



## n° 24 - August 2010

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### Foxbat Factory visit



Early in July 2010, I was fortunate enough to be in Europe and took the opportunity to again visit the Foxbat factory in Kiev, Ukraine. This was my third visit and as usual, the hospitality was superb.

This cannot be said of British Airways, who delayed the Heathrow flight departure by over four hours while they shilly-shallied about deciding whether the aircraft was airworthy or not and then deciding to put us all on another aircraft anyway. Funny how they still board you onto a defunct aircraft in the hope that it will somehow miraculously repair itself.

I was met at Kiev Borispol airport by Alex Zhurba, Aeroprakt's Logistics Manager - his job is handling all the importation of parts and exportation of aircraft. This covers everything from basic raw materials like aluminium from the USA, instrumentation from Europe and machine tools from all over the world. Alex speaks excellent English and was my guide for the next few days both at the factory and in Kiev city.

I also met Yuriy Yakovlev, Aeroprakt's joint CEO and designer of the A22, Oleg Litovchenko who is also joint CEO and commercial director and three of Aeroprakt's financial backers. Finally, it was great to meet Anya, my day-to-day contact at Aeroprakt.

Aeroprakt are now manufacturing close to six A22 every month - a mixture of the



European A22L and the Light Sport A22LS. They are planning to increase production further as order books are now full right up to February 2011 - not a bad place to be during what is supposed to be a global slow-down. The factory can handle up to eight or nine aircraft a month.

Part of my visit was to confirm an allocation of A22's for Australia during 2011, to ensure that customers are not kept waiting unduly long periods once they have placed an order. I believe the allocation system will substantially improve delivery times over the next six to 18 months.

The factory was, as I remembered from previous visits, a hive of activity. New equipment has been installed to speed up production and improve quality by reducing the number of rejected items - for example, a switch to vacuum formed mouldings for some parts instead of hand-moulded fibreglass components. Lighter and better quality parts result.

There are a few new developments in the pipeline - both in the short and longer term - and I'll announce these as and when they become available.

Meanwhile, many thanks to Alex and everyone at Aeroprakt for making my visit so enjoyable.

### Flying tips from the maestro



Yuriy Yakovlev is the designer of the Aeroprakt A22. He is an award winning aeronautical designer trained by Antonov Aircraft after he left university with an honours degree in aerodynamics.

Apart from his aeronautics educational credentials, Yuriy is also a superb pilot, with a brace of European microlight titles to his credit, as well as a raft of other piloting awards. He has several thousand hours of flying experience in the A22 and it was with great delight that I accepted an offer to go flying with him at Aeroprakt's own Nalivaykovka Airfield near Kiev.



It was a hot sunny early July day - temperature in the low-30's, with hardly a

breath of wind. We were flying in one of the Aeroprakt club's yellow A22LS aircraft, fitted with twin yoke controls and centre throttle. Personally, I like the stick control but Yuriy tells me that almost 80% of current factory orders are for the yoke control version.

We took off and flew a long lazy figure of eight over the lush Ukraine countryside - Yuriy is clearly a natural pilot: from take-off roll to straight and level, the slip ball didn't move a millimetre from its central position. He handed over to me and we continued to enjoy the afternoon air, which seemed remarkably smooth after Australian skies, and considering the high-ish temperature.

Then came some take-offs and landings on Nalivaykovka's grass runway 29.

1. First a tip for short take-offs, well known to bush pilots: no flap, apply brakes and build power to full. Release the brakes and (on the A22) at about 30 knots indicated, smoothly and firmly pull on full flap. The aircraft will leave the ground immediately. Hold a level flying attitude at about 20 feet and allow the speed to build to 45-50 knots, start climbing and slowly remove the flap until you reach first stage, then continue to climb out at around 55 knots. Using this method, with two of us on board, we were airborne in around 50-60 metres. And this was a warm day.

2. Landing techniques. Apart from the usual short field landing techniques, like using power and full flap to keep your approach speed as slow as safely possible, Yuriy demonstrated a couple of other landing 'tricks'.

First, as soon as the main wheels are on the ground, remove all flap to get rid of lift and therefore put all the weight on the main wheels. Then you can brake much harder and stop much shorter than when the flap is still down and giving lift.

Second, and this is more of a safety feature for the A22, Yuriy showed me one of his party pieces. We approached to land at a little under 50 knots with one stage of flap. As we approached the threshold, he levelled out at about 15 feet and applied some power to keep us flying level. He then took his hands off the controls, ensured the aircraft was stable, and pulled the power back to idle. With no yoke control input at all and just a touch of rudder to counteract the power-off swing, the A22 dropped gently on to the runway, landing main wheels first, just as it should! It was a strange feeling....next, my turn.

After four or five attempts, I was beginning to get the hang of this type of landing. In fact, most of the problems I had were down to my overwhelming instinct to pull back on the yoke, and flare in the normal way. It didn't cause anything dangerous, just un-tied the landing, which the aircraft seemed to be perfectly capable of completing by itself.

I must stress to all aircraft owners - this technique was demonstrated to me by a very



experienced pilot and instructor, flying an aircraft he designed himself, the A22 Foxbat. Whether this works on any other aircraft I have no idea. You try it at your own risk!

Overall, I had a very enjoyable hour or so flying with Yuriy, which included a broad discussion of his objectives when designing the aircraft. In this case, the proof is in the flying and I am very lucky to be selling one of the best aircraft on the market in terms of safe flying characteristics!

### Broken exhaust springs



While at Aeroprakt, I discussed the causes of broken exhaust springs with Yuriy and other engineers.

As in many Rotax installations, on the A22 the muffler is attached to the exhaust pipes using a total of eight springs - two for each pipe. It has long been a source of interest to me that some aircraft seem to eat springs, while others rarely if ever break them. On the advice of various LAME's, we have tried filling the springs with red fire-proof goo, lock-wiring them in different configurations, even using special hardened (read 'expensive') springs. All with no consistently positive results.

The cause of spring fracture, it seems, is simple: vibration! (Yes, you are thinking. Duh.) But what causes the vibration?

According to Yuriy, 90% of spring-breaking vibration on Rotaxes is caused by the propeller. Most commonly, the pitch of all the blades not being exactly the same. He emphasised that not even a quarter of a degree difference is acceptable. This tends to be more of a problem with stiff, carbon fibre propellers, which transmit vibrations more strongly than more flexible wooden or composite propellers.

Differing blade weights can also be a problem, although reputable manufacturers will always supply a set new blades balanced to within no more than 0.1 grams of each



other. However, as the propeller wears in service, the weight may change and it is important to check individual blade weights every so often to ensure they stay within limits.

Check the tracking of the propeller blades. Composite prop blades are usually bolted individually into a hub. If the blade gripping bolts are not tightened evenly, it is possible to change the tracking. Similarly, the pitch can change if the gripping bolts are tightened unevenly. Even two-blade wooden fixed pitch propellers can suffer if the metal crusher plate is tightened unevenly.

Out of balance carburettors are another source of vibration. After checking the propeller, it is important to dynamically balance the carbs - that is with the engine running: CAUTION! The Rotax website has a good video on balancing your carburettors.

So, if you are plagued with broken springs, or even just the occasional breakage, check your prop and balance your carbs.

#### **New A22s for sale**

I currently have a brand new, white, yoke control A22LS for sale. Located at Redcliffe Aerodrome near Brisbane, the aircraft has only its test flight hours. Unusually for a yoke control A22, it has electric elevator trim. Also wheel spats, strobes and FlyDat instruments.

My current yellow, stick control A22LS demonstrator is also for sale. Under 40 hours, transponder, wheel spats, strobes, etc.

Both aircraft are as new, with no damage record. Please call me on 0413 900 892 if you are interested in either of these Foxbats.