

## Why Bother With FPV Cameras On RC Planes

Let's start with the negative. The letters "FPV" (First Person View) seem to be a big turn off for a lot of RC aeroplane flyers these days. Perhaps they imagine it's only for youngsters who wear their caps the wrong way round. Or perhaps they think it's too difficult and all very technical. Or else it's all about drones and multicopters.

So perhaps we should change the title of this article. Let's call it "Why Miss Out On Flying Your Favourite RC Plane From The Cockpit?". And start again..

As RC plane flyers we all understand the enjoyment and satisfaction of flying our planes from the ground (LOS or Line Of Sight). You get to see your model in the air. You get to see it takeoff and land. But there is also a lot of fun and satisfaction in flying that same plane from the air through a camera. You get to feel something of what it was like piloting the real thing from the air – the poor view forwards over the nose is a challenge in many classic old aircraft for example. And of course you don't need to stop flying it from the ground just because you can fly it from the air.

Before I go on (*and on?!*) I should make it clear what sort of RC plane I have in mind for flying from the cockpit. In the past I have bought and flown the sort of planes commonly advertised as "FPV" planes – they are typically very stable and have a long endurance in the air. Examples would be the "Mini Talon" and the "Volantex Ranger 2000". Using these planes to fly any further than 500m is currently illegal in the UK so most of their long range potential is actually (*legally*) unavailable to us. And cruising around in 300m circles for half an hour is a great novelty at first but becomes a bit underwhelming after a time. I now see these planes as good trainers for flying from the air and a step towards the sort of planes that I think we *should* be enjoying from the air: namely anything that interests us as aero-modellers – WW2 warbirds, early biplanes, EDF jets, *whatever*. It just has to be big enough to mount the camera and not so big that it weighs too much (somewhere between 1200mm and 1400mm wingspan usually works out about right). Plus it should be powered by electric motor(s).



*Volantex Ranger –  
a typical long-range "FPV" plane*

It does take a bit of effort to fit the extra camera equipment into a model not intended for flying from the air but for me the satisfaction of doing circuits in an old tail dragger is well worth going to a bit of trouble over. The sort of planes I've enjoyed from the air are planes like the Dynam Waco and the Dynam Albatros – these open cockpit biplanes are particularly easy to adapt for cameras. More recently I've been doing circuits in an old Hobbyking Sbach 342 (1400mm) and more recently still an Extra 330. I typically fly below 300 feet vertically and within 300m horizontally on flights lasting around 5 minutes. I'm into takeoffs, loops, rolls and landings in a *roughly* scale model rather than pushing my luck on long distance cruise flying.



*Dynam Waco biplane  
showing camera in pilots cockpit*

Downsides to fitting a camera? The

camera and video transmitter will use a few watts of power - so a tiny extra load on the battery. And your plane will weigh a bit more (say 80g more to include camera, video transmitter, video antenna and panning servo). Plus you may need some balancing weight up front. Perhaps the biggest downside for the aero-modeller purist will be replacing a beautifully painted scale pilot with a miniature camera. But as my hero Otto Lilienthal said after his last landing: "*Sacrifices Must be Made!*".



*Extra showing camera inside canopy*

There are certainly a number of new challenges to flying from the air as compared to the usual flying from the ground. I've already touched on bits of the aircraft obscuring your view out of the cockpit. There is also the real concern over simply getting lost – a familiar landscape looks very different from 300 feet up and a few hundred metres of ground can be covered in less than 20 seconds. These problems have been faced by manned-aircraft pilots since 1903 so as aero-modellers we should be able to get a kick out of dealing with them. It certainly helps if you can “sort-of” *virtually* “move your head” left to right (by sitting the camera on a servo) to get an all-round view.



*Looking back over your left shoulder in an Albatros V strutter*

This article is about why I believe it's worth the effort installing cameras in RC planes rather than how to install them. So I've avoided technical details. But I should just mention **On Screen Displays (OSDs)**. They can be very helpful and can add a lot. It's particularly useful to know your Air Speed for landings for instance. But not vital.



*View forwards down the nose of an SE5a rolling to right after takeoff. OSD gives speed in mph on left ladder and height on right in feet.*

Flying from the air uses a lot of the same skills and knowledge as flying from the ground. It's the same plane after all. In some ways its easier – no confusion over left/right orientation for example. But it still feels very daunting at first relying on your view through an on-board camera. Well worth the effort though!



*View of club caravan from Cub cockpit using old analogue camera*

I should mention that to date I've only used analogue camera and video transmitter equipment. This is now “last generation” gear and provides a resolution of 720x480 or so (all the cockpit photos in this article are from old analogue equipment). This is more than enough for flying, its cheap(ish) and there is a lot of choice in the market.

However the latest equipment is digital and offers a resolution of 1280x720 which means a much clearer and more detailed view from the cockpit. The latest gear is also very pricey. I'm saving up!

Oh, nearly forgot. You can view some of my flying footage if you look up my channel on YouTube “Steden Videos”. Thanks for reading and happy landings.



*SE5a in imagined 1920s racing colours*