

QUEENSLAND ULTRALIGHT ASSOCIATION

MARCH 2010 NEWSLETTER

Watts Bridge Memorial Airfield, Silverleaves Road via Toogoolawah, Qld

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16 PAGE NATFLY BUMPER EDITION



Jim Gallagher on short final in a Technam Sierra (hired). Jim is the good-looking guy in the left-hand seat. Jim is also a keen aircraft builder as well as a pilot. He is currently bench testing a Subaru motor for his Karatoo project (as described in last month's newsletter). We'll hear more from Jimbo later.

These shots were sent in by Mal McKenzie. They were taken from the X-Air while flying around the Watts Bridge area in February.



Sunday in March fly-in at Clifton. Weather not the best but everyone happy.





Technophobes go to page 7 for more pictures. Tech-heads, read on. Jim's research has relevance for other members. At least one other Subaru auto motor is being bench tested in QUA and that belongs to Col Thorpe. All yours, Jimbo:

Hi Guys. The testing up to this point has been mainly around the cooling system. I needed to satisfy myself that the systems I have designed will cope. I feel that the performance I have had from the inlet duct on the front of the radiator is more than adequate. So too the performance of the fans which draw from the rear (they are mounted in a cone-shaped box sealed to the radiator). The estimated airflow into the inlet on the test bench was most likely no more than 20knots with all 3 fans running. That is well below what the airflow will be during climb at full power (97.5 hp @ 5200rpm). On the bench, the cooling system easily maintained temperatures within limits for a few minutes at that power setting. I also ran the motor at cruise power (60 hp @ 4600 rpm) for quite a long time without a problem.

My next challenge was the charging system (a Kabouta generator) and I'm also happy to now tick that box. At cruise power with the fuel pump (I plan to run gravity except on climb out) and one ignition running there is 14 volts with at least 6 amps going back to the battery. That should cover the radio and strobe with enough left to cover a normal amount of cranking deficit.

My biggest challenge was getting the mixture even on each side. Remember (last newsletter) that while collecting data on EGTS (Exhaust Gas Temperatures) and AFRs (Air Fuel Ratios), I had the problem of running richer (12.1) on the right side and leaner (13.2) on the left side. At the time of building the inlet manifold, I had hoped to equalise mixtures and flow rates by being very precise with distances and angles in the runners, plenum and TBI (Throttle Body Injection) attachment spigot. So I was quite surprised to see such a vast difference.

The TBI was lying on its side (for cowl clearance). From my testing and development of cylinder head ports I remembered that to help the flow turn in a port sometimes I had to create a flat surface perpendicular to the flow on the short side of the port (sort of like an offset stepped exhaust port). This would create a turbulence pulling the flow in toward the turn. This was exactly the situation I had here. The shape of the TBI was biasing one side of the manifold over the other.

How to solve it? I could have introduced a baffle deflector, but that would have been very restrictive at full power. What if I angled the TBI to open out the tight side and tighten up the easy side? Full throttle should be OK in that situation because full power is for take off and the first part of the climb when mixture is full rich. So I tried it - cut, set, weld and back on the dyno!

Success! The mixtures at cruise power were just about even - 12.4 AFR on the right and 12.2 AFR on the left, and the EGTS were much closer as well. At full power rich, both sides flicked around the low 11's. Excellent! I was super happy with that, so this is how I'll take it into the air.

Also, prior to this test, I changed the fuel to 100LL (so I could read the plug, pipe and chamber colours). I set up a cable-operated distributor advance/retard system to have a look at timing requirements. I adjusted the timing while holding the throttle flat open and I found the motor did not produce a single extra HP past 26 deg of total timing. At the moment, this test engine has 9.7 to 1 compression (standard heads with .035 off the block for squish/quench), so I suspect that, at 8.3 to 1 on regular unleaded (that's how I intend to fly it), it may require up to 30 degrees.

After that test, I pulled the plugs out and found the colours pretty good. Then I pulled the pipes off and found the colour very even. Finally, I took the heads off to find the colour also very acceptable. Now I'm getting set up for my next and hopefully last round of tests. I'll be bringing the compression down to 8.3 to 1 with regular unleaded fuel, checking power levels, throttle openings for cruise and full power, and timing. Hopefully, I'll only lose 5 to 10 HP. I'll be happy to finish with anything over 90 hp because I know I'll get a bit back with a nice set of mandrel pipes and a fresh engine.

Cheers, Jimbo

From Nick Sigley (sorry for the delay in printing this, Nick)

Thanks for the newsletter it's a good read. Sorry it took me a while to get around to reading it. The part about your support for changing the AGM to coincide with Natfly is great news. Since getting on the board I have been told all the reasons why it would be better to have it in Canberra, but John McKeown is right – almost nobody shows up (having it on a Friday doesn't help). I realise that there is not much time but if the club feels the AGM should be at Natfly then if you can get an email petition or something going so that it can be taken to Canberra, preferably before Wednesday the 24th of February. It would be helpful.

Thanks again, Nick Sigley

Now, in the beginning there was the word... and the word was: (PTO)

“If it flies, it’s welcome at Watts Bridge” – whatever it might be!”

**WATTS
BRIDGE
MEMORIAL AIRFIELD INC.**

**All-In Fly In
Airfield Open Day
22nd May 2010 9:00AM - 5:00PM**

All pilots and aviation enthusiasts are invited to attend the Watts Bridge Airfield Open Day celebrating the diversity of recreational aviation.

**If it flies -
It's welcome at Watts Bridge !**

Vintage Aircraft
Aerobatic Aircraft
Recreational Aircraft
War Birds
Gyroplanes
Homebuilts

**All day catering by
Brisbane Valley Christian Church**

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For more information visit
www.wattsbridge.com.au

**Yes, the newsletter went south to Temora. Photos start bottom of next page.
Mike and Precilla Smith were also there in their tail-dragging Jabiru (but no pic).**

Another local fly-in:

Gympie Aero Club would like to extend an invitation to your club members to Gympie Aerodrome on Sunday 16th May for an inter-club competition day, complete with trash and treasure market. All aviators and members of the public are most welcome. Come along and for a small donation convert your trash to someone else's treasure. While you're there, check out the static display of aeroplanes and cars (yet to be confirmed). Watch the flying competitions and/or compete yourself. Why not represent your club? The fun commences at 9.30am with a pilots' briefing. There will be spot landings, flour bombing and much more. There will be a small entry fee of \$15 per competitor. BBQ and cool drinks will be available. Details will be updated on the club website:

www.gympieaeroclub.com.au, the email contact is admin@gympieaeroclub.com.au or you can phone the Club President, Graeme Alexander on 0408 864 584. Please let us know if any of your club members are interested in taking part.

Kind regards, Deb (Deb Wagner, Secretary, Gympie Aero Club)

And the Caboolture Gliding Club is returning to Watts Bridge on the 1st, 2nd and 3rd of May for a weekend of gliding fun.

Here are other events you can go to if you've got the time:

Apr 10-11 Cummins, SA, Cummins and District Bendigo Bank Airshow
Apr 11 Cummins, SA, Cummins District Community Bank Airshow
Apr 14 Essendon, VIC, 'Managing Airservices Australia's History'
Apr 17-26 Dinner Plain, VIC, 2010 North East Victorian Safari
Apr 18 Novotel Brighton Beach, Sydney, NSW, Single Pilot HF Seminar
Apr 18 Aldinga, SA, Vintage and Classic Fly-In
Apr 18 Tyabb, VIC, 'A Century of Australian Aviation'
Apr 18 South Perth, WA, Red Bull Air Race Aboard the Paddle Steamer Decoy

NATFLY 2010 TEMORA

Seven hours one way. A lot to see out the windscreen of a Sapphire. I kept being overtaken by faster Queensland aircraft and some of them passing very close. I got so worried about being hit from behind in these days of GPS track keeping, that I flew lower and a bit to the west. Narramine to Temora on Friday afternoon was like Roma Street at peak hour. Temora CTAF was non-stop chatter. I heard Mike's voice as he tried to move his Jab. At least six in the circuit. Acres of parked planes, hundreds of pilots, spectators and officials, flags, bunting – all the razzamatazz of carnival time.

Friday evening with the sun low in the sky.



Under-wing camping



Five Corby Starlets but very few single-seaters at Natfly. There is definitely a swing on towards two-seat aircraft.



Indeed, true ultralights were conspicuously absent. An era has come and gone. Should we change our name?



Queueing for Happy Hour



Everyone's gone to the pub at this stage.



The owners of these planes must be staying in the local hotel



Saturday morning ready for the judges



Not so ready. Wake up! Too late to catch the departing Boonah caravan. There were at least ten Flying Tigers there.



It seemed as if half the planes at Natfly were Jabs. If there was ever a race, Jabiru have certainly won it.



A trip to the museum. This Sabre was recently flown for the first time in decades.



A genuine Mig-killing Meteor



No replicas here, Mike and Terry!



I took this one for Jimbo. Something to aim at.



An impressive display from the Martin amphibian. This plane really goes. It has a huge range.



Not sure what this is, but when it left on Saturday evening it went over the horizon like a WWII fighter.



Who said that foxes don't swim, or that bats don't like water?



Only the extended bubble canopy betrays the lines of this three-quarter scale Mustang.



According to Terry Cronk, the prop alone is worth \$30,000. Wonder what the paintwork cost?



The latest Quicksilver GT500 from Newcastle. At \$60K+ for DIY, no wonder the \$63,000 JI20 flyaway is selling well.



Alistair and Geoff from Moama NSW build these Gyros. The test pilot put on an incredible display.



Who needs a helicopter? These babies will turn on sixpence and they have an unlimited rotor life!



The undisputed champion of the show (technical knock-out in the tenth round). Go the Maroons!



Martin Hone's amazing Spacewalker from Queensland. I met him again at Moree on the way home.



The next QUA meeting is Monday April 12th in the Archerfield Terminal Building at 8pm. Be there or be square!

QUA INC - 45 MEMBERS AND STILL GROWING - JOIN US

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MINUTES OF MARCH 2010 GENERAL MEETING

MEETING OPENED	10.00 am on 6th March, 2010.
APOLOGIES	Arthur, Vern, Lloyd & Robin, Mal, Sandy & Bill Oates
VISITORS	John McKeown
ATTENDENCE	Eleven.
MINUTES ACCEPTANCE	Proposed by David Ratcliffe Seconded by Minutes accepted as accurate from February
PRESIDENT'S REPORT	Talk given on the overdue hangar rentals by some tenants. Motion proposed to take possession of Peter McCormack's aircraft with its future sale to recover outstanding hangar rent. QUA Inc has been unable to contact P. McCormick in recent months. Legal advice has been received. Hangar locks are to be changed with new keys issued. Proposed by Peter Ratcliffe Seconded by Ian Ratcliffe Motion Passed
TREASURERS REPORT	Opening Balance \$ 6,334.45 Deposits \$ 410.00 Withdrawals \$ 85.44 Closing Balance \$ 6,659.01
	Motion received to transfer \$5,000.00 into an investment account. Proposed by Richard Faint Seconded by Motion Passed Ian Ratcliffe to investigate the best account to use.
SECRETARIES REPORT	Mal still on holidays
WBMA REPORT	Peter Freeman talked on what is happening at WBMA.
GENERAL BUSINESS	Motion received to purchase a new fridge up to \$800.00 in cost. Proposed by Danny Fowler Seconded by David Ratcliffe Motion Passed Ian Ratcliffe to arrange the purchase & delivery.
	RAAus Board Member, Peter McKeown gave a talk on what is happening in the RAAus.
THANKS	To Peter for the BBQ after the meeting.
MEETING CLOSED	11.12 am. Next meeting is on Monday, 12th April at Archerfield.