

# AGC Weekly News

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



*From the CFI*

At the time of writing, it is most likely the strip will be open for business this weekend. If this proves to be the case, then please limit vehicles to the two Landboss vehicles only - no private vehicles are allowed on the field for the time being.

Even with the Landboss, the area next to the road may still be soft, so take extra care and maybe stay off that part of the strip. The northern spring area should still be avoided at all costs.

Notice about the strip condition will be given if it doesn't look any good by Friday.

The booking system has been opened in anticipation to flying - please use it if you are planning to fly. If you need a currency check or feel you *may* need one, then please see one of the instructors.

All students will need to do a check flight in any case, so please swat up on your syllabus's and prepare for your Soaring Certificate questions.

The MSC XC Camp is on the is weekend so DX, XF and possibly SB will be based at Matamata.

The article on Bank Angle further on in this edition follows on from last week's article on the thermal assistant.

I'll be away this weekend but still contactable by phone or email should the need arise.

*Anton Lawrence*  
CFI Auckland Gliding Club  
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## ***It's happening at last – some soaring!***

Tristan Harvey-Smith and Keith Macy both went to Matamata on Wednesday 11<sup>th</sup> and both had personal best flights. Here follows some pictures taken by both of them, plus their tracks, and a short account from Tristan.

*Tristan writes:*

Wind in the west promising another great ridge day, plus the potential of thermals! There was already a number of bookings to fly, so I wasn't the only one thinking the day looked good. Too good to say no. Let's go!

BI rigged and on the grid by 11:30, in the air by 12:15, heading for the ridge with plans to get to Thames - this would be my biggest excursion from Matamata thus far. Released from tow at 2000' and on getting to the ridge at 1500' I found light winds and not as much lift as I was expecting, but I pushed on expecting

improvement. In getting to Te Aroha less than half an hour after launching, I was seriously low and contemplating landing in the race course paddock! Hmm, not what I was planning.. However, my judgement was now very focused and I managed to stay in the air and climb.

The day improved and at my best I was 5000' over the swamp looking at cloud-base and the Firth of Thames, feeling pretty happy with myself. At about the same time Keith was returning in FR from Thames and I could see him scratching around much lower than me looking for lift. I noted his proximity to the ground over the radio, but my smugness didn't last long as I found myself similarly low not long after!

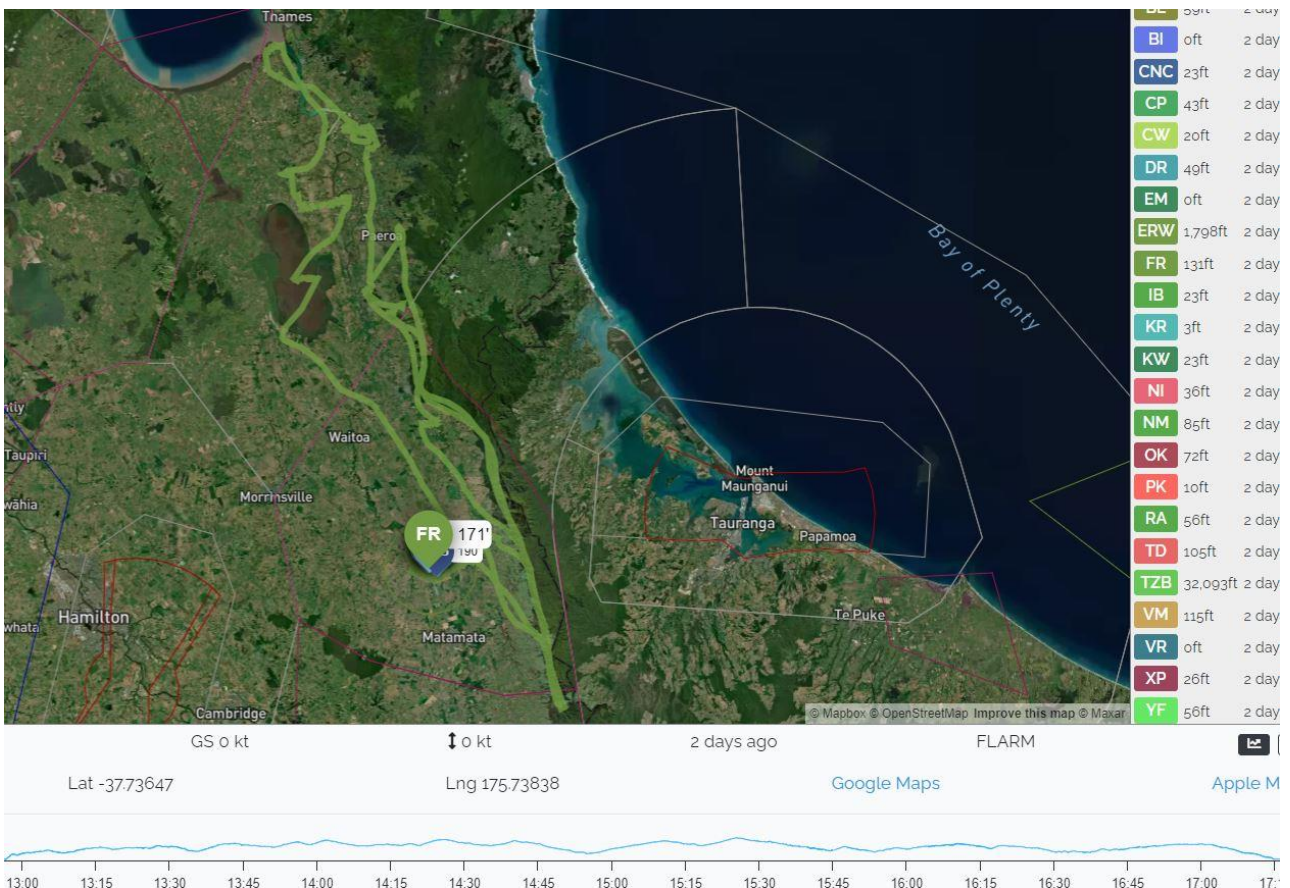
I chose to scamper back to the hills for the certainty of ridge-lift and started heading homeward. I didn't get to Thames this time, but it was close! Next time perhaps.

After five hours in the air I landed BI within meters of the trailer, just outside the club rooms (where there is a fridge with cold drinks). It was a really

fun flight, and great to extend my range in the process.



Keith's trace

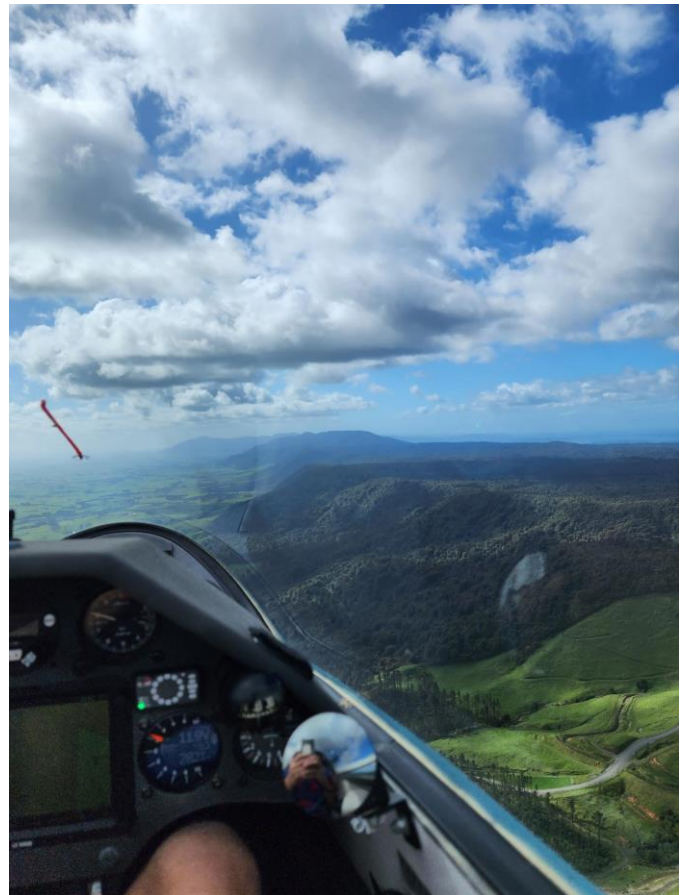


Tristan's trace





**View from the cockpit of GDI**



**Some nice clouds (taken by Keith)**

<https://nordicgliding-com.translate.google/? x tr sl=da& x tr tl=en& x tr hl=da>

<https://nordicgliding-com.translate.google/test-as-34-me-man-tager-vad-man-haver/? x tr sl=da& x tr tl=en& x tr hl=da>



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## The importance of 45 degrees bank

Anton Lawrence

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In my article on using the thermal assistant I talk about the importance of turning at 45 degrees bank. This article will explain why.

There are a number of YouTube videos on this matter, Bill Palmer's one <https://www.youtube.com/watch?v=xhoOwKM7pO&t=1s> is particularly good but he does leave out a couple of important points.

Looking at figure 1 below we can see that sink rates past 45 degrees start to increase dramatically. Looking at this you would think that circling at 30 degrees might give a better result, however unless you are under a very wide thermal, occasionally found over the swamp, the thermal profile is normally such that the increased radius puts you in a lower strength part of the thermal, perhaps even flying in and out of the lift. Also, if catching a low save the thermal core will be tighter low down requiring a smaller radius to stay within the thermal confines, 45degrees will help to achieve this. As G Dale puts it, "you need to turn tight". Higher bank angles will give a tighter

radius but a higher sink rate, the pilot will need to work out the best balance here. This graph is often stretched horizontally to make the difference more obvious.

Looking at Figure 2 one can see that 45 degrees gives the least height loss per 180 degrees turn. This is why we say keep the bank on when entering the sink around a thermal, you want to minimise the time and height loss in this centring stage and increase your climb rate once centred. Clearly floating around in the sink at shallow bank angles is not going to give good results. Faster XC speeds are dependent on fast climbs so practicing these techniques is of great benefit.

45 degrees and 50 to 55 knots is the preferred thermalling etiquette in competitions, everyone knows what to expect, shallow bankers slow it down for everyone and don't make it easy to stay coordinated in a gaggle. This is also true under free flying days, but one is more often on their own in these situations, except while close to the local club, in which case 45deg – 50knots.

Figure 1

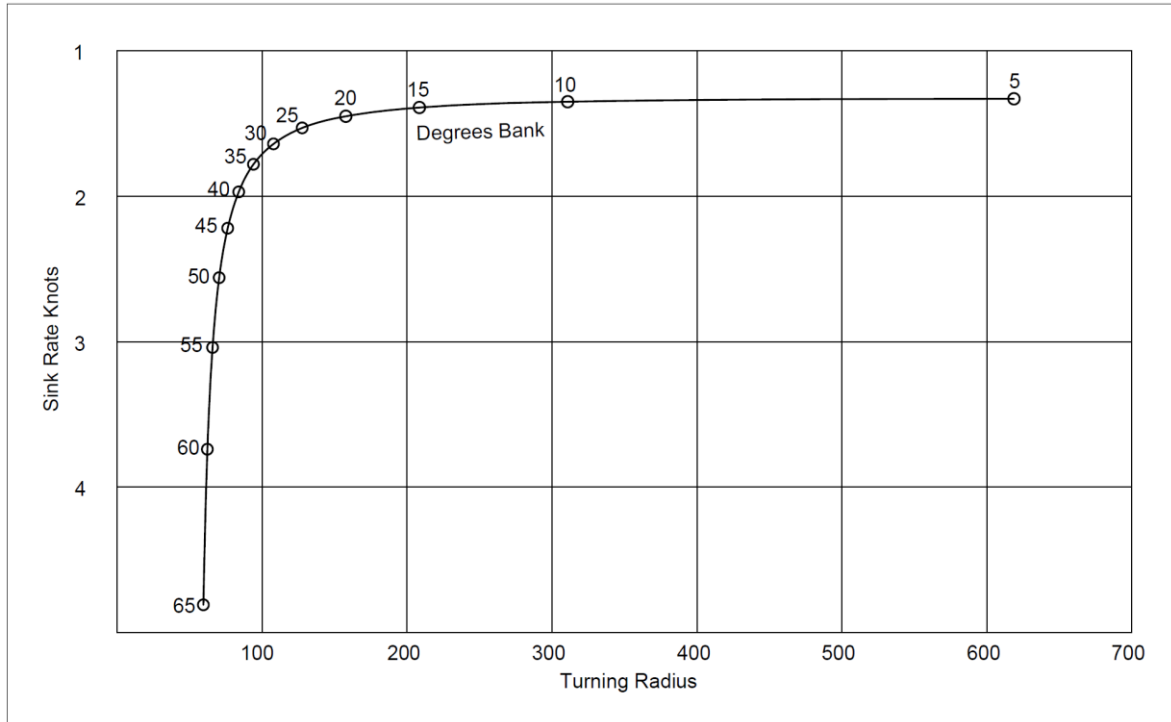
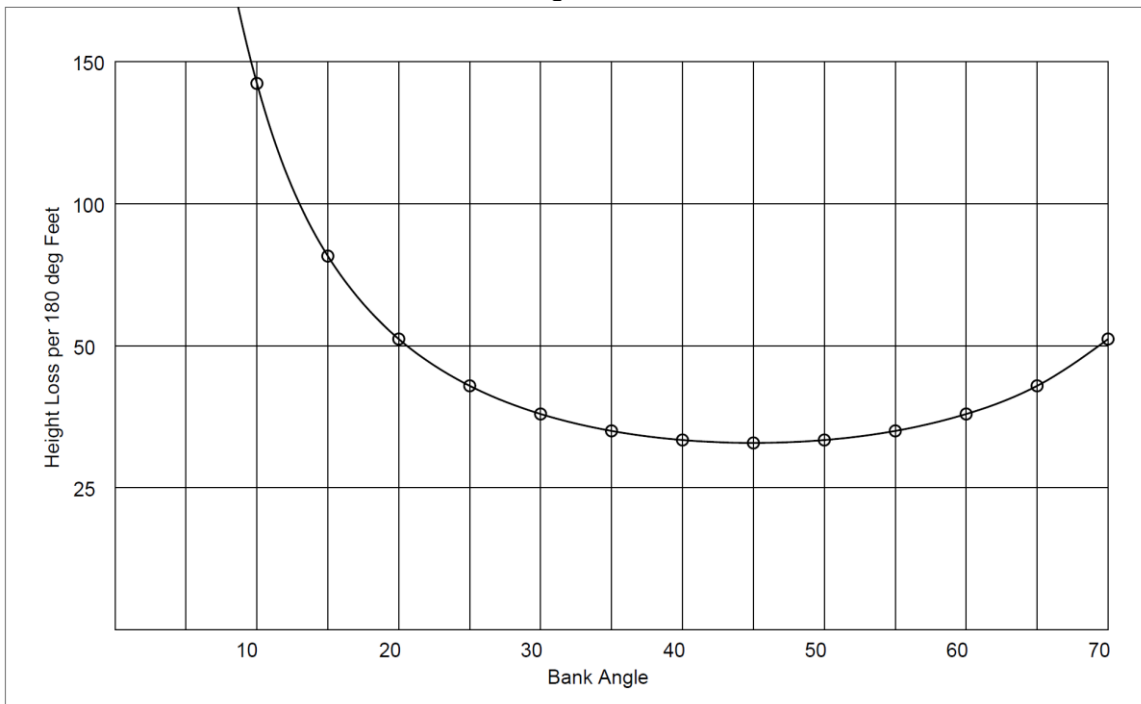


Figure 2



The straight flight min sink rate  $V_{sc}$  ( $S_0$  below) and min sink horizontal velocity  $V_k$  ( $V_0$  Below) were taken from my DG300 polar, however gliders are mostly designed to all fly at similar climb rates and speeds, the difference comes when the stick is eased forward, so the numbers will be similar for all gliders. It's not normally a problem to stay coordinated in thermals with different generation gliders unless they are vastly different in terms of age.

Formulas for those who are interested:

$$V_{\emptyset}/V_0 = 1/\cos f$$

$$S_{\emptyset}/S_0 = 1/\cos f \cdot \cos f$$

$$r = V_{\emptyset}^2/g \tan f$$

$V_0$  = Speed in straight flight

$V_{\emptyset}$  = Speed in circling flight at bank angle  $\emptyset$

$S_0$  and  $S_{\emptyset}$  are corresponding sinking speeds.

$r$  = Turn radius in metres.

$g$  = Acceleration due to gravity = 9.81 m/sec<sup>2</sup>





Photo by Wings & Wheels; HpH Shark SJ (Jet sustainer engine)

While you are thermalling be predictable. No erratic movements. No fast changes in direction. At the same time, no change so slow that the person behind you cannot see what you intend to do. When you roll out you want the person behind you to understand that you are leaving and not just widening the thermal which they might follow.

### Look to the outside

When rolling out look to the outside making sure someone is not trying to merge in as you are sliding out. If someone is right behind and sliding in and you attempt to dive to get more spacing that could have a bad result as there may be someone below that you cannot see. I have over the years had to make an extra turn to safely escape. Normally, I roll out when I want, however, once the gaggle exodus starts it can cause cross traffic and you might not get the line you want.

### Clear your exit

If the average is dropping below what I think I can

get ahead then I leave. I start by looking to make sure it is clear 270 degrees before my roll out I take a very careful look for incoming gliders. As I roll out I am generally looking over my shoulder to make sure nobody arrives into my view. But also keeping an eye ahead. You could get a surprise when the glider ahead rolls out when you do, requiring a slight slide to the side for separation.

It is pretty common for pilots to leave when they think they can beat the thermal ahead. Since everyone is flying with the same instrument data and looking at the same sky it is common that there can be a fair amount of people leaving that same turn. There will also be pilots holding back not wanting to be the first to leave.

### Risk of holding back

The pilot holding back could use you to avoid the sink and find better air, they could let you get a few turns in so you will be centered and they can enter once the core is found. But they also run the risk of missing a bubble or getting stuck in the

gaggle and not being able to climb. I remember one day at the Sailplane Grand Prix I was not afraid to lead out a few times and was able to get on top because I was ahead enough to quickly center and not have to worry about traffic in the gaggle as I was about 75 feet above them.

### **Risk of leading out**

I also remember this time when I turned around to see the entire gaggle above me as I missed the thermal and multiple gliders flying wingtip to wing

tip they were able to find it. Be like Sean Franke, Don't turn back.

*Garret Willat holds a flight instructor rating with over 8000 hours in sailplanes. His parents have owned Sky Sailing Inc. since 1979. He started instructing the day after his 18th birthday. Since then, Garret has represented the US Junior team in 2003 and 2005. He graduated from Embry-Riddle with a bachelor's degree in Professional Aeronautics. Garret represented the US Open Class team in 2008 and 2010 and the Club Class team in 2014. Garret has won 3 US National Championships.*

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## **Club flying in South Island**

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**Russell Thorne**

With just a little over three weeks until the first of us depart with DX for the South Island, it is time to begin our preparation with a few YouTube videos to watch to either acquaint or refresh our understanding of Mountain Flying, with particular reference to Springfield and later to Omarama.

For this week, I commend this 80 minute webinar "Getting into the Mountains" convened by Terry Delore and the Canterbury Gliding Club. It was produced as a an "off the cuff" webinar during the Covid lockdown.

<https://www.youtube.com/watch?v=wTk5s4Q1jLU>

**For particular attention in your orientation, note the following local area names (use Google Earth).**

Springfield  
Porters Pass  
Flock Hill  
Lake Lyndon  
Lake Coleridge  
Rakaia River  
Waimakariri River  
Red Hill  
Nearby mountain ranges  
Nursery Ridge (local name for small ridge SW close to SF)  
Springfield Ridge  
Big Ben Range or Torlesse Range  
Craigieburn Range  
Puketeraki Range

**CH Controlled Airspace Boundary areas (Freq**

128.1Mhz) LL 5500>7500>9500ft towards the West and North

### **Local Lift Sources:**

Convergence, Thermal Ridge, Mountain Waves

Landouts: Canterbury GC website, Resources, Landout Guide:

Castle Hill L144

Flock Hill L145

Lyndon L141

Harper River L120

Grasmere Road Jtn L137

### **Glider Flying Areas (CH 128.1)**

**Springfield (G951)** 5500-9500ft overhead and to the north. On Approval.

**Lake Coleridge (G952)** 9500-12500ft Wave flying towards the SW. On Approval.

### **Springfield Airfield**

NZSF Runway Directions (LH to the east RH to the west)

Elev 1216ft Frequency 133.55Mhz

Overhead Class C lower level 5500ft

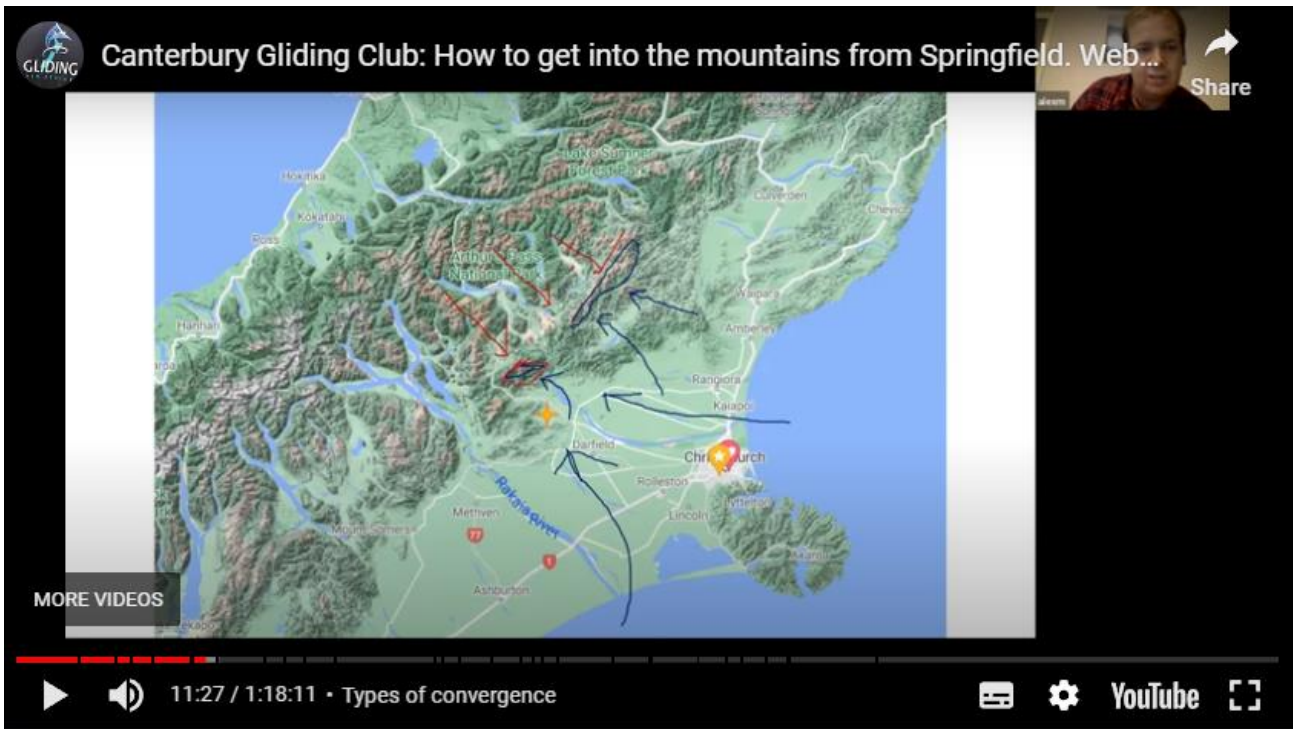
The better prepared you are, the more you will enjoy the flying.

Regards,  
Russell





The main part of the Springfield soaring area – please see the better map on their website



<https://www.youtube.com/watch?v=wTk5s4Q1jLU&authuser=0>



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## New Booking calendar for AGC

Keith Macy

After a considerable amount of work in the background we have implemented new booking calendar system. The old Soaringtrack.com site is no longer supported and had some deficiencies. The new system is found on our website directly and is split into two parts/ pages. The main public facing bookings are from <https://glidingauckland.co.nz/book-a-flight>

Trial flights can be booked from the left hand calendar with club members and visiting pilots using the right hand side. Simply select the date, time, booking type and fill in your details. Select submit and the booking will be taken. You will receive a confirmation email and be redirected to

a confirmation page. A reminder will be emailed to you 24hours prior to your booking.

A new additional calendar has been added for booking of support crew. This includes duty pilots, instructors winch drivers and tow pilots. This is behind the members login and is under the menu item "booking form member". From this page the duty pilot can print the current days bookings and for the duty instructor the days flights can be cancelled (with notification be sent to the booking email address) in the event of bad weather. Lists of existing bookings can be seen from each of the new pages with private details not being shown on the public facing pages

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## ASK21 Significant Defect

Russell Thorne

Since the ASK21 has been rigged yesterday, it has become apparent that the front seat gas strut has failed.

Until a replacement gas strut can be obtained, extreme caution must be exercised in the operation of the front canopy while performing DI or Pre-Take Off checks.

This means that to open or close the front canopy on AK is a two-person procedure, engaging the help of hookup crew or instructors to assist from the outside through the side window.

The opening in the side window is the most delicate part of the canopy, so take special care while having an arm through the opening. There is also a risk of crushed fingers, or even a cracked canopy, if the canopy is allowed to fall unassisted or remain unsupported while open.

Take Care!

Regards,  
Russell

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## Member's Ads



**LS3-A for sale (ZK-GLL).** Has been refinished and is in excellent condition. Recent upgrades include LXNav S100 plus remote stick, Trig ADSB, new front panel, Flarm mouse, new galvanized tilting open trailer that I am in the process of making a full cover for. Glider fits in the trailer the same as a cobra trailer with the fuselage and wing trolley's being visually similar to what the expensive trailers use. After several landouts the trailer proves to be successful and easy to use. Comes with tail dolly, wing walker tow-out bar, oxygen bottle and EDS system (I have never used this so cannot vouch for its functioning) Annuals recently completed. A great performing 15m

flapped glider. \$45,000  
Contact Keith Macy [keith.macy@outlook.com](mailto:keith.macy@outlook.com)



**PW5 KF.** Current Annual until Dec 2022. Ready to fly. Approx 800 hours flying. Radio, altimeter, airspeed indicator, electric and mechanicals varies. 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

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