

# ALPINE PHOTO SHOOT

Story & photos Jon Davison

Since 2005, I have been privileged enough to have photographed the superb line of Swiss made Pilatus aircraft around the world, in the air-to-air environment.

In late 2021, I was asked if I could provide new photography of their updated PC-7 MKX military training aircraft in action over the Swiss alps. This is the story of that shoot.

I was then asked 'have you any experience with military trainers?'. Intrigued, I responded in the affirmative, assuming this would be the subject. So I asked if we would be using the Skyvan 'No, we want you in the PC21. There are two subjects, the PC-7 MKX and a PC21'.

So that meant a three-ship formation which implied that we would probably not be flying straight and level! So I answered yes, of course I would love to. Then all sorts of thoughts crossed my mind, like was I still up to it? I had flown in high performance military trainers before,

but the PC21, well this was a different ball game entirely. This is an extremely nimble and agile trainer, which translates as 'slippery'.

So the date was set for mid January 2022, which meant being winter in Switzerland, it would be very cold!. So I headed to Switzerland and the beautiful alpine town of Engelberg, 30 mins from Pilatus, where I would be staying for the shoot.

At Pilatus 09:00 the next morning we had a detailed briefing, after which I was kitted out by Guido Frey from Aircrew Life Support and Survival, with the flying suit, the g suit, oxygen mask, helmet, boots and gloves plus a cockpit check out. When we had finished he looked at me and said 'Good ... now you look just like Maverick!'

Next day we would do a trial flight in the morning, followed by a break for lunch, then the actual photoshoot in the late afternoon.

As usual, the briefing was extremely detailed and very organised and involved myself, Reto 'Tödi' Anshutz, Mathew 'Fish' Hartkop, and Reto 'Obi' Obrist, the three Pilatus test pilots, plus Pilatus marketing director Jerome, and Guido. The two test pilots who would be the back seaters sat in as well. Jerome had provided very accurate dioramas that he wanted of the subjects, single portraits together with formation setups. But the main requirement was to show the two aircraft climbing vertically, with the alps as background, as singles and in formation. I had to work out how I was going to position my heavy Nikon D800 with an equally heavy 70 - 200 lens during the pull ups. So the trial flight was to see if a; the three aircraft could achieve the positions required and b; to see if I could keep my camera in place and other problems that may come up.

In the briefing prior to the trial flight, I mentioned that as I am right handed, it would be difficult shooting to my right, so all the carefully prepared visuals Jerome made with the subjects to our right, had to be reversed. Imagine, if you are holding your camera facing left, your right arm needs to be in front of you in order to fire the shutter.

But this cannot happen if you are facing right. You are strapped in to an ejection seat and harness and cannot turn around to have space for your arm to go to your right.

But imagine doing this when your camera weighs between three and five times its normal weight when we accelerate into a vertical climb? this means your arm also weighs as much. So trying to make any movement upwards whilst going vertical is almost impossible.



If you had your camera on your lap for instance, it would be difficult to bring it up to your eye, by then of course you would have lost the shot.

To get around this, you have to rest your left elbow whilst holding your camera on the canopy rim, with your right hand in place on top of the camera. So when the g forces start piling up, your arms would be in the right position to start with and not be pulled down by gravity.

The kit out was very involved and professional as expected as we would be flying over the alps, in winter. This meant if we had to eject, we had to be able to survive possibly for the night in freezing temperatures, up to 4,600 metres in the snow.



Guido (left) and JD getting kitted out.

Everything had to fit perfectly and I had to know how to use the gear in an emergency.

'Use your parachute as a tent Jon, wrap it around you, bury yourself in the snow to avoid wind chill. Keep warm, your EPERB will tell the emergency services where you are. Above all keep warm'. Okay, got it, keep warm, mmmm. Images of the ill-fated 1936 climber Toni Kurz hanging off the side of the Eiger went through my mind.

Okay, so I have to keep warm, right. My photographic considerations were minimal compared to the information I needed for the flight, so any thoughts on photography took a back seat, pardon the pun. Of course it was all designed to get me up there safely, then I would be able to go to work and sort out the visual part of the sortie. So it was my responsibility to make sure I had spare batteries, SD card and the additional lens.

One of my concerns was if I had to change lenses in

flight, where would I store the other one if we were doing a manoeuvre? But Guido showed me to my right was a storage container with a locked lid. So that was great, I could store a spare battery, a lens, iPhone, sick bags (if needed) and anything else. So sorted.

As we walked to the aircraft at 09:30, my heart was pounding with so many thoughts and things I had to remember.

- 1. Don't drop anything in the aircraft, especially the ejection seat arming pin.**
- 2. Remember to turn your Oxygen flow on when we start to taxi. As you know it's on your left.**
- 3. Remember to test the alternative audio channel when we start to taxi, this is on your right okay.**
- 4. Keep your visor down on takeoff.**
- 5. DON'T grab the ejection handle for comfort, that's the big yellow handle in between your legs! (and where do your hands naturally sit when relaxed?).**
- 6. Don't let my camera straps tangle around the same handle.**
- 7. Don't put the camera strap around your neck, otherwise if we have to eject, the camera now weighing around eighteen times its weight, will certainly snap your neck. So keep it free and drop the camera, fast before you eject.**
- 8. Remember to thread the leg restraints around your shins - and through the front of your flying suit (as you eject your legs are pulled back so they don't flail around and get sliced off on the fascia during the rocket ride out of the aircraft).**
- 9. If you need to undo your mask, unclip the right hand side, not the left as you might pull out the coms lead.**
- 10. Above all, relax!**

As I climb up and into the rear cockpit, assisted by Guido I asked my pilot Tödi 'Why doesn't the rear canopy have Miniature Detonation Cords like yours?' 'Ah, well spotted, your canopy is thinner than mine, so you have Through-Canopy Penetration spikes on your seat'. Okay, so I shatter the canopy if we eject, easy eh' (it is a sharp spike on the top of the seat, it strikes the underside of the canopy and shatters it. Todi's MDC - miniature Detonation Cord - is embedded within the acrylic plastic of his canopy and is initiated when the eject handle is pulled. It shatters the canopy over the seat a few milliseconds before the seat is launched.



**DON'T** grab the ejection handle for comfort, that's the big yellow handle in between your legs! (and where do your hands naturally sit when relaxed?).



Once over the majestic alps, we did four vertical climbs, starting with a 220kt dive to gather speed, then a slow pull up into the vertical. The g forces are a thing to behold, they are very strong and they occur the instant you do anything other than horizontal flight. The 'G' suit is a very comforting device. Pressured air is fed into the suit, squeezing your thighs and abdomen the moment the aircraft changes attitude. This prevents blood from leaving the parts where you need it most ... like your head, so you can remain conscious, which is kind of important up there. It is very comforting feeling as it kicks in, like 'I've got you ... relax it's okay'.

Once in the vertical, we got the shots, then peeled inverted into a wing over and a dive into the alps below. For those who have never experienced it, this sensation is hard to describe. When you are inverted you look up and you see the alps above you. That's right, you are looking up. You don't feel that you are upside down, because you are still sitting in your seat the right way up. It is a beautiful thing to experience and makes you realise how relative everything is. It's important to keep your eyes focused, if possible, on the alps as you rotate. This helps to orientate you and helps minimise any queasiness.

For the trial flight, the three ship formation had to see if they could hold the poses required. Even though there is little need for the test pilots to do much formation flying with Pilatus, seeing they have nearly all spent time in the Swiss Air Force flying either F5's or F/A18's, so this sortie was to act as a refresher! We all had the shoot sheets strapped to our knee boards, so we all knew what we had to do and were on the same page so to speak.

It is a comforting thing for a photographer to have a pilot who instinctively knows about camera angles you need and can position his aircraft for the shot. Even as I was thinking, and before I said 'oh oh Tödi we need to be lower', he corrected the angle. So most of the shoot I did not need to say very much at all, apart from 'Got it, that was great'. The sequence went like this;

A) Single PC-7 MKX flying horizontally, followed by a vertical climb. B) Next the PC21 joins on the outside and we do the same thing with the PC21 peeling off at the top. C) Then with roles reversed and the PC21 in the foreground, we go over the same sequence. D) Now the PC-7 MKX is inverted and does a solo vertical climb, followed by the same with the PC21. E) PC-7 MKX eclipsed by the setting sun. F) Grab bonuses!

After two hours of doing this and a few gut rumbles, we headed back to Pilatus base at Bouchs, followed



by a de-brief to see how it went. The pilots all felt that they could handle the positions whilst in formation with only small variations of agreed speed changes and angles of attack. The only thing we felt was that both the subject aircraft should be about 30 degrees nose up, just to make them look more dynamic. Next was a satisfying lunch at the huge and very slick Pilatus canteen. Following this we would have a break and fly again for the actual photo shoot at 15:30.

I needed a rest after the first flight. Even though I had flown in high performance military aircraft before, it was a while ago, so my nerves were wired and I was not fully relaxed. After the first hour of non-stop manoeuvres I had felt a bit queasy, mainly due to my eye I in the camera viewfinder all the time. It's a bit like trying to read in the back seat of a car, suddenly your gut says 'enough'. But the next flight would be great now I knew what to expect. Todi was a superb pilot, so I could relax and really settle into the shoot.

I did try one attempt at lifting my camera from my lap in the climb just to test the theory. It was impossible, I just could not do it, so resting my arm on the canopy sill worked perfectly. I did a bit of editing during the break and I was awestruck by what I saw, the mountains, the clarity, a pair of vertical aircraft against a clear blue sky. It made me realise that for most of the flight I had my camera glued to my eye.

I felt so privileged to be in this position to experience these things. I always feel this, but this was special being over these immense peaks and glacial valleys

in winter in the nimble and very slippery PC-21. Three O'Clock rolled around and another climb into the flight gear, then another briefing and the walk to the aircraft. I was now relaxed and really looking forward to the sortie. I made a note to look outside more this time. We did a three ship stream takeoff over Lake Lucerne then a climb up over the alps. There was no need for a practice this time so it was straight into the shoot list.

This shoot took another two hours and that was it, the sun was now low and the light was really nice. This time after the shoot I spent time just taking in the majesty of the Swiss alps from this privileged and elevated position, the setting sun silhouetting the massive peaks. It was nearly dark by the time we approached the illuminated runway at Pilatus. I took a wide-angle shot of this just to show the environment. Next was a mission debrief and a welcome beer or two.

It turned out I had been shooting HB-HZD, the same PC21 that I shot over Sydney harbour for the cover of the Pilatus 2011 calendar. What a great end to a fabulous day of doing what I love, the combination of aviation and photography and all in the extremely agile Pilatus PC21.

Grateful thanks to Jérôme Zbinden, Reto 'Tödi' Anshutz, Mathew 'Fish' Hartkop, Reto 'Obi' Obrist and Guido Frey.

Jon Davison 2023

A key aim for the PC-21 was to allow jet aircraft pilots to perform the majority of their training using the type before converting to jet-powered types, allowing operators to make substantial savings. In order to achieve this aim, the new trainer was required to have an expanded performance envelope in terms of aerodynamics, cockpit equipment, flexibility, and ease of maintenance. In May 2002 Pilatus announced that it aimed for the PC-21 to capture 50% of the global trainer aircraft market

Afer the shoot, left to right: Reto 'Obi' Obrist, passenger, Reto 'Tödi' Anshutz, JD, Mathew 'Fish' Hartkop, passenger.





**TOP:** Returning over Lake Lucerne to Pilatus airfield at Bouchs, note the runway lights ahead.  
**tLeft:** Pilatus 2011 calendar. **RIGHT:** Pilatus / Feb 2023 calendar. **OPPOSITE:** Peeling off inverted after the climb.