

QUEENSLAND ULTRALIGHT CLUB

May 2003 News Letter

Watts Bridge Airfield - Silver Leaves Road Via TOOGOOLAWAH QLD

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Please be sure to send your annual subs to the treasurer as soon as possible as all funds will be required for the clubhouse, **only \$40.00.**

No joining fee will apply to any new member. Just e-mail me for an application form and I will e-mail in Word Format.

Also any person wishing to receive the e-mail please e-mail your address to andydunlop@dodo.com.au or if you know other people in the aviation fraternity or interested please submit their address as well.

President: Michael Smith (07) 3206-3548

Treasurer: Richard Faint (07) 3818-1988

Secretary: Peter Fraser (07) 3267-7297

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Corvair KR2S Engine

I had previously planned to use a VW Type 4 for my KR2S, but heard a forum given by William Wynne on the Corvair engine at Sun N Fun in 1999. He was preaching the Corvair gospel, and it made perfect sense to me. I "saw the light", and this web page will be the story of how I converted my Corvair engine for aircraft use. I don't claim to have pioneered this procedure, but have seen the work of those whose sites are listed below and am doing my own thing. The bottom line is that the Corvair is certainly the most inexpensive way to get over 110 reliable HP into an airframe.

This is my 110hp Corvair engine, now on it's way to becoming a 130 hp 191 cid (3100cc) aircraft engine. While it wasn't legally a "basket case", most of it DID come in a blue plastic BUCKET, rusted to the max! But what do you expect for \$100? I have literally "thrown money" at mine, and have spent \$4000 on superfluous stuff like big bore pistons and cylinders, roller rockers, racing studs, etc, and this includes prop hub and everything that it takes to make the engine run. That's just about everything new except case and heads. You couldn't DREAM of rebuilding an 0-200 for twice that! But I think you can easily build a stock 110 hp engine with all new bearings, pistons, rebored stock cylinders, etc, for \$2000. Pat Panzera says he has \$2500 in his.

How will I get 130 hp (at 3500 rpm) from a 110hp engine? Well, ditching the power-robbing blower fan will save me 8 hp. I figure 180 mph wind coming in the cowling will do just fine. An OT-10 cam will certainly help, as will the 40DCOE Weber dual throat side draft carburettor with each barrel feeding a bank of cylinders. And most of all, a 15% increase will come from installation of Bob Sutcliffe's SC Performance 3100cc "Mighty Mouse" big bore 94mm VW piston/cylinder set. And then there's the roller rockers, Total Seal rings, 3 angle valve job, minor head porting, etc.

I've walnut blasted the engine case and heads, along with all the other aluminium parts, and they look positively new now. It's amazing what a few minutes in a blaster will do for the appearance. I've completed the valve job, cc'd the chambers, and equalised chamber volumes. The crank, rods, pistons, harmonic balancer, flexes plate, and flex plate adaptor have been dynamically balanced at a local speed shop. I've measured the cam and

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My engine ran for the first time on May 26th, 2002, on William Wynne's test stand at the [2002 Corvair College](#). It leaked a little oil at a loose cover, but other than that, ran very smoothly once the lifters were pumped up. Head temp was below 300 degrees measured at the 3/8" threaded hole at the rear. I'll do better at these measurements when it's installed in the plane. Despite the lack of spinner or cowling, it managed to turn a 58x74 Aymar Demuth prop at 2650 rpm and yielded 216 pounds of static thrust (stalled blades, for sure). This is 300 rpm more than an O-200 could do, and it's not even broken in yet. More importantly, this was running an A-65 Stromberg carb with the small venturi designed for a 65 horse engine! I plan to run a 54" prop at something like 2800-3000 rpm max, so we'll see what kind of pitch I end up with. Whatever it is, it will be wooden and probably 2 blades. Eventually I'll carve my own so I can get the perfect balance.

Since my plane is going to come in right at 700 pounds, and my engine will put out around 140 hp during climb out, I expect it to climb like a rocket! With this in mind, I should be able to use a cruise prop and still have respectable climb, and an amazing top speed. 160 mph should be easily attainable, and I won't be surprised with more.

I plan to use a Weber 40DCOE side draft carburettor, mainly because I have one, I know it's "infinitely tuneable", I know HOW to tune it, it's a very efficient type of carburettor, and it has sufficient capacity for this engine. It also has a fuel enrichment device which ADDS FUEL, rather than STRANGLES the AIR like most other automotive carbs. I'll let you know how it works. Mine's going down below, fed by a NACA duct with a hinged cover that will act to bring in filtered/heated air from inside the cowling (using an exhaust manifold stove) when closed, or unfiltered/pressurised air when open.

Exhaust system will be a stainless steel dual setup, with some sort of mufflers exiting almost parallel to the bottom of the plane in reverse NACA ducts below the passenger compartment. That's in the works soon.

Bottom line is that it's finally finished, except for intake and exhaust system, baffling, and wiring. The rebuild procedure is excruciatingly detailed in the links below.

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Minutes of monthly QUA club meeting.

Monday 03 04 2003

Apologies: Glenda Faint

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Visitors: Robert Cousin.

Chairman: Michael Smith

Minutes of previous meeting were read.

Acceptance : moved Bevan Dryden

2nd Lloyd Salisbury. Passed

Business out of previous minutes : Nil

President's report: Nil

Treasurer's report: Richard. Cash in the bank is approximately 13,754.02.

Secretary's report: Nil.

Social Directors Report: Nil.

AUF report: Nil.

General Business: No general business arising from the minutes. It was suggested that the club purchased a ride-on mower but after some discussion it decided not to be taken to a motion.

Thanks: A vote of thanks to Mrs. Salisbury for the supper.

Meeting closed at: 8.45pm

Next Meeting: 2 June 03 with Margaret Vote as Chairman

Inglewood: This year Inglewood was not considered a roaring success with the Hang Gliders taking advantage of the hospitality offer by the tug people and Dalby. Tanys intends making Inglewood a real success story next year.

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