

QUEENSLAND ULTRALIGHT ASSOCIATION

FEBRUARY 2008 NEWSLETTER

Watts Bridge Memorial Airfield, Silverleaves Road via Toogoolawah, Qld

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EVANS HEAD FLY-IN REPORT



Wayne Fisher taking off at Evans Head on another sortie.

Despite constant showers and blustery conditions, the Evans Head Fly-in was conducted over the New Year weekend. A small collection of various types of aircraft flew in for the fly-in. The best attendance was on Saturday with many aircraft in the air constantly, with some carrying people who had paid to experience flying. Each day an airshow sequence was on the go for the many visitors who drove in to see the action. One highlight was the model jet aircraft and helicopters that put on a flying display that at times defied gravity. The turbine powered model jets appeared to fly faster than most of the full sized aircraft that varied from a powered hang glider to some of the ex-military training aircraft. The weather had kept a lot of the other aircraft from attending.



Powered hang glider climbing out after take off.

EVANS HEAD FLY-IN CONTINUED



Kim Rolf Smith's Trojan building speed with the wheels already retracted.



Various aircraft at Evans Head including a tandem gyro.

Several people from South East Queensland had driven down for the fly-in including your editor, and Peter, David & Ian Ratcliffe who were on their way to pick up an engine in Sydney. Ole Jensen and his wife came and stayed on the airfield in their motor home which gave them the best seat to view the flying sequences. In the photos below are the Fletcher crop duster, fly-in organizer Gai Taylor with a Tiger Moth and the Pitts Special that performed aerobatics in the airshow, often in company with the Extra that was flown by the current Australian aerobatic champion. There were many stalls for food and other goods to buy. A Sunday morning market was also held, as well as a display of vintage motor vehicles.



QUA Inc CHRISTMAS PARTY



The QUA Inc Christmas Party was again held in lieu of a normal general meeting in December, 2007. A BBQ and salad was provided for the twenty five or so folk who were able to attend. The photos show some of the members who came including our Technical Director, George Perez who was busily sorting out the technical problems associated with some of the washing up after volunteering for this task. We need to thank again Robin and Lloyd Salisbury as well as our President, Peter Ratcliffe for their input in making the evening possible for our members.



SOCIAL CALENDAR

February 4th

QUA Inc General Meeting from 07.30 pm at Archerfield Aerodrome. This is the first meeting of the year to start the ball rolling. Meet at the SAAA Clubhouse off the Beatty Road entrance. Supper will be provided after the meeting as usual, thanks to Robin.

March 8 - 9th

The Annual Clifton Fly-in is again hosted by the Darling Downs Sport Aircraft Association Inc. at Bange's Airfield at Clifton. On field camping, bring your swag, BBQ on the Saturday evening. Drive, fly or walk in. Contact Trevor Bange 07 46958541 or email trevorbange@bigpond.com

March 21 - 23rd

Natfly 2008 at Narromine. Come for the eleventh anniversary of Natfly. For more information contact the RAAus office on 02 62804700.

April 26th

Lismore Airshow at Lismore Aerodrome, NSW. More details to follow.

TECHNICAL QUESTIONS

At a recent QUA meeting, a question was asked by Col Thorpe regarding the use of filling tyres with nitrogen instead of just plain air, when air is made up of 78% nitrogen anyway. The following information has been supplied by our Technical Director, George Perez to give some reasons for the benefits of the use of nitrogen. As Col mentioned, normal air comprises 1% water vapour and other gases, 21% of oxygen, and 78% of nitrogen.

The reasons that the FAA, US Military, NASA, airlines and motorsport racing such as the NASCAR and IndyCar teams specify the use of nitrogen is as follows. Water vapor and other gases in air escape up to 250 times faster than nitrogen, oxygen escapes three to four times faster than nitrogen. Nitrogen, the largest molecule in air, is dry and non-flammable. Because of their large size, nitrogen molecules are the least permeable and will stay in your tyre longer. It is not about nitrogen, it is about reducing the oxygen, water vapor and other gases. By reducing the level of oxygen, water vapor and other gases in our tyres from 22% to seven percent or less, tyres will maintain proper air pressure longer. For example, if we use 95% nitrogen in our tyres, they will retain optimal pressure 3 to 4 times longer. Three benefits of using nitrogen in car tyres are increased fuel efficiency, longer tyre life and increased safety as under inflation causes 90% of blow outs. NASCAR teams use nitrogen because it allows more precision in anticipating fluctuations in tyre pressure. Fluctuations due to varying temperature are less when water vapor is not present. Higher nitrogen levels also eliminate the explosive properties of oxygen, which loses its explosive properties at around 9% or less.

A tyre filled with nitrogen may lose 1.5 p.s.i. in six months, where as a tyre filled with just plain old air may lose 1.5 p.s.i. in less than one month. The air around us is filled with moisture, which we call humidity. Compressing air concentrates the level of water in it. Small bits of corrosion from metal wheel rims can become stuck in the tyre valves preventing them from seating correctly leading to a loss of tyre pressure.

When it comes into contact with other materials, oxygen causes oxidation, which can make rubber brittle and lose tensile strength. In addition, at high temperatures and pressures, oxygen reacts and damages inner tube liners and belt packages. Nitrogen does not.

Research has shown that nitrogen purity above a certain point does not provide addition benefits. In fact, with nitrogen purity above 93.4% in passenger vehicle tyres, oxygen actually begins to migrate back into the tyre. A purity level of 93 to 98% gives all the benefits of using nitrogen in tyres.

In aviation nitrogen is used in two main areas. The FAA requires the use of nitrogen in aircraft tyres because it reduces the potential for water vapor to freeze at high altitudes. In addition, Boeing airliners use a nitrogen membrane called onboard inert gas generation systems or OBIGGS to layer fuel tanks with inert nitrogen to reduce the potential for explosions as fuel is consumed. NASA and the US Military use nitrogen for similar reasons to commercial aircraft.

Also as oxygen hastens the chemical breakdown and microbial spoilage of many foods, food processors and packagers often use modified atmosphere packaging (MAP) and controlled atmosphere packaging (CAP) that replaces some or all of the oxygen inside the package with nitrogen to help preserve the food longer. This explains why a lot of airline food and supermarket products come in sealed airtight containers.

For us as recreational fliers, how relevant it is to use nitrogen in our aircraft tyres or fuel systems, when most of us usually fly well below the freezing levels of the atmosphere is a good question. As a means to reduce the slow reduction of tyre pressure over extended periods, there may be some benefit for us to consider. How many times have we arrived at the hangar without a tyre pump to find one or all of our recreational aircraft's tyres sagging from loss of air pressure ? If using nitrogen can also increase the life of our tyres, as well as help maintain the correct air pressure for longer periods, the benefits may out weigh the additional costs involved , considering that our recreational aircraft are becoming heavier, faster and increasingly more sophisticated and expensive.

WHERE NITROGEN IS NOT TO BE USED

Airlines all over the world are being warned to check to make sure there's actually oxygen in their aircraft oxygen systems after an embarrassing mix-up by Qantas Airlines at Melbourne International Airport. For ten months, crews have been filling airliner oxygen systems from a nitrogen cart that's supposed to be used to fill tyres. The mistake went unnoticed until recently when an observant aircraft engineer spotted service workers using the cart. "He was walking around the plane and asked what they were doing. When they said they were topping up the oxygen, he said, 'No you're not, that's an nitrogen cart,'" an unnamed source told [The Age](#). As anyone who works with industrial gases knows, oxygen tanks have different fittings than other gases to prevent exactly this kind of mix-up. However, when the crews discovered the fittings on what they thought was their new oxygen cart didn't fit, they swapped them for the ones on the old cart they were retiring. Of course, Australian officials are looking into the error and Qantas has been busy notifying other airlines that use its services in Melbourne. Hundreds of aircraft may have been affected. Interesting.

**NEXT QUA MEETING IS ON MONDAY 4th FEB FROM 07.30 PM
ALL MEMBERS AND INTERESTED PERSONS ARE WELCOME
SUPPER WILL BE PROVIDED THANKS TO ROBIN**

QUA NEWS

QUA Clubhouse update. The clubhouse building approval was passed by the Esk Shire Council in December, 2007. The first stage of construction is expected to commence by the time of the next QUA meeting with assembly to the lock-up stage to follow with in two weeks. The interior fit-out will commence soon after.



QUA member Gavin McGrath has now sold his Pee Wee 11 ultralight and purchased this great looking Zenair 701 STOL plane from North Queensland. On the left we see Gavin with his new aircraft at the time of purchase. When the weather is suitable Gavin plans to fly the Subaru powered 701 down to South East Queensland in company with Greg Kim. We wish Gavin and Greg safe flying as they ferry the 701 south and we look forward to seeing your new plane flying in our local area.

MEMBERS MARKET

For Sale Lea Kestrel, 95.10 single seat ultralight aircraft with an enclosed trailer included. Fitted with an electric start Rotax 503, Brolga propeller, and a well equipped instrument panel. TTIS 450 hours. \$10,500.00 Contact Keith on 07 38627740 for more information.

For Sale Tyro Two, 95.10 single seat ultralight aircraft, flies well. Fitted with a Rotax 377 and a Sweetapple propeller. Usual set of instruments including an hour meter. TTIS 160 hours, hangared at Watts Bridge. Just add petrol / oil and go flying. Give away price at \$4,500.00. Contact Mal on 07 33415348 or 0414723049 for more details.

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QUA Inc TECHNICAL DIRECTOR George Perez
