MSFS 2024

PRIVATE PILOT LIFE

USER MANUAL



VERSION 0.9.21

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CONTENTS

	Before You Begin	3
	A Word from the Author	4
1	What Private Pilot Life Does	5
2	Installation and MSFS Setup	7
3	Your First Flight, Step by Step	9
4	The App	11
5	The Preflight	14
6	The Maintenance Shop	17
7	Money	20
8	The Flying Club and Options	24
9	The Flight, the Debrief and Flight Analysis	27
10	Human Factors	29
11	Training Mode	31
12	Frequently Asked Questions	32
	Credits	34

BEFORE YOU BEGIN

HEALTH AND COMFORT

Some of the effects in Private Pilot Life act directly on your screen: tunnel vision closing in as a black circle (hypoxia, carbon monoxide), eyelids drooping shut (drowsiness), and a black screen if you lose consciousness. They come on gradually, but they darken the image and can make it flicker.

> **EPILEPSY**
>
> Some people may have a seizure when exposed to flashing lights or sudden changes in brightness. If you or anyone in your family has a history of epilepsy, talk to a doctor before using Private Pilot Life. Stop right away if you feel dizzy or experience blurred vision, muscle twitching, confusion or any loss of awareness.

- Sit a comfortable distance from the screen, in a well-lit room.
- Take a break at least once an hour, and don't fly when you're tired.
- Visual effects only appear while MSFS is the active window. Switch to another window at any time to make them go away.

FOR ENTERTAINMENT ONLY

Private Pilot Life, a failure simulator and realistic aircraft management tool, is an entertainment add-on for Microsoft Flight Simulator 2024. It aims to make failures believable and educational, but it **is no substitute for the manufacturer's POH or for training with a flight instructor**. The checklists in this manual are simplified and don't match those of any real airplane; they're tailored to how Private Pilot Life behaves. In a real airplane, only your aircraft's official procedures count.

HOW IT WORKS

Private Pilot Life doesn't modify a single MSFS 2024 or aircraft file. It talks to the simulator while it's running, like a flight instructor sitting next to you who knows how to quietly set up a failure. Close it, and your airplane goes right back to being the stock airplane you had before.

ACKNOWLEDGMENTS AND LICENSES

Two Cessna 152s are currently supported: the one that ships with MSFS 2024, and WBSim's freeware C152, whose systems Private Pilot Life uses without modifying them in any way. The WBSim C152 is not included, and Private Pilot Life is not affiliated with WBSim. All illustrations were made from the default C152 only. Microsoft Flight Simulator is a trademark of Microsoft.

FOREWORD

A WORD FROM THE AUTHOR

I've loved aviation since I was a kid, and a few years ago I finally lived out my dream and became a private pilot. I learned and flew on the DR400, the DV20 and the Cessna 152, and like so many of us, I keep the fun going in the simulator. I've also been lucky enough to buy my own airplane, a homebuilt Lucas L5. I always wanted Microsoft Flight Simulator to recreate what I deal with day to day as an aircraft owner. Out of the box, failures in MSFS 2024 are rare and mostly random, often with no connection to anything you did in flight. When they happen, they make for a challenge, but they don't really push you to fly the right way to avoid them. Managing your airplane is simplified, too. With this app, I wanted to get pilots more involved in keeping their airplane in shape, and to let them experience some of what you have to deal with when you own an airplane (or fly a club one) in real life.

In the air, an engine ices up because you pulled the power back in humid air without pulling the carb heat early enough. A tank can run dry too soon because the cap wasn't locked properly after fueling. An alternator finally quits because it has logged a lot of hours, and a radio can fry if you start the engine with the avionics already on, or if you keep resetting a breaker that keeps popping, usually for a good reason. Failures almost always have a cause, warning signs, and often a way out, if you know how to read them.

That's the idea behind this tool: failures **that have a cause**, with signs that should tip you off before it's too late, just like in real life. The airplane **remembers** what you put it through from one flight to the next, which makes you want to take care of it. You do a proper preflight, keep an eye on your gauges, keep up with maintenance, and learn from experience.

I'm not a programmer by trade. This tool was built one piece at a time, with every failure flown, adjusted and signed off before moving on to the next. It's still a work in progress, so I apologize in advance for any bugs you may run into. I hope you enjoy it as much as I do, that it gives you a taste of what flying is really like, that it makes you pay closer attention to your airplane, and maybe even that it inspires you to learn to fly for real.

Happy flying!

Julien

CHAPTER 1

WHAT PRIVATE PILOT LIFE DOES

Private Pilot Life is a program that runs alongside MSFS, shows nothing while you fly, and makes your airplane behave like a real one: it wears out, it gets damaged when you abuse it, and it breaks down for realistic reasons. Here are some of the highlights:

THE IDEA

- **Every failure has a cause.** Each one comes from something you do (or forget to do), the real-world weather, the way you fly, or the age of the parts, and each has its warning signs and its point of no return.
- **Hidden failures.** No messages in flight. You discover a failure through its symptoms, in the cockpit, just like in real life.
- **An airplane with a memory.** Engine wear, hours on the oil, tires, brakes, airframe, unrepaired failures: everything is saved every minute and carried over from one flight to the next.
- **Adjustable realism**: three profiles (Casual, Standard, Realistic), eight failure categories you can switch off one by one, and the frequency of random failures (Chapter 8). A debrief at the end of each flight helps you improve.
- **One module per aircraft**: each supported airplane has its own failures, preflight, prices and manual. The examples in this chapter come from the Cessna 152, the first airplane covered by Private Pilot Life.

THE ENGINE

- Wear that builds up with abuse: low oil, temperatures and pressures past the red line, over-revving, shock cooling, carb heat pulled at full power, oil left in too long.
- Carburetor icing driven by real-world humidity (METAR from the nearest station), temperature and throttle position.
- Modeled oil temperature, oil consumption and leaks, oil changes every 50 hours, a starter that can burn out, and propeller overspeed in a dive.

FUEL

- Inaccurate float-type fuel gauges, just like in a real light airplane. The only reading you can trust is still the one you get by sticking the tanks.
- Leaks, water in the fuel, fuel exhaustion, damaged gauges: it's up to you to catch them.

ELECTRICAL SYSTEM AND INSTRUMENTS

- Alternator, overvoltage, popped circuit breakers, vacuum pump, pitot icing.

AIRFRAME, WHEELS AND BRAKES

- Load factor, overspeed and turbulence: anything from a mandatory inspection to a jammed control, with airframe wear that keeps adding up.
- Flaps jammed after being lowered at too high an airspeed, hard landings, airframe icing.
- Weight and balance per the POH: overloading fatigues the airframe and landing gear, and an out-of-limits CG is something you feel in the elevator.
- Tire pressure, flat tires, overheated brakes, and getting stuck in mud or sand.

THE PILOT

- Hypoxia at altitude and carbon monoxide: tunnel vision, less precise control inputs, loss of consciousness.
- Cabin temperature: cold that makes you stiff and clumsy, heat that makes you drowsy.
- A CO detector and a cabin thermometer that pop up when needed.

AFTER THE FLIGHT

- A debrief shown in the app: badges, a timeline of the flight, what happened and why, what went well and what to work on, the airplane's condition and the shop work it needs.

ON THE GROUND

- An interactive preflight: a walkaround item by item, showing what you'd really see (oil, tires, fuel caps, fuel samples, alternator belt, exhaust, propeller, control surfaces) and what you can fix.
- A maintenance shop to make repairs, replace parts, do inspections and oil changes, choose your mechanic and the quality of your parts, and find out how worn the engine and airframe are through an inspection.

MONEY

- Three ways to live with an airplane, each with four difficulty levels: **aircraft owner** (monthly budget, parking, insurance, the airplane's value), **flying club member** (you pay for flight hours and deductibles) or **charter operator** (paid missions).
- Every repair has a price, so it's up to you to manage your budget wisely.

CHAPTER 2

INSTALLATION AND MSFS SETUP

A few one-time settings so Private Pilot Life can act on your flight controls and display its effects on top of the simulator.

WHAT YOU NEED

- **Microsoft Flight Simulator 2024**, on Windows.
- **A supported aircraft**, with its Private Pilot Life module. For now:
  - the **Cessna 152 that ships with MSFS 2024**: nothing to buy, nothing to install;
  - **WBSim's Cessna 152** (third-party freeware, version 2.1.2 or later, in your Community folder): the most complete experience, because Private Pilot Life can read more of its cockpit controls.

  The app automatically recognizes the airplane loaded in MSFS. Chapter 1 of the Aircraft Manual covers the differences between the two.
- **An Internet connection**, for the live weather report (METAR) from the nearest airport, which drives carburetor icing. Without a connection, Private Pilot Life falls back on the visibility reported by MSFS.
- No third-party software is needed. Private Pilot Life talks to MSFS through SimConnect, Microsoft's official interface for add-ons.

> **BETA**
>
> *This is a beta version of the software, so expect some bugs. Your feedback will help me deliver a stable version as soon as possible.*

UPDATING

When a new version comes out, the app's Home screen lets you know; the **Check for updates** button on the Options screen checks at any time. With the installed version, **Install the update** does it all: the app downloads the new version from the website, checks the file, closes, then restarts on its own once the update is installed (not during a flight). With the zip version, the button opens the download page: extract the new version. Either way, your careers, money and airplanes, stored in Documents\Private Pilot Life, are kept. What changed in each version is in the software's WHATS_NEW.txt file and on the website.

CONTROL AXES

Several failures act on your flight controls: a control that feels sloppy or jams after structural damage, inputs delayed by hypoxia, travel limited by the cold, brakes that fade as they heat up. To make that happen, Private Pilot Life sits between your hardware and the airplane.

It can only do that if **your axes are bound in the MSFS settings**. External software that drives the control surfaces directly (Axis and Ohs, for example) bypasses Private Pilot Life, and control failures then have no effect.

1. In MSFS, open **Settings → Controls**.
2. Select your yoke or stick, and make sure the **aileron** and **elevator** axes are bound to it.
3. Do the same for your rudder pedals (**rudder**, **left brake**, **right brake**) and your throttle quadrant (**throttle**, **mixture**).

> **TO CHECK**
>
> In the preflight (Chapter 5), the **Flaps and Control Surfaces** item shows the travel of each control surface. With the yoke and rudder pedals at their stops, each one should reach 100%.

DISPLAY MODE

The vision effects (hypoxia, carbon monoxide, drowsiness) and the small extra instruments are

drawn in a transparent window laid over MSFS. To make sure you can see them:

1. Open **Settings** → **Graphics**.
2. Set Display mode to **borderless full screen** or **windowed**. In exclusive full screen, Windows hides anything placed on top of the game.

These effects only appear while MSFS is the active window. As soon as you click another window they disappear, and they come back when you return to MSFS.

MSFS DAMAGE SETTINGS

In **Settings** → **Assistance** → **Failure and Damage**:

- **turn off Aircraft Stress Damage**. When you exceed the limits, MSFS abruptly ends the flight; Private Pilot Life replaces that with realistic damage (a damaged or even separated control surface) that you'll have to deal with all the way to the ground;
- **leave Crash Damage on**, along with the icing effects;
- on some aircraft, also leave Engine Stress Failure on (the Aircraft Manual tells you which).

REALISM LEVEL

Everything is set on the app's **Options** screen (Chapter 8): a one-click profile (Casual to get started, Standard, Realistic), categories you can switch off one by one, and the frequency of random failures (rare, normal, frequent). Failures you cause yourself (lowering the flaps at too high an airspeed, forgetting the carb heat…) always happen as long as their category is turned on.

EXTRA INSTRUMENTS

A carbon monoxide detector and a cabin thermometer can appear in a corner of the screen. By default, each one only shows up when it leaves its normal range. The **Ctrl + Alt + I** shortcut shows or hides them at any time, so you're free to fly without them, just like in an airplane that doesn't have them.

CHAPTER 3

YOUR FIRST FLIGHT, STEP BY STEP

From launch to shutdown: what to do, and in what order, on your first flight with Private Pilot Life.

ONE WAY IN

Everything starts from the **Private Pilot Life** app (from the Start menu or the desktop shortcut). It opens a window with a menu on the left: Home, Preflight, Flight, Maintenance, Finances, Club, Flight Analysis, Debriefs, Options and the manual. Chapter 4 walks through it screen by screen.

> **GETTING STARTED**
>
> Before your first flight, open the **Options** screen and choose the **Casual** profile: a few rare failures, an airplane that stays like new, no traps. You can step up the realism later.

BEFORE THE FLIGHT

1. Launch MSFS and load your airplane (the MSFS Cessna 152 or the WBSim C152) at a parking spot, engine off.
2. Open **Private Pilot Life** from the Start menu. The app recognizes the airplane loaded in MSFS and displays it.
3. Look at the **Home** screen: each of the airplane's cards has a green, orange or red indicator. A pending failure or an overdue inspection? Go to **Maintenance** first.
4. Open the **Preflight** screen and do your walkaround. The first time, take your time: check the oil, stick each tank, sump the tanks, check the tires and the control surface travel.
5. Click **Finish Preflight**.

> **GOOD TO KNOW**
>
> The preflight needs MSFS running with the airplane loaded, because it reads the airplane live (oil, fuel, circuit breakers, control surfaces). Without MSFS, it only shows a message, and it connects on its own as soon as MSFS is running.

THE FLIGHT

1. Click **Start Flight** (on the Home screen, or **Flight** in the menu). The **failure simulator** starts in the background with no visible window, and the status indicator in the top-right corner switches to **Failures Armed** as soon as the airplane is recognized. You can close Private Pilot Life during the flight; the failure simulator keeps running.
2. Fly as you normally would. Private Pilot Life doesn't say a word. It watches, logs the hours, ages the parts and triggers failures when their causes come together. It saves the airplane's condition every minute, so if MSFS crashes, you lose almost nothing.
3. If something seems off, track down the cause the way you would for real: instruments, circuit breakers, RPM. The Aircraft Manual has the emergency checklists and explains them.

> **WHAT YOU'LL NEVER SEE**
>
> A message saying "alternator failure." The ammeter and the popped circuit breaker are what tell you.

AFTER THE FLIGHT

1. Land, taxi to parking and shut down the engine.
2. In Private Pilot Life, click **End Flight** (that's what the Start Flight button turns into). The airplane's

condition is saved and the failure simulator stops. Closing MSFS also ends the flight cleanly.

3. The flight **debrief** appears in the app (Chapter 9): badges, a timeline of the flight, an explanation of each event, what went well and what to work on.
4. If a failure occurred, or if the airplane took a beating, open **Maintenance** before your next flight.

PICKING UP WHERE YOU LEFT OFF

The airplane remembers everything from one flight to the next: wear, engine time, oil, tires, the actual fuel in the tanks, unrepaired failures, and even the time it spent parked (condensation water, tires slowly losing pressure). A failure that happened in flight is still there on your next flight until you have it fixed. A failure tagged **Grounding** makes the airplane unairworthy; if you take off anyway, it goes in the logbook (Chapter 6).

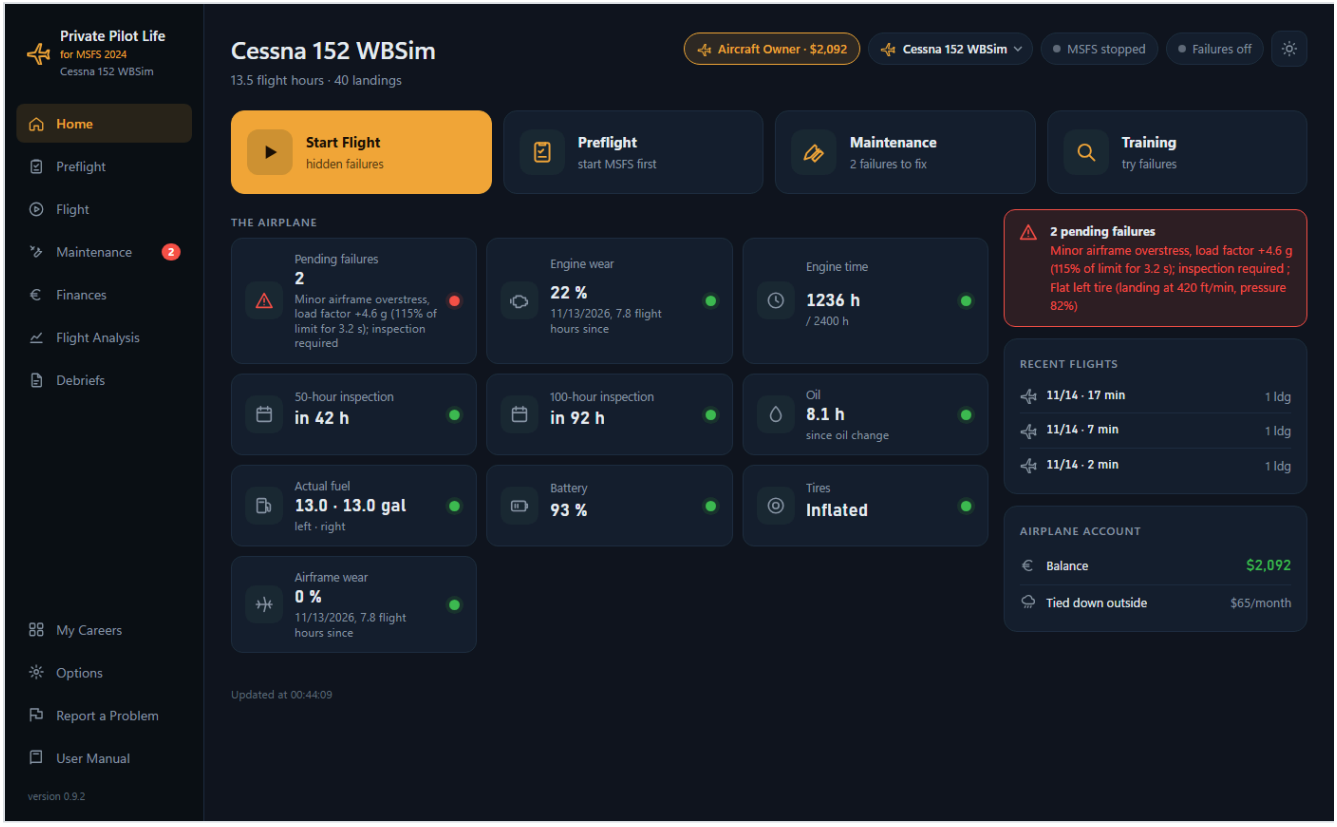
THE LOG FILE

Every session leaves a log file in the **enregistrements** folder. On a normal flight, it's kept short. In Training mode (Chapter 11), it details everything Private Pilot Life saw and did.

CHAPTER 4

THE APP

A single window with tabs: the airplane's condition, the preflight, the flight, maintenance, money, the club, flight analysis and the options. This chapter covers the layout and the Home screen.



The Home screen: four main actions, the airplane shown as color-coded cards, and on the right, reminders, recent flights and the airplane's account.

LAUNCHING THE APP

Open **Private Pilot Life** from the Start menu (or the desktop shortcut). The layout adapts to the window size: when it's narrow, the menu shows only its icons (hover over one to see its name).

THE MENU ON THE LEFT

Item	What it's for
Home	The airplane's condition at a glance (see below).
Preflight	The walkaround before the flight, with MSFS running (Chapter 5).
Flight	Starts the failure simulator (Chapter 9).
Maintenance	Estimates, repairs, inspections, logbook (Chapter 6). A red badge shows the number of pending failures.
Finances	Money: unlimited, aircraft owner, flying club member or charter operator (Chapter 7).
Charter	Charter operator only: reputation, missions to accept, recent missions, mission prices.
Club	Flights and remarks from the other members, when the airplane is also flown by a club (Chapter 8). Only appears when the airplane allows it.
Cabin	For an airplane that doesn't let Private Pilot Life read some of its cockpit controls (the MSFS Cessna 152): windows, doors, cabin heat, cabin air and circuit breakers (see below). Only appears for that airplane.
Flight Analysis	Charts for each flight, second by second (Chapter 9).
Debriefs	The summary of each flight (Chapter 9).
My Careers	Aircraft owner, flying club, charter and Sandbox, all run side by side (Chapter 7).
Options	The level of realism, shared by all careers: profiles, with the details under **Customize** (Chapter 8).
Pilot Manual	Opens this manual.

THE HEADER

- **The screen name** and, below it, the airplane with its flight hours and landings.
- **Aircraft selection**: each supported airplane has its own condition, logbook and account. The app automatically follows the airplane loaded in MSFS.
- **Two status indicators**: MSFS running or not, failure simulator running or stopped.
- **The theme** (sun or moon): dark, like a cockpit at night (the default), or light, in soft gray. The app remembers your last choice.

THE HOME SCREEN

The four main actions

Start Flight (in orange), **Preflight**, **Maintenance** and **Training**. Under each one, a short status line: "start MSFS first," "2 failures to fix"...

The airplane as cards

Each card has an icon, a value and an **indicator**: green (all good), orange (keep an eye on it), red (needs attention). Clicking a card opens the relevant screen (Maintenance or Preflight).

Card	What it shows
Pending failures	How many, and the first one; hover to see them all.
Engine wear	The **last measurement** taken by a mechanic, and its date (Chapter 6). Never the actual value, which you can only find out through an inspection.
Engine time	Hours since overhaul, against TBO.
50-hour and 100-hour inspections	Hours remaining, or how overdue.
Oil	Hours since the last oil change.
Actual fuel	What's really in each tank (the cockpit fuel gauges can be inaccurate).
Battery, tires	Battery capacity, tire pressure.
Airframe wear	Last measurement and its date, just like the engine.

The right-hand column

- **Reminders**: an inspection coming due or overdue, pending failures, an overdrawn account, a mission in progress; otherwise "Nothing to report."
- **Recent flights** (hover for details).
- **The account** for the airplane or the club, and where it's parked. Click it to open Finances.

THE CABIN SCREEN

Some airplanes don't tell Private Pilot Life what you're doing with certain cockpit controls. In the Cessna 152 that ships with MSFS, the cabin heat knob moves when you pull it, but no air comes out, and Private Pilot Life has no way of knowing it's pulled. The windows and door don't open, and the circuit breakers can't be operated.

The **Cabin** screen stands in for those controls:

- **Windows, doors, cabin heat, cabin air**: set them here, at the same time as in the cockpit when the control exists. Failures take them into account: an open window clears out carbon monoxide, a cabin without heat gets cold, and a door still has to be closed before you taxi.
- **Circuit breakers**: a breaker that pops in flight shows as **Popped**. The **Reset** button pushes it back in. Reset it only once, so you don't fry the equipment (see the electrical failures in the Aircraft Manual).

These settings are kept from one flight to the next. With the WBSim C152, Private Pilot Life reads all of this directly from the cockpit, so the Cabin screen doesn't appear.

CHOOSING WITH CARDS

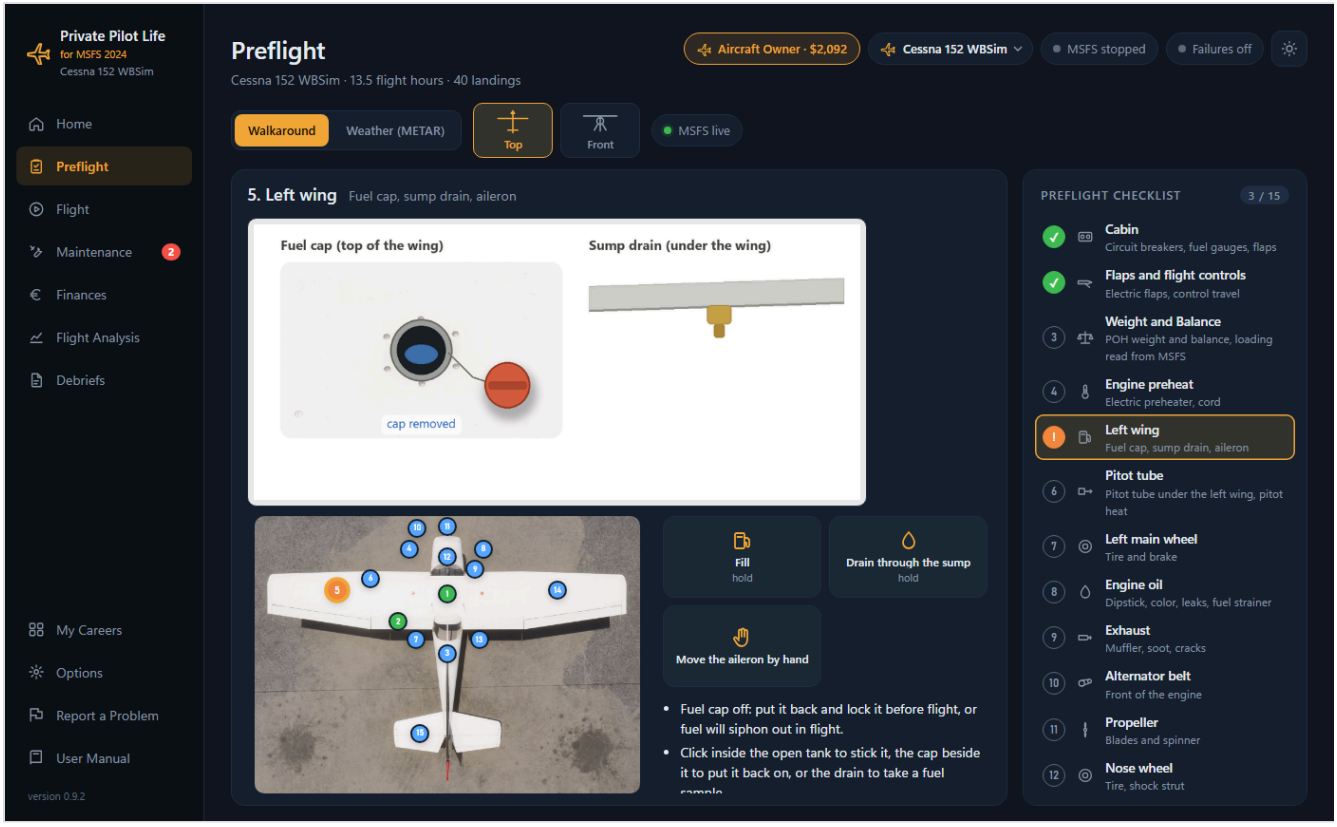
Throughout the app, you make a choice by clicking a **card with an icon**. The selected card gets an orange border and a check mark; nothing resizes or moves when you click.

> **WITHOUT MSFS**
>
> Home, Maintenance, Finances, Club, Flight Analysis and Options all work with MSFS closed. They show the airplane as it was at the end of the last flight. Any repairs you make in the meantime take effect the next time the failure simulator starts. Only the preflight needs MSFS.

CHAPTER 5

THE PREFLIGHT

The same walkaround you'd do at your home airport: what you can really see, what you can fix yourself, and what has to go to the shop. This chapter covers the screen itself; the items specific to each airplane are in its own manual.



The preflight: airplane views at the top, the selected item (here the left wing) with its buttons, the airplane diagram, and the checklist on the right.

MSFS MUST BE RUNNING

The preflight reads the airplane live from MSFS (oil, fuel, circuit breakers, battery, flaps, control surfaces, covers and chocks) and writes back whatever you do. So launch MSFS and load the airplane at a parking spot with the engine off. Without MSFS, the screen just shows a message and connects on its own as soon as MSFS starts. The failure simulator can be running or not.

AIRPLANE VIEWS

Four silhouette buttons let you look at the airplane from the **top**, the **front**, the **left** or the **right**. Each numbered marker on the airplane is an item to inspect. Click it, or click its line in the checklist.

Marker color	Meaning
Blue (number)	Still to check.
Green (✓)	Checked, nothing to report.
Orange (!)	Problem found.

INSPECTING AN ITEM

- **The drawing** shows what you'd see in real life, based on the airplane's actual condition: oil level and color, a tire that's more or less flat, soot on the exhaust, a fuel cap that isn't secured… What you don't look at stays hidden. A crack won't announce itself.
- **Some parts can be clicked right on the drawing**. Click a cap to open or close it, a quick-drain to fill a sampler cup, a circuit breaker to pull or push it in, or drag a control surface with the mouse.
- **The buttons** below the drawing let you stick the tank, fill up, add air, add oil, put the cover on… Buttons marked **Hold** keep working as long as you hold them down (a pump, for example).
- **The findings** tell you in plain words what you notice.

WHAT YOU CAN TAKE CARE OF YOURSELF

- **Fuel.** With the cap open, hold **Fill**. The fuel pump shows what you're adding (cost and quantity), never what's in the tank; stick the tank to find out. How fuel is paid for depends on your career type (Chapter 7). **Put the cap back on.** Left open, it will siphon fuel overboard in flight.
- **Fuel stays in the airplane** from one session to the next. When MSFS reloads the airplane with its default fuel load, Private Pilot Life puts back what you had at the end of your last flight. So do your fueling during the preflight.
- **Fuel samples.** Water is heavier than fuel, so it shows up at the bottom of the sampler cup.
- **Oil and tires.** Top off the oil, add air to the tires.
- **The aircraft cover** (airplane parked outside) and the **engine preheater** in cold weather, when the airplane has them. Remove the cover and unplug the preheater before engine start.

Everything else (a worn part, a crack, a damaged control surface) goes to the shop.

THE WEATHER (METAR) TAB



The METAR tab: the raw report, its plain-English translation, icing information and the carburetor icing chart.

At the top of the preflight screen, the **Weather (METAR)** tab shows the METAR from the station closest to the airplane (distance included), with the observation time in local time:

- **Plain English**: VFR or IFR conditions, wind, visibility, weather (rain, mist, thunderstorms…), clouds, temperature, dew point and humidity, altimeter setting, then the trend.
- **Carburetor icing**: where you fall on the carb icing chart at the field and during the climb (temperature and dew point extrapolated), with a table by altitude and the chart itself as a reminder, the field shown as a red dot. Above a reported cloud layer, the air is treated as drier.
- **Airframe and pitot icing**: freezing level, cold clouds, freezing precipitation, cumulonimbus.

If the MSFS weather doesn't match the METAR (weather set manually), a warning tells you so. The METAR is downloaded from aviationweather.gov using the airplane's approximate position, just as for icing during the flight.

FINISHING THE PREFLIGHT

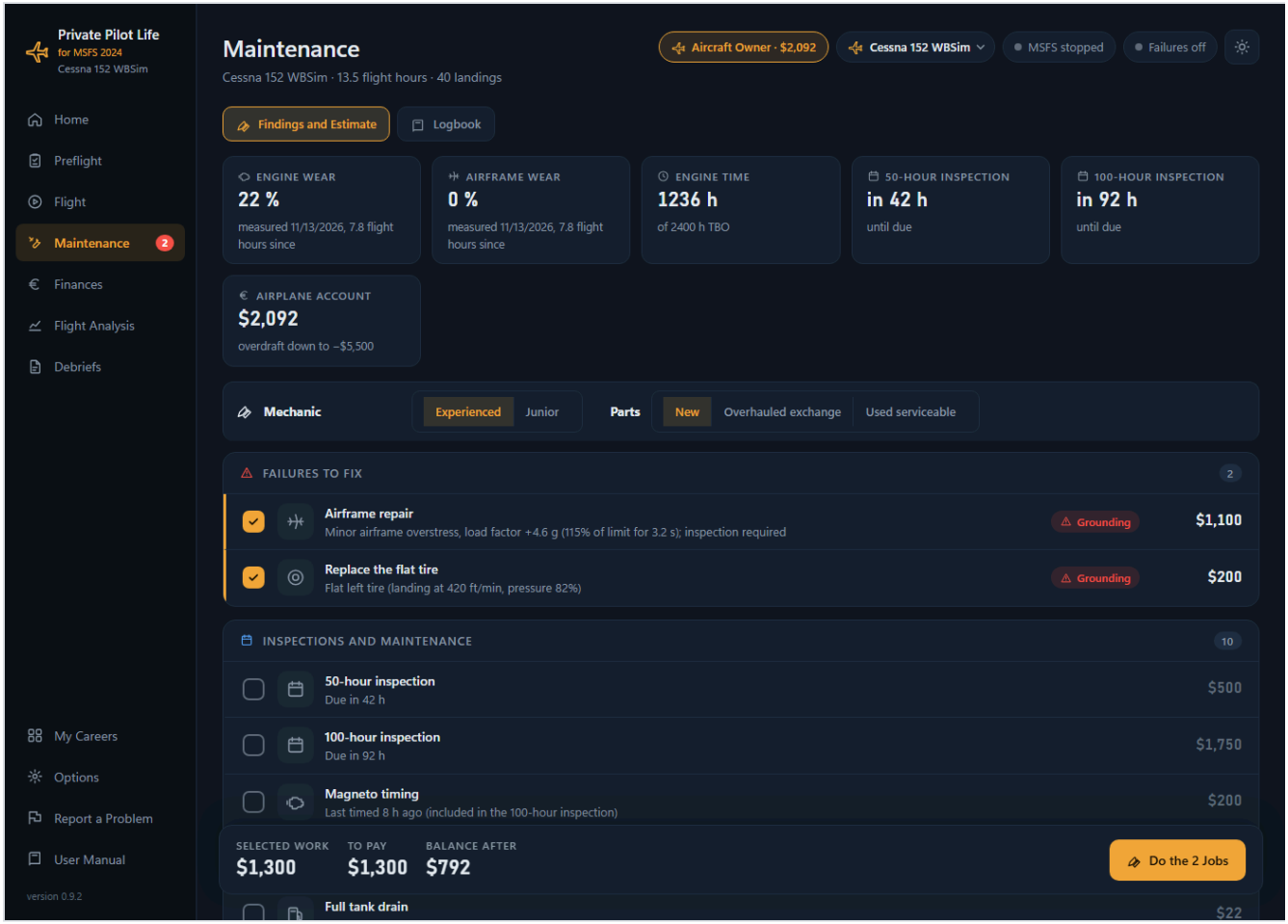
The **Finish Preflight** button saves the items you checked and any problems you found, and the flight debrief will take them into account (Complete Preflight badge). Every item is logged the moment you open it anyway. That matters in a flying club: if another member left damage on an item you didn't look at, it becomes your responsibility once you take off (Chapter 7).

> **PREFLIGHT TRAPS**
>
> A fuel cap left open, a forgotten cover or preheater cord, a bug nest in the pitot tube: you can turn these traps off in Options (Preflight Traps category) to ease into things.

CHAPTER 6

THE MAINTENANCE SHOP

Between flights, the shop writes up its findings, draws up an estimate, fixes what's broken and replaces tired parts. It's also where you choose your mechanic and the quality of your parts. A well-maintained airplane breaks down less often.



Maintenance: measurements and due dates at the top, mechanic and parts selection, the estimate with its checkboxes and tags (Grounding, insurance), and the total bar at the bottom.

TWO TABS

Findings and Estimate and **Logbook**. Work is only done **while the failure simulator is stopped**; you don't fix an airplane in flight. MSFS can be closed; the repairs take effect the next time you start a flight.

AT THE TOP: WHAT YOU KNOW ABOUT THE AIRPLANE

Engine and airframe wear (the latest measurements and when they were taken), engine time, upcoming inspections and, if you're flying on a budget, the airplane's account balance.

MECHANIC AND PARTS

Two choices, saved for the airplane, that immediately change the prices in the estimate:

Mechanic	Price	Risk
Experienced	standard	Finds everything, does good work.
Junior	−35%	Cheaper, but riskier. He may miss a hidden defect during an inspection, a repair may fail shortly afterward, an engine top overhaul may be less effective, and his wear measurements are less accurate.

Parts	Price	Reliability
New	standard	standard
Overhauled exchange	−40%	a little less reliable
Used serviceable	−70%	unknown age, noticeably less reliable, sometimes defective right out of the box

This applies to parts that wear out (alternator, vacuum pump, muffler, magneto, battery, belt, starter, electrical equipment...). The Aircraft Manual lists them with their prices.

THE ESTIMATE

One line per job, with a large checkbox, an icon for the type of work, the reason and the price. Lines fall into three groups:

- **Failures to fix.** Each one is tagged **Grounding** (the airplane isn't airworthy; checked by default) or **Can wait** (unchecked; you can keep flying in the meantime, at the risk of it getting worse). A serious accident also gets an insurance tag showing the amount covered, or "not covered."
- **Worn parts: recommendations** from your mechanic (soft tires, a cracked belt, a worn airframe and, after a 100-hour inspection, parts at the end of their life and engine top overhauls).
- **Inspections and maintenance**: 50-hour and 100-hour inspections, wear inspections, fuel gauge check, oil change, fuel sampling, magneto timing, top overhaul and major overhaul.

Some lines are **simple purchases** (a new aircraft cover, for example). They're tagged **Fixed Price**, since neither the mechanic nor the parts quality makes any difference.

The bar at the bottom shows the total of the checked items, the insurance share, what's left to pay and your balance after the work. The **Do the Work** button fixes everything at once and records the work in the logbook. If you're short on money (past your overdraft limit), the shop won't do the work; uncheck whatever can wait.

> **FLYING WITH A GROUNDING SQUAWK**
>
> You can, but the takeoff is recorded in the logbook as an "unairworthy flight." Your insurance won't cover any accident on that flight, and the airplane loses 10% of its value. In a flying club, the club fines you.

INSPECTIONS

Inspection	What it includes	What it can find
50-hour	Oil and filter change, spark plugs, tires, fuel sampling, fuel strainer.	A small oil leak, for example.
100-hour	Everything in the 50-hour, plus a compression test (engine wear), airframe, magneto timing, part ages, battery and fuel gauges.	Every hidden defect (miscalibrated gauge, stuck float...) and every part due for replacement.

Inspections come due in **counted hours**: with the career's accelerated time (Chapter 7), each hour you fly counts as several. The app also shows what's left in real flight hours.

You don't have to wait for the 100-hour. The **fuel gauge check** looks at the floats and the calibration. Ask for it if a gauge doesn't agree with your dipstick reading during the preflight. Anything it finds shows up in the estimate.

After an inspection, the **mechanic's measurements** appear above the estimate. An overdue inspection is flagged on the Home screen and in the flight debrief.

FINDING OUT HOW WORN IT IS

The app never shows the actual wear of the engine or the airframe, only the **latest measurement taken by a mechanic**, with its date and the flight hours since. To update it, order an **engine wear inspection** (compression test and borescope), an **airframe inspection**, or a 100-hour inspection, which covers both. Measurements are never perfect. An experienced mechanic is accurate; a junior one can be off by a fair amount.

THE ENGINE: TIME AND WEAR

An engine has a **time** (hours since the last major overhaul, against its TBO) and a **wear** level (its mechanical condition). Only wear affects performance. Time makes the engine less tolerant of abuse and less reliable. A new engine shrugs off an exceedance far better than one at mid-TBO, and an engine near TBO handles it much worse.

- **Partial top overhaul** (one or two cylinders) or **top overhaul**. Both reduce wear, not time.
- **Major overhaul**. Both wear and time go back to zero.

THE LOGBOOK

It records every flight (date, flight time, landings, failures), every shop visit (work done, cost, insurance share), every fuel purchase and, in a flying club, the bill for each session. Airplane hours and expenses are shown at the top; **Export to Excel** turns it into a spreadsheet.

WHAT YOU KNOW ABOUT YOUR AIRPLANE

Just like a real owner, you only know the engine and airframe wear from a mechanic's measurements, through the shop's inspections or a 100-hour inspection, which includes them. The Home screen shows the latest measurement and its date; an airplane that has never been inspected shows "never measured." Between inspections, the symptoms in flight and the preflight are your only clues. Engine time, on the other hand, is always known, since it's in the engine logbook.

ROUTINE MAINTENANCE

- **Oil changes.** Old oil protects the engine less, and oil that runs too hot ages faster.
- **Aging parts.** The more hours they have, the more likely they are to fail. Replacing them early costs less than a failure in flight.
- **Tires** lose air over time (faster when parked outside) and with every landing.
- **The airframe** wears in turbulence in the yellow arc, when overloaded, and even while parked. It never recovers on its own; an airframe repair brings it back to zero.

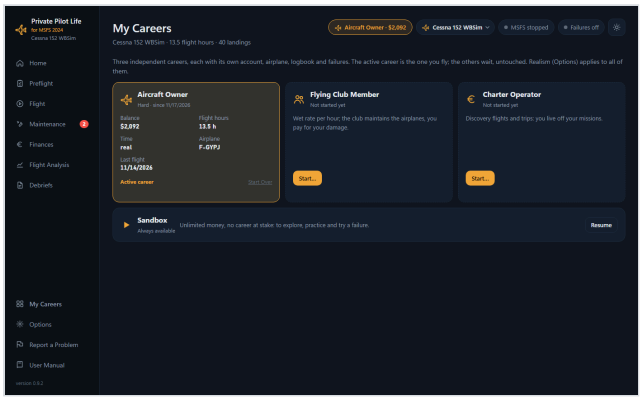
> **IN A FLYING CLUB**
>
> You don't pay the shop. You **report** failures to the club, which fixes them for free within a few days and handles the inspections itself (Chapter 7).

CHAPTER 7

MONEY

With unlimited funds, fixing the airplane is never a decision. For more of a challenge, set some limits. There are three ways to live with an airplane, each with four difficulty levels: aircraft owner, flying club member or charter operator. You can run all three at the same time.

MY CAREERS



The My Careers screen: one card per career, plus Sandbox.

The **My Careers** screen (at the bottom of the menu) shows one card per career: **aircraft owner**, **flying club member** and **charter operator**. Each one is completely separate, with its own account, airplane and wear, logbook, failures and debriefs. You can run all three. **Resume** switches to another career, and the one you leave stays exactly where you left it. The active career is shown at the top of the app; clicking it also lets you switch (never during a flight).

Start... begins a new career. You pick the difficulty and your starting airplane: brand new (not recommended on Realistic, since nothing is worn), mid-life, or near TBO (engine overhaul coming up). Its actual wear is still yours to discover. As a club member, you fly the club's airplanes. You also pick the **accelerated time**: real time, ×3, ×5 (recommended) or ×10. Each hour you fly then counts that many hours for wear, part aging and inspections, since in a sim you never fly as much as a real airplane does. What happens during the flight keeps its real pace, and your logbook and the club's bill stay in real hours. The difficulty and the accelerated time are locked for the whole career. **Start Over** archives the career (nothing is deleted); the others aren't affected.

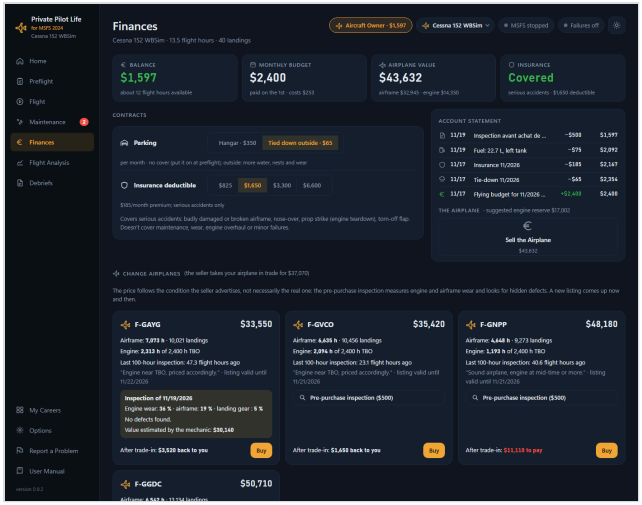
SANDBOX

A fourth slot, kept apart from the rest, with unlimited money and free repairs, fuel and maintenance. Use it to explore or practice without touching your careers. It's the only place where you can choose the engine's condition (new, mid-TBO, tired, unknown...).

HOW MONEY WORKS

- **One account per career**, with a statement. Every expense and every payment shows up there, with an icon for each type (fuel, oil, maintenance, parking, insurance, budget, club flight, mission...).
- **The real calendar.** Your budget comes in and your bills come due on the 1st of every month, even if you don't fly. Money you don't spend stays in the account.
- **Overdraft**: you can go down to −$5,500, at 1% interest per month. Beyond that, the shop and the fuel pump turn you away. Spend thirty days past that limit, or drop below −$11,000 even once, and the career ends (the airplane is repossessed and sold at 70% of its value, or you're expelled from the club).

AIRCRAFT OWNER



Aircraft owner mode: balance, budget, airplane value and insurance; difficulty level, parking and deductible as cards; account statement.

The airplane is yours. A monthly **budget** comes in based on the difficulty level (on Normal, enough to fly about twenty hours, maintenance included; on Expert, at least ten if all goes well). You pay for:

- **parking** and **insurance**, every month;
- the **fuel** and **oil** you add during the preflight;
- every **repair** and every inspection at the shop, depending on the mechanic and parts you choose.

Exact prices (parking, insurance, budgets, repairs) are in the Aircraft Manual.

Parking

- **Hangar**. Expensive, but the airplane is sheltered. The tires lose air slowly and the airframe wears very slowly.
- **Tie-down** (outside). Cheap, but you risk condensation water in the tanks, bug nests in an uncovered pitot tube, tires that go soft faster and an airframe that wears even when you don't fly.
- **The aircraft cover**, for tie-down only, goes on and comes off during the preflight. It also covers the pitot tube and cuts down on water and airframe wear. Forget to take it off before engine start and the prop shreds it.

Insurance

It only covers **serious accidents**: severe structural damage or failure, a nose-over, a prop strike (engine teardown required), a separated flap. It never covers maintenance, wear or the overhaul of an engine that has reached TBO. Choose your **deductible**; the higher it is, the lower the premium. Every claim raises your premium for a year, and every claim-free year lowers it.

> **NOT COVERED**
>
> You're not covered if the premium went unpaid, if an inspection is more than 10 hours overdue, or if the accident happens on a flight with a known grounding squawk.

Airplane value

Airframe (based on its wear) + engine (based on time remaining to TBO and its wear) − open failures, + a bonus if inspections are current, − 10% if the logbook shows any unairworthy flights. **Sell Airplane** ends the career; your result compares your money and your airplane with what you started with.

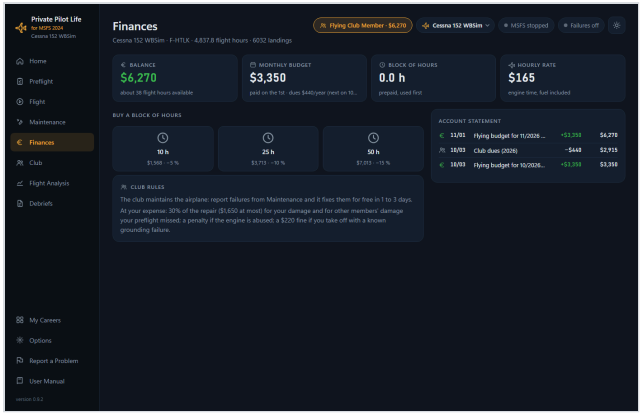
Buying another airplane

At the bottom of the Finances screen, a few airplanes of the same model are **for sale**, each in its own condition: airframe hours, engine time against TBO, last inspection. A listing stays up for a few days, and a new one appears every so often. The asking price reflects **the condition claimed by the seller**, which may not be the real one. An abused engine or a hidden defect won't be mentioned in the listing.

- **Pre-buy inspection** ($500, charged even if you don't buy). The mechanic measures engine, airframe and landing gear wear, looks for hidden defects and gives you his own estimate of the airplane's value.
- **Buy**. The seller takes your airplane as a trade-in (at 85% of its value) and you pay the difference. The new airplane comes with its own logbook; your account, parking and shop choices carry over.
- After a **sale or a repossession**, buying starts a new career with the money you have left (including your overdraft allowance).

Without an inspection, all you know about the airplane you buy is what the seller told you. The first 100-hour inspection or an engine inspection will bring any hidden problems to light.

FLYING CLUB MEMBER



Flying club member: balance, budget, prepaid hours and hourly rate; blocks of hours to buy and club rules.

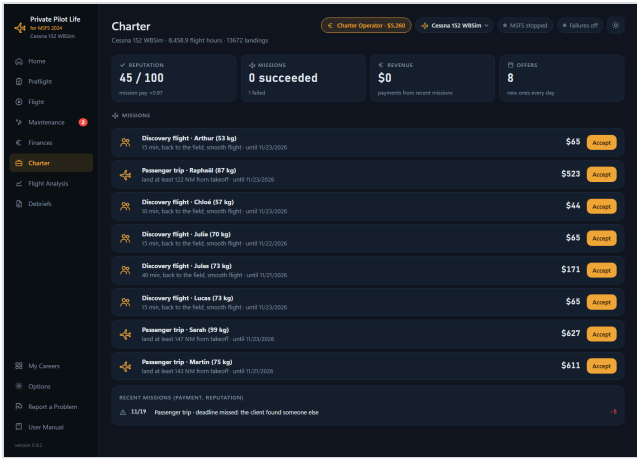
The airplane belongs to the club, and other members fly it between your sessions (Chapter 8).

- **Flight time** is billed on **engine time** (from start-up to shutdown), fuel and oil included, when the failure simulator stops. Fuel and oil added during the preflight cost nothing.
- **Blocks of prepaid hours**, bought in advance at a discount, are used up first.
- **Annual dues** are charged when the career starts, then every year.
- **The club handles maintenance.** In Maintenance, check the failures and click **Report to Club**. The club fixes them for free within a few days and takes care of the inspections.

What you still pay for, on the bill at the end of each session:

- a **deductible** (a capped share of the repair cost) for **damage you caused** (airframe, landing gear, flaps, window, flat tire, burned-out starter, torn cover or ripped-out preheater cord…);
- the same deductible for **damage left by other members that your preflight missed**. A member sometimes leaves a bent nosewheel or a bent flap without saying a word, and if you take off without having opened that preflight item, it's on you;
- a **penalty for an abused engine** (based on the wear caused by the abuse);
- a **fine** if you take off with a known grounding squawk.

CHARTER OPERATOR



The Charter screen: reputation, missions available, recent missions, level.

No budget here. You get **starting capital**, then you live off your **missions**. The airplane is yours, so parking, insurance (more expensive, since you carry passengers), fuel, oil and maintenance are all on you.

The business has its own screen, **Charter**, which appears in the menu as soon as your charter operation is set up, with your reputation, missions and revenue. The Finances screen only deals with money: balance, expenses, airplane value, insurance, parking and account statement.

- **The mission board** refreshes every day, and each offer stays open for a few days. You can only take one mission at a time (**Accept**, **Abandon**).
- **Discovery flight** (10 to 40 min). Bring the passenger back to the departure airport, fly smoothly (watch your bank angle and avoid jolts) and land gently.
- **Charter flight**. Land at least the required distance from your departure point. Pay depends on the distance.
- **The passenger has to be on board.** Before the flight, set the weight given by the mission on the **passenger seat** in the MSFS payload settings. Otherwise, the mission fails.
- **Payment**, when the failure simulator stops, ranges from 50 to 100% of the price depending on how happy the customer is. A flight that's too short or too long, steep turns, jolts, a firm or hard landing, or a failure in flight all bring it down.

- **Reputation** (out of 100) goes up with delighted customers and down with unhappy ones, and with missions that fail, are abandoned or run past their deadline. It moves prices (from −30% to +30%) and the number of offers.

CHAPTER 8

THE FLYING CLUB AND OPTIONS

An airplane that other pilots fly too, and a level of realism that suits you, from the beginner just getting started to the pilot who wants the full experience.

THE CLUB

The **Club** screen appears in a flying club member career (Chapter 7). The other members keep flying between your sessions.

The club fleet

As a flying club member, you have access to **three airplanes**, yours and two others, each with its own registration, hours, engine, failures and logbook. The Club screen shows them as cards: what's known about each one (latest wear measurements, known failures), whether it's **available**, and its next booking. **Click an available airplane to book it**, and it becomes the airplane you fly (its registration shows at the top of the app). In MSFS it's always the same C152; Private Pilot Life simply applies the booked airplane's condition to it (fuel, oil, wear, failures).

An airplane isn't available when it's **in the shop** (a reported failure not yet fixed), **booked by another member** or **in for its 50-hour or 100-hour inspection**. **Start Flight** won't work, so book another one. If all three airplanes are taken at the same time, the club **borrows an airplane** as a one-off, always available to you. It goes back as soon as one of the club's airplanes frees up, and doesn't carry anything over from one flight to the next. Your account is the same whichever airplane you fly. Other members' bookings can fall at any hour, day or night, since you can play whenever you like, so the airplane you want will often be taken.

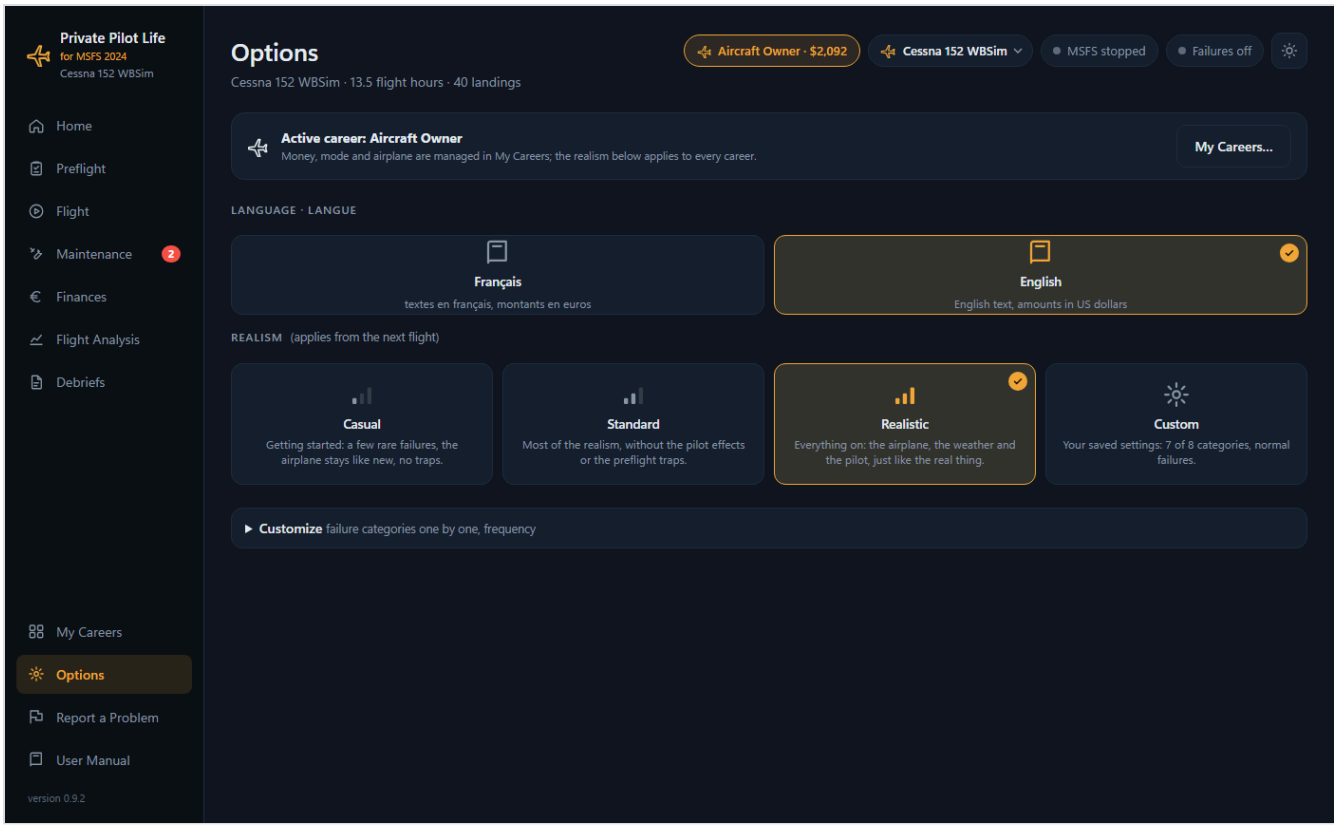
Between your sessions (never during them), the other members fly the airplanes, mostly on weekends and during the day:

- they put wear on the engine, burn fuel and oil, and may or may not top off the tanks;
- they sometimes have incidents (hard landing, flap overspeed, abused engine, pitot cover left on, radio fried at engine start), which they **report... or not**;
- now and then they have a real in-flight failure (alternator, vacuum pump, flat tire, magneto, brake). They report it, and the airplane stays in the club's shop for a few days;
- the club does the inspections when they come due and fixes whatever is reported ("Maintenance (club)" in the logbook). A hidden failure waits for an inspection.

The screen shows their **recent flights** (type of flight, duration, what happened) and their **remarks**, often "Nothing to report," sometimes a real clue ("a little oil on the nosewheel after the flight"). Your flight's debrief also lists, under "While You Were Away," the other members' flights since your last one.

> **PREFLIGHT**
>
> A member may leave visible damage without saying a word (not cool!). Do a full preflight. As a flying club member, any damage you didn't spot becomes yours once you take off.

OPTIONS



Options: three profiles, eight categories to turn on or off, random failure frequency.

The **Options** screen (at the bottom of the menu) lets you set up Private Pilot Life the way you like it. Changes take effect the **next time the failure simulator starts**.

At the top of the screen, **Language · Langue** switches the app between English and French at any time. On first launch, it follows your Windows language. In English, amounts are shown in US dollars; the game itself doesn't change.

Three profiles, plus your own

Profile	Who it's for
Casual	Getting started: a few rare failures, the airplane stays like new, no traps.
Standard	Most of the realism, without the pilot effects or the preflight traps.
Realistic	Everything on. The airplane, the weather and the pilot behave just like in real life.

Eight categories

Click a category to turn it on or off; the profile then becomes Custom. These settings are **saved separately**, so you can try another profile and come back to your own settings with one click on the **Custom** card.

Category	What it includes
Random Failures	Alternator, vacuum pump, magnetos, circuit breakers, equipment, small leaks.
Wear and Maintenance	Engine wear, oil, magnetos, fuel strainer, aging while parked. Turned off, the airplane stays like new.
Icing and Weather	Carburetor, pitot and airframe icing; water in the fuel.
Pilot Effects	Hypoxia, carbon monoxide, cold and heat in the cabin (Chapter 10).
Pilot-Induced Damage	Airframe (load factor, VNE), flap overspeed, hard landing, tires, brakes, getting stuck in soft ground.
Realistic Fuel	Inaccurate float-type gauges, leaks. Turned off, the gauges tell the truth.
Weight and Balance	Effects of overloading or an out-of-limits CG.
Preflight Traps	Fuel cap left open, forgotten cover or preheater cord, nest in the pitot tube, damage from other members that you missed.

Random failure frequency

Rare (much less often), **Normal** (as in real life) or **Frequent** (much more often, for practice). Failures you cause yourself always happen, as long as their category is turned on.

> **MONEY**
>
> Money settings aren't here; they're on the Finances screen (Chapter 7).

CHAPTER 9

THE FLIGHT, THE DEBRIEF AND FLIGHT ANALYSIS

During the flight, Private Pilot Life works in silence. Afterward, it explains what happened and lets you replay everything second by second.

THE FAILURE SIMULATOR

Start Flight (on the Home screen) or **Flight** (in the menu) launches the failure simulator, the part of Private Pilot Life that runs during the flight. It works in the background, with no window. The status indicator in the top-right corner tells you where it stands (Connecting to MSFS..., Waiting for Flight, Failures Armed). It keeps running even if you close the app.

- It recognizes the airplane loaded in MSFS, and the app switches to that airplane on its own.
- When it starts, it catches up on the time since your last session: monthly account activity, club flights, condensation water, tires, wear while parked.
- During the flight, it says **nothing**. You discover failures through their symptoms.
- It saves the airplane's condition every minute.
- To stop it, click **End Flight** (that's what the Start Flight button turns into during the flight) once you're on the ground with the engine shut down. Closing MSFS also ends the flight cleanly, a few seconds later.

Vision effects (hypoxia, carbon monoxide, drowsiness) and the small extra instruments are overlaid on MSFS, but only while MSFS is the active window (Chapter 10).

WHEN IT STOPS

- The flight is entered in the **logbook**.
- Depending on your career type, you get the **club bill** (engine time, deductibles, penalties) or the **mission payment**.
- The **debrief** appears in the app.

THE DEBRIEF

The **Debriefs** screen opens on its own at the end of the flight if the airplane flew or the engine ran. It keeps every debrief for the airplane (pick one from the list at the top); **Open in Browser** lets you print it.

- **Badges**: complete preflight, fuel samples taken, engine preheated, carb heat applied in time, smooth landing, flawless flight...
- **The flight timeline** and **one card per event**: what happened, why, and what you should have done.
- **What went well** and **what to work on**.
- **The airplane's condition** after the flight and what's waiting for it at the shop. Engine and airframe wear are never given as numbers. The debrief only tells you whether wear went up, and reminds you of the latest measurement and its date.

> **GOOD TO KNOW**
> The debrief doesn't grade you; it explains. In Training mode, forced failures are marked "test" and don't count toward what to work on.

FLIGHT ANALYSIS

Every second of the flight is recorded: RPM, temperatures and pressures, fuel, airspeeds, altitude, load factor, icing, pilot condition... The **Flight Analysis** screen plots it all as curves.

- **Pick the flight** at the top (the most recent one by default).

- **On the left**, the data grouped by category, one checkbox per curve, a search box, and quick selections (engine, icing, flight, airframe, fuel, pilot, weather, cabin). The surface type shows as a colored band (paved runway, grass, dirt or sand…), alongside clouds, precipitation, cabin heat, cabin air and the windows.
- **Three display modes**: one graph per item, items with the same unit overlaid, or everything overlaid (each curve on its own scale).
- **Hidden data** (actual wear, actual fuel, water, tires, magneto timing…) is grayed out, because a real pilot wouldn't know it. You can show it anyway after a warning, but it breaks the realism. Icing, pitot ice, lack of oxygen and carbon monoxide stay visible, so you can understand what you went through. After a Training session, everything is visible.
- **Above the curves**, a strip shows the flight's events (colored triangles, details on hover).
- **Zoom** by dragging across a time span, or with Ctrl + mouse wheel. Double-click or click **Whole Flight** to zoom back out. The value and time under the mouse are shown on every graph at once.
- **Save Image** saves the graph to the **enregistrements** folder.

CHAPTER 10

HUMAN FACTORS

Some failures don't affect the airplane at all. They affect you: lack of oxygen, carbon monoxide, and a cabin that's too cold or too hot.

FOUR STAGES

Hypoxia and carbon monoxide both starve your brain of oxygen, so their effects **add up**. Either one takes you through four stages, with no sharp break between them.

Stage	Vision	Controls
1 Insidious	Barely affected	Almost nothing
2 Impairment	Edges start to darken	Slightly delayed, and they drift
3 Hard to fly	Tunnel vision	Clearly delayed
4 Unconscious	Black screen	Controls go to neutral

> **TOO LATE**
> Staying unconscious too long is fatal. The pilot never wakes up, even if the airplane descends. The screen stays black for a while, then the overlay clears so you can get back to the MSFS menus.

HYPOXIA

Above 10,000 ft pressure altitude, hypoxia sets in, and the higher you are, the faster it comes on.

Altitude	What to expect
10,000 ft	Slow, insidious effects. You'll notice them on a long flight.
12,000 ft	Faster. Stay up here long enough and it becomes dangerous.
14,000 ft	The stages come one after another. Losing consciousness isn't far off.
18,000 ft	Very fast. Only a few minutes of useful consciousness.
22,000 ft	Almost immediate.

Descend and you recover, and the lower you go, the faster it happens. After you've blacked out, your vision comes back first, but your inputs stay sloppy much longer. Recovery takes time, and even longer if you stay high, so get down without hesitating.

> **IN THE C152**
> The C152 climbs slowly and has no oxygen on board. Spending a long time between 12,000 and 14,000 ft is enough to pass out.

CARBON MONOXIDE

A cracked muffler lets exhaust gases into the cabin heat air (Aircraft Manual, Chapter 7). Carbon monoxide has no smell and no color, and poisoning can come on fast, even faster with the cabin heat on.

Leak	Cabin heat full on	Cabin heat off
Major	Within a few minutes	A little more slowly
Small	More slowly, but surely	Even more slowly

The table shows how fast the poisoning progresses until you lose consciousness. Cabin air by itself only slows it down. A window cracked open slows it too; **opening a window all the way stops it**. Recovery is

slow, even in clean air, and the better the cabin is ventilated, the faster you recover.

CABIN TEMPERATURE

MSFS doesn't model cabin temperature, so Private Pilot Life works it out from the outside air, the sun (strong on the ground, weak in flight, almost nothing in cloud), the cabin heat and the cabin air.

Situation	Cabin
Winter, no heat	Almost as cold as outside
Winter, heat full on	Comfortable
Summer, on the ground in full sun	Stifling, much hotter than outside
Summer, on the ground, both windows open	Still hot, but bearable

Cold

In a cold cabin your fingers go numb. You can't get the control wheel and rudder pedals all the way to the stops, and elevator travel suffers even more than aileron travel. The colder it is and the longer you fly, the less travel you have.

Heat

In a very hot cabin, fatigue also limits your control travel, and **drowsiness** sets in. Your eyelids close in from the top and bottom of the screen, halfway at first, then all the way, more and more often.

These effects build up gradually, and they take a while to wear off once the cabin is back to a comfortable temperature.

> TRAP
>
> The cold makes you want to turn on the heat, and the heat makes a carbon monoxide leak worse.

EXTRA INSTRUMENTS

The MSFS 2024 C152 has neither a CO detector nor a cabin thermometer, so Private Pilot Life adds them in a corner of the screen, without touching the airplane.

- **CO detector**: an orange spot that darkens to gray-black within a few minutes when there's a leak, then slowly returns to its normal color once the air is clean.
- **Thermometer**: shows the cabin temperature.

They only show up when a reading is outside its normal range. **Ctrl + Alt + I** hides them.

CHAPTER 11

TRAINING MODE

Want to see a failure without waiting for it to happen, or practice a procedure? Training mode shows you everything and triggers failures on demand.

GETTING STARTED

On the Home screen, click **Training** instead of **Start Flight**. The **Training** screen opens. It shows the airplane's condition every five seconds, and the log details everything Private Pilot Life sees and does.

To force a failure, type the command in the field at the top and press Enter (or click **Send**). The **e** (status) and **e0** (repair everything) buttons save you some typing. The visual effects only appear in MSFS, so switch back to it to see them. **End Flight** ends the session just like a normal flight.

> **THESE FAILURES ARE REAL**
>
> A forced failure is saved like any other. It stays with the airplane from one flight to the next until you take it to the shop. The e0 command repairs everything on the spot, so you can run several tests in a single flight.

THE COMMANDS

They're short (one letter, sometimes followed by a number) and specific to each airplane; the full list is in the Aircraft Manual. A command from a failure category you've turned off in **Options** has no effect (a message tells you so), and the failure simulator keeps running.

COMMANDS COMMON TO ALL AIRPLANES

Command	Effect
e	Detailed airplane status
e0	Puts everything right on the spot so you can run test after test: failures repaired, controls restored, tires reinflated, brakes cooled, wheels freed, pilot back to normal (lack of oxygen, carbon monoxide). For a short time afterward there's no structural or flap damage, to give you time to get the airplane back under control. Carburetor ice stays, though; pull the carb heat.
q	Stop the failure simulator

> **GOOD TO KNOW**
>
> To try a failure without harming your regular airplane, type e0 right after the test, or have it repaired at the shop. Damage you cause yourself in flight (overspeed, load factor, RPM past the redline) is very real: a full-power dive can wear out an engine in a few minutes.

CHAPTER 12

FREQUENTLY ASKED QUESTIONS

The most common problems, and what's behind them.

I can't see the visual effects or the extra instruments.

MSFS is probably running in exclusive full screen. Switch it to borderless full screen (Chapter 2). Also make sure MSFS is the active window and that the instruments aren't hidden (Ctrl + Alt + I). And remember that in alert mode they only show up when something's wrong.

A control surface isn't responding normally.

You may have a structural failure (a sloppy or jammed control) or a pilot effect (hypoxia, carbon monoxide, cold, heat). If no failure is affecting the controls, check your axis bindings in MSFS. In Training mode, the e command shows the airplane's status.

Flight control failures have no effect.

Your axes are probably bound in third-party software that drives the control surfaces directly. Bind them in the MSFS settings instead (Chapter 2).

The engine runs rough right after takeoff.

Check the oil pressure. When it's too high (cold oil at full power), the WBSim C152 loses power in surges, and it can even lose its oil or quit. Warm up on the ground at around 1,000 to 1,200 RPM until the pressure comes back down into the green arc, then go to full power.

The parking brake keeps setting itself.

The airplane is grounded after damage: a hard landing, a bent wheel, a window torn off, a structural inspection. Take it to the shop.

My fuel gauges don't show what I put in.

That's by design. The C152's float-type gauges are inaccurate, just like on a real light airplane. Only a dipstick reading can be trusted. If the preflight table shows a difference in orange, the gauge may be miscalibrated or its float stuck; ask the shop for a **fuel gauge check**.

After restarting MSFS, my tanks were half full.

MSFS reloads the airplane with its default fuel load. When the failure simulator starts, Private Pilot Life puts back the fuel you had at the end of your last flight, since that fuel never left the airplane. To add fuel, use the preflight.

The engine vibrates and the airplane shakes in cruise.

Think carburetor ice. Once enough ice builds up, the engine runs rough. Pull the carb heat to full hot; the vibration goes away once the ice has melted.

The WBSim tablet doesn't show the quantity I measured.

Like the MSFS fuel menu, it shows what the gauges read, not the actual quantity. Fueling from the tablet is still taken into account.

I triggered a failure in Training mode and it's still there.

Forced failures are real. They stay until you take the airplane to the shop.

I can't see my flat tire on the airplane.

MSFS doesn't model tire pressure, so a flat tire doesn't show in the exterior view. You'll see it during the preflight and feel it in the way the airplane handles.

The Maintenance screen won't let me do any work.

The failure simulator is still running. Stop it (q then Enter).

Can I close MSFS without stopping Private Pilot Life?

It's better to stop Private Pilot Life first, so it saves the airplane's condition. Otherwise, the last save (made every minute) is used the next time you start.

Does Private Pilot Life slow down MSFS?

No. Measured in flight, it uses a tiny fraction of the CPU and doesn't change your frame rate.

Which C152 should I use?

Either the Cessna 152 that comes with MSFS 2024 or the WBSim C152; both have their own module. The WBSim gives you the most complete experience, because Private Pilot Life can read more of its cockpit controls. With the MSFS C152, a few settings are made on the **Cabin** screen and a few failures aren't available (Aircraft Manual, Chapter 1). The C152 Aerobat isn't supported. More airplanes are planned, each with its own module.

What's left behind when I close Private Pilot Life?

Nothing in MSFS or in the airplane: Private Pilot Life doesn't modify any files. Only your airplane's condition (wear, failures, fuel) is kept in the Private Pilot Life folder for your next flight.

CREDITS

DESIGN

Concept, failure logic and flight testing by Julien, private pilot.

THE AIRPLANE

The supported Cessna 152s are the one that comes with Microsoft Flight Simulator 2024 and the WBSim C152, a free third-party aircraft. Private Pilot Life uses their systems without ever modifying them. The WBSim C152 is not included with Private Pilot Life, and Private Pilot Life is not affiliated with its authors.

DATA AND ILLUSTRATIONS

- Weather reports (METAR): aviationweather.gov public service.
- C152 view diagrams: based on the default MSFS 2024 Cessna 152.
- Preflight drawings and diagrams: made for Private Pilot Life.
- Preflight photos: screenshots of the MSFS 2024 Cessna 152, edited for Private Pilot Life (defects drawn on top).

OPEN-SOURCE SOFTWARE

Component	License
Python	PSF License
Requests	Apache 2.0
Pillow	MIT-CMU
pywebview (app window)	BSD 3
uPlot (flight analysis graphs)	MIT
openpyxl (logbook Excel export)	MIT
pypdfium2 (manual production)	BSD 3 / Apache 2.0

The SimConnect link with MSFS was written for Private Pilot Life from the official documentation of the MSFS software development kit (SDK); it doesn't use any third-party library.

TRADEMARKS

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