the speed of your CPU and graphics card, and how many RealFlight options you turn on. This is not the same as refresh rate, which is the number of times per second that your monitor retraces an image on its screen.

Fuselage
R/C Term

Generally speaking, this is the main part of the airplane that holds the wings and engine. The fuselage is often thought of as the “body” of the airplane. This term is also used to refer to a “body” that might be used on helicopters.

Futaba
R/C Term

Maker of high quality R/C products, including the USB InterLink Elite controller shipped with RealFlight 7.

Gadget
RealFlight Term

An on-screen display that shows you continuously updated information about your aircraft, or lets you control RealFlight features using mouse clicks.

Global Wind
RealFlight Term

This term describes the overall wind conditions in the simulation.

Goldfish
R/C Term

Entering at level flight, pull 45 degrees up; perform $\frac{1}{2}$ roll centered on the line. Then perform a $\frac{3}{4}$ loop back to a 45 degree up line. Finish with another $\frac{1}{2}$ roll centered on the up line.

Governor
R/C Term

A device used to help maintain a constant RPM (head speed), generally used in helicopters rather than airplanes.

Grouping
RealFlight Term

A collection of scenery objects or foliage objects in your airport. Every object in the airfield must belong to one Group. You can place all of your airport's scenery objects in a single Group, or create multiple Groups to place objects in categories with related objects. For example, you could have a Group for Trees and another group for Buildings within a particular airport.

Gyro
R/C Term

A device, most commonly used in helicopters, that aids in controlling the yawing action of the helicopter by automatically adjusting the deflection of the tail rotor blades.

HAL Device
Computer Term

A hardware-accelerated 3D video card driver. "HAL" is an abbreviation for the phrase "Hardware Abstraction Layer" that uses software drivers to communicate between RealFlight's software and the hardware of the PC.

Harrier
R/C Term

A Harrier is a slow forward progression of the aircraft with the nose held high. Use the elevator to stall the forward progress of the aircraft. Add in more up elevator until the nose approaches 45 degrees. The throttle should be used to control the forward progress of the aircraft, without climbing.

Host
RealFlight Term

In RealFlight 7, every multiplayer session requires one player to serve as Host. The Host starts the session, and then the other players join. Other players can leave the session whenever they want, but only the Host can terminate the entire session.

Hub
R/C Term

The centralized mechanical device used to attach the main rotor blades and paddles.

Humpty-Bump

R/C Term

This aerobatic maneuver consists of two vertical lines connected by a half circle flown across the top.

IP Address

Computer Term

Whenever your computer is connected to the internet, it has an IP address. This number is a string of digits and periods, and looks something like “123.45.6.78”. The IP address is like an internet “zip code” that tells other computers where to look for your computer. Depending on your internet connection, your IP address may always be the same, or may change each time you connect to the internet.

Immelman Turn

R/C Term

The aircraft will enter a half loop from straight and level flight followed immediately by a half roll to straight and level flight.

Interface Mode

RealFlight Term

With RealFlight 7 set to Interface Mode, you are using the InterLink Elite Controller as an interface to your own R/C radio. In Interface Mode, your own radio controls RealFlight 7. Conversely, in Joystick Mode the InterLink Elite Controller (used as a mockup of an R/C transmitter) controls the RealFlight 7 aircraft.

InterLink Elite Controller

RealFlight Term

Great Planes’ USB InterLink Elite Controller by Futaba is a USB device shipped with RealFlight 7. The InterLink Elite Controller can be used as a standalone “mockup” R/C controller, as an interface for using your own R/C transmitter to control RealFlight, or both simultaneously!

Joystick

Computer Term

A device that connects to your computer to provide control input for the simulated aircraft. The InterLink Elite controller that comes with RealFlight 7 is considered a Joystick.

Joystick Emulation Interface

RealFlight Term

A term used to describe using your own radio to emulate the Interlink Joystick. This allows you to use your own radio to fly any of the stock aircraft in RealFlight 7. Actual radio functions such as mixing and ATVs are performed in the RealFlight software, not on your radio. This is in contrast to the Direct Control Interface.

Joystick Mode
RealFlight Term

With RealFlight 7 set to this mode, RealFlight 7 is controlled by the InterLink Elite controller used as a mockup of an R/C transmitter.

Knife Edge
R/C Term

This maneuver requires the pilot to roll the aircraft 90 degrees so that the wings are perpendicular to the ground, with one wing down and the other up then, holding this position while maintaining the same altitude above ground.

LAN
Computer Term

Local Area Network. This is usually a network where the computers are connected with high speed network cards.

Lateral Balance
R/C Term

The right-to-left or side-to-side balance of an airplane.

Launcher
RealFlight Term

The RealFlight 7 Launcher is useful for many aspects of the RealFlight 7 program, including loading the simulator, compiling system information for technical support, or uninstalling RealFlight.

Lead Lag
R/C Term

A helicopter term describing the hinge point where the blade attaches to the hub. This allows the blade to move forward and backward at certain times during the blades rotation.

Leading Edge
R/C Term

The very front edge of the wing or stabilizer. This is the edge that hits the air first.

Limbo
R/C Term

An event (flying competition) in which pilots take turns flying their aircraft under a Limbo bar. The pilot that clears the lowest bar height wins.

List Server
RealFlight Term

RealFlight 7's Multiplayer function lets you publicly "post" your session, so that any RealFlight 7 user, anywhere in the world, can find out about your session and join you (assuming you have not reached the enrollment limit of your session). The place where you post your session is called a List Server. Use of the List Server is optional.

Lithium Polymer

R/C Term

Rechargeable batteries frequently used in R/C for powering an aircraft's electric motor. A lithium polymer battery offers lower weight and improved run times when compared to other rechargeable batteries.

Low Rates

R/C Term

A switch on the radio that reduces the servo movement to much smaller extremes, thus making the model respond more slowly to a given control input.

mAh

R/C Term

Milliamp Hour – The measurement of a battery's total capacity.

Mixing (or Programming Mixing)

R/C Term

Two or more output channels can be coupled together to move in a desired manner when controlling input channels are activated.

Mode

R/C Term

Also known as Flight Mode or Stick Mode, this refers to the transmitter's gimbal stick assignments (locations) which determine the flight mode of your controller. There are two main modes of control, Mode 1- mostly used in Europe and Mode 2 which is the predominant method of controlling aircraft commonly used in the United States.

Most Recently Used (MRU)

Computer Term

MRU refers to the list of documents which were last accessed. For RealFlight 7, MRU's appear for airports, aircraft and recordings.

MultiMode

RealFlight Term

A RealFlight 7 feature that allows two users to fly simultaneously on the same PC.

Multiplayer

Computer Term

A RealFlight 7 feature that uses Microsoft's DirectX technology to connect with other RealFlight 7 users over a network.

Multiplayer Session

RealFlight Term

A network connection between RealFlight 7 users, which allows each user to fly in the same "virtual world," and allows all participants to see and interact with each other's aircraft.

NavGuides

RealFlight Term

A gadget that displays continuously updated information about your aircraft and the virtual world.

Normal Mapping

Computer Term

In 3D computer graphics, normal mapping is used to add details to shading without using more polygons.

Parent Item

RealFlight Term

In many of RealFlight 7's selection windows, items are displayed in a hierarchy format. An item that has an additional item within it is considered the parent item.

PhotoField

RealFlight Term

A technology that creates a flying field by using a panoramic photograph as a background for a flat terrain.

Pilot Profile

RealFlight Term

Contains miscellaneous information about the modeler such as name, location, hours logged, etc. It is a great methodology to identify yourself to others in multiplayer sessions.

Pirouette

R/C Term

The yawing action of a helicopter that looks much like an ice skater spinning in a circle. One Pirouette is equal to one 360-degree rotation.

Pitch Axis

R/C Term

The airplane axis is controlled by the elevator. Pitch is illustrated by holding the airplane at each wingtip. Raising or lowering the nose is the pitch movement. This is how the climb or dive is controlled.

Plumb String

R/C Term

When you measure your aircraft for RealFlight, some measurements require that you have a reference line running straight up and down. To make such a line, we tie a weight to the free end of a string, and let the weight dangle. Because the string is then "plumb" (oriented straight up and down), it is called a Plumb String. A Plumb String is particularly useful in measuring an aircraft's center of gravity.

Point Rolls

R/C Term

These maneuvers are very similar to a roll with the exception of a hesitation at either 1/4 or 1/8 of the roll.

Private Session

RealFlight Term

A multiplayer session that is password protected by the Host. The Host must communicate the session password to each player who wishes to join the private session.

Propeller
R/C Term

Props are generally designated by two numbers (for instance, “10 – 6”). The first number is the length (10" in the example) of the prop. The second number is the pitch or angle of the blades. In this example, the “6” represents the distance the propeller will move forward in one revolution in ideal situations.

Public Session
RealFlight Term

A multiplayer session that is published on a List Server and is not password protected.

Quick Edit
RealFlight Term

The Quick Edit gadget offers the ability to quickly modify basic parameters of an aircraft without opening the Aircraft Editor.

Quick Load
RealFlight Term

The Quick Load gadget allows you to quickly search and load a new aircraft or flying site through a simple search.

QuickSelect
RealFlight Term

RealFlight 7 InterLink Elite allows you to make changes to the simulator with the controller using the buttons at the bottom. Manipulating these buttons through the on-screen QuickSelect tabs offer the ability to change aircraft, flying sites, and more.

RAM
Computer Term

Random Access Memory.

ReadySelect
RealFlight Term

This is the name given to RealFlight 7's rotating preview box. This allows a rapid view of the aircraft from all angles.

RealPhysics 3D
RealFlight Term

This is RealFlight's exclusive physics modeling technology. RealPhysics 3D authentically replicates the actual physics of model aircraft by performing hundreds of thousands of floating point calculations each second while delivering sizzling real time performance.

RealRendering
RealFlight Term

This is a term used to globally describe the cutting edge three dimensional graphics, authenticity, and realism of the simulator world in which you are being immersed during flight.

Refresh Rate

Computer Term

The number of times per second that your monitor retraces an image on its screen. This is different from the Frame Rate.

Resolution

Computer Term

When used in the context of screen Resolution, this term describes the picture quality of the screen. Lower Resolutions will produce an image that is not as sharp as higher Resolutions.

Rewind

RealFlight Term

By pressing and holding the Reset button on the InterLink Elite controller, you have the ability to rewind your flight to any point you wish and continue on from there.

Roll Axis

R/C Term

The airplane axis controlled by the ailerons. Roll is illustrated by holding the airplane by the nose and tail. Dropping either wingtip is the roll movement. Roll is used to bank or turn the airplane. In most airplanes, the ailerons control roll however, when the main wing has dihedral, the plane can be banked using the rudder only. Consequently, many planes with wing dihedral do not have ailerons, and the rudder controls both roll and yaw. This is one reason most trainer aircraft have a large amount of dihedral -- a plane with large dihedral can be controlled using fewer input channels.

Rolloff Factor

RealFlight Term

This phrase describes how rapidly the volume of a sound increases or decreases as the source draws closer or moves farther away.

Root

RealFlight Term

In many of RealFlight 7's selection windows, items are displayed in a hierarchy format. The upper most item in this hierarchy is considered the Root item.

Rudder

R/C Term

Hinged control surface located at the trailing edge of the vertical stabilizer, which provides control of the airplane about the Yaw axis (causing the airplane to Yaw left or right). Left Rudder movement causes the airplane to Yaw left, and right Rudder movement causes it to Yaw right.

Servo
R/C Term

An electromechanical device that moves the control surfaces or throttle of an airplane according to commands from a receiver. This device does the physical work of moving parts around inside the aircraft.

Session
RealFlight Term

See "Multiplayer Session."

Setup Failures
RealFlight Term

RealFlight 7 authentically recreates common difficulties that may be experienced at your local flying site. Setup failures are problems where, in ideal situations, should be detected before the aircraft ever leaves the ground.

Sky Grid
RealFlight Term

A grid work of lines that appear in the sky when activated. Modelers practicing precision aerobatic maneuvers will appreciate these lines as they perfect their routines.

Software Radio
RealFlight Term

This term describes RealFlight 7's ability to accurately mimic a computer transmitter (complete with mixing, etc.) in the simulation.

Sound Card
Computer Term

A card inside your computer that controls audio (what you hear over your computer speakers). Most sound cards plug into your computer's motherboard. You can upgrade your sound card (or the software driver that controls it) without getting a new computer.

Specular Highlights
Computer Term

A graphics rendering technique that makes surfaces (e.g., MonoKote™) appear reflective, or "shiny" in direct light (e.g., sunlight).

Split S
R/C Term

The Split S is another step in learning to combine loops and rolls and is a great maneuver to decrease your altitude. A half roll precedes a half loop, making the maneuver a mirror image of the Immelman. The Split S provides course reversal and an easy increase in speed.

Stall

R/C Term

When an airplane's angle of attack is too great to generate lift (regardless of airspeed), the plane will dive and rapidly lose altitude. This is known as a stall. Every airfoil has an angle of attack at which it generates maximum lift. The airfoil will stall beyond this angle.

Swash Plate

R/C Term

The mechanism in a helicopter rotor that turns non-rotating control movements into rotating control movements.

Thermal System

R/C Term

This phrase describes the wind flow and effects for the thermals in RealFlight 7.

Throttle Hold

R/C Term

This is used to keep the throttle at a set position, yet allows input to the collective of the helicopter. Generally this function is used to practice autorotation.

Throw

R/C Term

Commonly used to describe the degree of deflection of a control surface.

Tip Stall

R/C Term

This is when the airplane reaches its stall speed and one wing drops.

Torque Roll

R/C Term

The Torque Roll occurs when the nose of the airplane is pointed vertically and the airplane hovers in place. The aircraft will rotate left around its roll axis.

Touch and Go

R/C Term

Landing and taking off without a pause, often confused with a good bounce.

Trailing Edge

R/C Term

The rearmost edge of the wing or stabilizer.

Trainer

R/C Term

A model designed to be inherently stable and fly at low speeds, to give first-time modelers time to think and react as they learn to fly.

Training Aids

RealFlight Term

RealFlight 7 offers a variety of features to learn new maneuvers. These consist of training aids that take you through step-by-step basic flight lessons, such as takeoffs and landings for airplanes, and Hovering practice for helicopters. Prerecorded lessons are also available from professional pilots.

TruFlo Wind Dynamics

RealFlight Term

RealFlight 7's TruFlo Wind Dynamics is the most accurate wind model ever released in an R/C simulator. It combines five different wind models to recreate the ever-changing wind fields found at a real flying site.

Turbulence System

RealFlight Term

This is the ability of RealFlight to induce turbulent, rough air, as would be experienced at the flying site.

USB

Computer Term

USB, or Universal Serial Bus, is a connection protocol for computer peripheral devices (like Great Planes' USB InterLink Elite Controller by Futaba). USB technology allows you to connect multiple devices to your computer, and supports high data transfer rates and is hot swappable. USB devices have a special connector that only fits into a USB port. Most modern personal computers have USB ports, which are usually clearly labeled. Some computers have one or more USB ports on the front of the computer housing, although the USB ports are usually on the back of the computer.

Variometer

R/C Term

An instrument designed to indicate the rate of climb or descent of an aircraft.

Video Card

Computer Term

A card inside your computer that produces the images on your video monitor. Most modern 3D video cards have accelerated 3D operations—that is, they perform numerical calculations for rendering a 3D scene, to free up your computer's CPU to perform other tasks. The video card plugs into your computer's motherboard. You can upgrade your video card (or the software driver that controls it) without replacing your computer.

Viewport
RealFlight Term

A picture-in-picture display set within the RealFlight 7 main display. The Viewport is independently adjustable and serves as its own unique “window on the world”.

Virtual Flight Instruction
RealFlight Term

This RealFlight 7 feature lets you choose from a variety of prerecorded maneuver training lessons. The maneuver is then demonstrated on screen, along with the instructor’s voice and control stick movements. You can index, pause, and even loop the maneuver playback for training purposes.

Washout
R/C Term

An intentional twist in the wing, which causes the wing tips to have a lower angle of attack than the wing root. In other words, the trailing edge is higher than the leading edge at the wing tips. Washout helps to prevent tip stalls.

Waterfall
R/C Term

The Waterfall is a maneuver where the plane pivots 360 degrees in the pitch axis with as little forward motion and altitude deviation as possible. As the name suggests, this maneuver resembles a waterfall during flight.

Wing Loading
R/C Term

The amount of weight per square foot that has to be overcome to provide lift. It is normally expressed in ounces per square foot. This specification can be easily calculated as follows: first determine the area of the wing in square inches then, simply divide by 144 to obtain square feet. Divide the total weight (in ounces) of the airplane by the wing area (in square feet).

This information is valuable when deciding on which airplane to build next. Planes with high wing loading must fly faster to stay in the air. These are generally "performance" airplanes. Conversely, a plane with lower wing loading does not need as much air flowing around the wing to keep it flying. Gliders and trainer airplanes fall into this category because in this case, slow, efficient flight is highly desirable.

Yaw Axis
R/C Term

The airplane axis controlled by the rudder. Yaw is illustrated by hanging the airplane level by a wire located at the center of gravity. Left or right movement of the nose is the Yaw movement.

Index

A

- About, 315**
- AccuModel, 5, 349**
- Advanced Flight Recorder, 6, 350**
- Aerobatics, 321**
- AFR.** *See* Advanced Flight Recorder
- Aircraft Editor, 35, 118**
 - Add Component, 132**
 - Aircraft Parts Tree, 129**
 - Delete Component, 132**
 - Parameter Window, 131**
 - Preview Screen, 131**
 - Show Wireframe, 127, 128**
- Aircraft Menu, 115**
- Aircraft MRU, 22, 143**
- Aircraft Selection, 21, 116, 117**
 - Description, 117**
 - Specifications, 117**
- Aircraft Variant, 74**
- Airframe, 350**
- Airplane Basics, 317**
- Airplane Flight, 318**
- Airplane Hover Trainer, 280**
- Airplane Physics.** *See* Physics
- Airport, 211**
- Airport Editing, 34**
- Airport MRU, 24, 173**
- Airport Selection, 23, 146**
- Airspeed, 187**
- Altitude, 187, 199**
- Audio, 80**
- Auto-Play, 351**
- Autorotation, 351**
- Autozoom, 299**
- Base, 266**
- Battery, 200**
- Binocular, 189**
- Bloom, 97, 351**
- Boundary, 259, 264, 269, 283**
- Camera, 83**
- Camera Position, 297**
- Camera Type, 294**
- Capture Screenshot, 112**
- Channel Mapping, 351**
- Chase View, 296**
- Chat, 92, 242, 352**
- Child, 130, 153, 352**
- Clear Aircraft Position, 140**
- Clouds, 95**
- Cockpit View, 295**
- Collective, 322**
- Color Scheme, 73, 118**
- ColorSchemes, 137**
 - Alpha Channels, 138**
 - PowerReflectiveOff, 137**
 - PowerReflectiveOn, 137**
 - PowerSpecularOff, 137**
 - PowerSpecularOn, 137**
 - Reflectivity, 137**
 - Specular, 137**
- Commands, 94**
- Console, 85**
- Controller Menu, 175**
- Crashing, 317**
- Crosswind, 260, 265**
- Cyclic Stick, 324**
- Data Lever, 353**
- Deadstick, 353**
- Direction, 260, 265**
- DirectX, 13, 342, 354**
- Disconnect, 217**
- Display Advanced Properties, 124**
- Display Properties, 339**
- Downwind, 266**
- Drivers, 12, 342, 355**
- Edit* Airport, 35, 148**
- Effects, 292**
- End Game List, 223**
- Errors, 90**
- Export, 73, 77**
- Filter Servers, 213**
- Final, 266**
- Fixed Position, 295**
- FlexiField, 5, 34, 356**
- Flight Failures, 6, 60, 356**
- Float Fly, 3**
- Fly Camera, 153**
- Folder Listing Window, 159, 160**
- Foliage Density, 98**

Forward Flight, 327
Futaba, 357
G Force, 200
G3X. *See* RealFlight Archive
Gadgets, 28, 249, 357
Gadgets Menu, 185
Game, 211
Game Gadgets, 232
Game Help, 231
Global Wind, 357
Graphics, 95, 187
Graphics Frame Rate, 201
Great Planes, 314
Ground Speed, 200
Grouping, 117, 147, 157, 358
Gyro, 327
Head Tracking, 302
Heading, 187, 200
Height, 201
Heli Hover Trainer, 267
Heli Orientation Trainer, 277
Helicopter Basics, 322
Helicopter Physics. *See* Physics
Help Contents, 306, 307
Help Menu, 305
Host, 214
Hovering, 327
Hovering Training Aids, 4
Idle-Up, 326
Import, 70
Installing RealFlight, 11
Instructions, 86
Interface Mode, 359
InterLink Elite, 2, 5, 359
IP Address, 359
Join, 210
Joystick Emulation, 359
Joystick Mode, 360
Keep Ground in View, 299
KEX, 71
Keyboard Commands, 37, 308
Kill Engine, 142
Knife Edge Software, 314
Knowledge Base, 341, 343
LAN, 205, 360
Landing Trainer, 4, 261
Landings, 320
Language, 102, 103
Latency, 211
Launcher, 6, 329
License, 310, 315
List Server, 360
Look At, 126, 298
Look From, 127
Manage Ban List, 216, 225
Manage Game List, 223
Manage User Files, 75
Manual View, 299
Max Players, 215
Message Boards, 341, 343
Metric Units, 108, 125, 158
Microphone, 238, 252
Movement Modes, 147
MRU, 361
MultiMode, 105, 243, 361
Multiplayer, 6, 36, 104, 193, 205, 361
Multiplayer Menu, 205
Multiplayer Session, 214
Mute Audio, 78
NaturalPoint, 302
NavGuides, 6, 186, 198, 355, 361
Night Flying, 4, 97
Normal Camera, 154
Normal Maps, 98
Notifications, 89
Object Palette Window, 159, 163
Orientation, 270, 284
Overhead, 193
Overhead View, 4
Pan Camera, 154
Parent, 130, 152, 362
Particles, 96, 99
Password Protection, 216
Performance, 344
PhotoField, 4, 362
Physics, 51, 57, 59, 107
Physics Frame Rate, 201
Pilot Nametags, 293
Pilot Preview, 159, 165
Pilot Profile, 228
Pilot Status, 232
 Bullets, 233
 Fuel, 233
 Gun Temperature, 234
 Health, 233
 Paintball, 233
 Poison, 233
 Rockets, 233
 Shield, 233
 Speed Boost, 233
Pivot Camera, 154
Play Engine Sounds, 124

Playback Gadget, 249, 250
Players, 211
Port numbers, 216
Power Ups
 Bullets, 220
 Fuel, 220
 Infect, 220
 Paintballs, 220
 Points, 220
 Poison, 221
 Random, 221
 Repair, 221
 Rockets, 221
 Shield, 221
 Speed Boost, 222
Power-Ups, 219
Preview Screen, 147
Private, 362
Properties, 159
Properties Window, 162
Public, 363
Publish, 215
Quick Edit, 3, 133
Quick Load, 3, 197
QuickSelect, 3, 25, 26, 43, 44, 48, 116, 146, 187, 188, 190, 191, 363
Radio Gadget, 188, 289
Radio Mode, 202
Raw Panoramic Image, 71
ReadySelect, 363
RealFlight Archive, 72
RealPhysics, 3, 363
Recordings, 247
Recordings Menu, 247
Recordings MRU, 253
Refresh, 212
Refresh Rate, 101
Registration, 331
Reload Color Scheme, 125
Remember Aircraft Position, 139
Reset, 141
Resolution, 101
Restore Defaults, 331
Rewind, 3, 109
RFX. *See* RealFlight Archive
Rotary Trails, 294
RotoSonics, 5
RPM, 187, 200, 201
Rudder, 323
Safety Alerts, 110
Save Color Scheme, 136, 138
Scenery, 96, 292
Scoreboard, 226
Select Color Scheme, 135
Select Level, 280
Select Target, 235
Server Details, 229
Session Name, 211, 215
Settings, 79
Setup Failures, 65
Shadow, 96, 98
Show Title Bar, 113
Simulation Menu, 47, 145
Simulation Sounds, 237
Sky Grid, 4, 293
Software Radio, 365
Sound Card, 9
Specific Version, 333
Speed, 199
Split Screen. *See* MultiMode
Start Game, 218
Start Game List, 222
Stop Game, 222
Streamers, 6, 99
Sun, 167
 Sun Azimuth, 168
 Sun Inclination, 168
System Information, 336
System Requirements, 8
Takeoff Trainer, 4, 256
Takeoffs, 318
Targa (.tga) File Format, 136
Targeting, 234
Targeting Ring, 235
Technical Support, 333, 335, 337, 341, 343
Terrain Detail, 96
Texture, 99
Thermals, 169
 Dynamic, 170
 Simple, 170
Throttle Hold, 327
Timer, 194, 195
TrackIR, 302
Trails, 4, 294
Training Aids, 31, 34, 255, 367
Training Menu, 255
Transmitter, 17
Trees, 97
TruFlo Wind Dynamics, 4, 367
U.S. Patent, 41
Uninstalling, 334

Updates, 331, 342
USB, 2, 3, 367
Use a Game List, 216
Variable Pitch Prop, 4
Variometer, 192, 367
Vertical Sync, 102
VFI. *See* Virtual Flight Instruction
Video Card, 9
View Menu, 291
Viewport, 6, 27, 190, 368
Virtual Flight Instruction, 5, 29, 287, 368
VirtualRevolution, 5
Voice Chat, 238
Voltage, 200

Warnings, 90
Water, 98
Websites, 313
Wind, 110, 170, 188, 200, 260, 265
 Wind Gust, 111
 Wind Variation, 111
Wind Direction, 171
Wind Field Indicators, 97, 294
Wind Speed, 171
Zoom, 201
Zoom In, 155, 300
Zoom Out, 155, 300
Zoom Reset, 156, 301
Zoom Type, 298

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Special Thanks	Jill Brinkoetter Neal Cloud Don Coulter Don Ferguson Teresa Fredericks Janet Gallivan Ben Godwin Bounchanh Grant Angela Haynes Bryan Heaton Martin Hepperle Albert & Jeanette Hibpshman Daniel Kempfues Neal Kuechler Danielle LeFaivre Dan Mason P.B. Mink Ang Overholt Ryan Reeder Jürgen Schrader Eric Smith Lisa "Weesa" Stirnemann Bill Wiegand Russ Williamson Stefan Vorkoetter
A Big Thanks Also To	The families of those who put many late nights into the production of this product.
And To Knife Edge Mascots	The All-Seeing Gnome LuLu the Hula Girl
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