



# ***FSFlyingSchoolPro*** ***Cessna 172 Detail Pack***

## **Manual**

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**Note** - The FSFlyingSchool Pro Cessna 172 Detail Pack will function with any Cessna 172. **It is modeled on the Cessna 172 included with Flight Simulator**, but other add-on Cessna 172s can be used with it, although their details may differ and this will alter some aspects of your experience.

**FSFlyingSchool's software is not to be considered, in any way, implied, certified, suitable or valid for the training of any person for the operation of any aircraft or vehicle of any kind.**

## ***Introduction***

Welcome to the **FSFlyingSchool Pro Cessna 172 Detail Pack!**

*To get the most out of this product, please read this manual.*

FSFlyingSchool uses sophisticated logic to analyze your flying technique, to help you refine and demonstrate your flying skills. Several of FSFlyingSchool's methods will be new, even to veteran simulation pilots, so please read about them in this manual, to discover how FSFlyingSchool works, what it is telling you, and why.

The FSFlyingSchool Pro Cessna 172 Detail Pack adds a whole new level of realism and atmosphere to your flights with FSFlyingSchool Pro.

## Quick Start

Please read this manual if you want to get the most out of flying with the FSFlyingSchool Pro Cessna 172 Detail Pack.

If you would prefer to do this later and want to jump right into the cockpit, here's what you should do next:

Launch Flight Simulator.

Create or select a flight in Flight Simulator **using one of Flight Simulator's Cessna 172s.**

Get that plane ready to fly, either in mid-air or on the ground. Get yourself at the controls of the plane.

Launch the FSFlyingSchool program.

Press the *Connect Button* in FSFlyingSchool.

Switch back to Flight Simulator and enjoy your flight with FSFlyingSchool by your side!

**But – you really should read this too...**

There are several new features you will want to understand, including a special new key. Read more about these features in detail in this manual.

## Enhanced Instructor Logic

With the addition of the FSFlyingSchool Pro Cessna 172 Detail Pack, your instructors will be looking at your aircraft and your performance in it in a lot more detail.

Note that the instructors' advice, warnings and checklist lists are a combination of real world reference sources and of the checklist and reference files supplied by Flight Simulator for this aircraft. Not all of these sources agree and as a result some of the values or methods used may differ from sources you may have seen yourself.

The following is a list of different stages of flight in which events will cause your instructor to talk to you, with specific reference to the Cessna 172 you are flying.

### Starting and Takeoff

**[Shortly after flight starts on ground with master battery on]**

Estimate of current fuel as a percentage of full.

**[Engine start attempted and throttle not correctly set]**

Advice that throttle should be open about ¼ inch when starting.

**[Engine start attempted and parking brake not set]**

Warning that parking brake must be set when starting the engine.

**[Engine start attempted with master battery switch off]**

Advice that the master battery switch must be on when starting the engine.

**[Engine start attempted with fuel pump off]**

Advice that the fuel pump must be on when starting the engine.

**[Engine start attempted with fuel shut off]**

Advice that the fuel shut off must be pushed in so that fuel is not cut off when starting the engine.

**[Shortly after moving in taxi mode]**

Advice on which instruments and systems should be checked during taxiing.

**[In takeoff mode with more than 10 degrees of flaps]**

Warning that you have too much flaps set and that you should use no more than 10 degrees.

**[In takeoff mode and on ground with autopilot on]**

Warning that autopilot must be off during takeoff.

**[Shortly after beginning takeoff]**

Advice to move throttle smoothly up to full.

**[Shortly after beginning takeoff]**

Advice that the nose wheel can be lifted at 55 KIAS.

**[Shortly after takeoff]**

Reminder that this aircraft's 'vX' (Best Angle of Climb Speed) is 62 KIAS at sea level. Use this speed to clear runway obstacles or to lift off from a soft field quickly.

**[Shortly after takeoff]**

Reminder that this aircraft's 'vY' (Best Rate of Climb Speed) is 74 KIAS at sea level. Use this speed to climb after takeoff in normal operations.

**[Shortly after takeoff]**

Reminder that in this aircraft you should normally turn with a 20 degree bank and when doing so you will want to rollout about 20 degrees before your desired heading.

**[Shortly after takeoff]**

Advice that if you encounter heavy turbulence you need to be at or below manoeuvring speed ('vA') and to remember that this will decrease as you burn fuel.

**[Shortly after takeoff]**

Advice to use right rudder to correct for any unwanted yawing to the left caused by P factor and torque.

**[Entering cruise mode]**

Advice to cruise between 2100 and 2700 RPM and to lean the mixture above 3000 feet MSL to obtain maximum RPM.

## Descent and Landing

**[Descending and below maximum flap speed while landing]**

Advice that once below 110 KIAS the pilot may use 10 degrees of flaps.

Advice that once below 85 KIAS the pilot may use more than 10 degrees (15 to 30 degrees) of flaps.

**[Descending and decelerating to maximum flap speed while landing]**

Advice that once below 110 KIAS the pilot may use 10 degrees of flaps.

**[Descent to around 1000 feet AGL while landing with autopilot on]**

Warning to disengage the autopilot below 1000 feet during an approach in this aircraft.

**[Descent to around 600 feet AGL while landing]**

Advice to use pitch to control airspeed and power to control rate of descent during approach and landing.

**[Descent to around 500 feet AGL while landing]**

Advice that you typically want to land with 30 degrees flaps, 1900 RPM and 65 knots IAS.

**[Descent to around 400 feet AGL while landing]**

Reminder to flare at about 10 to 15 feet above the runway and to lift the nose about 10 degrees.

**[Descent to around 300 feet AGL while landing]**

Reminder that at about 10 to 15 feet above the runway you should reduce power to idle and flare.

## General Warnings and Advice

**[Avionics master switch off and engine running or airborne]**

Advice that normal operation requires the avionics master switch on.

**[Alternator off and engine running and master battery on]**

Advice that normal operation requires the alternator on.

**[Fuel shut off at inappropriate time]**

Advice that normal operation requires the fuel shut off to be pushed in so that fuel is not cut off.

**[Engine fire and fuel not shut off]**

Warning that fuel should be shut off immediately.

**[Loss of engine while airborne]**

Advice that the best glide speed in this aircraft is 68 KIAS.

**[Engine fire started]**

Warning that the engine is on fire.

**[Shortly after engine has started]**

Reminder to check the oil pressure.

**[Shortly after engine has started and fuel pump on]**

Advice to turn fuel pump off.

**[Not in cruise mode and fuel selector is set to left or right]**

Advice that this is the wrong setting. You should change it to 'both'.

**[Engine is off and the aircraft is on the ground and fuel selector is on 'both']**

Advice to set selector to left or right to prevent cross-feeding, unless you are about to start the engine.

**[Speed approaching vNO]**

Reminder that you need smooth air to fly into the yellow arc on your ASI, above 129 KIAS which is 'vNO' (Maximum Structural Cruising Speed) for this aircraft.

**[Speed approaching vNE]**

Warning that you are close to exceeding 163 KIAS which is 'vNE' (Never Exceed Speed) for this aircraft.

**[Decreasing speed approaching vSO]**

Warning that stall speed with full flaps is 40 KIAS which is 'vSO' (Stalling Speed in Landing Configuration) for this aircraft.

**[Decreasing speed approaching vS]**

Warning that stall speed with flaps up is 48 KIAS which is 'vS' (Stalling Speed with Flaps Up) for this aircraft.

**[Left or right fuel level is low]**

Warning that one or both fuel tanks are getting low and you may wish to consider your refuelling options.

**[Flaps down and flying too fast for any flaps]**

Advice that once below 110 KIAS the pilot may use 10 degrees of flaps.

**[Flaps down and flying too fast for that particular flaps setting]**

Advice that once below 85 KIAS the pilot may use more than 10 degrees (15 to 30 degrees) of flaps.

**[Master battery switched on]**

Estimate of current fuel as a percentage of full.

**[Master battery on and fuel level getting low]**

Estimate of current fuel as a percentage of full as fuel falls below 50%, 25%, 10%, 5% and 3%.

## Checklists

### Overview

The primary function of FSFlyingSchool is to provide virtual instructors who are watching you and helping you be your best in the area of *airmanship* – how well you *fly your airplane* – and to have fun doing it. It certainly does a lot of other things in several other areas, but airmanship is its main focus.

We do not concentrate on teaching checklists and indeed there are other products which concentrate on just such training. As a result, we have not concentrated on checklists in this detail pack, but have instead added several simple checklist reminders from the instructor that can be requested by the pilot with a single simple keystroke.

Because the keystroke is always the same:

### Ctrl Shift N

the process could not be simpler to remember. Your instructor will determine which checklist is the logical one at that point in your flight. In reading a checklist, the instructor will take several seconds to list all of its points, during which time you can follow along performing and checking the actions required, or you can use the checklist to make sure that you have already performed those actions.

The name of the checklist currently being read is shown on your screen in Flight Simulator immediately after the checklist key is pressed. Pressing **Ctrl Shift B** displays which checklist would be read out by the instructor if the checklist key Ctrl Shift N were to be pressed.

A key point to understand is that the checklists are not *interactive*, which means that the instructor is not waiting for you to perform each action. The instructor will read the entire checklist from start to finish regardless of what the pilot does. This is because checklists are not our main focus and also because your FSFlyingSchool instructor *is always* looking at your flight to see if anything is not as it should be – not just when a checklist is being read.

For example, if you failed to switch something on during a checklist, you can be sure that if it is ever off, or on, at the wrong time, your instructor will bring this to your attention – not just when a checklist is being read.

**FSFS-Tip** Remember it's handy to press Ctrl Shift B to see which checklist **would be** read out by the instructor if the checklist key Ctrl Shift N were to be pressed.

When Ctrl Shift B is pressed, the instructor will also describe the sky condition.



## Checklists

*(Press Ctrl Shift N to hear the current checklist)*

### **Cold and dark**

**[Taxi mode and master battery off]**

This is a combination of a before start and engine start checklist.

### **Run up**

**[Taxi mode and engine running and not yet done run up for current flight]**

This is part of a before takeoff checklist.

### **Takeoff**

**[Takeoff mode and on ground]**

This is a takeoff checklist.

### **Descent**

**[Landing mode and above 1000 feet AGL]**

This is a descent checklist.

### **Before Landing**

**[Landing mode and below 1000 feet AGL]**

This is a before landing check list.

### **Shut down**

**[Taxi mode and aircraft has flown since FSFSPRO started]**

This is chiefly a securing airplane checklist.

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