

AGC Weekly News

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

Well done Angelie!



Angelie Madsen this past weekend – First Solo and conversion to single seater PW5.



Angelie has lots to smile about after a flight of approximately one hour in the PW5. The arm on the right is that of Anton Lawrence, who sent her off solo. Photos by James Butterworth

Caring for the Pawnee



The new baffle installation on the Pawnee engine, fitted by Ian Williams and Steve Cronin is



complete and looks amazing.

3 Sqn Air Cadet Visit to Drury this weekend

Russell Thorne

The first of our late season Air Cadet visits takes place this coming weekend with 10 Cadets from 3 Squadron on each of Saturday and Sunday beginning at 9am.

They expect one aerotow and one winch launch for each cadet and a maximum of 30 minutes for each flight, a fixed price has been agreed.

This will mean that some extra support in terms of Instructors and Winch drivers will be required.

Georg will leave for Taupo on Friday afternoon, so will not be able to assist, but I shall be able to lend a hand with the winch launches in particular.

New Members

We say a big welcome to father and son pair **Geoff and Matthew Fowke**. A sincere welcome

to you both!

Summer Instructors find alternative interests

Georg and Miha checking out what Auckland has to offer on days when the weather is ucky. Which

lately has been rather often. Picture by member Nigel Caigou, sent in by Keith Macy.



Winching Weekend on 19 February



Gliding – a game of waiting. We wait for the field to dry, wait for thermic weather, wait for the tug, wait for more hands. Here the club trainers wait for a winch hook-up on 19 February. Photo James Butterworth



A happy group from the weekend of the 19 February. Photo James Butterworth

Climate Drivers – La Niña out the door, Southern Ocean set to fire up

La Niña is almost out the door, with climate models predicting neutral El Niño Southern Oscillation (ENSO) conditions through autumn. This means that local climate drivers close to New Zealand will be in charge of our weather maps in the coming months.

The tropics remain active this week, with Tropical Cyclone Judy tracking southeast out of the tropics but staying well clear, to the northeast of New Zealand. Another tropical low also has a high chance of developing into a tropical cyclone from Friday 3 March. This system is expected to then follow a similar path to TC Judy. At the time of writing, neither system is expected to have significant impacts on New Zealand (but keep up to date at www.metservice.com/warnings/tropical-cyclone-activity).

Instead, the major player for New Zealand for March will be the Southern Annular Mode (SAM), a measure of Southern Ocean storminess. The SAM is forecast to change to a negative phase for most of March, meaning a major regime shift to unsettled westerlies over the country.

Sea surface temperatures remain well above average around the South Island but have yo-yoed in the vicinity of the North Island recently (from above average to below average and back

again).

March 2023 Outlook – A return of the westerlies

Southerlies prevail this week, with an unsettled westerly regime predicted for the 2nd and 3rd week of March. By the end of the month, we may see a High across New Zealand (lower confidence).

The westerlies result in increased March rainfall across the west and south of the South Island (normal or above normal totals), with near normal monthly totals predicted for western parts of the North Island. In contrast, below normal March rainfall totals are forecast for northern and eastern areas of the North Island – welcome news for these saturated regions for the ongoing clean up. Near normal monthly tallies are forecast for eastern Otago and Canterbury.

Above average March temperatures, overall, are forecast for all South Island regions - noting that this is the time of year when fogs and frosts make themselves felt. In contrast, North Island temperatures are forecast to end up slightly cooler than average (near average to below average).




Weekend Weather Outlook

A ridge of high pressure currently lies over northern and central New Zealand, meaning generally fine and settled conditions. Meanwhile, a series of fronts move north over the South

Island during Friday, and onto the North Island during the weekend bringing a change to cool southerlies and showers.

Hunua

2 March 2023

Friday 3 MAR		Fine, apart from areas of fog in low-lying areas in the early morning. Light winds and afternoon sea breezes.	▲ 26°C ▼ 14°C
Saturday 4 MAR		Fine apart from morning cloud. Southwesterlies.	▲ 26°C ▼ 15°C
Sunday 5 MAR		Partly cloudy, with isolated showers clearing in the afternoon. Southwesterlies.	▲ 24°C ▼ 13°C

It was late afternoon and we were going for gold. Preparing for the 90km final glide home to Omarama, we milked the last lazy thermals off the hot rocks at Tin Hut Creek. Ahead the eastern sea breeze had already crossed the Mackenzie Basin. Out on track the air would be calm and stable. To make the winner's podium we would need all the height we could get.

But we wanted more than the thermals had to give and so, with Jeff muttering expletives, I set off on the long glide home. We were well below glide slope.

"How can you be so confident?" he asked.



How could Gavin be sure he would make it home? Ripples on Lake Pukaki (in the top left of the picture, right) indicated a 15kt easterly, but on track by Mt Benmore another pond was calm, revealing a convergence zone that always forms in that wind direction.

"Convergences," I said, "we'll find a convergence."

Like the Eskimo who has 42 words for snow, the glider pilot needs a dozen different names to describe convergences. In mountain regions, especially, there are more examples of convergences and associated subtleties than in any other soaring environment.

We recognise convergences as the meeting place of different airmasses. These airmasses may differ in any or all of the variables like temperature, stability, and moisture content and/or wind velocity.

Convergence zones may be synoptic in scale and include all the frontal systems that characterise our weather patterns. Or they may be small and local as when a breeze meets itself upon flowing around a hill.

The classic mesoscale convergence so characteristic of island nations is the sea breeze front. But its close relatives can move unnoticed across entire continents and interact with mountain ranges along the way.

Consider first the sea breeze moving into a mountainous area. Figure 1 (next page, top left) illustrates how inland heating can draw a tongue of stable sea air many kilometres into the mountains and far ahead of the main sea breeze convergence.

This sea air is cool and dense and flows like water into the valleys and around obstacles. It slowly fills the inter-mountain basins with stable air. At the tip of the tongue the cool air acts as a trigger and induces a frenzy of thermal activity. Further back, the tongue wedges up the warmer air mass and prolongs activity in clouds already cut off from their heat sources.

The canny glider pilot will map the progress bubble. When clouds are present they will of this low level tongue knowing that behind it mark the convergence zone. But because the thermals are dying and the clouds are slowly shutting down.

Imagine this tongue of cool air a few hundred feet thick flowing all the way around a mountain massif and colliding with itself on the leeward side. The two airmasses are essentially the same except for the nearly opposite directions of arrival.

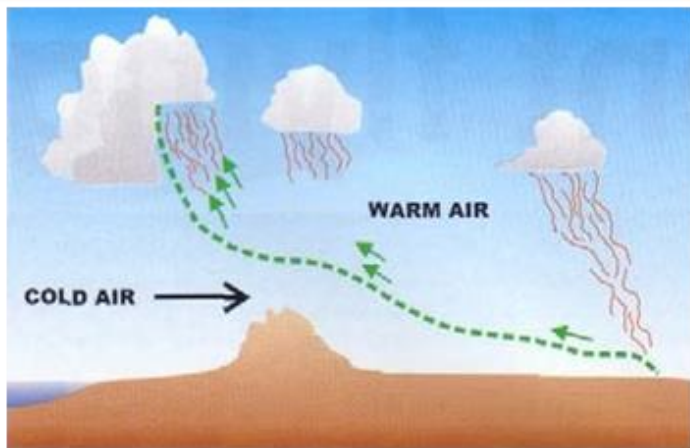


Figure 1: sea breeze front with a tongue of cold air protruding ahead. The canny pilot will map the progress of this tongue, knowing that behind it thermals are dying.

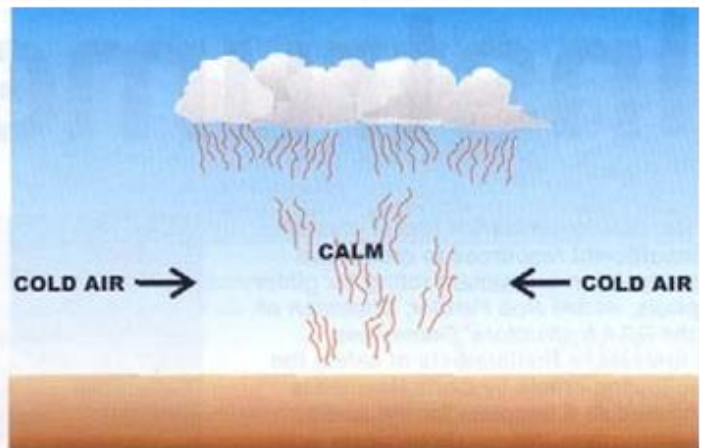


Figure 2: when similar airmasses collide, at their meeting place the air on the ground is calm. This encourages heating and the formation of convergence thermals

At their meeting place the air on the ground is calm. This encourages heating and the formation of convergence thermals - see Figure 2 (opposite, top right). These thermals bubble like sparkling water, at first triggered but then shut down by the opposing airmasses.

In convergence thermals it pays to search for your own bubbles of lift. Other gliders may mark the convergence zone but each is likely to be climbing in its own discrete bubble. When clouds are present they will mark the convergence zone. But because the clouds are formed by small fast-cycling thermals they, too, will come and go.

When the prevailing wind approaches a large range of mountains, such as the San Juan Mountains of Colorado, the flow becomes complex (see Figure 3). The wind not only flows over the mountains and is funneled by favourably-orientated valleys but it flows around the block of mountains as well. Thus, multiple meeting places are created for the mighty mountain winds.

In the mountains convergence thermals may form anywhere opposing winds create calm on the valley floor. Likewise, the airflow around the mountain massif may converge with the valley winds and form strong – often well-marked thermals. Given similar winds, convergence thermals usually occur in much the same place. On a blue cloudless day, this is worth remembering

Converging mountain winds shear and create eddy lines as if in a river. These eddy lines often contain convergence thermals and may form bands of lift in otherwise unfriendly air.

In continental landmasses, mountain areas greet the sun and generally heat up before the cooler

inter-mountain basins. This causes breezes similar to the sea breeze effect to be drawn into the mountain valleys as an anabatic flow.

The main difference between this and the sea breeze is that the sea breeze has a never-ending flow of lifeless air from the ocean while the continental anabatic flow heats with the day and often becomes unstable itself. Both the anabatic and the evening katabatic flows will create convergences in mountain areas at opposite ends of the soaring day.

One of the most spectacular convergences known is the giant north-south line lying west of the Rocky Mountains that divides the moist eastern air of the continental United States from the dryer western air.

This line is perhaps the clashing of the remnants of two sea breeze fronts and may be traced south into Central America where Caribbean air meets Pacific Ocean air in one of the most active (and wettest) convergences in the world.

Mountain convergences can be recognised by stepped clouds, a single line of cloud whiskers or cumulus, by unusual changes in wind direction on the ground, lines of haze or dust rising across a valley or even by changes in the colour of the air. Sometimes when the light is just right one can see the denser air flowing like water into the inter-mountain valleys.

When clouds are present, convergences are often marked by stronger or even hyperactive clouds with stepped bases and cloud tendrils. Remember to stay under the higher bases on the warmer side of the convergence, beside the rising cloud tendrils and out in front of any low-level

cloud that may form beneath you.

"So where's this bloody convergence then?" pipes up Jeff from the back of the Duo Discus.

The homeward glide has been ominously blue and smooth and we are now only 1,200ft above the ground. The sea breeze has swept across the Mackenzie Basin, shutting down the thermals and greatly reducing our chances of getting home at all, let alone winning anything.

I scan the lakes and ponds for tell-tale wind signs. Beneath us, Lake Pukaki shows a 15-knot easterly. Suddenly, ahead near Mt Benmore I spy what I am looking for - a pond with no wind. I alter course. "There's a convergence about 10km ahead," I announce as nonchalantly as possible. "Damn, you'd better be right!" mutters Jeff.

Six hundred feet above the ground, 15km from home and just past the calm pond we meet the wind coming around Mount Benmore from the other side and the air begins to bubble. We pull up into 3kt of smooth lift, gain a thousand feet and head for the finish line.

"How in the Hell did you know that was there?" blurted Jeff.

I didn't like to say it, but it always happens there when the easterly blows! Once again, the great glide of the Duo Discus and a subtle convergence had given us the winning edge...

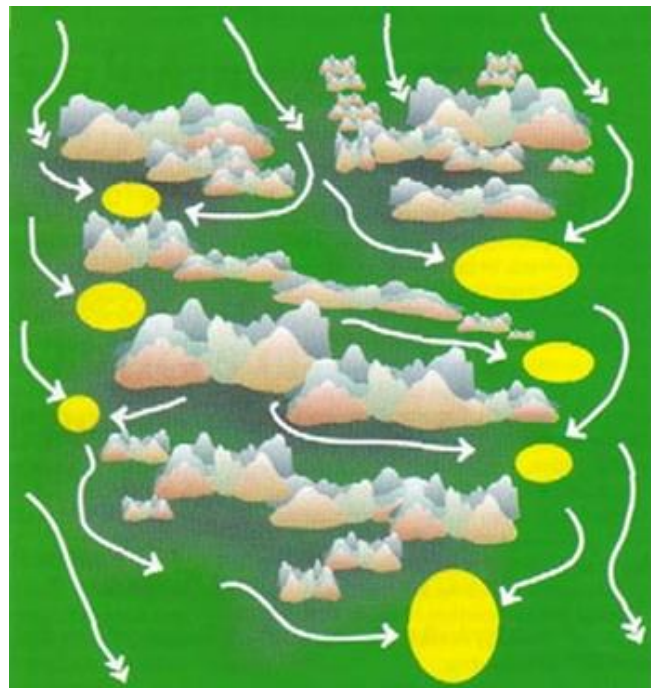


Figure 3: Mountain convergences created by the prevailing westerly winds flowing around the San Juan Mountains and through some valleys.

When the prevailing wind approaches a large range of mountains such as these, in Colorado, the flow becomes complex.

The wind not only flows over the mountains and is funnelled by favourably orientated valleys but it flows around the block of mountains as well. Thus multiple meeting places are created for the mighty mountain winds. (Diagrams: Jon Hall, HRA.)

Glider pilot avoids hitting the mountain by unloading his wings!



<https://www.youtube.com/watch?v=19wUzqi0onl>

Submitted by Gerard

Members' Small Ads



(file photo only)

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

One share for sale in Grob G109 (ZK-GOC). Touring type motor glider in excellent condition. Upgraded with Limbach L 2400, so has much better take off performance than the standard G109. **Price for share is \$15 000.00.** Contact Russell Jones on 021 180 5544 or email russell.jones@orcon.net.nz

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

Roster

	Instructor 1	Instructor 2	Tug Pilot	Duty Pilot	Winch Driver
March					
Sat 4	Roy Innes	Graham Cochrane		Allen Pendergrst	
Sun 5	Ross Taylor	John Bongrain		Dylan Watson	
Sat 11	Nigel McPhee	Keith Macy		Frank Excell	
Sun 12	Russell Thorne	Nigel McPhee		Geoff Green	
Sat 18	Jonathan Cross	John Robertson		Geoff Gaddes	
Sun 19	Russell Thorne	Frank Excell		Georgia Schofld	
Sat 25	Roy Innes	Graham Cochrane		Gerard Roberts	
Sun 26	Ross Taylor	Keith Macy		Caleb Rosvall	