

The Changing Face of Trikes



The first trike I saw didn't impress me much. No more than a hang glider wing with a lightweight frame and a chainsaw engine strapped to the back – unimpressive during the then era of the ultralight. I never flew in one of those bad old boys, at that time I was flying much larger aircraft for the military.

by Peter McLean, Yarrawonga Flight Training

Why Trikes Then?

Eventually though, my wife, Anne, and I made the decision to get into recreational aviation. This meant a rethink of the aircraft we would fly. No more Cessna 210 or Piper Aztec. We would be down to a two-seater aircraft.

We first looked at the Skyfox, as it was the only two-seat, three-axis aircraft at the time designed to be put on a trailer. The only other option was a trike. After flying both, we decided on a trike.

A Little Trike History

Three-axis aircraft have over 100 years of development, whereas trikes (or 'weightshift aircraft') have only a little over 35 years of development.

However, in that short time, development has raced ahead. We have gone from the chainsaw engine to the

Rotax 912, and the speed of the trike has gone from a 30kt machine to over 100kt. The comfort has improved as well. The designers of trikes all over the world have gone from backyard hopefuls to engineers with a Ph.D. in aeronautical engineering and carbon fibre composites.

I met one of these amazing people. His name is Robin Kraike, from P&M Aviation in England. Robin and Bill Brooks are the driving force in trikes in the UK. Bill Brooks is the designer of the new PulsR, and Robin is an engineer and test pilot, and has been a designer of the new wings. P&M said to Robin, "You can design what you like, but just remember, you will be test flying your designs..."

P&M Designs

I would have to say that the new wing designs Robin has incorporated into the Quik range of trikes is amazing and

safe. Robin developed STARS, which stands for Stability Trim And Roll System, and the roll trimmer. I was amazed when I flew the first STARS QuikR aircraft. I was able to fly at a very high angle of bank at very low speed, whilst still having full control of the aircraft. I had the same control at very high speeds.

So what speeds am I talking about? The slowest speed at very high angle of bank was 40kt and the fastest speed at the same angle of bank was 108kt. I am not suggesting that anyone habitually fly these aircraft like this, but like most high performance wings, they normally become very unstable at low speeds at high angles of bank. I felt very safe flying this aircraft. Mind you, when I was in the back seat with test pilot Robin, I saw the aircraft fly like I have never seen a trike fly before! It was amazing, and I have to admit that particular flight was right on the edge of my comfort zone. My students know that I always comment that I will let them get to the edge of their comfort zone, but

they will never get anywhere near mine. Well, Robin had me at the edge of mine and I was nowhere near his!

Then there is the roll trimmer. It just works and the aircraft flies straight or in a controlled turn if you want it to, with no effort at all. All of the P&M's roll trims are attached within the wing, with no need for fins on the wheel spats or dampeners attached to the main mast – which don't work anyway. (These may look good, but really don't do much except make the workload in the cockpit much higher when you are flying.)

I have flown most of the trikes available in Australia, and I would like to say that I don't see a lot difference between them in price. However, flying capability and comfort are another matter. The first big change for me was the Air Creation Tanarg – big and roomy and very comfortable. The flying speed was 10 to 20kt faster than the other trikes around at the time. I still have two Tanargs that I use for training. I then purchased a P&M Aviation QuikR. Well, not quite as roomy and as comfortable as the Tanarg. However, it was fast, and the response on the controls is something to be seen. I love flying the QuikR! At present it is my favourite aircraft to fly.

A Welcome Offer

When I was contacted by P&M Aviation from the UK and asked if I would like to become their dealer in Australia, I admit I like the aircraft and flying it so much that I said to P&M, "Does a one legged duck swim in circles?" Yes, I took on the dealership. Anne and I decided to buy another QuikR, a GT Lite and one of the new PulsRs. The PulsR is not for sale – it's mine! (Well, ours..., or



Tanarg



QuikR



GT Lite



QuikR



Cockpit QuikR



PulsR



Tanarg



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GT Lite

maybe just Anne's and she kindly gives me permission to fly it...)

I was very surprised to find that most of our students want to fly the QuikRs when they are given the chance. I suspect they may have felt it would be too fast for a low time pilot.

The more I fly the P&M aircraft, the more I can see the passion that the workers and designers in the factory have put into their products. Even the accessories have been designed to work in with each of the various new models of aircraft.

I thought that the PulsR was the best weightshift aircraft I had ever flown. There is no wind in the cockpit and I don't wear a helmet or a jacket in this aircraft now. The cockpit is quit warm and you feel very protected. The PulsR flies at a cruise speed of 75kt, however, you can sit on 85kt if you want to. Will I be bringing more PulsRs into Australia? Probably not. Why? It's due to the build time. A PulsR take about eight months to build at the moment. They are an all carbon fibre construction and this aircraft is incredibly strong. So I would need to have at least four PulsRs ordered to make it worthwhile.

The GT Lite is the same shape and looks just like a QuikR, but it is powered by a Rotax 582 oil injected

engine. One of the nice features is the de-icer on the carburettors. This aircraft has a 65 litre fuel tank and a cruise speed of 70kt, so you can really go places in it, without fear of running out of fuel too soon. The best part about the GT Lite is the price. It's half the price of its 912 brother. So if you are flying less than 80 hours a year, this could be the trike for you.

The QuikR is just a great aircraft to fly. I love flying my two QuikRs as they are so light on the controls and the speed is just awesome. Most of the time I am flying along at a speed of 85kt, however if I need to slow down for another slower aircraft, I can just use the electric trim and match their speed, or if I need to go faster, I can, quite safely.

The Next Generation

The new generation of P&M Aviation aircraft has just been released. It's called the HypeR trike. The prototype flew in early May in the UK. It was a great success, but some of the people in the UK didn't like the chisel nose, which was designed to house the landing lights. The factory is now redesigning the nose. However, I think P&M may be listening to people who will probably never buy this aircraft anyway. Once the HypeR goes into



Air Creation Skypper

production I am looking at offering a special one-off price for the first 10 aircraft ordered in Australia.

I love flying a trike, the open cockpit and the visibility is something else. Some people say it is too cold in a trike, but I disagree. The new designs mean that very little cold air gets into the cockpit. Remember, I fly trikes all year round. I can fly an enclosed cockpit any day I like, but I like my trike.

Changes

So after all these years, we still love flying trikes, and we have seen so many changes.

Safety is one of the biggest changes I have seen. However, training to fly trikes has also changed. Gone are the days of training a student to fly a slow aircraft and then being able to jump from one type of trike to any other. I was never able to go from a Cessna 150 to a Cessna 172 without having to do conversion training, but it seems that you can in recreational flying. Not at my school! I have always pushed my students to do as much conversion training as they can or need.

If you have only been flying a slow trike (or if that is what you have trained on) and you intend to buy a faster one, you should have conversion training with an instructor who flies both types on a regular basis. Otherwise you are putting yourself at risk!

When I buy a new aircraft of any type, I will fly it, test it in all conditions for up to 20 hours, before I think of putting a student in the front seat. Quite simply, I don't want to be learning at the same time and rate as the student. I want the knowledge on how the aircraft handles in all sorts of situations and I want to be able to fly out of any unusual attitudes safely. I don't want to be flying around with a student and then find myself in a situation that is unfamiliar to me, when the student is counting on me to keep them safe.

And a last thought for all three-axis pilots (and if you have read this far, I presume you are still interested):

Next time you see a trike flying around, think before you enter the circuit. That trike just might be faster than the aircraft you fly.



HypeR

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