

AGC Weekly News

The weekly newsletter of the Auckland Gliding Club at Drury, Auckland

CFI Report April 2023

As we complete the summer season with the departure of our two European instructors and the consequent seasonal weather deterioration, the amount of club flying to date has decreased to 145 hours.

I believe the advent of the summer instructor programme has once again provided the fullest use of our resources and made a positive contribution to restoring our club finances.

Since Georg Schulte arrived in the first week of January, until the departure of Miha Gosak on 4th April, the total amount of glider flying has amounted to 623hrs 33 mins.

By comparison, in the same period last year, the club recorded 564hrs 08 mins, the period when we did not have overseas instructors as a

consequence of immigration restrictions.

We must record that this flying period has not been a vintage season while the seven-day a week operation has been in place, the record wet weather has otherwise been the main factor of influence.

CFI Changeover

I am pleased to report that **Anton Lawrence** has agreed to assume the position of Chief Flying Instructor with effect this meeting. I am grateful for the support I have received from DCFI Paul O'Neill-Gregory and my fellow instructors during this period of six years and wish Anton every support during his tenure.

Regards,
Russell

From the new CFI

It's been known for about a year that Russell wished to pass the CFI baton. Ross Gaddes asked me some time ago if I would consider taking it over, but at the time I told him I wasn't nearly ready for it. However, after some time passing, I feel I could now do the job if needed.

I therefore made the offer, which Russell very quickly accepted. The committee then ratified the appointment on Wednesday evening, so now I'm the newly minted CFI.

Russell has done an amazing job over the last six-odd years and been the only CFI I have known in the club. The bar has been set very high, but systems are in place with a number of delegated jobs falling under the CFI umbrella, which eases the load.

As winter approaches there will be a seminar for Instructor Trainers (IT's) at Matamata on the 13th and 14th May. This will see IT's upgraded over time to A cat instructors.

I've tentatively made calendar dates for the mid-winter lectures and exams, which all student pilots

who haven't sat the exams should attend. More details to come as we finalise the details.

Anyone who has any questions regarding flight training or operations should feel free to contact me at cfi@glidingauckland.co.nz

We have opened the booking page for ANZAC Day from 12:00pm onwards. If you are interested, please make a booking; if no interest is shown, please don't expect to turn up and find an instructor waiting.

One last thing – the club annual prize giving will be held on 27 May. Details will be made available in the next couple of weeks.

Regards
Anton Lawrence

From the AGC President

New CFI

Having served far longer and given far more than one could reasonably expect, Russell Thorne has stepped down and Anton Lawrence has taken on that role. The committee is confident that Anton will do a stellar job. The committee voted unanimously to thank Russell for his outstanding contributions and to remind him that there's always something he can turn his hand to.

I'm sure Anton will share some of his thoughts in the next newsletter.

Clubhouse

In the spare time which Anton won't have, he will - likely over winter - install another set of doors opening out into the passage between the clubhouse buildings, matching the two already installed. The clubhouse will look even better.

Security

Ardmore Airport has reported a spate of breakdowns, so please be alert for strangers and ensure that hangars are locked. With all the construction locally, the population has swelled; some apparently have light fingers. The committee is looking at installing a more substantial front gate, activated by token.

Duo brake

The Duo will have a new brake kit installed to improve its braking. The committee is presently weighing up options.

MSX XC Course

The course will be held, as usual, over Labour Weekend, extending to the following Wednesday.

This timing avoids the start of contest season and requires people to take fewer days off work to attend. While the weather can be variable, it's been a very useful introduction to cross-country for many AGC members. Those interested in attending should speak with Anton.

The club will provide two two-seaters for the course, while people may also want to take a single seater, as the format is flying with an instructor on alternate days. There are typically six instructors and twins for 12 students.

President's absence

From 12th May until early October Gerard will be away in Europe, cycling between Gibraltar and Nordkapp (top of Norway). This will be the longest break Jane's ever had from the hospital and university systems in our 30 years of marriage. James Butterworth will act as president during this time, which will include the AGM.

Winter lectures

These will happen as usual and will be good preparation for lower time pilots still moving through the training programme, as well as some who may have not seen this material for some decades.

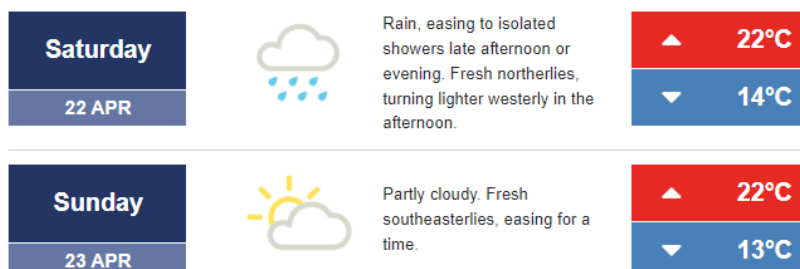
AED

Via the good efforts of Christine Cross, the club is applying for a grant for an AED (automated defibrillator). It will likely be mounted on an outside wall, accessible via a code given when ringing 111 for an ambulance. This will make it accessible to more than just club members, 24 hours per day.

Not more rain! NZ Met Service Report

Saturday will be a wet day, with heavy falls across southern parts in the morning. The rain will clear towards the end of the day, starting in the west from late afternoon, only hanging on in Tairāwhiti, Gisborne by midnight.

On Sunday it will be fine in the west and south, but cloudy at times elsewhere with the chance of a shower or two.





Wings & Wheels Editor: In Part I, Roy began a discussion with Strategies When You Are Low. Thermalling low can be dangerous. These two articles are focused on mitigating risk and increasing your chances of climbing away from a safe altitude. Follow along as we continue to get lower...

Accept you are in survival mode

If you are carrying water ballast, dump it all, right now. You need the glider light and maneuverable. You must be able to climb and exploit any lift that you find, and you will need the extra margin that being light gives you over the stall speed - especially in the tight turns needed in small thermals close to the ground. The small advantage that ballast "might" give you later (if you save the flight) is not worth the trouble that the ballast causes when thermalling down low. And if your search strategy doesn't work, you want the machine as light as possible when you land in a farm field.

Work any lift you find - no matter how weak

A low save is not the time to be choosy about the strength of a thermal or to slavishly stick to some McCready setting. You are buying survival time. Waste nothing. Work any thermal that you find - no matter how weak. This gives you time and opportunity to look around and see other resources like birds circling, other gliders climbing, smoke starting to go vertical, dust devils forming, and other signs of a thermal working up from the ground. Do not leave a weak thermal until you are certain that the next step will be better than what you have now. Sure, you will be slow - but you will be even slower sitting on the ground.

When critically low, never leave zero sink

"Zero sink" is a thermal that matches the sink rate of the circling glider and, if you use it well and perfectly, you will climb. If the day has otherwise been good, zero sink is either the beginning of a thermal (which is wonderful) or the end of a thermal - which still gives you some time to think

and sort things out. Either way, you should stay with it until it's gone, or you see an alternative that you are sure is better.

Focus your mind on here and now

This is the time that you must fly smoothly and excellently. There is nothing else important to think about. Forget the mistakes that you made getting here and forget how late it will be if you get back. Ignore what your buddies or the other competitors are doing. Your universe is only THIS THERMAL, RIGHT HERE, RIGHT NOW, and you must work it smoothly and perfectly. Move your circle smoothly to first establish a positive rate of climb for the full 360 degrees of each circle, That's a huge first step. Adjust the bank to maximize the climb rate. Remember that thermals are smaller down low, and you will need more bank. Also, remember that increasing the climb from a mere .5 kt to 1 kt cuts your climbing time in half. When you have the thermal centered and have maximized the climb, keep trying to make it even better, and don't relax until you get to a more comfortable altitude.

The radio is a distraction you don't need

If your landing target is an airport, you should have already tuned to the local frequency when you arrived in the area and all you need to make is a simple crisp position report like, "Hometown traffic you have a glider maneuvering one-mile northwest of the airfield at 1100 feet". That's all that is needed. If you are working a weak thermal and get a radio call from another glider, your response should be only a curt, "Sorry, busy now", and nothing more. There will be time for talking later.

Get your head out of the glider

This is probably the most important thing. Use the audio vario with only brief glances at the instruments. Focus on what is happening outside. Look for birds, dust devils, smoke rising straight up, and other gliders. On the ground try to visualize what will get warm and stay warm. Look for vertical structures that will focus or trip thermals. Moving cars, trucks, and trains will kick off thermals as will airplanes on the runway and moving machinery in a farm field. Sandpits and rock quarries hold heat well. And don't forget to look straight up - frequently you will see a building cloud that wasn't there when you started the climb, or a bird, or another glider.

Know when to quit

This is discussed in the introductory note and is of fundamental importance. The lower you attempt to thermal - the higher the risk you are taking. Wind and gusty conditions greatly increase your risks while they diminish the likelihood of success (because they chop up the thermals down low). Decide in advance what your limits are for today and stick to them. Commit to a safe organized approach, lower the gear, and execute that plan. Sometimes it is helpful to think about why you got low on this flight. If it was just bad luck and the air is still alive, and the flight salvageable - that may be a consideration. But if it is late in the day with the sun angle low or a building overcast causing the ground to cool off - are you just postponing the inevitable? And taking risks to do that? This is my 50th season flying gliders and while I have made thousands of flying mistakes that I would do over differently, none of them were the decisions to end a flight and land safely.

I hope that these ideas and strategies may help you to avoid a land out. They have helped me, at least sometimes. But even if they don't work, you will step out of the glider knowing that you did your best, that you had a strategy, and that you executed that strategy. That's something that takes away the sting of the land out and gives you confidence for the next flight.

Stay safe. Have fun. Get better.
Roy Bourgeois



Roy Bourgeois is a well-known US and South African glider pilot who served many years as the Chief Pilot for the Greater Boston Soaring Club and now lives and flies in Arizona. He has held several US national records, competed in many US and Canadian Nationals, and has flown over 300,000 XC kilometers in his 4400 hours of gliding. He can be reached at royb@bw.legal

Not all the major (hence expensive) issues have actually been related to the engine. In August 1994, while landing for a retrieve at Pukekohe East strip, the tow pilot miscalculated his landing and hit the left wing against a fence that protruded into the airfield at the eastern (top) end. The wing leading edge was significantly damaged, being flattened against the main spar in places. A very temporary repair was made with lots of 100MPH tape, and the Pawnee was ferried back to Ardmore for repair. The wing was removed and most of the leading-edge ribs were replaced with pressed ribs from Univair in the USA. The usual rib construction for Pawnees and Cubs at that time (the Pawnee wing actually being a modified Cub wing) was made from small individual pieces of folded alloy sheet, all riveted together to form the structure. This presumably was for ongoing employment opportunities during the great depression. The pressed Univair ribs at the time were available ex-stock, complete with a US STC approval. The required ribs were purchased, the repair completed, and the Pawnee was brought back into action.

In the mid 90's there were increasing concerns about the Pawnee's main fuselage carry through structure for the main spar. Apparently, a Pawnee crop duster in the US had a wing fall off because of significant attachment point corrosion (not a good state of affairs). As a result, the NZ CAA introduced a mandatory inspection (DCA/PA25/124). I was concerned that because we had significant major corrosion issues in the forward fuselage area in the past, there could be a problem with the attachment fittings of CEB. The original fittings were fabricated by welding bent plates around the bottom longeron which bolted to the wing spar. When the wing was removed, the longeron could be seen inside the welded plates, so I did some research and found that a company in the USA called KASOLA had developed an STD'd mod to totally replace the original fabricated fitting with a one-piece forged fitting. A complete kit was therefore ordered and installed. That was an interesting project, as a jig had to be made to ensure a perfect fit to the existing wings. I organised two other Pawnees in NZ to have this work done at the same time, so that it was more economic for us. The welding work was done by the same engineer who had carried out the earlier forward tube repairs and modifications (as well as further welding work later). He is a brilliant engineer/welder and all his work has been first class.

This work effectively cancelled the mandatory inspections of the NZCAA AD. After the welding, all tubes were washed internally with linseed oil.

While this presentation is basically a technical discussion, I did have the privilege of taking CEB to Omarama to tow during the World Gliding Championships in 1995. I thought that a brief discussion of that experience would be of interest.

I departed Drury and flew to Taupo, Paraparaumu, ten Nelson (overnight). From there it was on to West Melton (Canterbury), then to Christchurch airport for fuel. I remember it was windy and I had real trouble taxiing the Pawnee to the fuel bowser. During this struggle, an ANZ pilot cruising past in his air-conditioned, temperature-controlled cockpit attached to a 737, made some disparaging comment. He may have forgotten, but it was none other than our current CFI! (*Isn't a 737 called a Fluffy? Ed.*)

Cruising south, I stopped at my brother's farm just out of Ashburton, landing in his back paddock for a cup of tea and then on to Omarama.

The towing was quite demanding and CEB acquitted itself really well. I had done a lot of prep work to it, so it also looked good. Frank and Rosemary Gatland oversaw the tow ropes. As the time between each launch and hence landing approach had to be as short as possible, we all had to drop our ropes just inside the airfield boundary. We then landed to join the line of towplanes for the next launch, where another rope would be attached and away we would go. Because of the different performances of the towplanes, a good lookout was critical, and spacing on finals very important. Sometimes there were just seconds between each aircraft's approach but we all nailed it.

Aero retrieves were interesting and we all had a share. The farthest North of Omarama I picked up a glider, was from a small strip next to Lake Clearwater just north of the Rangitata river. In order to get over cloud on the Two Thumb range, I had to climb to 9500 feet and as previously mentioned, CEB did run out of steam at that altitude when towing a glider. However, what was unforgettable was the perfect view of the entire Southern Alps in the late evening. Just beautiful. That particular retrieve resulted in a night landing with CEB at Omarama. The farthest south

retrieve was to the middle of the Lindis Pass to pick up a Mexican dude, who eventually pulled out of competition. That was interesting, because we were assisted by two very rural ladies who I think had had too much gin at their local rural ladies meeting. Other retrieves were from Lilybank Station, up the Godley River from Tekapo; Mesopotamia Station, a strip above the Lake Ohau Alpine village, and many others. One interesting point I discovered was that almost all European pilots would land on the strip and not bother to pull their gliders off to the side. It did make landing a little tricky i.e. a final approach parallel with the strip and when almost ready to flare a quick split-arse change of direction in front of the glider. We all got to know the McKenzie area airstrips well.

One rest day all of us tow pilots went to Big Bay on the West Coast in two big Cessnas, routing directly over Mount Aspiring. The pilot was a local who had a little bach there, and regularly flew over to bring back whitebait. We went to his little hut AND DID IT STINK! Coming back, he told us that on one trip over Mount Aspiring, he noticed a bloke sitting on a rock right at the top, having a cup of tea.

The trip back to Drury was via Omarama, Rangiora and Omaka. At Omaka we did some trials with our four bladed prop on my mate Ray Padgett's GA200. He did a few simulated top-dressing runs, then I did the same (in the GA200). What we found was that at the end of a run and a full power climb to do a change of direction wing over, the drop in engine RPM was much greater during the climb phase with the four bladed prop as compared with the two-blade metal prop, which has greater inertia. A metal prop also gives much better pilot protection in the event of flying through power lines. Next day was Omaka to New Plymouth and back to Drury. That exercise has been a real highlight in my many years at the noisy end of the tow rope.

Back to the engine. In August 1995 at 1904 engine hours, during a routine 100-hour inspection, we discovered the engine case was cracked. A replacement case (narrow deck) was located and during the rebuild, a full bottom end overhaul was carried out, including new bearings. At the time we could have actually zero timed that engine, but because the "new" cylinders had only 300 hours on them, we decided there was no real point.

All went well for the next few years, apart from the ongoing frustrating and expensive magneto issues and the occasional starter issues.

In November 2000, at 3007 hours TSMH, we again found traces of metal in the oil, hence the usual camshaft problems. So again, engine strip, replacement camshaft, cam followers and bearings - not cheap.

All went OK and in 2003 I tendered my resignation as the CTP, handing over to Tony Leggatt. I was still involved as a tow pilot and supported Tony technically. During this time, I believe we incorporated two specific changes to CEB which have had a profound impact to long-term engine reliability, contributing to a significant positive financial impact. Tony Leggatt didn't last long as the CTP and I was roped in again.

As previously mentioned, I had never been totally comfortable with the four-bladed prop. I figured there must be a reason why we were having the ongoing magneto and starter issues. The tailplane vibration also seemed to be a pointer back to the prop. I downloaded as much information about the work Pratt and Whitney engineers carried out when developing their big radial engines. It was really interesting to read how they tracked down resonance issues. Those old dudes had no computer modelling software or other modern devices. They had to invent, design and build all their test gear. But they did it. In our situation, we decided to contact Hoffmann in Germany. Through their "engineering backdoor" we managed to obtain a drawing for a large metal counterweight, which could be installed between the prop and engine. This counterweight was fabricated and installed here in NZ. All the issues we were having disappeared overnight and all has been well for the last 20 years. This includes the current engine, which now has 1600 hours TTSMOH and has had NO magneto issues. What's more, it still has its six original cylinders. The counterweight has also had another positive impact by moving the C of G further forward towards the mid C of G range, instead of the rear.

To explain this propellor issue in simple terms, every certified engine/aircraft/propellor combination has undergone testing to establish specific engine counterweights to be attached to the engine crankshaft. These counterweights move and dampen the harmonics generated.

Therefore, changing any part of that "approved" combination will affect engine vibration levels. Naturally, one would consider the four-bladed prop being "lighter", that its harmonic generation would be less, which is correct, BUT it does have roughly twice the blade area and less weight, or rotating inertia. As the prop rotates, it speeds up

with each firing pulse and slows down between. The original engine counterweight combination is set up to cancel specific harmonics, but only when used with the original propellor. With a lightweight Hoffmann prop using the original counterweight combination, this can actually generate more harmonic problems. Thus, the inclusion of the large metal disc has made a huge improvement to the overall engine reliability by increasing the total rotating mass.

The other thing we discussed, obtained and installed is a very simple cylinder "rate of temperature change" indicator. The pilot presentation is a flashing light which will flash at an increasing rate, the faster the cooling rate is. The idea is that the tow pilot needs to ensure the

that light does not flash at any time. This device also has greatly improved the long-term engine reliability.

Finally, the cowl flap was removed. We considered it a real menace and was not providing any tangible proof of effectiveness, and tow pilots would sometimes take off with it still closed.

If you have noticed there are two cooling holes in the front cowl, the second one was set up to cool the two fuel pumps when they were mounted on the front lower firewall.

To be continued...

Can you read a Tephigram?

Kevin Johnson has just sent in these links to *An Idiot's Guide to Tephigrams*, which appeared in a back issue of NZ Soaring. While not suggesting that any of our readers are idiots, they make good reading.

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<https://mail.google.com/mail/u/0?ui=2&ik=e3df1fb41c&attid=0.2&permmsgid=msg-f:1763581763190207743&th=187980450f4f34ff&view=att&disp=inline>

Lots more interesting stuff can be found at <https://www.mccawmedia.co.nz/SoaringNZ-Magazine/Back-Issues.aspx>

Member's Ads



PW5 KF for sale. Current Annual until Dec 2022. Ready to fly. Approx 800 hours flying. Radio, altimeter, airspeed indicator, electric and mechanicals varios. Includes open trailer. **Priced to sell at \$8,000.** Ideal for single ownership or cheap syndicate. Reason for sale is that glider is surplus to requirements. Phone Murray on 0275 875 438

This newsletter was compiled by Peter Wooley wooleypeter@gmail.com

Roster

	Instructor 1	Instructor 2	Tug Pilot	Duty Pilot	Winch Driver
April					
Sat 22	Roy Innes	Graham Cochrane		Lois Kok	
Sun 23	David Moody	Frank Excell		Lance Feldwicke	
Sat 29	Jonathan Cross	Keith Macy	James Bassett	Matt Findlay	TBA
Sun 30	Nigel McPhee	John Bongrain		Matt Kerrigan	TBA
May					
Sat 6	Russell Thorne	John Robertson		Michael Alexander	
Sun 7	Paul O'Neill-Gregory	Graham Cochrane		Nathan Montano	
Sat 13	Roy Innes	John Bongrain	James Bassett	Nigel Caigou	
Sun 14	Nigel McPhee	Frank Excell		Patrick Lalor	
Sat 20	Russell Thorne	Graham Cochrane		Peter Himmel	
Sun 21	Ross Taylor	Keith Macy		Shery Nichols	
Sat 27	Jonathan Cross	John Robertson	James Bassett	Peter Wooley	
Sun 28	David Moody	Anton Lawrence		Tristan Harvey-Smith	
June					
Sat 3	Paul O'Neill-Gregory	Graham Cochrane		AJ Dudley	
Sun 4	Russell Thorne	Keith Macy		Allen Pendergrast	
Sat 10	Roy Innes	John Robertson		Dylan Watson	
Sun 11	Ross Taylor	Anton Lawrence		Caleb Rosvall	
Sat 17	Nigel McPhee	John Bongrain		Geoff Green	
Sun 18	David Moody	Keith Macy		Geoff Gaddes	
Sat 24	Jonathan Cross	Frank Excell		Andy Campbell	
Sun 25	Anton Lawrence	John Robertson		Anton Lawrence	
July					
Sat 1				David Moody	
Sun 2				Dion Manktelow	
Sat 8				Frank Excell	
Sun 9				Graham Cochrane	
Sat 15				Grahame Player	
Sun 16				Hugh Warren	
Sat 22				John Bongrain	
Sun 23				John Robertson	
Sat 29				Jonathan Cross	
Sun 30				Keith Macy	