Aircraft Photography Part Four

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Composition, Panning, and Putting it all Together.

WELCOME to episode four of our 'how-to' series on aviation photography. I hope you have all been out having fun photographing your local aviation scene, and have some good shots to send in to our photo competition!

In the past three episodes we have covered some of the theory of photography, the equipment you need to take great photos and what the many buttons and menus on your camera do. In this issue we are going to talk about something very important, called 'composition'. We will also learn how to take 'panning shots'. Then, taking everything we have learned so far, we will look at some real world situations and apply what we know.

Antonov An-124 – f 8, 1/640, ISO 200: Sometimes it's almost impossible to include all of the aircraft in the image. It just wasn't practical to fit in the wingtips of this beast!

Composition

The term 'composition' is used in all forms of art, be it painting, drawing, sculpture or photography. It refers to where within the available space available you choose to place your subject. In our case, the 'space' is the camera's viewfinder, and the subject will be the aircraft we are photographing. Technique, sharpness and pixel count aside, it is how you choose to compose your images that will have the greatest impact on how aesthetically pleasing they are to look at. The space you leave around your aircraft can have as much impact as the aircraft itself. There are many rules of composition used in photography, and I will cover the two main ones here.

The most famous rule of composition is 'the rule of thirds'. This rule states that the main subject of your image, be it the entire aircraft, or just the part of it you are wishing to focus on, should not be directly in the centre of your image. Imagine there are four lines across your image, two horizontally and two vertically. This would break your image into thirds, both length- and widthwise. In fact, many DSLR cameras come with the option of turning on a thirds 'grid' inside the viewfinder. The human eye is drawn to the outlying thirds of each image, so if your subject is placed there, it can look more appealing. There is a natural tendency, however, to always place your subject in the centre while taking photos, so I would recommend leaving your 'focus select point' slightly off to one side to remind you of the rule of thirds. If you need to centre your image horizontally, such as when taking a head-on photo of an aircraft, try and keep the subject to the top or bottom third of the image.

P-40E Kittyhawk – f 6.3, 1/320, ISO 200: Visualising four lines across your image can help you find your 'rule of thirds'. Some cameras give you the option of displaying a grid like this in your viewfinder.

DC-3 – f 8, 1/320, ISO 200: Using the cockpit area as your focus point, and placing this off to 1/3rd of the image can be effective for your composition. Don't be afraid to cut off the tail or wingtips.

The other common rule of composition, which is especially important when taking images of flying aircraft, is called 'the rule of space'. This refers to whether your subject is moving 'into' or 'out of' the frame. In basic terms, this means leaving enough space ahead of your aircraft for it to fly into, or away from, depending on the orientation of your aircraft. While it's important to try and 'fill the frame' with your aircraft, it is easy to crop too much sky out of the image, leaving your aircraft aesthetically 'trapped'.

The main thing that you will be using to dictate the layout of your image is the fuselage of the aircraft. Sometimes you will find the need to crop off the ends of wings, tails and vertical stabilisers in order to get the angle and composition you are after. Often the cockpit area can form the centrepiece of your image, and it is this you would place off to one third of the image, either horizontally, vertically, or both.

Another important aspect to your composition is 'levelling'. This involves keeping the background of a photo level, for example a runway, the perimeter of the airfield, or the horizon itself. This can be tricky, especially if you are shooting at an angle to the horizon, since the aspect ratio can mean having a level runway will actually tilt the image. If you are lucky, you will have some vertical elements to the background that you can use, such as trees or lighting towers. If these are directly up and down, then your shot can appear level. Sometimes as an effect you can drastically tilt your camera to achieve a striking image. This is especially the case with an aircraft in flight that has no background or horizon, but be careful, since if you tilt the image too much and the light appears to be coming from underneath the aircraft, you can lose the credibility of your image.

While these rules of composition and aesthetics were detailed as far back as the 16th century by painters (long before they had aircraft!) it's important to know that you can break these rules at any time. Composition needs to be kept in mind, but always use your own creative judgment, and no matter what, if it looks good, then do it! Try to use many different types of composition when taking your images. When you go back through them to select the ones you want to use, you might be surprised about which ones looked the best. If you are in doubt, move or zoom back a little bit and put some more space around your subject. This will make it easier for you by keeping your editing options open – once you get home, you'll be able to crop or tilt your image in your digital darkroom to get the composition you want.

Panning Shots

The 'panning shot' is an excellent display of motion and action, and is a much sought-after effect in aviation photography. It requires three elements: a fast-moving aircraft flying past you, some close background behind it, and a steady hand. The aim of the panning shot is to achieve a sharp, in-focus aircraft with its background blurred in motion. This is achieved by keeping the aircraft in the exact same position in the frame as you and your camera follow it past whilst employing a slow shutter speed. The exact length of exposure required depends on the speed of the aircraft, your distance from the subject and the focal length of the lens. For a fast flying aircraft, low enough to have a visible background behind it, you can achieve a blurred background at about 1/250th of a second, while you might need to go as slow as 1/80s to achieve the same amount of blur for an aircraft that is just taking off or landing. Of course, the faster the shutter speed, the easier it is to capture a smoothly panned shot, but the less motion you will get out of the background. With slower moving subjects, it can be difficult to avoid vertical camera shake, and it is also harder to track the aircraft in the same position of the frame for the longer period of time needed by the slower shutter speed. A panning shot of a slowly taxiing aircraft is extremely difficult, since this would require a shutter speed well below the focal length of your lens.

BAE Hawk, Red Arrows – f10, 1/200, ISO 200: The 'Panning Shot' is achieved when you keep your aircraft sharp but allow the background to blur with motion as the aircraft passes. You will need both a low shutter speed and steady hand.

Aids such as tripods and monopods can make it easy to swing your camera along the horizontal plane, while keeping it steady in the vertical. Some new forms of Vibration Reduction or Optical Stabilisation built into more expensive lenses can detect a panning shot, and will stabilise the image in the vertical plane only.

Continuous shutter release and continuous focus modes can be excellent aids in making panning shots, allowing you to concentrate on keeping a smooth panning motion in time with the passing aircraft. Using these modes, the camera will try to keep the aircraft in focus as it comes towards you, while making multiple images as it passes, increasing the chance of a clean shot. It's a good idea to start your continuous burst before the aircraft is directly in front of you for two reasons. Not only does it give you and your camera a few extra seconds to get to grips with the pass, but if you are lucky, you may also get a panning shot of the aircraft on a slightly head or tail on aspect, which makes for a much more interesting image. Shutter priority mode is useful for panning shots since it allows you to set your shutter speed low, and the camera will narrow the aperture automatically to avoid over-exposure. If you wish to have a wider aperture and a slow shutter speed at the same time in bright daylight, you may need to reduce your ISO to below the standard 200 (if your camera does this) or put an 'ND' filter on your lens. This will decrease the light entering the lens, but remember to take it off again before you attempt normal photos of the aircraft in flight.

F/A-18F Super Hornet – f 4.8, 1/1250, ISO 800 (above) and Mig 29OVT - f 14, 1/800, ISO 200 (below): The space you leave around your aircraft can drastically enhance the impact of your image. It's important to leave some sky for your aircraft to fly 'into' or 'out of'.

Real Life Examples

OK, now let's take all the theory, controls and modes we have learnt over the past three issues into some real world examples…

Let's pretend we are spending the afternoon at our local airfield, where an small aviation event or airshow is being held. It's a reasonably bright day, but there are patches of cloud. You have with you a DSLR with a cropped sensor, and two lenses, a 70-300mm Tele-photo Zoom Lens and an 18-55mm Wide angle zoom - and sunscreen of course! You have just photographed two aircraft taking off, a Vampire Jet, followed by a FG-1D Corsair (two of my favourites!) and now they are preparing to make some low passes across the runway, one after the other, before they come into land.

You turned up early so have a good spot right at the front of the crowd. Since it's a bright day you have your ISO set to 200. Your camera is set to shutter priority mode for shots of aircraft in the air. You have your telephoto lens on the camera. You have a fresh memory card, and a few spares, so with no space concerns you have your images being recorded in RAW format. OK, here comes the Vampire (oooh, hear that lovely low pitch whine?). This aircraft has no propeller, so you can set your shutter speed quite high, such as 1/1200s. This is well above the focal length of your lens (including the crop factor of your sensor) so you should avoid any camera shake, and will freeze the action quite nicely. Since the shutter speed is so high, your aperture will be very large, and your depth of field minimal, so your focus will be very important! You know that the Vampire is going to come past quickly, and you decided you want a photo of it with the cockpit section about 1/3 from the left edge of the frame, so you have your focus mode set to Single Area on the area of the frame you want the cockpit to be in. It's going to be a quick pass so you have selected Continuous Shutter Release. Also, since the paint job on this Vampire is silver, and therefore very light and reflective, you push the Exposure Compensation up a few steps, maybe +2/3ev in case the camera is fooled by the bright body of the aircraft and tries to underexpose the image. All you have to do is keep the red focus select box on the cockpit area of the Vampire as it screams past, releasing bursts on the shutter release when the aircraft is in a nice looking spot, and chances are you will get some good in-focus images. As the Vampire heads into the distance, you have a quick check of the histogram on your images to see if your exposure compensation is correct.

Sukhoi Su-30MKK – f 10, 1/500, ISO 200: Sometimes you just have to break the rules! The aircraft just had to be in the middle for this shot.

Next up is the Corsair. Since this aircraft has a propeller (and a massive one at that!) you want to keep your shutter speed low enough to allow the propeller to blur while the shutter is open, so you drop the shutter speed down to 1/350s. While this is not going to give you full prop rotation, it is starting to get close to the focal length of your lens, so going lower could be risky. As you lower your shutter speed you can see your aperture becoming smaller (and the f number getting larger) as the camera tries to maintain exposure in Shutter Priority mode.

Hey, it looks like it's coming in pretty low! There might just be enough background behind it to enable you to nail a panning shot. You drop your shutter speed down to 1/250 to get more motion in the background for the panning shot. In order to keep the shutter speed higher than your focal length, you zoom your lens back a little to 200mm. Since you need to be extra steady to reduce camera shake, you remember to pull your elbows in tight towards your body. With the Corsair being a dark blue colour, and the trees on the hills in the background behind being dark also, you pull the Exposure Compensation back to -2/3ev in case the camera overcompensates for all the darkness and your images become over-exposed. After a burst of shots as it flies past, it can take a while for your camera to catch up, and you have to wait a few seconds before you can review your images on the back of your camera. Zooming in on the screen on your camera aircraft you find… a sharp airplane… and some very blurred trees. Success!

The aircraft are coming back for another pass, this time in formation. The sun has gone behind a cloud and put the whole airfield into shade. It looks like the aircraft will be in shadow as they come back past, so you decide to raise your ISO up to 400 to compensate for the reduction in natural light. After snapping some great shots of the pass, you notice as they are pulling up and away, still in formation, with the Vampire at the top and Corsair below it, that they are beginning to fly out into the sunlight with dark clouds still behind them. Here is a chance for a very dramatic shot! Quickly, you pull back the Exposure Compensation to -1EV in case the Vampire becomes overexposed, and you zoom right in as far as you can, flipping the camera around 90 degrees in your hand to fit both the aircraft in. The focus select point is already in the right spot to keep the uppermost aircraft in the top 1/3 of the frame - you take another round of shots. A quick check on the screen on the camera and… superb! The image is very striking, with the brightly lit aircraft contrasting with the dark clouds.

De Havilland Vampire – f 5.6, 1/800, ISO 200: The colour of an aircraft's finish can confuse your camera into over or under exposing your image. Use the 'Exposure Compensation' control to correct it. And don't hesitate to take some of your images in portrait mode to capture more of the ground.

Later, after the aircraft have landed, you show a few of your photos to the pilot of the Vampire, who is so impressed he lets you up onto the wing to take a photo of the cockpit. Now you put the 18-55mm lens on, and get out your flash, which is already set up in remote mode. Setting your camera in manual mode, you set your exposure for the view outside the cockpit, and use your wide-angle lens to capture the entire cockpit and some of the view outside. Holding the flash above the cockpit just out of view, you use your flash to light the shadows inside of the cockpit. After a few failed attempts as you adjust your flash level, you have it!...

You can see from the little fantasy afternoon I've described how quickly things can change as the light varies, and how quickly you need to be able change your settings - so go on out and practice changing your settings around until it becomes second nature.

In the next issue, we will talk about how to get the most out of photographing a proper airshow, both in terms of enjoyment and the pictures you take. Until then, happy shooting!