

QUEENSLAND ULTRALIGHT ASSOCIATION APRIL 2011 NEWSLETTER

Watts Bridge Memorial Airfield, Silverleaves Road via Toogoolawah, Qld

www.qua.org.au

www.wattsbridge.com.au

Sorry folks, but you have missed another bargain. Sandy's Starduster has just been sold. Congratulations go to Mario Mayerhofer!



Congratulations to Deb Follett for achieving your Pilot Certificate. Well done Deb!

Deb started her training a while back flying Jabiru's. Due to a change in flying schools and flying the aircraft that were available, Deb flew several models of Jabiru. The last one being the new J160, that her instructor Wayne purchased recently. Deb has at times expressed her thoughts of the different models of the Jabiru and their strengths and differences.

Deb and Ralph joined the QUA Inc at the last Festival of Flight after showing interest in Mal's X-Air. Mal had his Himax for sale but Deb wanted a two seater. In conversation Mal also learned that they owned a Piper Clipper that was being restored. They were introduced to Sandy and Bill who operate a Piper Tri Pacer at Watts Bridge. Deb and Ralph welcomed the friendly open atmosphere and the fellow flying enthusiasts they met at the QUA Clubhouse.

They also own a farm about 77 nm north of Watts Bridge via Murgon. Recently Deb & Ralph had a couple of runways put in so that aircraft could operate from their farm. The main runway is 500 metres and runs up hill to the tree line above. The cross strip is 300 metres at the lower end of the main strip. As the runways are in a basin surrounded by terrain and trees, landing and taking off can be described as more interesting than usual.



After the Festival of Flight Deb & Ralph bought the X-Air so they would have a plane to fly from their strip while the Piper is restored. The X-Air was the first aircraft to land at the Windera farm. This was done with much caution by Mal.

Following some aircraft familiarization, Deb has been very competent in operating the X-Air from this challenging airstrip as she consolidates her training. With the Pilots

Certificate achieved she is now planning to start her cross country training so they can fly the X-Air on longer flights to Gympie or Watts Bridge.



In the photo above, Deb is tying down that X-Air outside, but space has now been made in the large shed for storing the plane until a hangar is constructed.

Recently Deb donated and planted some shrubs at the QUA Clubhouse to help with the landscaping of the area. They have both participated in the working bees at the clubhouse in recent months plus attended various QUA meetings.

An invitation for QUA members to visit the farm either by flying in or driving has been given by them as well. Deb & Ralph's contact number is 07 41686248 and the airfield's co-ordinates are S25' 57. 261' E151' 46. 367' for the GPS.

Left: X-Air on final for the 300 metre cross strip with Baramba Creek on the left.

**WATTS
BRIDGE**

MEMORIAL AIRFIELD INC.



All-In Fly-In Airfield Open Day

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

The All-In Fly-In is an all day event with on-field catering and coffee available. Entry is free with no landing fees. Aviation fuel is available on the airfield.



Vintage Aircraft
Aerobatic Aircraft
Recreational Aircraft
War Birds
Gyroplanes
Homebuilts



CONTACT

Richard 0412-317-754

Liz 0419-369-963

If it flies ~ It's welcome at Watts Bridge !!
www.wattsbridge.com.au



21st May 2011

9:00am ~ 4:00pm

**Catering by
Brisbane Valley
Christian Church**



QUA March meeting report (with regard to RAAus Board meetings)

At our meeting earlier this month, there were several issues discussed in regard to RAAus board meetings and overall policy. RAAus board member, John McKeown was in attendance.

The sentiments expressed at the meeting were as follows:

1. The minutes of RAAus board meetings should be immediately available to all members via the Internet, prior to ratification. This is the case with unratified minutes from local council meetings and other organisations. Waiting ten months to find out what was talked about is not acceptable. QUA secretary, Mal McKenzie was directed to write to RAAus board members asking for a copy of the latest (unratified) minutes.
2. As of this month, RAAus fees have been increased. John McKeown said that the association's operating expenses had risen sharply. When asked what evidence there was of cost cutting occurring within the association, he said that he was not aware of any. It was the clear concern of the QUA meeting that efforts should be made to control costs. While the meeting noted that the association's new treasurer appeared to have an open and honest approach to the matter, there was opinion expressed that all costs should be tabled, including all staff salary figures.
3. The association's magazine has been being distributed to newsagencies at considerable cost to members. When asked, John McKeown was hesitant to put a figure on it but said that the cost was considerable. The meeting was of the opinion that there is no return for individual members from this expenditure. They were of the opinion that if flying schools and other commercial operations wanted the magazine distributed in this way, then they should meet the cost themselves. John McKeown added that the arrangement with Paragon Publishers was now thankfully at an end and the new arrangement might be more satisfactory. The sentiments of the meeting, however, were unmoved. It was further complained that the magazine was available in the newsagencies up to three weeks before it came to members in the mail. John McKeown was of the opinion that most of the newsagency sales were to members who couldn't wait to get their own copy delivered in the post.
4. The matter of a having a General Meeting at Natfly was raised. Dissatisfaction with what happened last year was expressed. Last year, there was no GM at Natfly as called for, but rather there was simply a discussion meeting. The Board had actually approved a motion to have a GM at last year's Natfly, however their wishes were not carried out. John McKeown said that the Board executive were at fault here for not following through with the motion that the Board had passed. The clear sentiment of our QUA meeting was that there should be an RAAus General Meeting at Natfly, a venue where it is obvious that the greatest number of members can attend.

In fact, the QUA meeting was of the opinion that the RAAus AGM should be held at Natfly. John McKeown said that this would require a redesignation of the RAAus financial year with the ACT Government, however, he also said that this was something that would be quite possible to do.

5. John McKeown said that at the last board meeting, all board members were pressured into signing a confidentiality agreement. John said that he was the only board member not to sign. He said that his personal philosophy was to be part of a board that was honest, open and transparent. He said that he was of the opinion that secrecy breeds corruption, laziness, nepotism and many other ills.
6. The following response was received to our request for a copy of the latest minutes:

Dear Mal,

Providing unconfirmed minutes probably isn't a good idea as the minutes are taken under a fair bit of pressure as the board meeting debate is generally quite robust and there is always the possibility of errors and omissions. Bear in mind that the board meeting always has a significant amount of business to deal with and takes 2 to 3 days of typically 9 hour sessions and consequently generates a lot of material that has to be reviewed carefully in order to ensure a true and correct record of the proceedings. This is of course the reason that the minutes need to be confirmed as a true and correct record of the meeting by the participants. Certainly once this is done there is no problem with making the minutes available to members.

There is a fair amount of work in compiling the minutes both from handwritten notes, from the handwritten motion sheets used and a check of the audio recording of the meeting and this task has to be undertaken by a somewhat overworked volunteer secretary. Once the minutes can be circulated to the board members for checking and response then they are available to members.

My observation of Lynn's work as secretary during my tenure on the board is that he is a meticulous person who brings a high standard of professional endeavour to the job in hand.

I hope that this will give you some idea as to why the availability of the minutes takes time to organise.

Regards
Ed Smith
Board member for W.A.

No further response has been received. Neither has a copy of the yet to be ratified minutes of the last board meeting been received.

7. Editorial comment on this response:

Why do the minutes take ten months to organize? Why are we so different to other organizations, councils, etc, in that we, the members who are paying for these meetings, can't see the minutes until nearly a whole year has passed?

If the board is so hard pressed to come up with true and accurate minutes in a timely fashion, why not spend a few hundred dollars on a professional minute-taker to do it for them. That would not be a big expense comparatively speaking when the board is making decisions about what to do with millions of dollars of our money.

We don't need testimonials. We simply need to see what's happening for ourselves? Why is the executive of this board so obsessed with secrecy to the point of pressuring members into signing a legal document to shut them up?

Gatton Air Park Fly-in, 29 MAY 2011

Come and inspect our unique hill top residential aviation community. Everyone is welcome. There will be a hot breakfast courtesy of the Gatton Lions Club from 0730 Sunday. Saturday night camping will be available under-wing or in hangars with shower & toilet facilities. There will be a BBQ on Saturday night and the use of a courtesy vehicle. There will also be a \$200 award for the longest flight. The airfield details in the ERSA. For more information, phone Martin on 0419 368 696.

Natfly (21st to 25th April)

How many QUA people are going to Temora at Easter? If people driving down have a little room in their boots, it may be a blessing for some of those flying small planes. I remember last year how difficult it was to stuff my camping gear and everything else into an aircraft not quite big enough for it. Please let me know if you have a little extra capacity. Anyone who needs it can contact me as well.

A photo from last year. Some QUA members dropping in at Bradfield.



Sapphire AW notice update [it's not what you know but whom]

Some of you may remember from the May 2010 QUA newsletter that I had wanted to have an Airworthiness Notice posted on the Sapphire's stabilator centring system. Well, I had no success then with the RAA, despite some correspondence (both ways) with Steve Bell. I also asked Nick Sigley to take it up but had no luck there either. Then I posted a review on a recreational flying website, but after an editing disagreement, it was taken down.

I had more or less given up trying to get the word out, when, nearly a year later, John McKeown came to our March meeting. In passing, I described my concerns about the Sapphire. He thought about it for a few seconds, then agreed that it was a serious matter. He said that if he were a prospective Sapphire owner it would be something that he would definitely want to know about.

The next day, John delivered! Despite being flooded to the gutters in January, having a cow on his roof for two or three days, and now being involved in an almighty effort to restart his life, he delivered the notice overnight. The very next day I was sent a draft, already signed, by Steve Bell. Steve said it was the first he had ever heard of the matter. (Don't ask me how.)

Anyway, I couldn't be happier with him. In fact, there is quite a bit more than I asked for. In particular, the notice mentions landing accidents. In this context, there is another feature of the Sapphire worth mentioning. As I understand it, all Sapphires since day one have come out of the same fuselage mould, yet motors have gotten considerably more powerful and correspondingly heavier. My Sapphire has a Rotax 503 weighing close to 50kg, for instance. This has meant that a Sapphire's empty C of G has moved more and more rearwards as the design has been developed. In my plane, the second last one built, it is so far to the rear that I need 14kg of lead in the extreme nose to balance the tail. That's a lot to lug around. I have been told that Sapphires are "set up" for 90 kg pilots. However, any pilot of my plane weighing less than 103kg needs ballast to bring the C of G sufficiently forward. A 70kg pilot without ballast and with 30 litres of fuel would have a C of G at 37% MAC, a full 5% MAC aft of the approved range (29% to 32%). Also, with the wing tanks slightly forward of the approved range, as fuel is used during the flight, the C of G moves further rearwards.

Because of the aerodynamic power of the stabilator, the aircraft will take off and fly OK with the C of G well aft of the approved range, but as the speed comes off and the lift moves forward, the landing becomes difficult. The plane will not flare smoothly and will rear up after the slightest bounce. Three point landings become very problematic. The fact that Rotax two-strokes don't respond quickly from idle does not help.

As with the stabilator centring system, when I bought my plane, there was no advice from anyone or anywhere to inform me about this situation. As it was, the previous owner was quite a bit heavier than me. I should have been more alert to the balance issue, but the fact that it was a single seater without much baggage space was perhaps a little deceptive. So he hopped out, I hopped in and flew the plane home. As with the centring system, I have had to learn by trial and error, and in a big way, I've been lucky. However, there have been unforgettable moments. Of course, I have since done a full weight and balance, a practice that I now recommend be done before buying (and flying) any aeroplane.



Date 08 March 2011

RECREATIONAL AIRCRAFT AIRWORTHINESS NOTICE

AIRWORTHINESS NOTICE IDENTIFICATION NUMBER: RA-Aus 080311-1(issue 1)

ADDITIONAL MAINTENANCE INSPECTION ON SAPPHIRE AIRCRAFT

To: All owners and operators of Sapphire aircraft fitted with a pitch control centring system under the seat.

Discussion: The later Sapphire aircraft uses a bungee to bias the stabilator push rod to the centre and allows some limited trim control. All stabilator systems can be prone to large movements with little input and due to their size can be adversely affected by external (to the pilot) inputs. The system used on the Sapphire dampens some of the effects of these inputs. The result of wear or ageing of the dampening/centring system used on the Sapphire can mean that the stabilator can become too sensitive and be adversely affected by turbulent or changing airflows etc. Several Sapphire aircraft have been severely damaged when crosswinds and air turbulence were evident during landing, takeoff and taxiing: this was possibly due to deterioration in this system

Action Required: **BEFORE NEXT FLIGHT:** Inspect the stabilator centring bungee (located under the seat) for wear, damage, ageing, tightness, and the condition of the attachments. Replace any worn or deteriorated components immediately.

Recommended Further Action: This is a continuing airworthiness notice and the area should be inspected for damage and deterioration and attachment points every 50 Hours. (Coincident with the normal 50 hourly inspection)

Reports and Recording: The initial inspection is to be recorded in the aircraft log book Citing RA-Aus 080311-1(issue 1). Any defect found is to be reported to the RA-Aus office

Technical Manager

Defect Reporting is one of the primary ways we have in ensuring continued safety in our operations.



Peter Freeman's new hangar



All new structures built at Watts Bridge require N4 structural rating (required by SEQWater, SRC and WBMA). Peter's engineering certificate complies. Actually, SRC require hangars in this area to be constructed to Class 7 standards, putting them on a par with industrial sheds.

The hangar is approximately 19m long (plus sliding doors at either end) and is 13.9m wide. The building has a clear opening of 13.1m at both ends and an opened height of approximately 3.5m. How many aircraft it will hold? How long is a piece of string? It all depends on what type and size they are. In theory, it should hold 3 x C172s or C182s. It would take time and care to get them in, but if you were to mix high and low wing aircraft it would become a little simpler. Of course, if they were all Pitts Specials then it would probably hold 6 to 8.

The hangar design is something that Peter developed himself with reference to industrial building designs that he has been involved with over the past 30 years. He did the concept and structural drawings himself, and a cousin converted them into CAD. Then he had a structural engineer check them and advise on any alterations. After that, the engineer issued a certificate indicating that the designs complied with the requirements.

The construction is being done by the local builder who has his sign at the entry to the airfield. In reality, many people are involved because Peter is not one to stand back and let it happen. He believes that it is important to know what you can do efficiently yourself and what it is best to let others do for you. The steel frame was manufactured and erected by a Brisbane company with the site prep and foundations done by the local builder. The local builder has done the concrete floor and will be doing the roof, walls and plumbing. A local electrician will do the wiring when the time comes.

Peter uses local tradespeople as much as possible on any project at the airfield. He says that it not only puts work and income into the local area but he has found that the local tradespeople both friendly and capable, with a wide range of skills. He also believes that their charges are reasonable as well as competitive with city tradespeople. Overall, he is happy with what is being achieved. Well done, Peter.



SAE 30R9 Fuel line – is it worth the extra money?

Last month the newsletter discussed the importance of regularly servicing fuel pumps. This month the discussion is about fuel lines. Firstly, with fuel line, it is very important to use product that is approved for the type of fuel used. ULP, in particular, contains some very aggressive aromatics (it will destroy a pair of rubber gloves about twice as quickly as MEK). I remember Col Thorpe telling me that he once had an engine failure because he used the wrong plumbing with ULP fuel.

Fuel line for non-injecting systems, that is fuel line that is designed to run under 50psi, is rated at SAE 30R7 standard. This is the fuel line normally sold in auto spare outlets. With modern fuels, however, there is opinion that SAE 30R9 standard is warranted, even for non-injection. The following advertisement is from the Gates Corporation, well known American suppliers of fuel line:

“Install permeation-resistant fuel line hose”

Fuel line hoses carry gasoline from the tank to the fuel pump, to the fuel filter, and to the fuel injection system. While much of the fuel lines are rigid tube, sections of it are made of rubber hose, which absorb engine and road vibrations. There are two basic types of fuel hose: Fuel and oil hoses that meet the SAE 30R7 standard, and fuel injection hose that meets the requirements of SAE 30R9.

Standard fuel and oil (SAE 30R7) hose is rated for low-pressure applications at 50 psi working pressure up to 3/8" size, and 35 psi for sizes over 3/8". This general-purpose hose contains a light reinforcement, and the rubber materials can be any compound that is suitable for fuel, oil and vapors. However, Gates Corporation engineers warn installers that fuel formulations at many US refineries are constantly changing as proprietary blends are introduced according to government mandates and seasonal influences. At times, more aggressive fuels can extract the oils that give SAE 30R7 hose its flexibility. The result is a brittle, stiff tube that will greatly reduce the performance and service life of the hose.

Fuel injection (SAE 30R9) hose or MPI (multi-port injection) hose is reinforced to handle higher pressures up to 180 psi. It can be used on all injection systems that use hose clamps. It is not designed to replace coupled assemblies on fuel injection systems. Fuel injection hose is designed for low permeation contact with a wide variety of alcohols, alcohol fuel blends, and diesel fuel. It allows 15g/m²/day permeation whereas standard SAE 30R7 hose allows 550g/m²/day. (Gates fuel injection hose routinely performs at 1 to 2g/m²/day of fuel loss, well below the allowable standard.)

Gates SAE 30R9 hose uses a laminated tube of Fluoroelastomer, as a thin wall inner layer backed by traditional compounds. This first layer protects the rest of the hose from attack, swelling or permeation from aromatics, oxidized gasoline (as can occur in fuel injection systems), ethanol or oxygenate additives and a wide range of petroleum based products. The laminated tube will resist cracking caused by "sour gas," which forms when unused gas is returned to the fuel tank. As an added benefit, this hose construction reduces emissions because fuel can't evaporate through the hose walls. SAE30R9 hose is also recommended for diesel fuel because its fluoroelastomer tube resists deterioration caused by some diesel fuel additives.

As refineries produce cleaner fuels and lower allowable permeation rates during the "vehicle at rest" condition, older hose specifications such as SAE 30R7 are becoming less reliable. This type of hose is no longer specified on OEM automotive fuel applications because of stringent permeation standards.

Therefore, Gates engineers assert that the best choice for automotive fuel line hose applications today is fuel injection SAE30R9 hose. For installers, it is the best choice for reduced comebacks and for high performance, assured trouble free service in a changing fuel environment. Finally, for submersible applications such as on the in-tank fuel pump, only SAE30R10 hose should be used, because when the hose fails, the pump will fail. Hose construction consists of low swell fluoroelastomer compounds in the tube and cover that resist gasoline and diesel fuel permeation and aging. Standard hoses have these fuel-resistant characteristics in the tube portion only. Contact your Gates jobber for information on Gates MPI/fuel injection hose and submersible fuel line hose.

Gates Corporation

PO Box 5887, Denver, Colorado 80217

SKYRANGER AIRCRAFT



The Skyraanger design probably needs no introduction to most of us who follow the recreational aviation scene. Since the prototype was completed nearly twenty years ago, over 1,200 examples have been sold all over the world. In Australia there are approximately twenty Skyraangers flying as GA or recreational aircraft.

At first glance the Skyraanger looks like a copy of the Rans S6 Coyote. However, the airframe structure is entirely different. In the Skyraanger construction all structural tubes are straight with only

some of light weight shape-giving ones like wing ribs and tail feathers being bent. This makes for a simple but very strong airframe assembly.

There are four main Skyraanger models in the range. Firstly, there is the original Skyraanger V-Fun, which can be powered by the Rotax 503 or 582, Jabiru 2200 or Aero-vee 80 hp. Then, the Skyraanger V-Max was developed for the British BCAR-S regulations. Many basic airframe structural design improvements were worked through to meet these strict British regulations. These modifications have resulted in higher airframe strength and more directional stability, plus the use of the Rotax 912 range of engines.

The Skyraanger Swift was developed from the V-Max having increased performance possible from the Rotax 912 ULS 100 hp engine. The Swift has a smaller, lighter wing with some streamlining modifications. This has improved the cruise speed to 85 or 90 knots.

Finally, the new Ninja model (released 2009) is an improved, slightly faster Swift with a fibreglass fuselage skin and a modified fuselage frame. The cockpit area has many improvements with new seats and a more central integrated instrument panel. It is more streamlined due to the new fibreglass skin and winglets.

Cruise speeds of 100 knots are now possible with a Rotax 912 ULS engine. A locally manufactured 90 litre fuel tank can also be used to increase range and endurance.



In the early 90s, Frenchman Phillipe Prevot set out to design a high performance light aircraft of the simplest possible construction, one that could be assembled, inspected, maintained and repaired by almost anyone anywhere in the world. He collaborated with some of the most respected aeronautical schools, ENSICA and Sup Aero. The design criteria was met, and the Skyraanger was born. The prototype V-Fun was built and flown in 1992 with excellent handling and flight performance.



Each year there have been improvements to the design and new patents have been registered. Today, the Skyraanger is manufactured under license by Aeros Ltd to very highest standards and marketed by Best Off Aircraft of France. The ongoing success of the Skyraanger is due to its simple but incredibly strong construction and high performance parameters. They are used extensively in Europe, the UK, NZ and the US as trainers, because of their excellent flying qualities and low operational costs.

In Australia, Skyraanger aircraft are marketed by Greg Robertson. More information is found on www.skyraanger.com.au or mobile 0418585731.

Carburettor Ice [an Internet article sent in by Trevor Bange from Clifton]



William Wynne was the passenger in his Corvair powered Pietenpol when it crashed north of Tampa, Florida, on July 14, 2001. The engine cut off at 700' AGL, which gave only 60 seconds to attempt a restart and execute a forced landing. To avoid people on the ground, the pilot tried a sharp bank and the plane spun in from 80'. The impact destroyed the airframe.

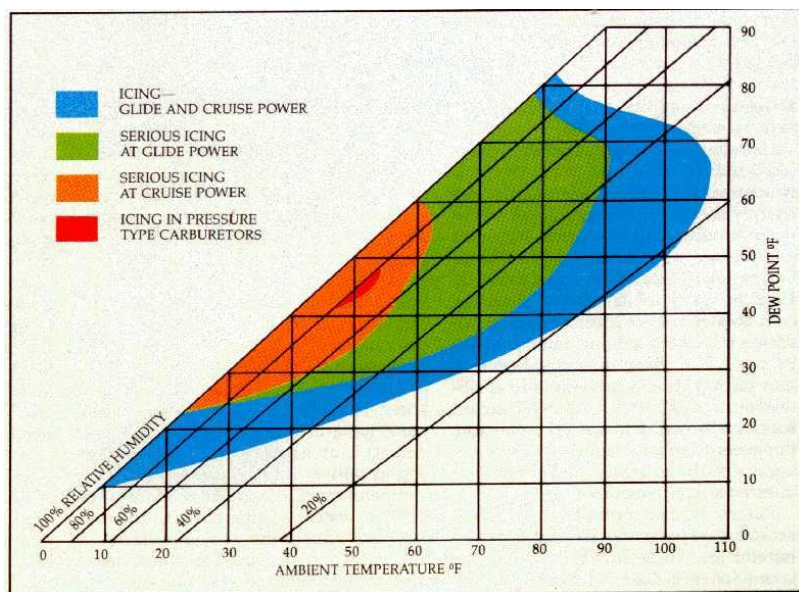
When freeing the trapped pilot, a fire started and ignited William's fuel-soaked clothes. While extensively burned, both William and the pilot survived the accident. An investigation into the engine stoppage has indicated that carburettor ice almost certainly was the cause. Because a few of the engine components were incinerated in the fire, no one will ever be able to say with 100% certainty that carb ice was the cause. The engine was recovered from a wrecking yard where it had sat for months, placed on a test stand, and runs well. The remaining wreckage was examined very closely and no evidence of any kind of failure was found. This mechanical integrity and clues such as visible condensation on the exposed intake manifold just prior to the engine quitting leaves carb ice as the only probable cause fitting not most, but all of the evidence, William said.

A single incident of carb ice hardly seems newsworthy. Most pilots and flight instructors feel they have an adequate knowledge of the subject. However, William's extensive discussions with pilots and builders after the accident revealed that most traditionally trained pilots have little understanding of the subject. The rote memorization of a technique that works on a single aircraft and atmospheric setting does not constitute an adequate understanding of the topic. Further, experimental aircraft may have quite different engine management requirements.

The day of the accident was overcast with the cloud base at 800' and dropping. The OAT was about 70F. The dew point was within 5 degrees. The trip had been 90 miles and the flight was within 2 miles of the destination. The plane had been throttled back to 60mph to allow traffic at the destination to clear. The carb heat control was in the rear cockpit and was not applied.

The engine, a direct drive Corvair fed by a Stromberg carb from a C-85, was turning about 2,200rpm. It had at least 13 gallons of 100LL in the wing tank. Within one minute of the power reduction, the engine quit, William said. It had dual ignition and a restart was attempted on each one. The engine cranked normally, but did not light. Carb heat was not used. The impact broke up the airframe and severed the 3/8" fuel lines to the wing tank.

The airframe ignited about a minute later when fumes from the spilling lines reached a shorting wire. The fire burned for more than 20 minutes, consuming most of the airframe but leaving the engine largely intact.



Many pilots interviewed later expressed the following thoughts:

- 1) Carb ice cannot form at 70F, and certainly not in Florida.
- 2) It would take longer than a minute for ice to block off the 34mm venturi.
- 3) The engine would "run rough" for a while before quitting.
- 4) Ice could not form at 2,200rpm.
- 5) Auto fuel would have about the same potential to ice as 100LL.

Carburettor Ice (continued)

All five of the above thoughts are wrong. If you believe any of them, you are a giant step closer to having your own version of William's accident. Here's why:

1) Ice can form on warm days. Anytime a gas expands from high pressure to low it will consume energy from its environment. In this case, the gas is the air the engine is consuming and the pressure drop is from ambient to manifold pressure, about 30"map to 12"map. The energy it consumes is any form of available heat. Most of the heat comes out of

the air. This temperature drop is instantaneous and can easily be more than 40F. Shoot a thermometer with a CO2 extinguisher and learn.

2) Carb ice forms at the pressure drop point, which occurs at the restriction to flow. At a reduced power setting, the throttle plate is the restriction, not the venturi. At 2,200rpm and 12"map, the throttle plate is barely cracked open. Right at this crack is the idle fuel port, a tiny hole. A minute film of ice could cover it in an instant. The engine will stop running because at power settings like these, most of its fuel comes from the idle circuit.

3) A certified four-cylinder engine of 7 to 1 compression and 190cid swinging a 25-pound metal prop generally will sputter for a while when it is experiencing carb ice. By contrast, a 9.5 to 1 six-cylinder 164cid engine with a 6-pound prop will quit nearly outright. Many Lycoming pilots said their engines gave warning. Lycoming carbs are bolted to the oil sump and experience the onset of icing at a slower rate.

4) Icing has nothing to do with rpm; it results from the pressure drop. Granted, an A-65 Cub with a certified prop is very unlikely to ice at 2,200rpm, but this is because 2,200rpm usually is associated with nearly open throttle on this plane, and consequently very little pressure drop in the carb. However, any motor experiencing a large pressure drop in the carb is prone to ice, regardless of rpm. The motor in N1777W had a static rpm of 2,650. Any motor that has a prop that will allow a similarly high static rpm will be running low map at an rpm like 2,200. A manifold pressure gauge provides useful information that a tachometer by itself does not.

5) Although auto fuel was not being used the day of the accident, pilots need to understand how it can contribute to carb icing. Remember that at a reduced power setting, the restriction is the throttle plate. And when operating at reduced power, there is a large pressure drop at the plate, with its accompanying temperature decrease. Fuel flows out of the idle port in a mist. Misted fuel is still a liquid, not a vapor. 100LL under these conditions remains a mist until reaching the combustion chamber. Contrast this with auto fuel, which by design will vaporize readily under these circumstances. It is a fact of physics that when the fuel changes from a liquid mist to a gaseous vapor, it takes further heat from the surrounding air. This is the cooling one feels when gas evaporates off the skin. This additional temperature drop can produce icing when the same engine under identical circumstances would not ice with 100LL.

In the previous five years, N1777W had flown with more than a dozen pilots and logged hundreds of hours that included several very long trips. William briefed pilots who flew the plane to use carb heat before any substantial power reduction. The carb heat system on the plane was so effective that it produced a 200rpm drop at idle, but still had to be employed as anti-ice, not de-ice. The pilot involved in the accident only had about two hours in the plane, including the final flight.

Although much of the physics of icing can be found in textbooks and technical publications, William's observations on the subject are based upon years of work and actual flight testing. It is the nature of some to debate anything and offer opinions extracted out of context from technical publications. But William adamantly believes that this is a safety of flight issue and people without flight testing experience debating esoteric details dilutes the risk management message. William deems any commentary that hinders the delivery of the message as amoral.

To reduce the possibility of a similar accident, William suggests that potential pilots get a better understanding of icing, more thorough briefings, a panel placard about when to use carb heat, and carb air temperature gauges. William is working on a combined throttle/carb heat lever which would move in concert and have calibrated linkages, but could be manipulated separately for run ups. All of these are small efforts when the price can be the destruction of aircraft and the loss of life.

Article from the Internet. Written by Grace E. Korosec, a freelance writer and pilot who had about 25 hours in N1777W

The next QUA meeting is this Saturday (2nd April) at Watts Bridge at 10.00am. BBQ lit at 12.00pm.

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MINUTES OF MARCH 3rd 2011 GENERAL MEETING

MEETING OPENED	07.54 pm
APOLOGIES	Bruce Clark, Richard & Glenda Faint, Richard Sweetapple
VISITORS	John McKeown
MEMBERS PRESENT	Eleven.
MINUTES OF FEBRUARY	No business arising. Motion to accept minutes as correct. Proposed David Ratcliffe Seconded Col Thorpe Motion carried.
PRESIDENT'S REPORT	Sandy has applied for a grant for the clubhouse solar power panels. Future grant applications will be for the clubhouse completion and a concrete floor for the hangar. SRC require an engineer's certificate & drawings for the QUA main gate sign. The initial sign design was done by Peter Freeman and passed to Ian Ratcliffe for reviewing by an engineer. Clubhouse progress has seen the kitchen tiles fitted, walls painted, and mixer tap fitted. The rain has slowed further progress.
TREASURERS REPORT	Opening Balance \$ 8,152.75 Deposits \$ 1,504.00 Withdrawals \$ 90.00 Closing Balance \$ 9,566.56 QUA Inc now has an ABN number due to the grant applications.
SECRETARIES REPORT	Correspondence sent out to and received from the local members in regard to the grant application. The local members were supportive of this application with their replies. Correspondence with Sandy via email whilst providing information for the grant applications.
WBMA REPORT	Aviation Trader has an advertisement for the All In Fly In. Runways have been narrowed slightly to reduce the mowing. Garbage trailer is being constructed. Deb's plants are doing ok. Neil has acquired another fire extinguisher for the clubhouse.
SOCIAL REPORT	All In Fly In at Watts Bridge on May 21 st 2011
GENERAL BUSINESS	Visit from RAAus board member John McKeown. John mentioned that the QUA Inc be prepared to be more involved in the RAAus, who need to be more open and accountable with their members. Discussion mentioned the current financial situation of the RAAus and the decision to raise all fees to help the shortfall in finances
NEXT QUA Inc MEETING	Saturday 2 nd April at the QUA Inc Clubhouse at 10.00am at WBMA
THANKS	To David Ratcliffe for providing the supper tonight.
MEETING CLOSED	09.02 pm.