



FlyInside RotorWay RW162F User Manual

By FlyInside Simulation

Programming - Edward P. Jeremy W. Dan C.

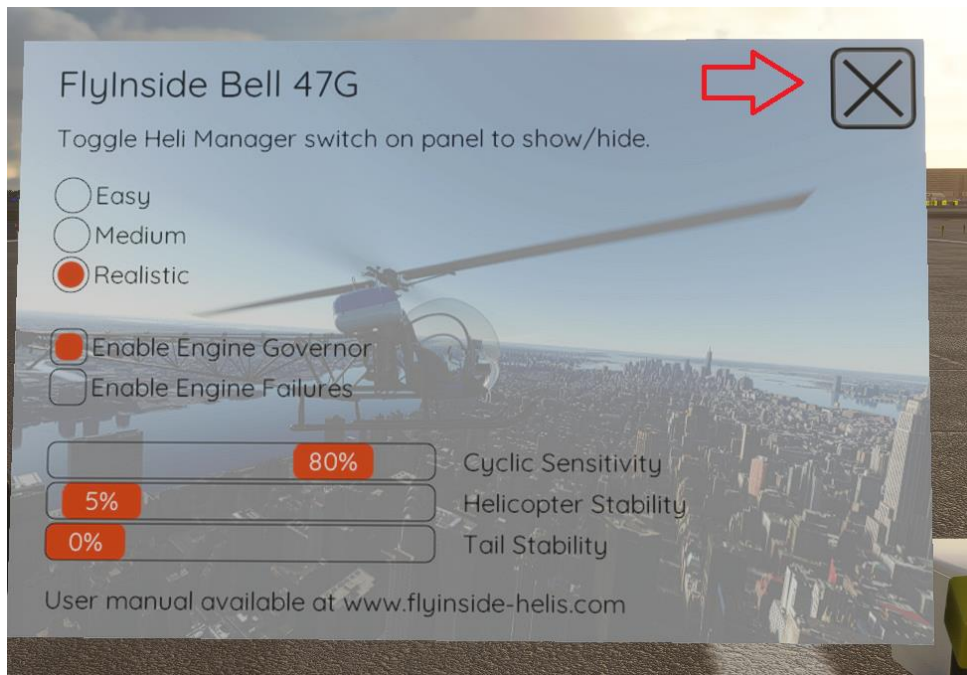
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Marketplace Version Heli Manager

The website and Marketplace versions of the RotorWay RW162F are nearly identical. They contain the same artwork, systems, customizability, and flight dynamics. The only difference is the “Heli Manager.”

In the marketplace version of the RotorWay RW162F, the Heli Manager is built right into the cockpit, instead of running as a separate program. To dismiss it, click the “X” on the upper right corner.



To open Heli Manager again, simply press the Heli Manager button on the bottom right of the helicopter panel.



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A Special Thanks to Our Beta Testers

We'd like to thank everyone who helped to test, debug, and shape this helicopter. We couldn't have done it without them.

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1. Introduction

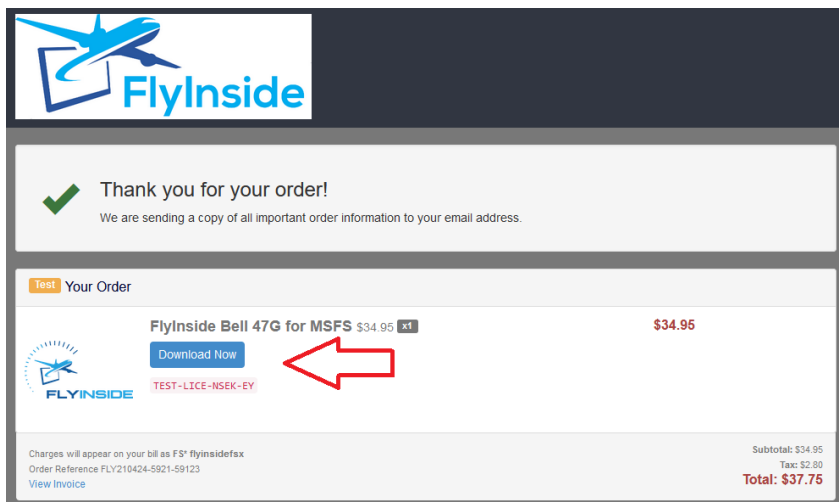
Welcome to the FlyInside RotorWay RW162F. With this aircraft, we've attempted to authentically recreate the RotorWay RW162F for Microsoft Flight Simulator. The RW162F ships with highly realistic flight dynamics, accurate systems, and beautiful artwork. We hope that you enjoy this experience!

2. Installation and Activation

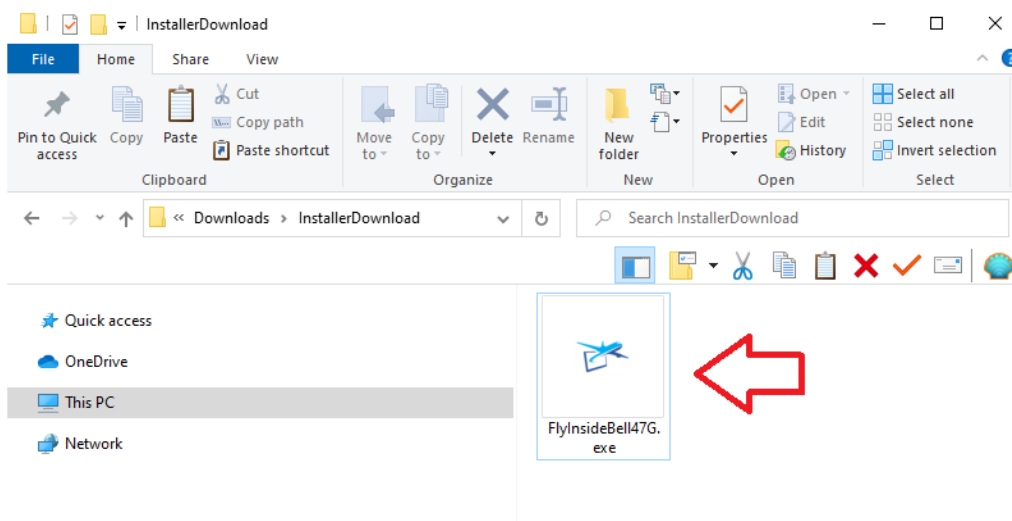
These instructions apply only to the website version of our software. The Marketplace version installs and activates via the MSFS Marketplace.

The FlyInside RotorWay RW162F installs via an easy-to-use setup program. If you encounter any issues, cannot find your installer, or haven't received a license key, please contact support@flyinside-fsx.com

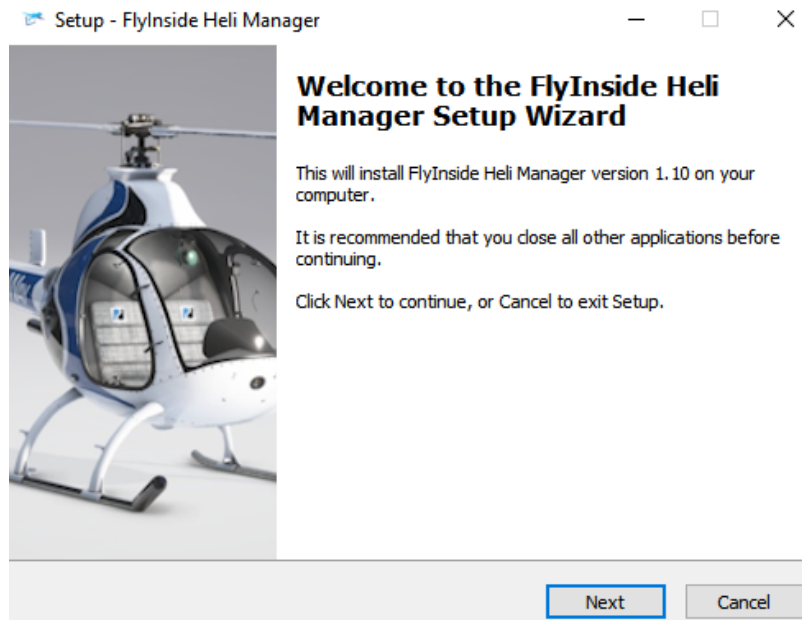
1. Download the installer via the link on your purchase receipt page



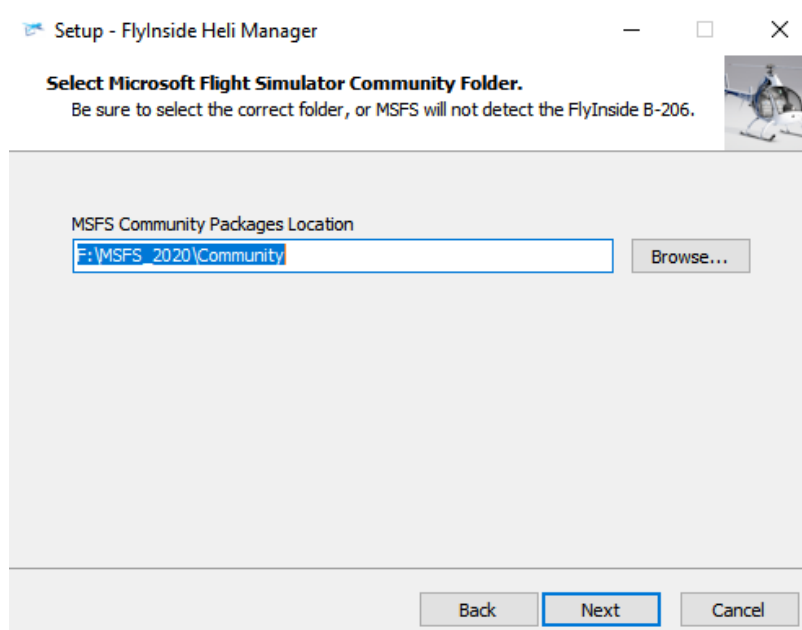
2. Double click the installer to run, and accept any prompts that appear.



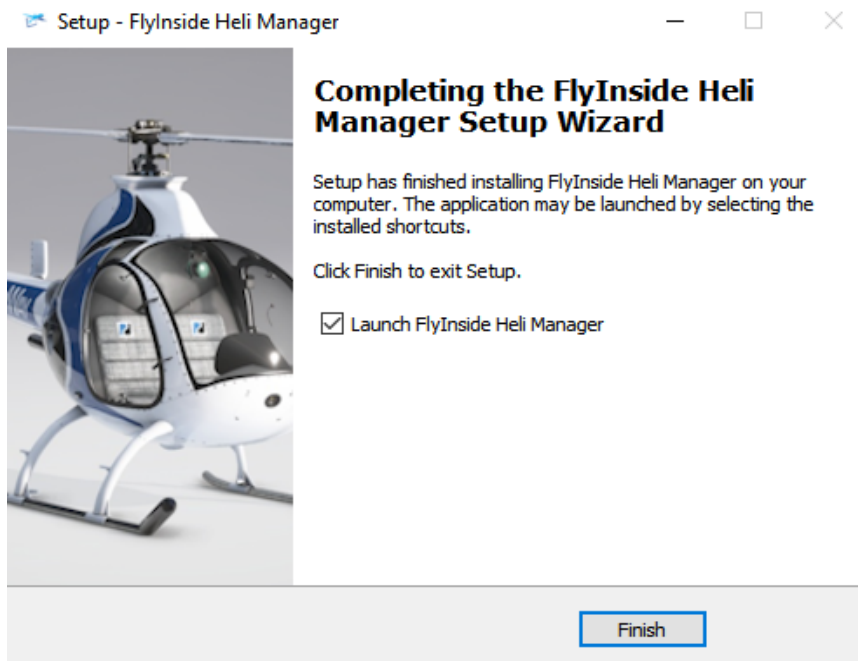
3. Click through the installer



4. Double check that the installer correctly locates your MSFS Community packages folder. If this location is not correct, MSFS will not detect the aircraft.



5. After the installer completes, allow it to launch FlyInside Heli Manager.



A Note on FlyInside Heli Manager

Marketplace Version Differences? In the Marketplace version of the RW162F, the Heli Manager is integrated into the helicopter itself, rather than running as a separate application. Heli Manager is used only to configure the flight model. Activation and copyright are handled by Marketplace. See the pictures on Page 3 of this document.

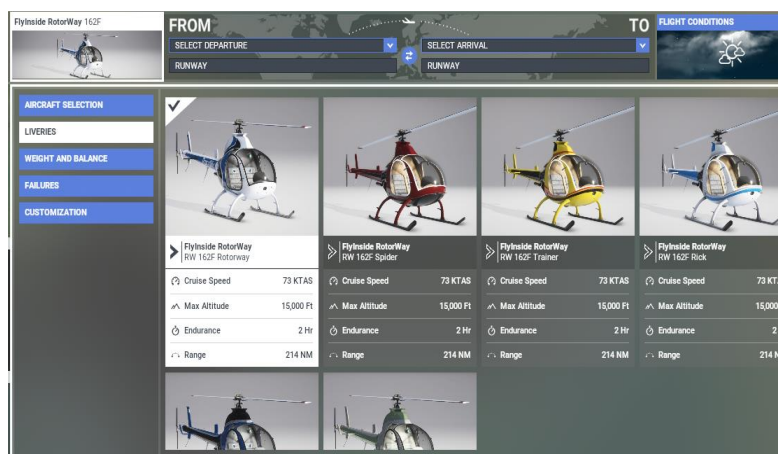
FlyInside Heli Manager handles copyright protection for the FlyInside RotorWay RW162F, and allows you to customize the flight model. By default, FlyInside Heli Manager will run in the background when you turn on your computer.

FlyInside Heli Manager doesn't log any data, or call home randomly. It will communicate with our servers when you activate a license key, and occasionally to check for new versions. It's also designed to use minimum

system resources, it won't affect frame-rates or heat up your CPU while running in the background.

FlyInside Heli Manager runs in the background purely for convenience, so that you won't need to launch it manually when flying our helicopters. If you prefer though, you can turn off the System Start option (via Task Manager), and launch FlyInside Heli Manager manually as needed.

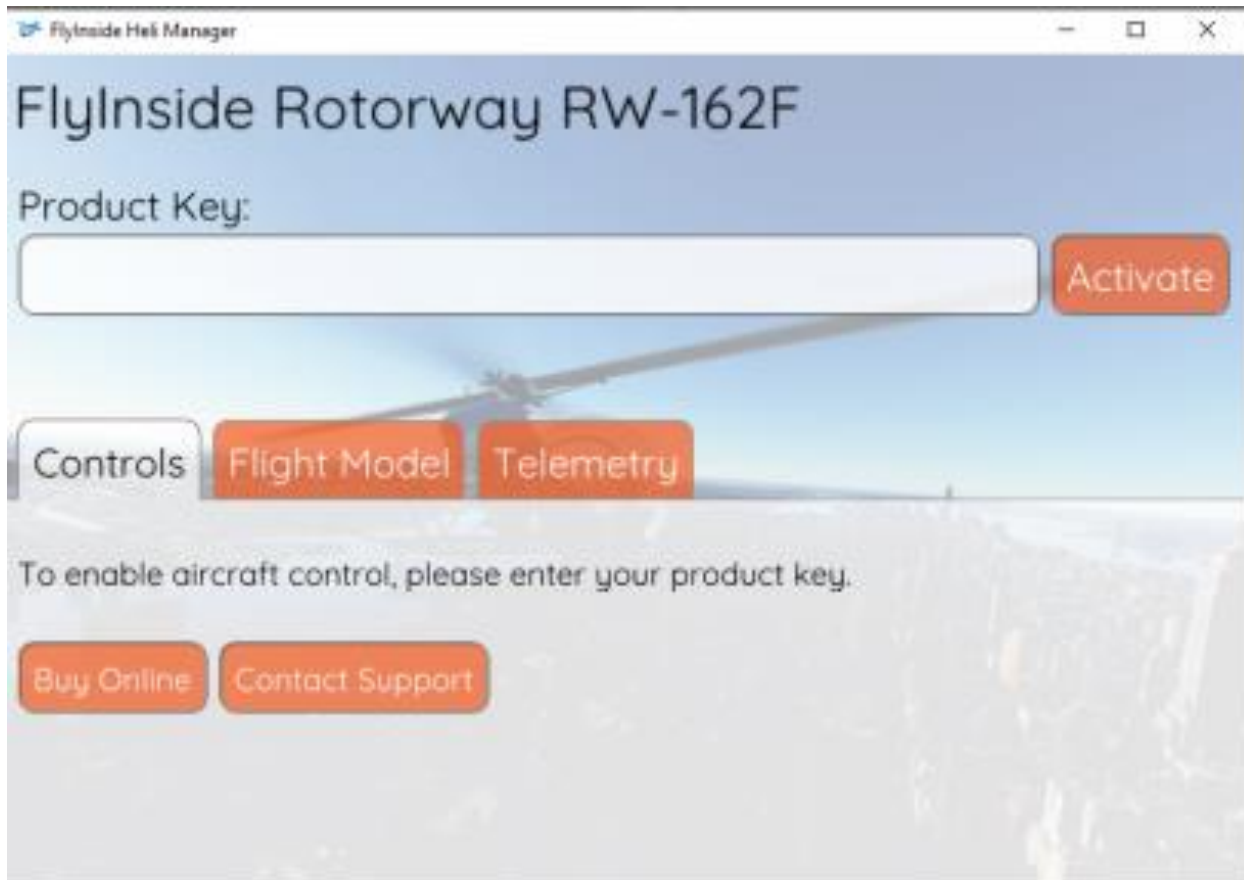
6. Open Microsoft Flight Simulator, and select the FlyInside RotorWay RW162F as your aircraft. Note that the RW162F will appear in the Rotorcraft category..



7. Select a departure airport and load a flight. The first time you load the FlyInside RotorWay RW162F may take several minutes as MSFS compiles our flight-model code for your PC. Once loaded, the RW162F will have an in-cockpit message prompting you to run FlyInside Heli Manager, or to enter an activation key.



8. FlyInside Heli Manager should appear on your desktop. If not, you can click on the system tray icon (if it is running), or run “FlyInside Heli Manager” from your Start Menu.



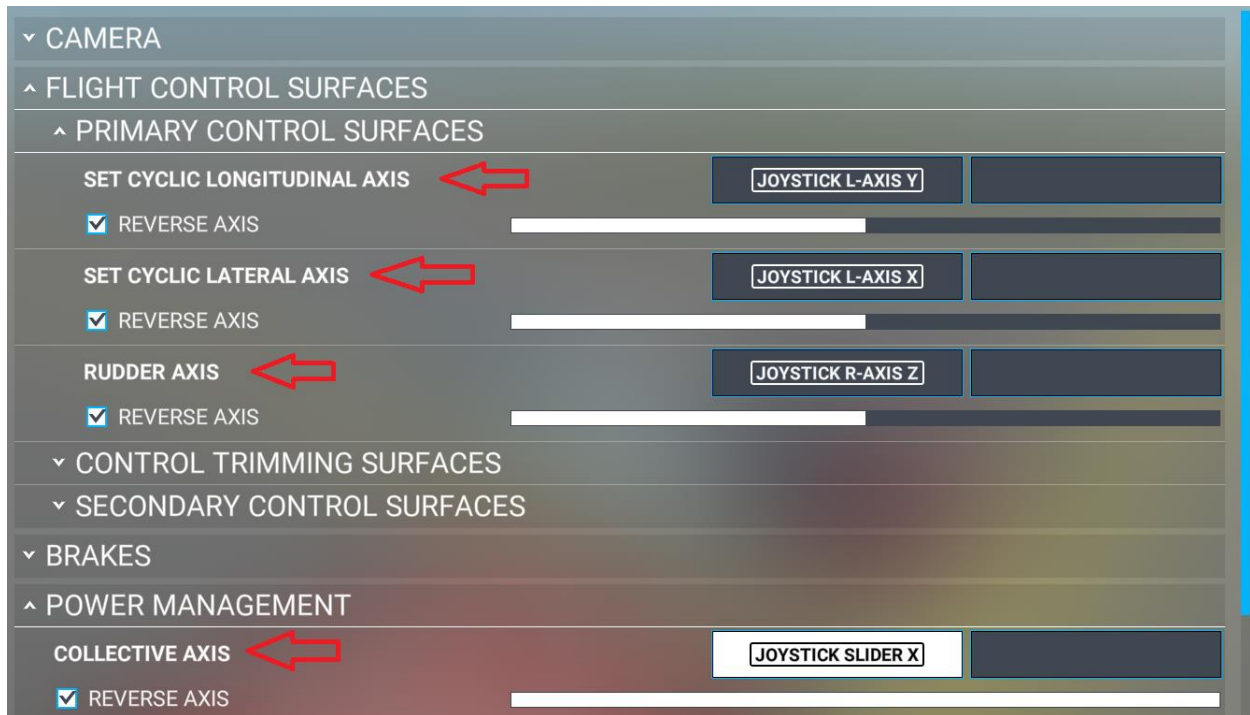
9. Enter your product key (you may use Ctrl+V to paste it), and press “Activate.”

10. The rotors should start spinning up, you’re ready to fly!

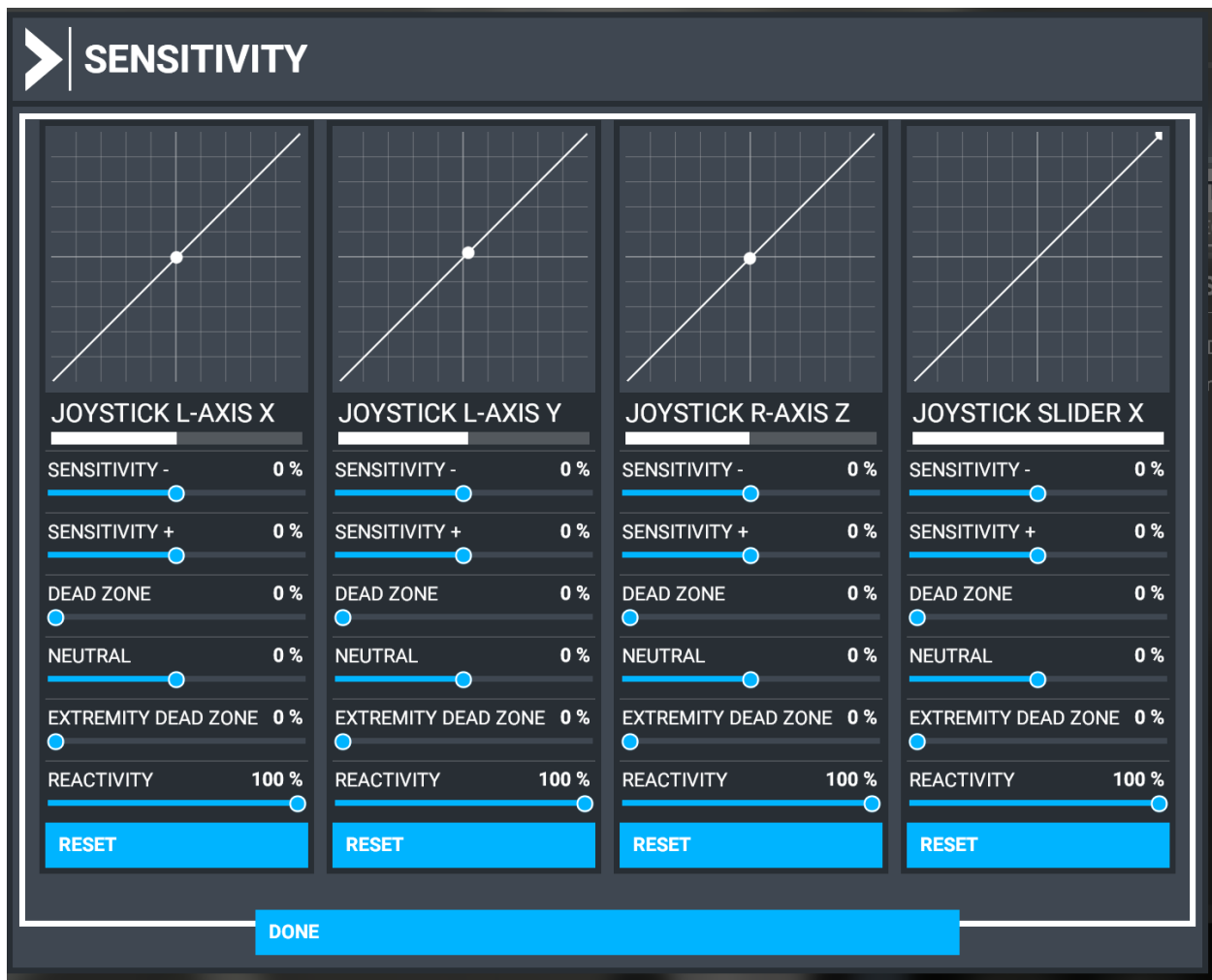
3. Flight Controls Setup

The FlyInside RotorWay RW162F should work with your standard Microsoft Flight Simulator control bindings. At a minimum you'll need the following controls

1. Bind the joystick axis you'd like to use for cyclic roll (left/right) control to either the MSFS "Cyclic Lateral Axis" or the "Ailerons Axis"
2. Bind your cyclic pitch (fore/aft) control to the MSFS "Cyclic Longitudinal Axis" or "Elevator Axis"
3. Bind your pedals or yaw control to the MSFS "Rudder Axis"
4. Bind your collective control (or throttle paddle) to the MSFS "Collective Axis"
5. You may have to reverse some axes depending upon your hardware.



For realistic control response, you'll want to ensure that MSFS "Sensitivity" is set to 0%, 'Dead Zone' 0%, 'Neutral' 0%, 'Extremity Dead Zone' 0%, and 'Reactivity' 100%, for all axis.



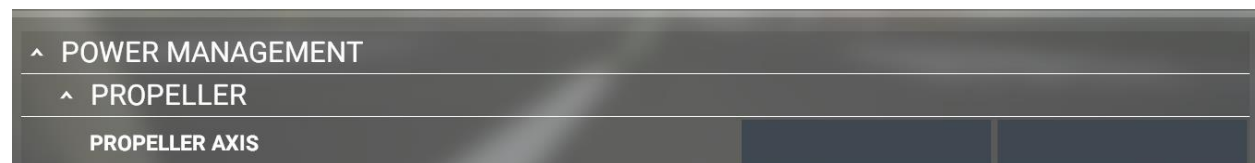
Manual Throttle Control

In real life, the RotorWay RW162F doesn't have an engine governor. The pilot needs to manually control the engine's power level using a twist grip on their collective. As they pull more pitch on the collective, they'll need to feed in more power. It's an intricate dance, every control moved affects the others.

Unfortunately, PC helicopter controls can be prohibitively expensive. We understand that most users don't have a full USB helicopter collective, and instead many are flying with a HOTAS or joystick. As such, the FlyInside RotorWay RW162F ships with an engine governor installed by default, meaning that you only need 4 axes of control, and the helicopter automatically keeps rotor RPM near 100% during flight.

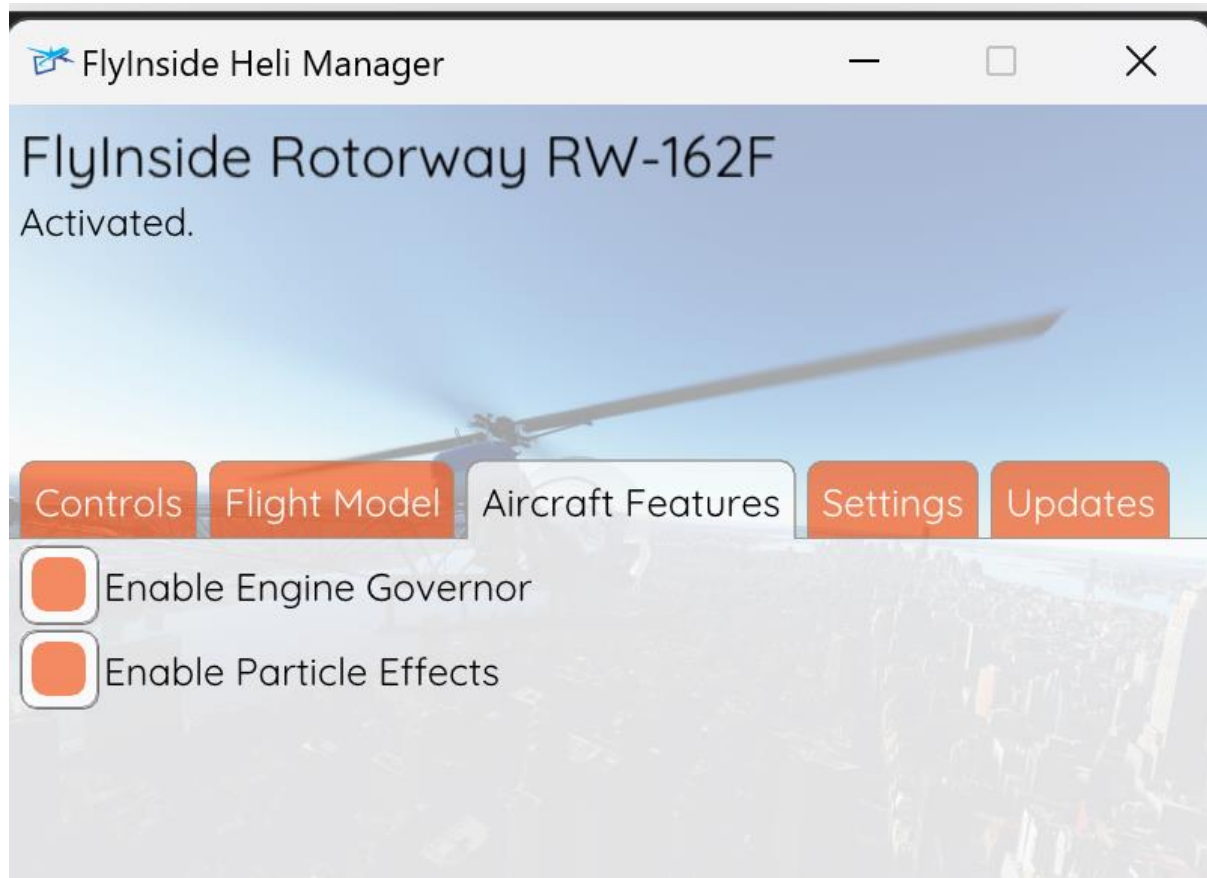
For those of you with a full helicopter control-set, the FlyInside RotorWay RW162F has a piston engine RW162F with realistic power response. You can turn off the governor (either using the switch on the panel per chapter 7, or the Heli Manager setting in chapter 4), and manually manage the throttle while you fly.

In this case, you'll want to bind your twist throttle to "Set Helicopter Throttle Axis" or "Propeller Axis" in MSFS. Depending upon your setup, you may need to reverse this axis.

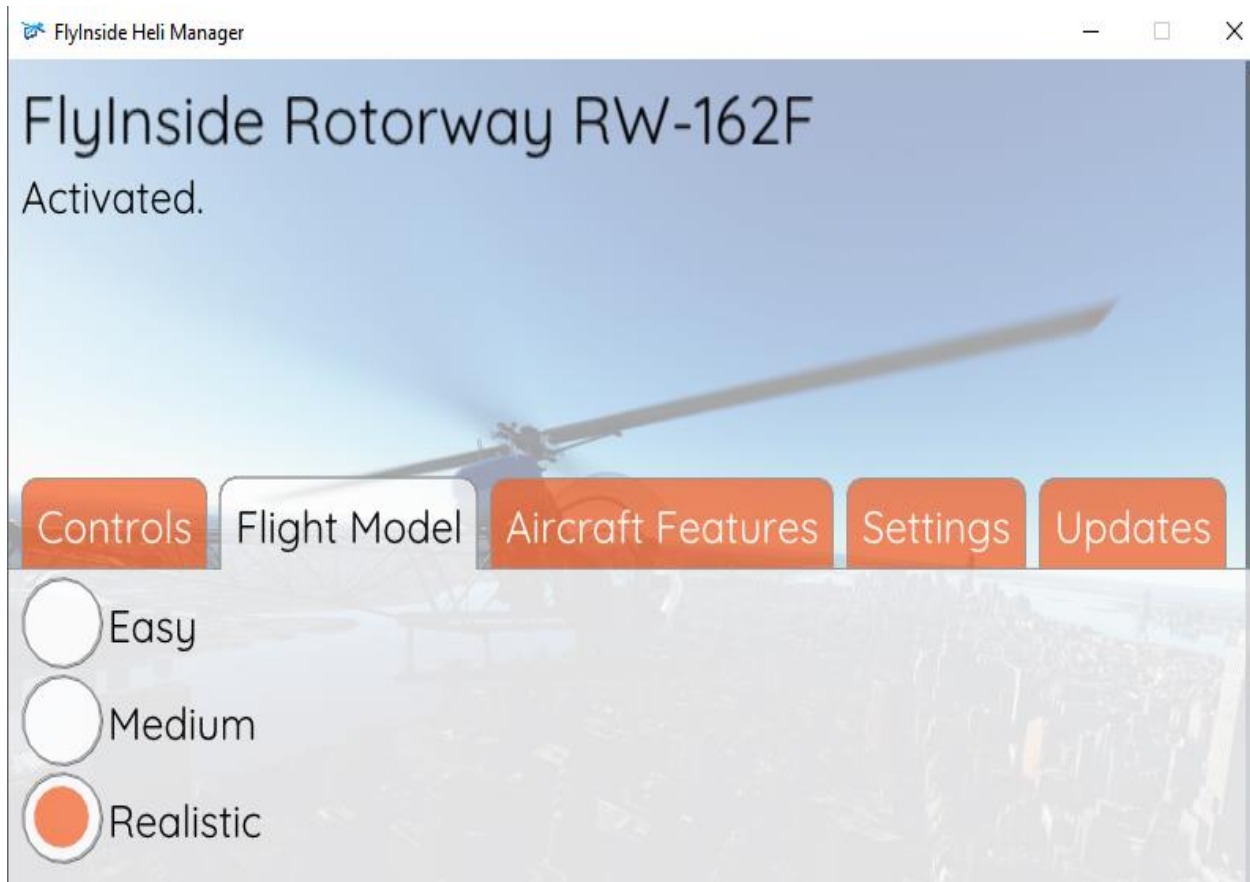


4. Flight Model Options

The FlyInside RotorWay RW162F supports multiple realism levels and options to suit your control setup and skill level. To configure these, run FlyInside Heli Manager, and go to the “Flight Model” and “Aircraft Features” tabs.

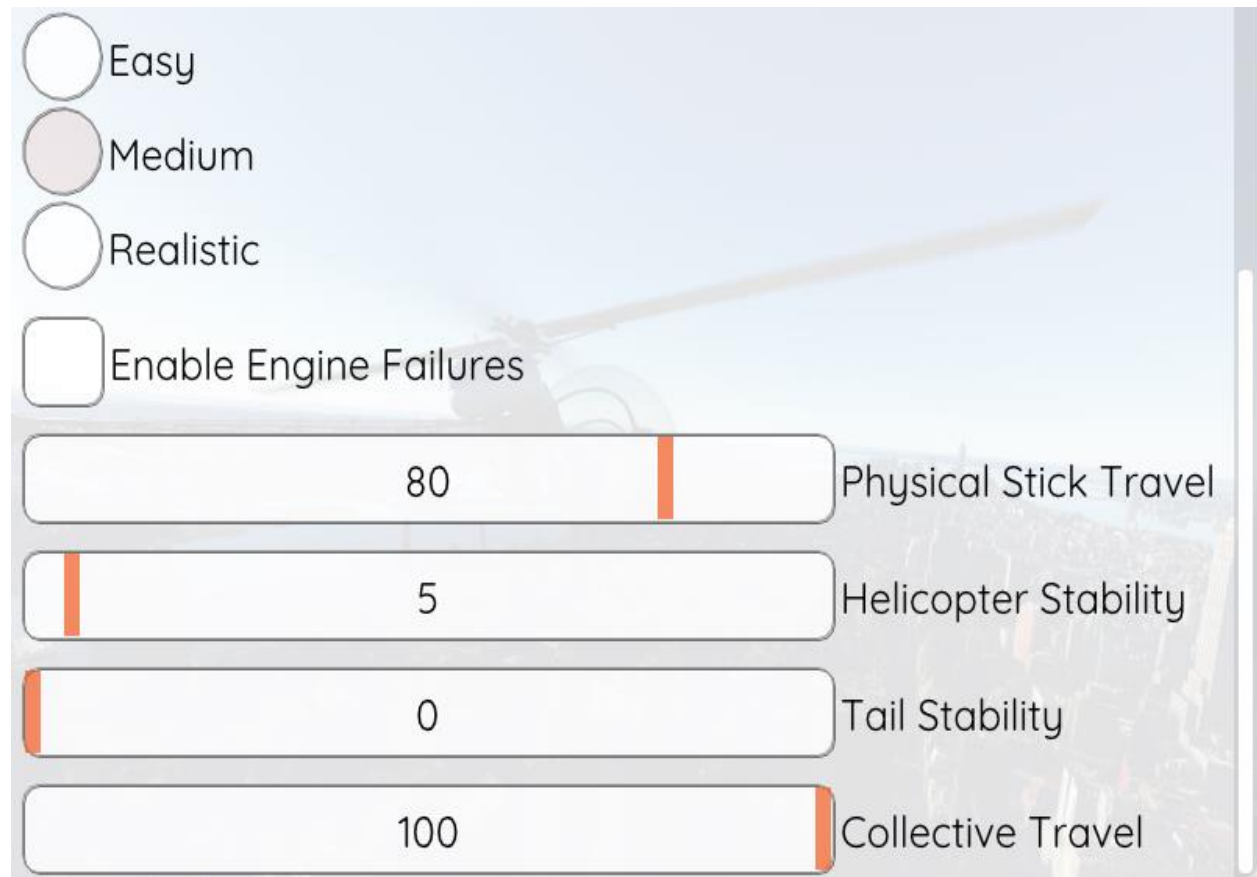


“Enable Engine Governor” allows you to switch the included engine governor on and off. When on, the helicopter automatically maintains 100% rotor RPM if able. If turned off, you’ll need to manually control the RPM via throttle, as described at the end of Chapter 3.



Under “Flight Model”, Easy, Medium, and Realistic allow you to change the flight difficulty. Realistic flies just like the real thing, requiring minute control inputs and a gentle touch. Easy is self-stabilizing, has little torque effect, and offers a gentle introduction to helicopter flight. Medium of course falls in-between.

In addition, you can scroll down to customize the difficulty level.



The RW162F engine has limited power, and if you pull full collective or abuse it, it can seize and fail. Turning off “Enable Engine Failures” will allow you to climb using your full control range without risking engine failure.

Cyclic Sensitivity adjusts how reactive your cyclic controls are. If you find yourself constantly overcorrecting, you may want to turn this down a little.

Helicopter Stability causes the helicopter to return to an upright hover on its own. In real life, (and on Realistic mode), a helicopter is not self-stable. If you don’t constantly correct, it can eventually tip over one direction or the other. Stability prevents this, meaning you’ll need to hold the joystick forward to keep the heli tilted forwards.

Tail Stability determines whether the helicopter is at the mercy of torque effects. In Realistic, if you pull in more collective, your heli will spin opposite the direction of rotation, and you'll need to compensate for this with the anti-torque pedals. As you turn up tail stability, this becomes less and less prominent.

If you'd like to enter a value outside of the 0-100 range (for a more sensitive cyclic, for example), you can hold the CTRL key and click on any of the sliders. The slider will then let you type any value you'd like into it. Note that crazy values will cause poor flight behavior.

5. Helicopter Flight

If you've only flown helicopters in video games before, you'll find the FlyInside RotorWay RW162F a real challenge. You may want to start on Easy or Medium, and work your way up as you become more comfortable.

The first thing that may surprise you is the lack of power. Although piston helicopters can hover, they don't normally hover, except close to the ground during take-off and landing. You'll almost never see them climb straight up, and if they do it will be slow and laborious. You will also run the risk of over-taxing your engine/driveline and end up with an in flight failure!

As such, be gentle on the collective, and once in a hover, gain a little speed. As you gain speed the efficiency of the rotor disk increases, and you'll be able to climb. This is known as Effective Translational Lift (ETL)

Keep an eye on the Manifold Pressure gauge. There's a redline, the maximum engine power you can safely operate at. If you're pulling more power than this, you can cook the engine and experience in-flight engine failure! Even staying within the yellow arc for too long can overheat your engine over time. Keep an eye on your Oil and Water Temps. If you see them getting too high, lower your collective and climb slower.

Another thing that may surprise you is the lack of pedal authority. The RW162F isn't designed to quickly yaw left and right in a hover. It has enough tail authority to hold a hover, and then gently pivot either direction. If you're climbing straight up, you'll find it may not even have enough thrust to turn to the left!

If you want to turn left, and the helicopter won't let you, just lower the collective to reduce the power needed.

The last thing to keep in mind, is that helicopters aren't stable. If you tip the nose forward, it won't come back on its own. You'll need to pull back on the stick to pull the nose back up. In fact, different flight forces will tilt the helicopter in different directions as you speed up and slow down. You'll need to constantly correct for this. Unlike an airplane, a helicopter doesn't want to stay in there on its own. You need to keep it there.

6. Startup Procedure

To start the helicopter, you need fuel, air, and a spark. From cold and dark you'll want to do the following:

1. Turn on the KEY switch on the overhead panel
2. Ensure the Alternator (ALT) switch is off
3. Set Ignition 1 & 2 to ON
4. Set FADEC 1 & 2 to ON
5. Push the Fuel Valve T-Handle between the seats Down to ON
6. Make sure your throttle is slightly open when you crank the starter (if you're using the engine governor, this will be handled for you)
7. Press the Starter button on your collective
8. Once the engine starts, you'll see the engine RPM ramp up to a 1500 rpm idle, with rotor RPM at zero and slowly climbing
9. Watch for Water and Oil Temps to climb into the green.
10. Press in the Clutch Lever between the seats
11. Gently add throttle to increase rotor RPM and join the needles
12. Using around 15 inches of manifold pressure, increase rotor RPM and Engine RPM to 100% n the Dual Tach Gauge
13. Lower your throttle to ensure that the needles split, and your sprag clutch is functioning
14. Raise the throttle to join the needles again
15. Go fly!



1. Airspeed
2. Dual Tach - Rotor RPM and Engine RPM
3. Altimeter
4. FADEC GO/Failure Lights
5. Manifold Pressure
6. Water Temperature
7. Oil Pressure
8. Oil Temperature
9. Vertical Speed Indicator (VSI)
10. Comm Radio
11. Transponder



1. Digital Engine RPM (Default)
2. FADEC Control Display Selector
3. RESET FADEC Display
4. Fuel Level Gauge
5. HeliManager Popup [Marketplace Version Only]



1. Full Range Analog Engine RPM
2. Turn and Bank Indicator



1. Air Vent
2. Heat
3. Fuel Flow T-Handle



1. Key Switch/Battery Power
2. Fuse Panel for all circuits
3. Strobe Lights
4. Nav. Lights
5. Landing Light
6. Instruments
7. Avionics
8. Alternator
9. FADEC 2
10. Ignition 2
11. Fuel Pump 2
12. FADEC 1
13. Ignition 1
14. Fuel Pump 1

8. Common Issues

1. My engine quit in flight

The engine will unexpectedly quit in flight for two main reasons. First, if you are pulling too much power and keeping manifold pressure above red-line, the engine can fail and quit. Secondly, Watch your temps!! If you linger above the red line for too long bad things happen. Lastly, if you run out of fuel (check your fuel gauge), the engine will quit.

Note that holding the engine gauges in the yellow for excessive periods of time may also lead to engine failure. Keep an eye on your oil and water temperatures.

2. I was descending and suddenly fell out of the sky

You most likely encountered vortex ring state. VRS occurs when you sink into the downwash of your own turbulence. To avoid this, always keep some forward airspeed in descents. You can break out of VRS if you have enough altitude by going either forwards or sideways, and lowering the collective.

3. I can't turn left

The RotorWay RW162F is a piston helicopter with limited overall power and tail authority. If you pull too much collective power, you won't be able to turn left at all (and may even slowly turn to the right despite best efforts). Lower your collective a bit, don't try to turn climb straight up. You will be able to turn left in a hover no problem.

Thank You

Thank you for reading, we hope you enjoy the FlyInside RotorWay RW162F!

For questions you can contact us directly at support@flyinside-fsx.com

Be sure to check out our forums at <https://forum.flyinside-helis.com/>