

QUEENSLAND ULTRALIGHT ASSOCIATION FEBRUARY 2010 NEWSLETTER

Watts Bridge Memorial Airfield, Silverleaves Road via Toogoolawah, Qld

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Greetings, QUA members. Just over a month to go before Natfly. How many of you (us) are heading south to Temora? As you know, I always include a letter from Ian, our Boonah correspondent, and this month is no exception. Here are their plans for the big Easter fly-in. These rag and wire boys are into it:

Hi Arthur. Our Natfly plans at present are as follows: We intend to leave Boonah on Saturday 27th March with first stopover at a private strip (Tony's) near Gunnedah. From there, we will probably go to Narromine, then on to Hillston and from there to Temora, arriving on the Wednesday or Thursday. We've normally had enough of Natfly by about the Saturday and will probably leave Saturday or Sunday at the latest and head to Bright or Yarrawonga. From there we head west to Swan Hill and perhaps Hay before starting to head home with stops at Jerilderie, and Lake Cargelligo on the way back to Tony's at Gunnedah. All of this is subject to variation due to weather or any other unforeseen circumstances so we are not locking ourselves in (also we might hear of someplace better on route). We do need to be back until the Sunday after Easter (4th April) as some have to return to work on the Monday. We are not planning on having a ground vehicle at present (every one wants to fly) so all aircraft will need to be self sufficient. Regards Ian.

The good thing about drifters is that anyone can keep up with them. Also, the Tigers don't mind you tagging along. It's just a matter of getting the time off work. Easier said than done though.

Now let's hear from another bloke who's really into it. Jim Gallagher has been dyno-tuning a Subaru power plant for his Karatoo. He's trying to get the most power for the lowest compression ratio, obviously having reliability in mind. A word of warning – this article is not for technophobes. Take it away Jimbo:

Hi Guys, here are a couple of photos of what I've been playing with lately. Pics 3 to 6 are of my little dyno set up and my Subaru ea81 test engine. You can see my dual ignition, inlet manifold, rotec tbi and reg, Kubota generator, coolant swirl header tank and exhaust system etc. All of these things will be tested extensively and analysed. The engine itself won't be used in my aeroplane. However, if I'm happy with the camshaft, I'll use it in my aero engine. The main testing is firstly for the reliability of the various systems and then tuning the output up or down

to achieve a maximum of 100 hp @ 5500 rpm with the lowest possibly compression ratio. These things are a detonation/pinging nightmare with a poor burning chamber and too much standard compression.

Pics 1 and 2 are to show my firewall template and motor mount system which I would like to say are exactly to the plan but sad to say again the plans are grossly inaccurate. The reason for the dummy up is to weld whatever tabs needed for the throttle linkages setup and make the custom fitted radiator and ducting to be tested on the dyno. So while the motor is set up I'll glue foam all over it and shape the plug for my engine cowl. This is not really in the order I would think of doing things but I'll take advantage of the setup and it's another job to do anyway. OK shut all your windows and doors. I'm off to make some noise and play dynos for a while. Cheers Jimbo



Now, all that arrived at the beginning of the month. Two weeks later came Jimbo's next report (overleaf). More skunkworks-type technical stuff:

Hello again, Guys! I did another run of testing yesterday and again I can see the value of playing around with this thing before I go anywhere near the airframe with it. After studying http://www.arrowheadradiator.com/14_rules_for_improving_engine_cooling_system_capability_in_high-performance_automobiles.htm and talking to a couple of engineer friends who assured me the content is credible, I decided to make my first tests with the coolant flowing through the radiator tubes and “tune” my outlet restrictor to give me around 7 feet/sec through each individual tube. With max power and max cooling requiring around 5000 rpm, this is the test speed. The original test from a couple of weeks ago showed .833 litres/sec from the pump @ 5000 rpm with a 10mm restrictor orifice at the outlet. My target amount is .990 litres/sec so I figured I'd try a run with no restrictor so I could see the window I had to work within. That run at 5000 rpm produced a flow of 1.25 litres/sec. Now I have to work out the area difference between a 10mm hole and the open hole, and then have a stab at choosing the area of restrictor that might work best. But before I sat down to do the maths, I decided to connect the new, dual pass, aluminium radiator that I had just finished to the outlet and factor in the reduced flow from the internal drag of the radiator. With the radiator plumbed in and a test run to 5000 rpm, the flow rate was just a tad over 1 litre/sec. I've decided that will do just fine with no outlet restrictor and this is how I'll take it into the air.....now I know what I have! The next cooling system test will be in a couple of weeks when I have the inlet duct finished and a temporary outlet duct with fans set up. The goal here is to simulate a full-power take off and get at least 35 knots through the inlet duct opening. If the fan set I have isn't powerful enough I'll keep adding fans until I get that speed. I'd hate to be just over the fence and see my coolant temp gauge wind off the clock (and then really have to test out my low level endorsement).

The other test I did yesterday was with the dyno cooling system all put back together. I tested the AFR (air fuel ratio) and the EGT (exhaust gas temperature) on both sides, mainly to see overall best power mixture and mixture difference on each side. This gives me an look at my self-made inlet manifold distribution. What I found wasn't that surprising. The best power is at an AFR of 11.2 /1 at the collector (bit rich) and with that AFR at cruise power (60 hp @ 4600rpm), I find I have a bit of work to do with the manifold because my EGT's were 100deg F hotter on the left side. That means flowing the manifold on the flow bench with the TBI (Rotec throttle body injection) on and setting the cruise opening and then looking at any differences in flow from one side to the other. The situation is most likely caused by having to lay the TBI over (for cowl clearance) and TBI being a slide system opening from one side and therefore biasing one branch of the manifold. I expect the remedy to be either adding an internal deflector or angling the TBI horizontally. I may try first off to add one of those intake cyclone (swirl) generators that are meant to mix and distribute the intake charge better for a better burn. All very interesting stuff, so I'll keep you posted on how that progresses. The real eye opener for me at the end of the last test was the water-heated de-icing adapter I've made and fitted to the inlet side of my TBI. This totally vapour-locked the TBI and the motor went extremely lean even with the mixture ball to the wall rich. It finally quit running altogether from 3500 rpm. I quickly removed the fuel inlet fittings to find that chamber completely empty and the whole TBI too hot to touch. I then carefully poured a little petrol into that chamber and it boiled violently! So, no doubt at all about the question of whether or not the water heater will cause a fuel vapour lock. The answer is YES! I will now have to decide if I'll leave it off and use some other method. I might have a cable-operated tap and use it as a pilot-operated system when the conditions warrant it.

That's it for now. My next dyno session won't be for a couple of weeks. Cheers Jimbo

Now, to a fly-in nearer to home. The Clifton Fly-in is on Sunday 14th March. I'm hoping to get there. Are you? See overleaf:

Darling Downs Sport Aircraft Assn Inc
offers

"Annual Clifton Fly-In"

Latitude S 27 55.66 Longitude E 151 50.85 Freq 126.7 multicom
Elevation 1500, Runway 06/24, 800meters. Right hand circuits for 06
6 km west of Clifton, adjacent the Clifton-Leyburn Road, 24 nautical miles south of Toowoomba

Sunday 14th March 2010
from 8 am

- Pilots please register at Canteen upon arrival
- Pilots and crew welcome to stay Saturday evening 13th for a BBQ dinner, hangar talk and what's not happening in aviation
- On field camping, bring your swag
- Sunday Morning Breakfast advise for catering please
- Avgas/Mogas by arrangement
Cheque or cash

see various types, shapes sizes and models of recreational, ultralight and homebuilt aircraft including sport, vintage, general aviation and any other flying machine

Open to the Public, no admission fees

Fly or drive in, bring family and friends for an enjoyable outing

**FILLET STEAK BURGERS TEA, COFFEE, COLD
DRINKS**

for Clifton Airfield details: refer to ERSA

Fly-In Information phone 0429 378 370 or a/h 07 4695 8541

Email: trevorbange@bigpond.com

Some other important aviation dates:

Feb 27-28 Watts Bridge, QLD, AAC QLD Practice in the Box Weekend
Feb 27-28 Denmark, WA, SAAA WA Regional Fly-in
Feb 27-28 Ravensthorpe, WA, Wings & Wheels Festival
Feb 27-Mar 1 Denmark, WA, SAAA Chapter 13 Denmark Fly-In
Feb 28 Wollongong, NSW, Wings Over Illawarra 2010
Mar 6 Luskintyre, NSW, LAFM Lunch with the Tiger Moths
Mar 6 Wagga Wagga, NSW, BBQ Lunch Fly-In
Mar 11-14 Dubbo, NSW, ABS BPPP and Ground School
Mar 13 Jacobs Well, QLD, Rag, Tube and Wood Fly-in
Mar 13 Bairnsdale Airport, VIC, Official Club Opening
Mar 13-14 Port Macquarie, NSW, Flightfest Port Macquarie
Mar 14 Clifton, QLD, Annual Clifton Fly-in
Mar 17-Apr 20 Adelaide to Canberra, SA, The Great Australian Air Race
Mar 19-21 Merimbula, NSW, International Comanche Society Merimbula Fly-In
Mar 20 Yarrowonga, VIC, Lightweight Aircraft Association Fly-In
Mar 20 Melton Airfield, VIC, Houdini Centenary of Flight
Mar 20-21 Hamilton, VIC, Hamilton Aero Club Fly-In
Mar 20-May 13 Bendigo, VIC, Millions Against Malaria
Mar 21 Parafield Airport, SA, 8th Antique & Classic Aircraft Air Display
Mar 21-27 Yarrowonga, VIC, Nax-Ex Squadron Fly-Away

Free to good home:

One vintage Rally 2B ultralight aircraft. No engine, propellor, wheels or instruments. Generally poor condition but 80 percent complete. Suitable for restoration for static display or as spares. Contact Mal on 07 33415348 or 0414723049

And yes, Mal's Himax is still for sale at this ridiculously low price:



For Sale is the **JDT Himax** as pictured on the left. This great little fully enclosed, single seat 95.10 recreational aircraft has only 150 hours recorded on the hour meter since completion in 2006. A **Rotax** 447 engine, **Sweetapple** propeller, compass, ASI, altimeter, tachometer, dual CHT & EGT, hour meter, Vertex radio and Garmin GPS are fitted. Handling of this aircraft can be described as stable with a docile stall at 25 knots and very easy take off and landing characteristics. Cruise is 50 knots with a fuel flow of 12 litres per hour from the 40 litre dual wing tanks giving a range of over three hours. Price is a low **\$9,900.00** Contact Mal McKenzie on **07 33415348** or **04141723049** for more details.

QUA Meeting Dates 2010

March 6th at Watts (Saturday)
April 12th at Archerfield
May 10th at Archerfield
June 5th at Watts (Saturday)
July 5th at Archerfield
August 2nd at Archerfield
July 10th at Archerfield
September 5th at Watts (Sunday)

October 4th at Archerfield
November 1st at Archerfield
December 5th at Archerfield (Sunday)
May 22nd All in Fly in
Poker Run/Christmas in July
November 28th QUA Xmas Party at Watts?

A letter from Bruce:

Dear RAPAC Members,

Recently and increasingly aircraft flying in Australia have had, from time to time, severe radio interference from transmitters which have become unstable e.g. broadcast, TV, etc. These off-normal frequency transmissions can occur on RPT or GA/CTAF used frequencies and in these cases is usually an aircraft only situation where ATC cannot hear the interference on the ground. When ATC can hear the interference then the next available Airservices maintenance team will investigate, time and resources permitting.

Recently Broken Hill area had a hash problem on 126.7 MHz in the vicinity of the airfield but aircraft could not hear the interference on the ground. The fault was reported by RFDS and local flyers as occurring in the Northwest sector only. Airservices with the aid of this information was able to find the faulty transmitter which was located near a large slag heap close to the airfield thus causing a dead zone of hearing on the airfield. The lack of interference occurring on the airfield was a contributing factor in analysing where the source emanated from. The transmitter was turned off until repairs were carried out.

Airservices Australia is writing to all RAPAC Members to enlist their aid throughout Australia to assist us by reporting any information that would help in stopping these spurious and sometimes continuous interfering transmissions. If all RAPAC Meetings agree, we will contact the Aero Clubs and Flying Schools in the area where a problem is occurring requesting them to monitor and report, when time allows, any details about the frequency of concern. The faster we can stop these transmissions, the safer the skies will be.

Regards,

Bruce Bilton (Airservices Australia)

A new type of antenna

It's called a Miracle Airwhip ELT antenna and it cost me \$US99 from Spruce and Specialty. It arrived this afternoon and it is so small I wonder why it cost so much. It's made to go in the nose of composite aircraft and doesn't need a ground plane because it's half a dipole in length. The best part about it is that installation is simple. Just run it up under the floor beneath your legs, then between the rudder pedals, up around the nose cone and back to the top of the instrument panel. Place a few patches of fabric tape over it at appropriate intervals and screw the BNC connector into the back of the radio. Seemingly, it could not be simpler and should take about five minutes. Well, that's the theory. I'll let you know in the next newsletter how it goes in practice. The reviews tell me that it should work very well though.

One thing to note is that there are two models on sale, the comms type and the ELT type. They are supposed to work equally well for comms but the ELT one has a longer lead. The picture in the S&S online catalogue is of the comms model but they are actually selling the ELT type. So don't be confused.



Now, scroll to the next page and be surprised. Wouldn't a little diplomacy have helped here? Membership input perhaps before handing down from on high.

RECREATIONAL AIRCRAFT AIRWORTHINESS NOTICE
AIRWORTHINESS NOTICE IDENTIFICATION NUMBER: 150210-1 (Issue 1)

COMPULSORY USE OF NEW AIRCRAFT REGISTRATION CARD AND PLASTIC POCKET

To: All owners and operators of Aircraft: It is required that all aircraft registered with RAAus have a registration card which can be read from the aircraft wing tip.

Background: Several aircraft have been found to have RA-Aus Registration Numbers on them but have either expired registrations or are unregistered, with a few never having been registered.

Discussion: The circumstance outlined above is a major concern to the RA-Aus Board and Management, since the operation of unregistered (that is an aircraft which is not or has not been registered or an aircraft where the registration has expired) is illegal. An aircraft ceases to be legally registered at midnight on the date indicated on the registration certificate or plastic registration card. Operating unregistered aircraft is a very serious offence and often brings the organisation into disrepute, which is a major embarrassment to RA-Aus. To help overcome some of these problems a new registration card has now been sent to aircraft owners. This card has the expiry date in large numbers and letters across the centre of the card. This has several advantages including that it is obvious when the registration expires, and the expiry date can be read from a distance.

Action Required: ON RECEIPT OF A NEW REGISTRATION CARD :

The owner of any aircraft registered with RA-Aus must place the card in a position where it can be read FROM OUTSIDE of the aircraft, in fact from the aircraft's left wing tip. With this new card you will be provided with a self-adhering plastic wallet; this wallet as been tested on plastic surfaces and should not cause any damage to aircraft surfaces (with the exception of fabric). The new registration card will fit into this pocket. On receipt of your new card and pocket, the pocket is to be placed in a position on a flat surface at the rear of the canopy or windscreen **where it can be seen from the left wing tip.**

In cases where this cannot be achieved, the pocket can be placed on a flat surface in a holder in an area of the fuselage where it will not disturb the airflow with the opening to the rear of the aircraft, and can be seen clearly from the left wing tip. The new registration card can be placed into this pocket with the date facing out and be replaced at each renewal. Note: the pocket is clear so that it can be placed on the inside of the canopy or windscreen, with the expiry date facing out.

Recording: Completion of this AN must be certified by the aircraft's owner or their agent in the aircraft log book quoting **AN 150210-1 (Issue 1).**

The next QUA meeting is this Saturday March 6th at 10am at the Watts Bridge Clubhouse with a BBQ to follow.

QUA INC - 45 MEMBERS AND STILL GROWING - JOIN US

PRESIDENT: Peter Ratcliffe 0418159429 TREASURER: Ian Ratcliffe 0418728238

SECRETARY: Mal McKenzie 07 33415348 Email: mmc80789@bigpond.net.au

NEWSLETTER EDITOR: Arthur Marcel Email: a.marcel@optusnet.com.au

QUA Inc TECHNICAL DIRECTOR: George Perez 0423536380

MINUTES OF FEBRUARY 2010 GENERAL MEETING

MEETING OPENED	08.00 pm on 1 st February, 2010.								
APOLOGIES	Richard Sweetapple								
VISITORS	Neil Bowden								
ATTENDENCE	Fifteen.								
PRESIDENT'S REPORT	<p>Thank you to Robin for organizing the Christmas Party. Clubhouse Broken glass in rear door has been repaired SRC suggested we look at available grants to complete the clubhouse more quickly. Final Inspection not passed due to the incomplete kitchen and toilet areas. The basic building is approved, however. An extension has been applied for. All in Fly in planned on May 22nd 2010 at Watts Bridge. Send relevant QUA aircraft photos to Peter Ratcliffe for a display board to be set up at the clubhouse for the Open Day.</p>								
TREASURERS REPORT	<table><tr><td>Opening Balance</td><td>\$ 6,484.29</td></tr><tr><td>Plus Deposits</td><td>\$ 100.16</td></tr><tr><td>Less Withdrawals</td><td>\$ 250.00</td></tr><tr><td>Closing Balance</td><td>\$ 6,334.45</td></tr></table> <p>We have lost contact with Peter McCormick who is behind in hangar rent again. Legal action is being considered.</p>	Opening Balance	\$ 6,484.29	Plus Deposits	\$ 100.16	Less Withdrawals	\$ 250.00	Closing Balance	\$ 6,334.45
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SECRETARIES REPORT	Human Factors course is being planned at Watts Bridge by Kevin Walters on Saturday 6 th February, 2010.								
WBMA REPORT	<p>The full time caretakers, Bruce & Mary Clarke are on site. A power surge damaged the fuel depot electronics. The toilet block is not pumping due to damage to the pump. UAV Group is operational mid week with training. The old Fordson tractor and slasher are for sale. Good rain and wind at Watts recently. Grass is green. Usage fee applies to commercial operators i.e flying schools. A joining fee now applies for new members at WBMA.</p>								
GENERAL BUSINESS	<p>Discussion on the proposal of having the RAAus AGM at Natfly each year so more members may attend. Due to the RAAus Constitution, this may not be possible to change. The RAAus Board Members are elected to represent the members and attend various meetings. Suggest the QUA Secretary contact the three local RAAus Reps with a request to attend our next meeting. Suggestion for hangar tenants to use a pre paid authority for hangar rent and other fees to encourage active flyers and QUA members to use the hangar. Will has been developing the QUA webpage. An administrative password is required to add photographs and captions. Members are invited to participate.</p>								
THANKS	To Robin for providing the supper.								
MEETING CLOSED	09.21 pm. Next meeting is on Saturday, 6 th March at Watts.								