

FREE FLIGHT

2020 Issue 2





- Glider maintenance
- Major structure repair
- 20 years composite experience
- Annual inspection

- Maintenance de planeurs
- Réparation structurale majeure
- 20 ans d'expérience en composite
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The journal of the Soaring Association of Canada
Le journal de l'Association Canadienne de Vol à Voile

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FREE FLIGHT

Soaring Association of Canada (SAC)

The Soaring Association of Canada (SAC) is the governing body for the sport of gliding in Canada. Mandated to safeguard and promote our sport, we render support and representation to glider pilots and gliding clubs across the nation through a variety of committees. On a national level, we represent our affiliated clubs and members on issues related to licensing, medical requirements, airspace and regulation. Internationally, we maintain representation within the Fédération Aéronautique Internationale and the International Gliding Commission. We invest in the renewal and expansion of our sport by offering bursaries for young pilots, financial support for contenders representing Canada in international competitions, and financial aid for clubs carrying out marketing and publicity initiatives. Additionally, we publish **Free Flight**,

SAC's magazine. Finally, we keep our sport safe by providing extensive training and development programs for instructors, safety seminars, and maintaining safety programs.

SAC maintains a head office in Ottawa. A volunteer Board of Directors comprised of representatives from all regions of the country steers the organization. SAC is registered as a Canadian amateur athletic association with the CRA, an agency of the Government of Canada.

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VOL LIBRE

Association canadienne de vol à voile (ACVV)

L'Association canadienne de vol à voile (ACVV) est l'instance dirigeante pour la pratique du vol à voile au Canada. L'ACVV a pour mandat de préserver et promouvoir notre sport. À travers différents comités, elle représente et soutient les pilotes de planeur et les clubs de vol à voile partout au Canada.

Au niveau national, nous représentons nos clubs affiliés et nos membres pour les questions relatives aux licences, aux exigences médicales, à l'espace aérien et à la réglementation. Au niveau international, nous sommes représentés au sein de la Fédération aéronautique internationale et de la Commission internationale de vol à voile (IGC). Nous investissons dans la relève et l'expansion de notre sport en offrant des bourses à de jeunes pilotes, en fournissant un support financier à ceux qui nous représentent dans les compétitions internationales et en fournissant une aide financière aux clubs qui réalisent des initiatives de marketing et de publicité. Nous publions également la revue

de l'ACVV: **Vol Libre / Free Flight**. Finalement, nous prenons à coeur la sécurité dans notre sport, en fournissant des programmes élaborés de formation et de perfectionnement pour les instructeurs, des séminaires sur la sécurité et des plans de maintenance de la sécurité. Pour avoir plus d'information à propos de l'ACVV, veuillez nous contacter via l'un des liens ci-dessous.

Enregistrée comme une Association canadienne de sport amateur auprès de l'Agence de revenu du Canada, l'ACVV a son siège social à Ottawa et est gérée par un conseil d'administration bénévole constitué de représentants de toutes les régions du Canada.

Pour un changement d'adresse, communiquez par sac@sac.ca. La revue est disponible gratuitement, en format "pdf" au www.sac.ca. Veuillez envoyer vos soumissions à bphornett@gmail.com

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“Wanna break a record?”

Melanie Paradis, Edmonton Soaring Club

I showed up at Fall Cowley on Sunday evening excited and nervous, as this would be my first opportunity to experience Mountain Wave. Within seconds of my arrival I heard the bad news that a wing stand had given out while Patrick “Peanut” Pelletier was rigging his glider, rendering it unserviceable.

I immediately offered my sympathies and disbelief and told him that he would have to get in our two-seater from Edmonton so he could mentor the uninitiated.

Monday, Patrick volunteered to ferry the ASC towplane to Red Deer and was gone for most of the day, while I was able to line up a wave check-ride with Gary Hill. Gary and I were able to get to the primary wave in the ESC Perkoz. It was a great flight with a taste of everything the mountain wave had to offer. Rotor, wave, cloud formations, tracking vs heading, fighting to stay out of controlled airspace and most amazingly how quiet and smooth it was in the wave and how effortless the climb was. If you weren't paying attention, you would quickly bust through the 12,500 foot base of Victor 300 airway before you could get clear of it North of Centre Peak. It was amazing how strong the upper winds were and how fast we could descend when we were on the rotor side of the wave.

That night, my family had our truck camper parked at the end of runway 21 beside all the tied-down gliders, and endured the windiest overnight camping we had ever experienced. Finding it hard to get to sleep, my husband Tyler and I found ourselves wandering around in the dark checking on the gliders, and luckily righted a blown over wing stand on the Perkoz. Back in bed afterwards, with the camper rocking in 80km/hour winds, my mind swirled thinking of the days' events, and the excitement of tomorrows wave conditions to come.

Early the next morning, there was a slight lull in the wind and a Cu Nim pilot asked if we could help de-rig his glider before the winds picked up again. We were happy to help. It didn't take long and as we were finishing up, Peanut arrived. He said he thought it was going to be a great wave day and wanted to know if I would like to go break the two-seat altitude record. Before I knew it, I was saying "Okay!", and sprung into action untying and DI'ing the Perkoz. Positives and release checks completed, we pulled the glider over to fill the oxygen tank to max capacity, while Tyler went and brought the towplane over to the flight line.

Patrick was happy to answer all my questions I had with regards to the tank fill and passed on knowledge about getting more oxygen into the tank with a slow steady fill, all the while feeling the tank for any in-

creases in temperature. My knowledge of oxygen equipment, being all hospital acquired with my respiratory therapist background, left me feeling comforted that the regulator and tanks were much the same, and the use of nasal prongs and mask use, Fi O₂ and Partial Pressures of O₂ at altitude were all second nature. The use of the "box contraption" for the O₂ was new to me, so Patrick and I discussed its use and multiple settings and came up with a clear plan of when to switch over to mask use and when to switch to rescue breathing settings. Patrick's military background/briefing leant well to my work as a Cardiovascular Perfusionist where I work as part of a team during cardiac surgery. Closed loop communication is very important in this setting as the surgeon needs to concentrate on their task at hand, so short concise words and read-backs of what is requested is important to know we are all doing our part for everything to go smoothly. A small miscommunication can have dire consequences for the patient, so the surgeon is relying on instruction being followed and understood.

Since Patrick and I would be relying on our oxygen system to keep us conscious and functioning for our flight, a clear plan and team work would need to be followed. We discussed the plan and I practiced switching over from nasal prongs to mask and switching over the connection at the box end, which sounds simple enough, but at altitude would need to be done in a timely and practiced manner to avoid hypoxia. Patrick then briefed me what would happen should one of us feel the effects of hypoxia. It would be imperative for both of us to keep our masks on at altitude, especially above FL250 to avoid hypoxia. As verbal communication would be hindered with the masks, we would need to check in with one another every 1000 feet with a thumbs up. Should either of us feel any effects of hypoxia, either of us were to open the spoilers and descend as seconds would matter to get down to a safer altitude.

While Patrick and a small crew pushed the glider out to the flight line, I went back to the camper to get my winter gear on and tend to my nutrition. A quick mental check-in with myself was completed on my short

As verbal communication would be hindered with the masks, we would need to check in with one another every 1000 feet with a thumbs up. Should either of us feel any effects of hypoxia, either of us were to open the spoilers and descend as seconds would matter to get down to a safer altitude.

walk to the camper to ensure "I AM SAFE" to fly. I was well hydrated, well rested, stress free and would soon be fed. I had witnessed the deleterious effects dehydration could have on cognitive function at Summer Cowley, and had been mindfully drinking water since my arrival. I was in great shape, having lost 90 pounds over the winter months to make flying easier for myself and my hemoglobin was the highest it had ever been which would bode well for my oxygen carrying capacity at altitude. Being a teetotaler and a non-smoker would increase my chances of not becoming hypoxic at altitude.

Arriving at the camper, my three boys were about to start their on-line school day, and were using my cell phone as a wi-fi connection to log onto their class meets. I told them, "Sorry boys, you're going to miss school this morning, as I would like to document our attempt to break a Canadian altitude record." Amazement to both the statement of missing school and to their mom going off to break a Canadian record ensued. They all said "Good luck Mom, you can do this!". With their words of encouragement ringing in my ears, off I went to get into my parachute, set up *XC Soar* and get strapped in to the glider to ensure everything was in order.

Our ESC fleet manager Ray was close by and since I had only flown the Perkoz twice this season (I had been jumping between six other glider types between Cu Nim and ESC), my familiarity with how to switch between radio frequencies, check battery life, and switch between the onboard batteries were minimal as every aircraft seems to be slightly different. I'm glad I asked for a quick refresher as the Perkoz had some quirks and the backseat push to talk button was not working, which meant I would be handling all the radio calls/communications. Two of the three on board batteries were at minimal charge so I requested a hand held for the backseat as a back up and Patrick was happy to provide his own personal one. Putting people on ECMO at work, a type of life support, has taught me that you want to have everything ready when seconds could matter for life and death situations. You don't want to be run-

ning to get things needed to institute support and we certainly did not want to be lacking battery power for communication devices.

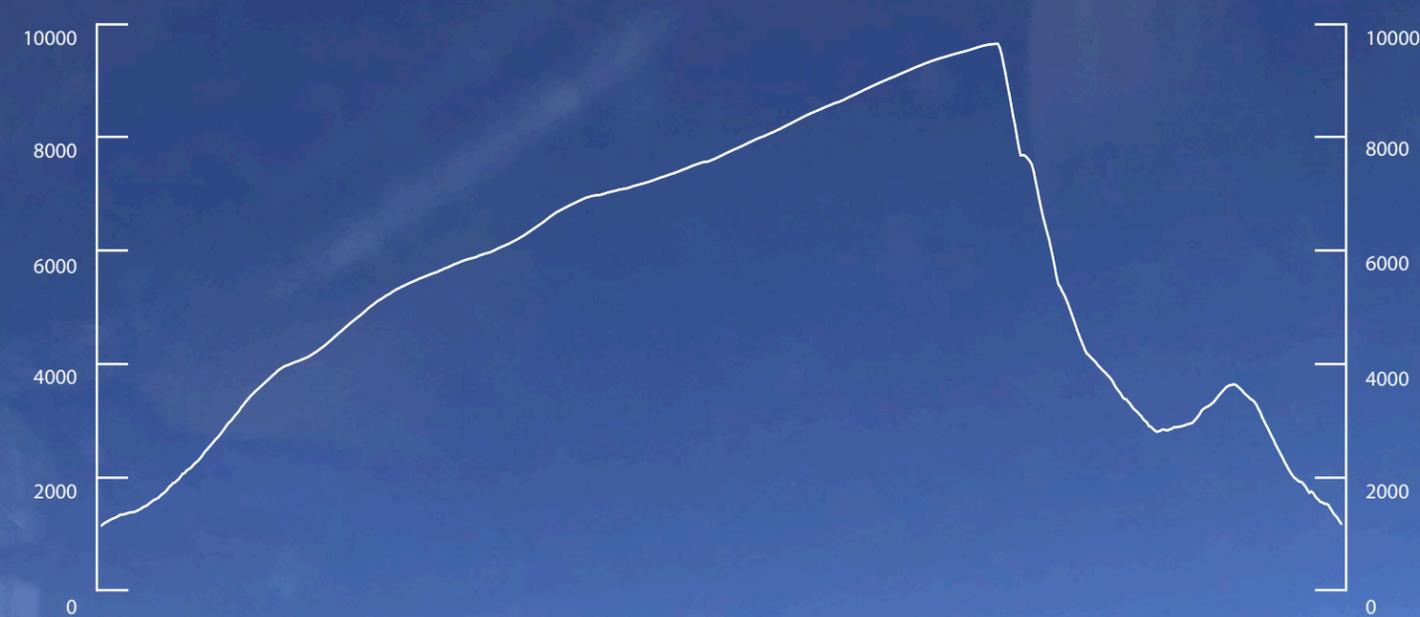
While Patrick and I were busily getting prepped for our flight, Tyler Paradis, who is a “Calgary Enroute” IFR Controller (encompassing Cowley airspace), our tow pilot for this flight and who happens to also be my husband, was coordinating with the Edmonton ACC to facilitate a block extension above FL280 in an hour’s time. A big thank you to Todd Trischuk, the Edmonton ACC Shift Manager at the time who organized approval for this request.

Several people were around to get the operation running at this point. Getting a glider into the air takes a team and I am thankful to the crew who jumped into action to get us on our way.

The time came where we were all strapped in, crew plan in place and rehearsed and discussion of tasks divided up. I was to fly take-off, aerotow, initial wave climb to 20,000 feet, all air to ground communications and ATC clearance coordination through Cowley ground, descent from the wave, return to the airfield, circuit and landing. Patrick’s tasks were pre-flight game-plan coordinator and briefer, high altitude wave climb and navigation, crew safety coordinator, in-flight crew on-board communications and crew physiological monitor.

Take-off was uneventful and initial climb out was great and we quickly rose to 5000 asl, which is where we stayed for quite some time on our journey out to the Rocks. We were picking out fields along the way in the event of a rope break, as we were only at 1100 agl and definitely out of final glide of the field. Luckily there seemed to be some great options. The tow was rough at points once we were into the foothills. Full control deflections were definitely needed at times, but from stories I had heard about passing through the rotor, it wasn’t too bad, though I was thankful for my Air Cadet gliding roots and the 1500 aerotows it had afforded me to draw upon to get through it. As we were approaching where we thought the

primary wave should be, Patrick asked me to call Tyler to tell him to turn west, but before I could make the call, Tyler was already turning where we wanted him to. This turn was due to his experience attaining his diamond climb the day before on his wave flight, or possibly from his sixth sense from decades of avoiding the wrath of his wife. Regardless of the reason, our VSI started to read 10 kts up at which point we released. Our typical right turn off tow was quickly shortened and we turned back into the wave with the towplane in sight. Amazingly, the VSI and altimeter quickly marched up. We worked our way North to get past centre peak before we reached 12,500 feet to clear the Victor 300 airway and continued our strong steady climb. At 18,000 feet we seamlessly switched over from nasal cannulas to face masks. Time seemed to have no meaning any longer as I was lost in the wonder of the flight. As each 1000 feet ticked by, our goal seemed possible. Through 22,000 feet, it became obvious to Patrick that the wave would likely reach above 30,000 feet and he asked that I initiate communications with Cowley Ground to obtain clearance to FL350. The initial clearance had us cleared to FL320. Patrick reminded me to make sure my muscles were relaxed and to wiggle my toes, and mentioned that shivering can lead to hypoxia. My mind immediately flashed back to bedside experiences with cardiac patients shivering and watching their oxygen saturations plummet. The clinical solution in that scenario is to give Rocuronium, a muscle paralytic, in order to decrease the patient’s oxygen consumption. Since, that would not be a possible solution, nor would Patrick appreciate a paralyzed co-pilot, I



focused on keeping my muscles relaxed, and my legs warm by resting my arms over my chilly legs, with my down gloves resting on my thighs. I really wished I had snow pants at this point, but was very grateful for my winter boots, layered pants, jacket, hat, gloves and wool socks. Passing through FL280 Patrick told me to look up and I was shocked to see an Airbus 330 passing overhead. The contrails remained as we continued to climb and we were subsequently given a clearance to FL350. I took my last picture at FL280. My movements now were very deliberate so as not to consume more O₂ than was being delivered to my body. The small window vent on the Perkoz kept popping open and I weighed the risk of letting the -43 degree frigid air in and risk shivering, or moving my arm up to close it consuming too much oxygen through my movement. I decided to slowly move my arm up and close it and the window stayed closed for the remainder of our ascent. Passing through FL300 I focused on my breathing, maintaining a normal respiratory rate of 10-12 breaths/minute by counting 6-8 seconds between each breath and tried to keep a normal tidal volume to each breath as I did not want to decrease my CO₂ levels, as I know in my practice as a Perfusionist that decreased CO₂ can lead to cerebral vasoconstriction. Often times, while on cardiopulmonary bypass, we keep the CO₂ a little on the higher side of normal to maintain cerebral vasodilation and allow for higher brain saturations. Normal brain saturations were going to get me through this. I really wanted to look around and take

a picture, but instead I tried my best to imitate a rag doll with limp muscles. As we reached FL320, I tried not to get excited and dissociated my mind from the situation as I did not want my heart rate to increase as my cardiac output would increase along with my oxygen demand, which could push me over the edge to hypoxemia. Within seconds of being at FL320, Patrick opened spoilers, increased speed and did a rapid descent using the rapidly descending air on the downward side of the wave to get to 28,000 feet within a minute. I was very grateful for the very effective air-brakes on the Perkoz, Patrick’s 15 years of wave experience, his military training which included hypoxia training and F18 manoeuvres. These all contributed to his amazing sense of second nature escape planning when he recognized his own hypoxia through the beginning of tingling fingers after he took a picture at FL320. At 28,000 feet we discussed if we should continue to climb and we decided that since other pilots were waiting for the Perkoz, we should head back. Control was handed back over to me, at which point I inwardly laughed at the seemingly ludicrousness of our altitude. How do I get down from 28000 feet?! With a Fighter Pilot in the backseat to guide me through it, no problem! Spoilers, speed and staying in the down going side of the wave brought us

I took my last picture at FL280. My movements were now very deliberate so as not to consume more O₂ than was being delivered to my body.

down quickly. Once below the base of Victor 300, we decided to head west and pop over a large bank of cloud instead of going under it, so we could take advantage of the lift on the other side of it, instead of going under it into the rotor. I had never descended toward a cloud formation from above before, and our shadow on the impressive cloud bank could be seen with a concentric rainbow around it. How beautiful! We followed the edge of the cloud south-bound and came around the end of it and started heading north to the field at which point I closed the spoilers and fought up-wind. We arrived back at the field with a few thousand feet to spare.

I popped spoilers to descend to circuit altitude, but Patrick said “Why waste the height when we are paying for it”, and with a detectable grin in his voice took control and put a show on for me. It was amazing to see such precise control, and his ease at the controls from years of military training, shone through. At circuit altitude I took control and landed back at the field with a very stiff headwind, which I was thankful for as it was these amazing winds that afforded us the wave from the Livingstone Range to achieve our record setting goal.

What an amazing feat accomplished with such a simple question – “Wanna break a record?”

Patrick's Story

Patrick 'Peanut' Pelletier, Lethbridge Soaring Club

Melanie's article sums up our achievement quite well and after reading it I feel that all I can offer is my recollection of events and thoughts that led to us breaking a long-standing altitude record. I must point out that after the fact, a seemingly unconnected event led to this record attempt. Upon arrival in Cowley, my glider became unusable for the duration of the camp and I essentially started looking for someone to fly with after I was done kicking rocks and feeling bad about not being able to fly my own machine on what I consider to be the highlight of the year. Yes ... I'm addicted to high altitude flight! On to the story ...

During Fall Cowley, I have always been in the habit of getting up well before sunrise to have a look at the weather forecasts, read the NOTAMS and to take a peek outside my hotel room door to look at the weather conditions in the Pincher Creek and more specifically, looking for signs of rotor or lenticular formations towards the Cowley airfield. As luck would have it, it only took a second to tell that a strong wave was occurring. The sight of well formed lenticular clouds and the associated high winds at Pincher Creek told me that it was time to pack up my high altitude gear, head for the field and find someone who is awake and willing to go flying. I arrived at the field shortly after sunrise, only four people were up and about. Melanie, Tyler Paradis, Ben Hornett and myself. The initial conversation went like this:

Me: We should be flying right now!

Tyler: If you want to go, you could take the Perkoz and I'll tow you up.

Me: (to Melanie) Wanna break the two-seat altitude record?

Melanie: Okay!

And that's essentially what got the ball rolling. We promptly got to work getting the Perkoz ready and topping up the oxygen. Although this may seem like an impromptu "let's go flying" type of thing to the reader's

eyes, a lot of thoughts were going through my head as we were preparing to go break a record and were knowingly about to put ourselves at significant physiological risk flying above 25,000 feet. I did feel a certain burden of responsibility upon deciding to break a record and putting someone else at great risk, so I had some thinking ahead of me and only about an hour to do it. As we were preparing the glider and equipment prior to launch, I was building a list of essential briefing items in my mind that would ensure the risks we were about to take

I started looking for someone to fly with after I was done kicking rocks and feeling bad about not being able to fly my own machine on what I consider to be the highlight of the year. Yes...I'm addicted to high-altitude flight!

were mitigated as much as possible. The main challenge breaking a two-seat record is the fact that there are two crew members on board and how to achieve and maintain safety throughout the flight.

This may seem trivial in flight at low altitudes, however when the oxygen masks go on, the number one challenge is communication between the two of us. The number two challenge is the physiological monitoring of the crew. Number three is the air-to-ground communications and number four is the coordination and sharing of tasks between the crew members. Below is a list of elements that I considered essential to a crew briefing to achieve as safe a flight as possible during our record attempt.

1 Crew communications Our pre-flight briefing consisted of how we were going to communicate with each other once the

masks go on. Around 16,000 feet and up to 25,000 feet we briefed that we could momentarily lift our masks to say a few words. Above 25,000, we briefed that no more words would be used and only a thumbs up to the other crew member every time the altimeter climbs through another thousand. In the event that one of us feels unwell either through hypoxia or any other reason, the affected crew member only had to pull the spoiler handle open fully and this was the signal to start an emergency descent and turn towards the dump side of the wave to maximize our descent rate.

2 Physiological monitoring I am fortunate to have been trained to recognize my personal hypoxia symptoms through my Air Force high altitude chamber training and I am confident I can recognize my own in time to carry out my emergency actions. How do I monitor someone who has never experienced their own personal symptoms and has only had brief exposure to the wave once before? The answer was the combination of a few things:

- To establish that if you are not feeling exactly the way you feel right now standing on the ground, you are likely hypoxic.

If you are going to attempt a task using a glider with two crew members, you need to figure out what will maximize your crew's efficiency in a challenging environment and ensure everyone's safety

- The establishment of a prompt thumbs-up given to me every time the altimeter crosses another thousand once above 25,000 feet.

- This one came up in flight as a welcome annoyance:

the front cockpit vent kept popping open every 30 seconds, which allowed me to monitor Mel's reaction and watching her coordination while she closed the vent repeatedly. As an added precaution, our pre-flight briefing included the use of our oxygen settings at altitude and selecting the highest manual setting upon crossing above 28,000 feet (R/M on the *Mountain High*).

And finally, to further mitigate the risk, we briefed that we should avoid unnecessary movement above 28,000 feet since muscles consume oxygen.

3 Air-to-ground communications

Although this was a minor challenge, the fact that only the front seat had transmit capability required some coordination between the two of us. As an added precaution, I carried my own handheld just in case. We did however talk about what clearance I wanted from ATC to both Mel and Tyler as he would act as the ground liaison between us and Edmonton ACC.

4 Coordination and sharing of tasks

I believe that a two-seat record requires each crew member to act as a team. We effectively established who was going to perform which tasks before getting airborne. Mel would do the take-off, air tow through the rotor, release and carry out the initial wave climb

below 20,000 ft, all communications and the descent back down from high-altitude for landing. My tasks were: wave climb above 20,000 ft and navigation at high altitude, physiological monitoring of the crew, and a few other tasks.

Aside from those "big picture" tasks were some more specific items that needed discussion like "how and when are we going to switch from cannulas to masks?" The answer for that one as an example was low enough for everyone to do it and be able to fix a problem and we established the order of front seat first while the other is flying. Confirm oxygen flow in the mask then relinquish control and repeat for the back seat. This item actually proved to work quite well. When my turn came to don the mask, I had made the switch but could not establish oxygen flow which required me to retrace all the oxygen tubing until the fault was found.

The above elements are not a complete list of considerations I made prior to us trying to break this record. These elements are there to highlight that if you are going to attempt a task using a glider with two crew members, you will need to figure out what will maximize your crew's efficiency in a challenging environment and ensure everyone's safety.

Without re-telling our story, I wish to highlight that Mel's performance has been absolutely outstanding and performed as an ideal crew member throughout the entire experience. As a professional military aviator, I seldom get the chance to fly with civilian pilots in challenging environments. Mel's actions, teamwork and adherence to the plan we established were instrumental in us achieving success and her performance was equivalent to what is expected of a military aviator. She would be my first pick should the opportunity to break another two-seat record present itself again. ■



Mike Morgulis
Toronto Soaring Club

Gliding in



Japan

In March 2017 we vacationed in Japan, and we brought our then-12 year old son Lior with us. Of course, gliding had to be a part of this trip too. We researched clubs near Tokyo and found the Japan Soaring Club in Itakura, about 90 minutes outside of Tokyo. As they're the only club with an English webpage, they tend to get most of the visiting pilots, however there are seven neighbouring clubs within 50 km. Retired JAL 747 Captain Shigeteru Suzuki provided me with excellent instructions to reach the club, tow rates, and flight duration options.

Japan is ritually polite, people are addressed with honorifics, and the definitely punctual transit system is something to be awed. The food is both diverse and delicious. Signage and public announcements on the trains are in both Japanese and English and most who deal with the public can speak English. For everything else there's Google-translate and a few OCR phone translation apps.

Thanks to Google maps and a rented portable pocket-wifi, travelling was easy, as was using the Pasma transit card and Japan Rail Pass. On Saturday March 11th we arrived at Tobu Railway's Itakura's Fujioka station; waiting outside was a van with a glider sticker on the rear windshield. Pilot Masataka Yao introduced himself and we all settled into the van for the quick 5 minute trip to the airfield. \$16 train ride (each way) and a brief van ride is all that's needed to go gliding from Tokyo.

We learned that many Japanese glider pilots start flying at the university club level using a winch, which is quite popular and well-supported. The current university clubs train using brightly coloured ASK-13s or ASK-21s. The L-13 Blaniks which were once popular have all been withdrawn from service. There are also post-university students who learn at local clubs, one of whom was also in the van with us.

Masataka-san showed us around the huge hangar. Off to one side was the workshop with their club Dimona undergoing some maintenance. On the other side was the club's meeting room, kitchen and class room. The middle portion of the hangar was home to the club's Grob 103, 103 Acro III, G102, and Christen Husky towplane. An L-23 was de-rigged and off to one side. There is a second floor surrounding the main hangar, which also includes a bunkhouse.

The runway is on the flood plain of the Watarase River; to reach it from the hangar one must cross over a 20 ft high protective

levee as the monsoon season elevates the water level considerably. Lining the runway was a sizable fleet of modern gliders: ASW-19, 24, 29, and ASH-31MI. There were three Duo-Discuses as well as an Arcus T, DG300s, 400s, 800s, LS-4s, Discus A and B, and a PW-5. We were introduced to all of the pilots as they rigged and we all met back at the flight van for the morning briefing.

At the briefing we met Mrs. Haruka Kise, the club president, and she told us that she learned to fly in university at the age of 20 in a Japanese Horikawa H-22 open-cockpit primary, and then the enclosed cockpit H-23 (glide ratios of 14:1 and 18:1 respectively). We did not see either of those as they are now museum pieces. Mrs. Kise has three diamonds, two earned in Narrowmine (1978 and 1985) and her altitude earned in Minden (2002).

After the Met man gave his forecast, I was introduced and invited to speak to all the pilots, which was an enormous honour. I thanked them for their warm welcome, commented upon their excellent equipment and operation, and said that with a hot sun and firm ground, and many cumulus clouds already forming, it should be an excellent day and that we should all enjoy good, safe flights. (I know a few of my fellow club members will wish that I spoke only that much at our morning briefings!)

I picked the Grob Acro III JA2442 as my ride and senior instructor Masafumi (Masa) Itagaki volunteered to fly with me, as I don't have a Japanese license. For the pre-flight I grudgingly disclosed my weight, and after they chuckled a bit, they removed all the front seat ballast. Most Japanese pilots are somewhere between 55-70 kg due to the more active Japanese lifestyle. I still have a few kg to lose to get to that point ...

Instrumentation was the same as it was here, the flight computer was a Clear Nav that looked much like my CAI302/303 combination. The only unusual nuance I noted was the hand crank for the pedal adjustment which was a huge refinement from any Grob 103 I'd previously flown. The altimeter was set to field elevation of 59 ft asl.

Strapped in, and with checks done, we watched the Christen Husky pull in front of us. It has an internal spool for the towrope, something that's popular in Australia and Europe. All of the launch signals were familiar, including the air-to-air emergency signals and release directions. Masa-san said he'd handle the radio, but other than that, it would be my flight. The launch was quick, crabbing into the crosswind once the wheel

left the ground, and we turned left to avoid the power-lines ahead as we climbed out. Flying from Toronto Soaring demands the same power-line avoidance departure turn on runway 18, so a little taste of home!

At 2000 ft I released and turned right, hitting the thermal which the towpilot had found for us. With the audio vario happily chirping along we topped out at 6800. After the first climb I asked Masa to fly for a bit so that I could take some videos and photos of Mount Nikko in the distance. He cored another thermal and politely offered the controls back to me, but I told him to keep going to the top so that he could get the satisfaction of flying his first excellent thermal of the year.

The fields tend to be very small in general, almost prohibiting the thought of landing out. The grassy flood plains along the river offer much better opportunities. Masa told me not to worry as there were many other airfields around, in fact there were two gliding clubs close by.

Captain Suzuki later told two land-out stories from recent years, one resulting in a student landing on a river flood plain after getting lost. As there was no road to the land-out location, all the pieces had to be carried across the flood plain to the trailer. On another land-out, this time in an already harvested rice paddy, the glider was successfully retrieved, but the farmer was concerned about possible soil contamination. A case of beer changed the farmer's concerns to "you can land here any time!"

As we hadn't filed a flight plan, we were limited to local soaring only; we used our altitude to street along to the first corner of our imaginary boundary over Tatebayashi, then headed north for the foothills of Mount Nikko where we shared a thermal with another glider. Masa made a few position reports, but was otherwise happy to keep his hands off the stick. We turned east by the Karasawa Golf Club; I noted many golf courses around, all on sloped hills, and very few of them suitable for landing out. The end of the hour was approaching, so I turned homewards and used the remaining altitude to practise some stall recoveries, lazy-8's, chandelles and then I introduced Masa to "rolling on the point", which he thoroughly enjoyed.

Crossing back over the river, I joined the fixed pattern for runway 33 which overflies a large factory, then a school yard, hooks left at the radio tower and then one more turn for final. I allowed for the wind gradient when descending below the top of the levee.

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We were all forewarned about the lumpy runway during the morning briefing, so I touched down past the worst parts.

After the landing, Masa said that should I ever live in Japan, I'd have a job as an instructor at their club. The plane was put back onto the line so that Lior could have his flight with Masa, Lior's first from the front seat. He, unlike his father, required ballast. Masa enjoyed showing him around the area and Lior returned with a big smile.

We helped Masataka Yao and Takao Nakaniishi launch in the other G103 and their OLC posting later reported a good flight, getting up to 8000 ft asl while flying over 140 km. Recently they've begun to explore wave conditions north of the club near Mount Nikko.

The OLC shows that one of the club's pilots, Kenshi Tagami, flew his DG400/17 to Nihonmatsu on February 19th, 306 km and a height of 5000 m. On April 13th he flew to Kunimi and back, for a distance of 572 km and a height of nearly 6000 m. We're all eagerly awaiting to see if he can complete one of the first 1000 km flights in Japan.

Internationally, Japan is doing well in the gliding scene with Makoto Ichikawa earning a Silver medal in the Standard class at the 2017 worlds in Benalla. I had the pleasure of meeting Takeshi Maruyama "Team Maru" when I visited the club and he competed in the WGC 2018 in the Czech Republic.

Since coming home I've enjoyed trading emails with many of the club members in Itakura.

Part 2, the return

In July 2018 we returned to Japan with the purpose of climbing Mt. Fuji. We scheduled that for the end of the trip, which left one weekend for us to travel to a different gliding club! We decided to go to Nagano for both the 'snow monkeys' and soaring. We emailed Masataka Yao and within a few days of our arrival he and his wife, Naomi, met us for kushikatsu near Shibuya Station in Tokyo. As newbies to Japanese fun food, the experience was great, plenty of skewers of various fried foods on sticks, with beer of course, and lots of table chatter. Masataka and I spoke a lot of 'shop'. For example, an annual inspection of their Aviat Husky

towplane must be done by the same people who inspect large commercial aircraft, so the rate is around \$40,000 per annual inspection.

We could buy a reasonable glider for that. Two annual inspections would get them a Citabria. Masataka already knew this; they've been trying to change the rules.

The Shinkansen ride from Tokyo to Nagano was quick, traversing the many tunnels necessitated by crossing the spine of the Alps laterally across the country. As we left Nagano station and headed to the main concourse, Kazuo approached us and helped us check in at our hotel, which was connected to the train station. Kazuo gave us a guided tour around the city, treated us for lunch, took us to Jigokudani Monkey Park to see the macaques, and then took us to the club hangar for a social visit as it was a non-flying day.

We met the club president and their chief mechanic "Shigeta", who was poring over one of the SF-25C motorgliders. While Thuy and Lior went outside to sightsee, I remained and chatted with the guys in

English. The president informed me that Shigeta is a Lt. Colonel in charge of maintenance for the Air Force 'Blue Energy' aerobatic team. He is also an accomplished glider pilot. I asked if I should refer to him by his rank and he smiled and said "Shigeta is fine". I told him that my wife was a field marshal. All of them looked at me so I pointed to my shoulder and gestured an epaulet with 4 stars and then I said "ichi", the number one rank. They asked if she was in the air force, army or navy to which I replied, "No, she's the field marshal at home!" They cracked up laughing.

The next day Kazuo picked us up and drove us to the airfield, which is only 17 minutes from the Big Hat Olympic Arena downtown. We walked the field starting at the winch end of the runway. It was Annual Inspection Day, and Shigeta and another AME were test flying the gliders after doing the work on the ground. The sky was overcast with a southern wind as a small monsoon had whipped through the area the night before. I was told that the wind direction was completely backwards to the norm, thanks to the storm, so I would not be enjoying any of the convergence or wave that they normally experience with a prevailing northern wind hitting the mountains immediately south and east of the airfield.

As with the other club we visited the year prior, I was invited to address the pilots at the morning briefing, and Kazuo kindly translated into Japanese for everyone's benefit. I kept it simple again, good flying, good lookouts, and don't drift too far downwind.

Shigeta and I launched first in the ASK-21. As it was only my second winch flight ever, I asked him to launch us. I must admit that it was not only exhilarating, it was a much higher winch launch than I experienced at my own club as the runway in Nagano is about 1000 feet longer. After release, he pushed the nose down and gave me control. I flew a bit upwind and found a thermal which I centred and circled. We drifted north with the wind so when we had enough height, we pushed a bit more southwards, upwind and closer to downtown Nagano.

Shigeta pointed out the terrain, the mountains, and the expected angle of the thermals which the mountains would modify in addition to the modifications from the wind.

The house thermal we were enjoying was generated from the tip of an island and spit of land at the confluence of Sai and Chikuma Rivers. Again, the few farm fields

surrounding the flying club were tiny and didn't offer an option for a landout, however the flood plains of the rivers were wide and appeared to be flat enough to do the job in an emergency.

The scenery was nothing short of amazing, and it was a rare treat to be able to fly over such a densely populated and built-up urban area with a glider, at such a relatively low altitude. Shigeta invited me to complete the flight, so we joined downwind for a right hand circuit that had us pass over the large bridge over the Chikuma River, just east of the arched span trusses (which makes a great landmark for the circuit) and I eased us onto the grass runway.

Thuy flew next, and she explained to Shigeta that she liked roller coasters, so whatever he wanted to do after release would be fine with her. I knew she'd love the winch launch, it was her first, but the wingovers and steep turns that followed were really something to watch from the ground. The flight didn't last long, but I could see Thuy's smile beaming from the rear cockpit as they flew past on short final. I went with the small truck to retrieve them and pull the ASK-21 back to the launch line.

Thuy said "Sorry honey, but that was the best glider flight I've ever had!" Shigeta looked at me and flashed me a big smile. I said "That's okay, you were flown by an expert!" Again he smiled. And then it was Lior's turn to fly with Shigeta. Lior is usually reserved, quiet and calm and has a "yeah, sure, whatever, I'll go" approach to things. Having just seen his mother's flight he asked "Can I please have the same flight you gave my mom?" Shigeta smiled and said "Sure, maybe better. Keep the straps tight!"

Up they went, off the release Shigeta dove down to pick up speed and pulled the nose straight up, wing-overed and recovered into a few more, finishing off with another knife-edge steep turn that put them onto the downwind leg. And, just like his mother, there was a huge grin from the rear cockpit. For added effect, Shigeta side-slipped the glider for a shorter final and roll-out.

Shigeta had promised me a flight in the SF-25C motorglider, so a little bit later we climbed in with him in the right seat and me in the left. The motor is a Rotax with a reduction gear drive. After a quick briefing, Shigeta did the take-off and headed us directly to the mountain range to the south east of the club. He carefully narrated his flying. With the throttle back to idle, he climbed up the mountain's edge using ridge

lift and then turned away at the end to avoid the curl-over downdraft, "Escape!" He repeated it and then had me try it. I'd only climbed in ridge lift once before, the rules were the same in Japan. He turned off the engine, feathered the propeller, and we enjoyed some true free flight. When I tried to connect with a thermal that was under a cloud, I instinctively flew to the sunny side. He tapped my shoulder and pointed to the other side of the cloud. "You're flying flatland. The lift is from the slope, not from the sun." We shared a good chuckle. Lesson learned!

Once again he flicked on the engine and headed us towards the ridge line. I know our straps were tight, but we hit a pocket of lift that was so strong it pushed us down into the seats, and then a second later we hit sink that bounced our heads off of the canopy. Shigeta and I laughed and as he said "Thermal!" we whipped around to connect with it.

The beer penalty is international for staying up past an hour, so it was time to head back. He told me to land the plane, touchdown at the start of the paved portion of the strip to make braking easier. It had been a while since I'd landed with two main wheels, I actually didn't think about it much on the way down, I just flew a solid approach, held off, and used a bit of spoiler to drop us onto the runway as I flared. The rest of the spoiler was the wheel brake, which was easy. Shigeta taxied us back to the staging area.

During our flight, a group of air cadets had arrived, all younger members of the club. The president gathered everyone around the Puchacz for a big group photo, everyone showing the thumbs up.

We were treated so well and so warmly by the club, and Shigeta and Kazuo went so far above and beyond that we had no words. With hugs and handshakes and many "Arigatōgozaimashita" (thank you – formal) spoken and bows, we departed and headed back to our hotel.

After Nagano our trip took us to Kyoto, Tokyo and then we climbed Mount Fuji. We were so exhausted after all of that, on our last day we caught a train to Kamakura to enjoy a Pacific Ocean beach.

When we got back to Toronto, I made up two packages for Shigeta and Kazuo, each with a bottle of premium maple syrup, some aviation key chains and an RCAF baseball hat they could wear when flying. We're looking forward to seeing them again one day. ■

Top Flight for OLC Canada 2020

Nick Bonnière

It was exceptional weather overall, but wasn't a cake walk. I did not do a declaration unfortunately, and even for free distance you need a declaration to an OO. I have written some notes on the flight:

The E-NE wind was misleading. Who would have thought such a big flight was possible on an east wind day?

André Pépin and I followed NE cloud streets towards Quebec City, but the further east we got, the lower the cloud base got with significant overdevelopment. We kept going towards Lac-à-la-tortue until it was overcast and lift was difficult to find, so we turned around. When we got back to the level of Mt-Tremblant, it was turning blue, but we pushed ahead into fewer and fewer isolated cu and wisps, and got low around Maniwaki where we had trouble finding lift.

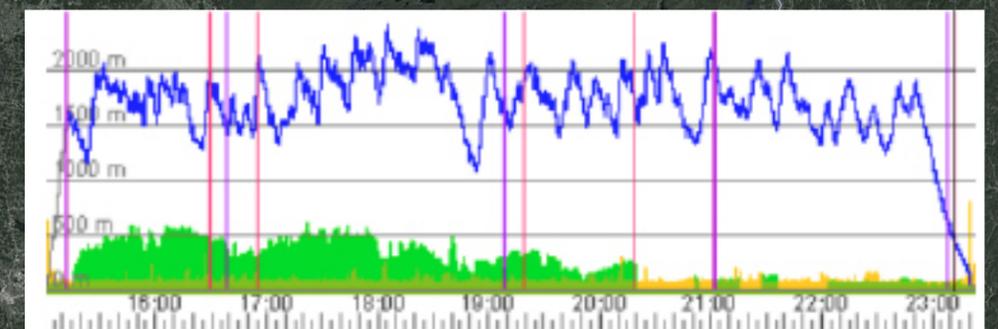
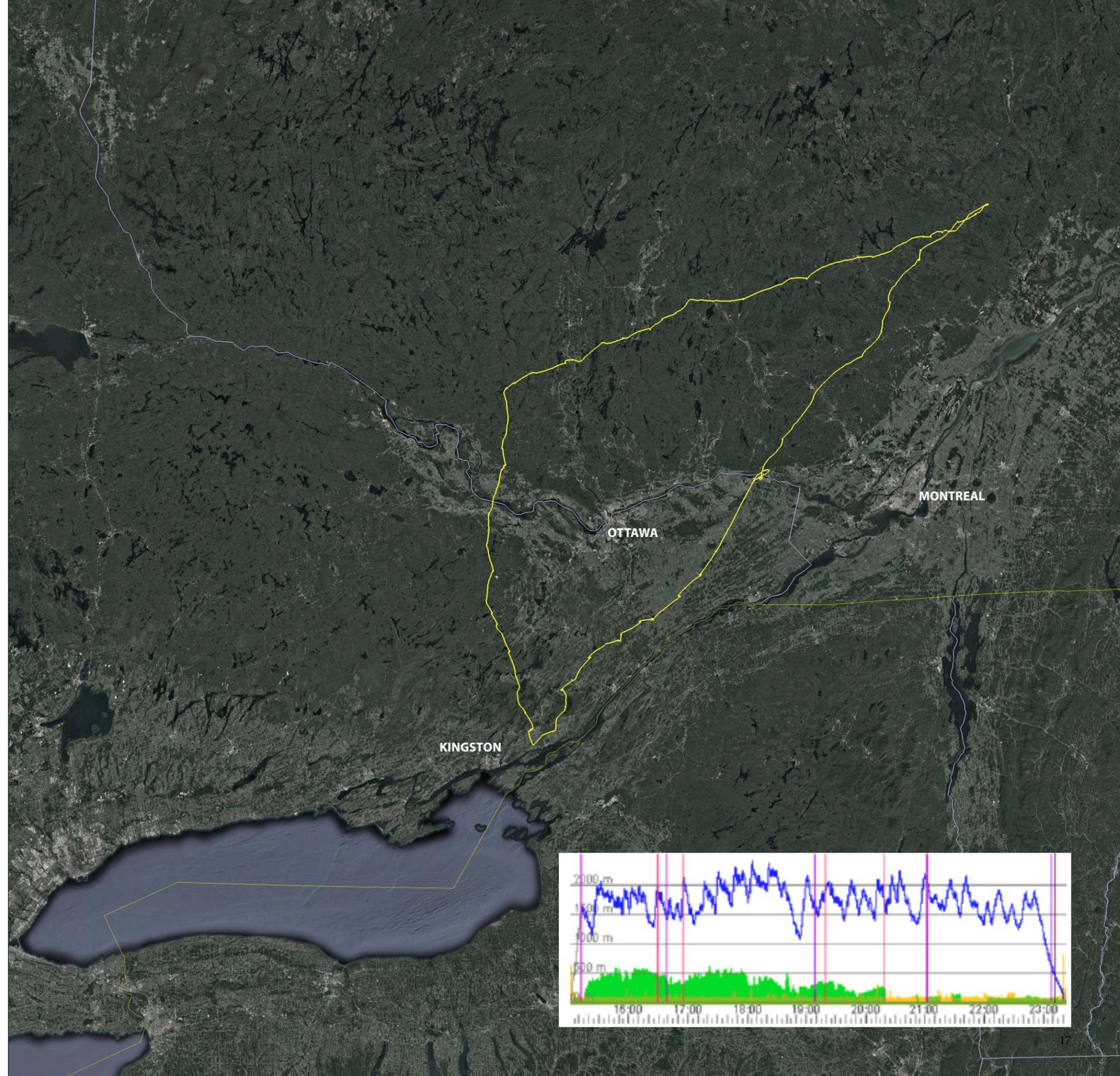
Things picked up a bit and we kept going towards our goal of Fort Coulonge, but it turned completely blue, so we turned early towards Gananoque. We got back into cu at Shawville, and it was good going south, but we got a bit separated and I found an 8 kt thermal and André ended down 1000 ft below, and fell behind unfortunately. I kept pushing south aggressively as time was ticking on. Due to overdevelopment

around Gananoque, I got low and had to be patient to climb. It looked good to get back home, but in no time it deteriorated quickly.

At Brockville I started thinking we had gone too far. I stayed high and made a lot of small detours here and there for small climbs. André got low, and down low, it was almost impossible to find lift under the left over bits of cloud streets. Even though it was an east wind, the streets were aligned north-south, and there was strong sink as we crossed the streets going east.

It was tricky, but with a bit of lift here and there, I eventually connected with a cloud street remnant that had picked up a bit – the last climb of the day. I climbed extra to make sure and indeed I lost an extra 1000 ft in various sink areas. André wasn't so lucky down low and had to start the motor, but was too far from home and didn't find intermediate lift, batteries were running out, so he headed to Maxville for a landing.

Well, a great day, but not a perfect day. We could have taken off half an hour earlier, used more ballast, and without the overdevelopment to the east and blue to the west, it would have been possible to do even better. ■



LOOKOUT

HOW THE EYE CAN LIE

PART TWO

Paul Sheffield continues his article on lookout with advice on where we should be looking

PART 1 of this article in the last issue dealt with the limitations of our vision, and how to overcome them. Part 2 tries to take the seemingly random space we fly in and make some sort of sense of where the risks are more likely to be – where we should be looking out as glider pilots.

In a perfect world we would pay equal attention to all areas, and that would be ideal if the threat were truly random. In reality some areas hold more risk: cloud streets, circuits, ridge flying, nearby control zones, entering and being established in thermals, etc. So

scan patterns have to be adaptable, and thinking ahead is crucial depending on where we are.

How we look out depends on the mode of flight we're in. Clearly, when in a cruise compared with thermalling, the threats are quite different.

During cruise, one could imagine lookout is somewhat akin to driving. We look where we're going and our peripheral vision becomes attuned to anything that moves. This isn't good enough however for flying, because it's the objects that *don't* appear to move (on a constant relative bearing) that are the real threats, whether they be on, or more peripheral to, our track. To spot these aircraft at a distance, we require our acute, central vision, which means looking around the likely threat areas. It's probably true that the faster we fly in cruise the more time should be spent looking where we're going in some band of space around our track, but the word is more, not solely – we still need to look around. The reasoning is as follows.

Threats

Imagine you could cruise on track at Mach 1 in airspace containing gliders flying around at normal speeds, all on their individual tracks. You'd probably leave nearly all the threats behind you; it'd be a narrow band of space around your track that would matter. Now consider you're in a helicopter, hovering in the same airspace. The threat is now equal from all points of the compass. Looking 'ahead' is no more relevant than anywhere else in this instance. Should we now move off in our helicopter at 10 knots, the threat would only slightly increase ahead, and slightly reduce towards the space behind (we're only talking about cruise flight here without turns). Furthermore, if everyone else were hovering, we couldn't hit anything from behind our wing. If we're flying at the same speed as everyone else, this is still essentially true.

If we all flew at precisely the same speed, the collision threat would be in the forward 180°, even if the converging track angle between the two aircraft was small, even much less than 90° [Fig. 1, glider A]. This is because the converging glider that's going to collide can't be behind you at any time (if it were, and travelling at the same speed, it couldn't catch you up). The other aircraft would still be in front of your wing by some small amount. How far in front of the wing is dependent on how small the converging angle is. The shallower, or more parallel, the converging angle of a colliding threat, the closer it would be to the wingtip position.

Think of it as the other glider on a straight course and you converging on it, even by some small amount, your wing must be angled such that the other glider is in front of it. Theoretically, you could ultimately be hit behind your wing, but the point is they would have been visible in front of your wingtip until impact. The CAA consider that the majority of collisions would come from the 120° arc ahead of track when in cruise flight.

Time to spot

If we were all to fly at the same speed, be that 10 knots or Mach 1, the threat would come from the same potential places, just that we'd have more time to spot them at 10 knots!

The faster we fly on cruise relative to everyone else, the more ahead the threat becomes (and with gliders generally the more we descend too). So the threat, hidden from us behind, will be flying faster than us, and the other pilot needs to be looking in their forward sector as just mentioned.

Perhaps all this can be simplified too: the faster you fly relative to everyone else, the closer you begin to look to your track, apportion slightly more time there, and use smaller eye movements. It's not just the time to the threat as the angular size of the threat [Fig. 1, glider B], but not to the exclusion of everywhere else. When we look off-track, turning our head, we'll probably be using relatively larger saccadic eye movements – pausing for a moment between them to assimilate what we're looking at – to check larger areas of nearby, and therefore slightly more easily seen threats. We also need to constantly update what else is in the sky in general.

Once we start turning, all this threat analysis goes out the window!

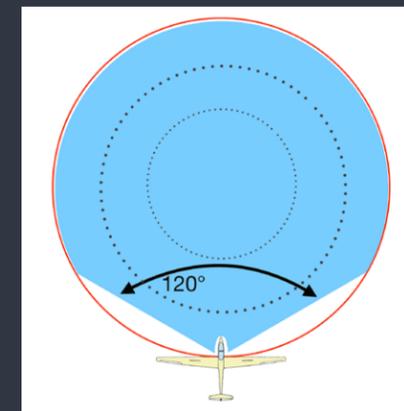


Figure 2 above: A 120° sector from your viewpoint happens to cover exactly 2/3 of a same-speed-as-you CRB circle, and a larger proportion, up to 100%, of slower moving aircraft on a CRB (dotted smaller circles centred on some notional collision point). Colliding aircraft of slower but differing speeds, will in effect fill the area of this same speed CRB circle. This all assumes aircraft are maintaining a constant course and speed. In reality, course and speed changes by other aircraft, or you, will either take them off part of a CRB circle, or put them on one.

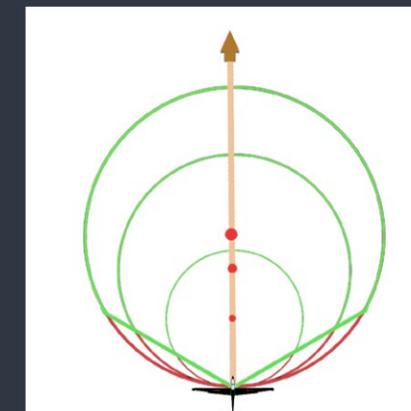


Figure 3 above: These CRB circles don't have a specific size (threat distance from you), they are an amalgamation of angles and distance to some collision point, such that a CRB arises from aircraft on a constant course and speed. You are on the circumference of whatever size circle you may consider. The collision point moves further ahead for aircraft further away (red dots at the centre of the circles). The ratio of the field of view not looked at, in red, remains the same to that checked, in green. Looking from wingtip to wingtip will cover 100% of same-speed and slower aircraft on a CRB, and likely the majority of faster aircraft on a CRB.

Aircraft flying faster than you are the only ones that could potentially hit you without you having any chance of seeing them, as they could hit you from behind, just as you could hit someone slower than you from behind, but we would (should...hopefully!) see them in front of us.

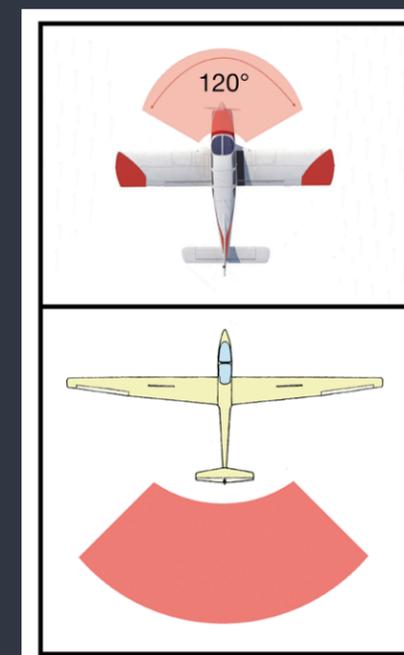


Figure 4 left: The CAA suggests the greatest threat probably comes from 60° either side of track during cruise, with reduced threat beyond 90° either side. Independently, the BGA find that the greatest risk of collision in gliders comes from the rear quarter, and overwhelmingly with other gliders in thermals, ridges or airfield patterns (there is no particular implication that powered aircraft fly into the back of gliders). Airspace4All Ltd found after analyzing 43 years of civil aircraft collisions that 13% of glider collisions were with powered aircraft (half of those with tugs), and 87% with other gliders – 17% of that risk occurring in the cruise and 83% over or close to the launch site.

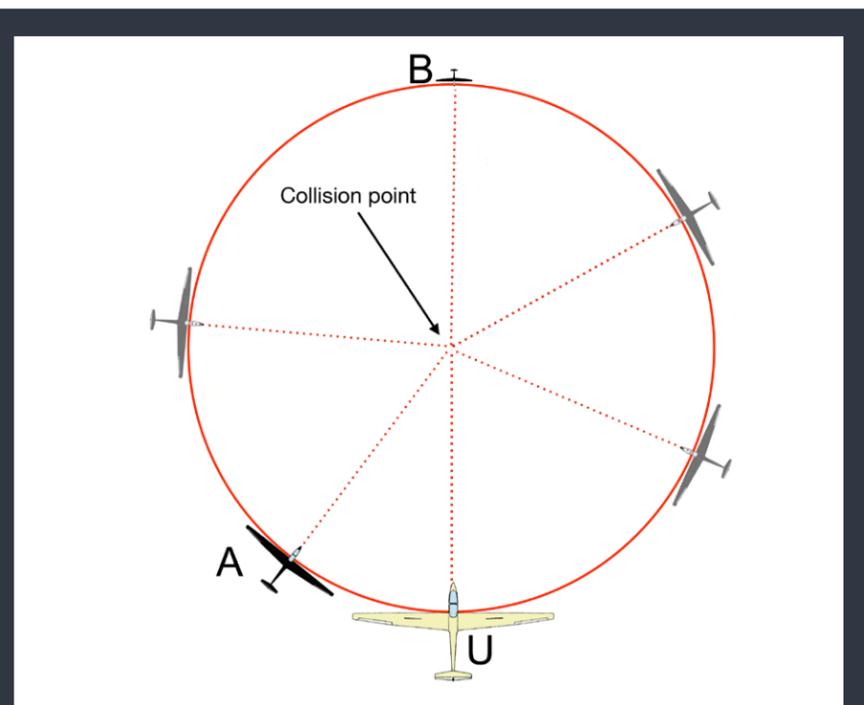


Figure 1: Other aircraft travelling at the same speed as you will cover the same distance as you in any given time. Therefore, those aircraft that happen to be on a constant relative bearing (CRB) will be at the same distance as you from the collision point. They are all on the circumference of a circle of which you (U) are a part. That CRB circle is ahead of you, so all gliders will be in front of your wing. Aircraft on a CRB travelling faster, are on a larger circle, and part of that circle, is behind you. Note that time to impact for glider A and B are the same, but the angular size of B is much smaller as it's further away (only gliders A and B are in relative scale to each other here).

DURING THERMALLING THE THREATS ARE QUITE DIFFERENT TO CRUISE AND COULD BE CONSIDERED TO BE ALMOST THE OPPOSITE

IN SUMMARY:

■ Ensure your eyesight is properly focused in the first place with clean spectacles and canopies.

■ You must turn your head as well as your eyes for an effective lookout to reduce the chance of missing something in one of your natural blindspots, and overcome obscurations from canopy arches and furniture, etc.

■ Develop a methodical scan routine, for example, by searching a broad band centred on the horizon. Perhaps consider that space overlaid with a grid or clock position to avoid missing large areas. Start by looking in one direction and at each position look above and below the horizon and work your way around (and at the 3 or 9 o'clock position you could check if the wings are still level). Come back and check attitude (which is looking ahead too, so you can search here again) and instruments, and then repeat in the other direction.

■ In cruise mode of flight, in general, the faster you fly compared to other aircraft in your area, the slightly more time should be spent looking ahead, and the closer to track you look use smaller saccadic eye movements as those threats are likely to subtend smaller angles.

■ The vast majority of the threats will be in your field of view in front of the wings.

■ Highest risks of collision appear to be during thermalling, ridge flying and circuits.

Finally, don't forget to enjoy the view!

In general sport aviation our speeds are largely similar, so the highest risks are probably, but not solely, in that forward 120° centred in a band around 10° to 15° from the horizon above and below. We must also consider that the sum of all the threats from everywhere away from some notional band of space around track will probably be much higher than the risk from that band of space around track alone – the area of space ahead is small compared to everywhere else. Of course, the faster moving aircraft striking another can come from any direction.

During thermalling the threats are quite different to cruise and could be considered to be almost the opposite, that is, from the rear quarter, and from above and below. Likewise, we shouldn't knowingly put ourselves in the obscured regions of another glider whenever possible. Perhaps then as we thermal and another glider begins to disappear behind us (which requires more head turning than comfortable), we should leave the thermal. There is always that risk/benefit balance, but when you know there's an unseen glider behind you, you are accepting that your life is in their hands. Thermalling then requires virtually continuous lookout in so many areas whilst maintaining correct attitude and bank.

As yet, no one really knows the ideal way to apportion the time, or precisely where you should be looking during particular modes of flight, although we should have a good intuitive idea. You can be sure in the meantime that the more time looking out in a regular and routine way, the better.

In the following part of this article are a series of photographs of a winch launch and flight. These are not comprehensive by any means, nor are they the only places we should be looking. These should be considered as starting points.

As fundamental as it is, looking out is only half the story; we have to act on what we see, even if that's only thinking about options. It's all too easy to feel it is OK because we've seen another aircraft, and think maybe it's fine to fly closer. We don't perceive the threat really increasing that much as we get closer, yet in reality it is. The presented area of the other aircraft goes up fourfold with

halving distance (since the dimensions each way double), so something small only really starts to balloon in size when we are much too close. Perhaps we should view the threat of collision going up fourfold as the distance halves on the basis that at any given time in a flight, the potential places you are able to fly to, but must not, increases fourfold. One for the mathematicians amongst you to cogitate on, please!

The first of these articles started with a driving soundbite, *Think Once, Think Twice, Think Bike*, and I shall it end with one too: *Keep Your Distance*. Safe flying. ■



Above: *Before launch* – As we wait for the person who's put the cable on to say "All clear above and behind," the implication is that we have checked everywhere else. There are four issues in this image: the first is that we wouldn't launch from a position so close to the other cables. Having started from a position more to the left, not only the rope section, but also the chute and as much of the cable as possible should be pulled over in-line with the glider. This reduces the risk of suddenly inducing yaw during the initial acceleration of launch. The second is the vehicle on the field, the third the glider at the top of the launch area, and finally, the area of picture shown isn't wide enough to check if our airspace will remain clear of approaching aircraft – we should check everywhere in this image and further left and right for approaching conflicts.

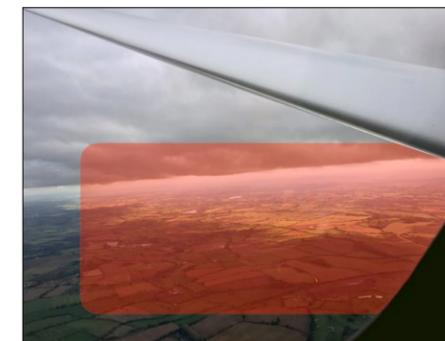


Above: *Winching* – Once in the full climb on a winch launch, briefly look along either wing to check you are at a suitable angle of climb, the amount of 'lay-off' to compensate for a cross-wind element if appropriate, and for any other issues.

After launch, threats can come from anywhere, so lookout should begin with a broad band centred on the horizon, above and below, and as far back as possible. Gliders are almost always changing their altitude, course, and speed, so a glider that appeared 'safe' some seconds ago, may soon become a real and serious threat. Don't forget to look overhead, especially so when entering a thermal. When descending rapidly with airbrakes, it's usually safer to do a series of 'S' turns or circling rather than letting down in a straight line and being unable to see what's below.

PERHAPS THEN AS WE THERMAL AND ANOTHER GLIDER BEGINS TO DISAPPEAR BEHIND US, WE SHOULD LEAVE THE THERMAL

Right: *Thermalling* – It's obviously crucial to monitor the other gliders at a similar altitude in the thermal so as to slot oneself in with the least fuss. Look up too before joining to see who's there. Those gliders may leave the thermal before you, others may join, and you may have missed someone higher up with whom you may catch up.



Above: *Before turn/during turn/coming out of turn* – before initiating a turn look as far round as possible in the opposite direction to the intended turn to look for an approaching aircraft as you may not see it again until turned through nearly 180°, check attitude, then look as far round as you can in the direction of the intended turn.

When rolling into the turn, look over the nose to check attitude and coordination. Once in the turn, the scan's datum point should be along the horizon in the direction of travel, NOT down the wing during the turn.

Before beginning to roll-out, ideally check ahead as you sweep about 90° of airspace during the turn, and then look under the down-going wing.

Lookout: How the Eye Can Lie, was written by Paul Sheffield. It was kindly provided by the British Gliding Association's *Sailplane & Gliding* magazine. www.sailplaneandgliding.co.uk

NATURALLY
THE PILOT IS
CONSTANTLY
JUDGING THEIR
POSITION TO THE
LANDING AREA
AND CHECKING
FOR CONFLICTS
THERE



Paul Sheffield went solo at 16, then gave it up, apart from the odd week's gliding holiday around the country. He took it up again and got the Silver badge 20 years later. Family/work commitments meant that Paul gave up gliding again until in recent years. He now flies from the Gliding Centre and is hoping to try cross-country flying. Paul has been an optometrist for 35 years.



High key: Our anticipated circuit in red. We're less likely to collide with anyone ahead of us on a similar circuit, but obviously we need to know whether anyone is there and where they're going – we don't want to catch them up. The higher risk of mid-air collision will come from someone converging on a 'non-standard' approach from outside of our intended path. We have to keep cycling our attention to all the risky areas. Don't forget to check below too as far as you are able. The radio is a valuable tool, assuming it's working!



Base leg: Look ahead for someone on an opposite base leg, and scan an area in the opposite direction to the final turn for someone coming straight in. Naturally the pilot is constantly judging their position to the landing area and checking for conflicts there – if gliding were easy, we wouldn't do it!

The Winnipeg Gliding Club has had a varied history when it reviews the way we conduct our operations at the runway flight line. For several years our flight operations were dealt with through the use of a club member's donated van. Another time it was a 1966 GMC half ton truck with modifications such as rotating beacons, external speaker wired to the VHF radio, while many years ago we had an old sliding door panel van, dubbed the Door-Mobile, likely for the reason that was the trade name it carried off the assembly line.

The Door-Mobile was unique in that it had two sprung front seats that you sort of semi stood upright on, a 3-on-the-tree shifter which presented those with no "stick" time plenty of difficulties and, worst of all... no brakes other than a hand activated emergency brake! How we never ended up in the Assiniboine River at our old location near Pigeon Lake (was there an actual lake? I suspect not) is actually something of a miracle.

In the early 1990s, we even tried to utilize an old utility trailer that was converted to a control tower of sorts, complete with a cable and pulley system to raise and lower a tin roof. Inside the trailer box were 3 steps to a second level that would allow an elevated view of the flight line. It did not last long as the effort in cranking the roof up was more work than desired and it fell into disrepair.

A smaller cart was needed, something lightweight that could be towed by a small Honda trike or similar vehicle. A design was copied from the Regina Soaring Club and built by our member Jim Oke. It provided room for all the accoutrements needed for the operational side of running a flight line, however it was missing a panel mounted radio or side access doors to the lower section. But it worked and was affectionately nicknamed the Hot Dog Cart.

In the fall of 2019 I was considering a winter works project where I would strip down the old cart and salvage what materials I could, and begin with a fresh slate. Breaking down the 4 sides and removing all the associated hinges for the top lid etc., was easy. Cutting the new plywood to size and assembling the pieces was also easy. In short order this easy project was coming together. The steel tube frame was strengthened and lengthened to accommodate a hitch ball on the rear to allow the pulling of a small metal utility trailer that holds larger items such as chairs, an umbrella and tail dollys.

The difficult part for me was the installation of the radio and wiring for the battery and

Hot dogs for sale!

Mike Maskell

Winnipeg Gliding Club

antenna. Another member, Neil Kelly, became involved and with his donated VHF panel mounted radio we set out to solve the mystery of just where to install everything, how to make an effective dipole antenna (this could be a whole story in itself!) and a few other features to add in.

The radio was removed from his Standard Jantar as part of his panel upgrade – it is a very robust unit and was bench tested serviceable. The problem was how to install it so that no parts were sticking out beyond the face of the plywood sidewall. Neil hit upon a novel idea of making a metal box that would be recessed about 2 inches and the radio would mount to this. What I did not know of this plan was that Neil was having it custom made at a metal fabrication shop, complete with precise laser cut openings for the radio, master switch, microphone jack and two USB ports and our WGC logo. What I also did not know at the

time, was that Neil drilled every hole for the 4" speaker mesh. The idea was solid and it turned out perfectly. There was even laser etched labels identifying the switch, microphone jack and the USB ports. A new 12 volt, 35 amp-hour battery was installed along with an internally mounted battery charger with a computer style 120 volt plug in to charge the battery at the end of the day.

With everything figured out, the rest was easy and it all came together a few weeks in advance of our opening weekend in mid-May.

I mentioned the dipole antenna would be a story in itself. Suffice to say that Neil constructed it from parts from a previous antenna but modified it to fold up neatly for storage. We also utilize three aluminum poles of 4 feet each to erect the antenna to about 14 feet when the antenna is factored in. During use we have successfully transmitted and received over 75 kilometres away to a glider pilot on a cross-country flight, thereby proving the function of everything.

A final touch was the addition of a fire extinguisher mounted on the front hitch, the storage of two first aid kits and a small tool box filled with a few basic tools and wing tape, etc.

All in all, it was a worthwhile endeavour and has been well received by our members. Just don't expect any hot dogs from it! ■



PROVING GROUNDS

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SAC Instructor Course Goes Virtual

David Donaldson, National Safety Officer, FTSC

SAC Flight Training and Safety has taken a huge step forward by hosting the first virtual instructor course. This course is being attended by 32 people representing six different clubs, a combination of course instructors, candidates seeking their instructor ratings and others upgrading their ratings. The format includes self-study, a series of plenary sessions and a series of mentor sessions that mimic the in-cockpit work to prepare and test pilots for their new role as instructors.

While there is a considerable amount of new material created to support this format, it is by no means a new course; for many years FTSC has developed and hosted instructor courses across the country. Based on this considerable experience, Dan Cook has been very busy capturing the knowledge in formats that are more suited to a virtual delivery including the creation of a series of videos.

The virtual format, however, quickly ran into an information overload scenario and the need to better structure the various documents, PowerPoints and videos was painfully obvious. To address this, we are introducing *Howspace* (<https://www.howspace.com>) which is an AI-powered digital collaboration tool.

What does this mean for SAC and the instructor course? First it will give us a platform to host and support the content for the instructor course. At the moment we are hosting content on the SAC website, *Drop-Box* and *YouTube* with no clear indication of what is needed when. By implementing *Howspace* we will be able to define the learning journey, feeding the student the necessary material at the appropriate time. Instead of having to navigate a long list of documents, videos and other learning assets,

they will be presented with the content they need and exercises to develop the skills needed in the correct sequence with the correct timing. The ability to test and confirm understanding of that content is also built into *Howspace*.

Course Outline

There are four distinct phases to this program:

Instructional approach – the focus here is around the student and how to best approach the instruction, considerations of instructional styles and setting up an effective instructional environment.



In flight lessons – this section focuses on the Flight Training Curriculum and students are introduced to the recommended list of lessons including detailed support on how to conduct each lesson.

Written Test – having completed the required training, a formal written test needs to be passed that will be the evidence for TC that this person has the required knowledge to be an instructor.

Flight Test – while the simulator can definitely assist in developing the skills required, at present, our simulator technology is not sophisticated enough to replace the actual aircraft experience.

Items 1 through 3 have all moved to a virtual delivery model that can be successfully delivered across the country as well as in the off season. The final step of the flight test can be handled at the regional level using local senior instructors.

As of the writing of this article we have launched our first virtual instructor course. With the first plenary sessions complete we are moving into the mentor sessions that will leverage *Condor* and *Zoom* to simulate the cockpit environment for the flight exercises. This new approach holds much promise and we look forward to building it out as the new standard for instructor training in Canada.

To answer the current demand for instructor training, we are moving forward with the virtual course and gathering the learnings that will be layered into the future offerings. Much like my 2016 experiment, to host the GPL ground school online, we have much to learn and the final product will evolve from this initial offering.

I am confident that with the level of expertise we have at the table and the technologies designed to support online collaboration, we can realize a first-class instructor training option that addresses this need; not at the club or regional level but at the national level. The vision does not stop there. Phase two is to leverage this model for ongoing support to the instructor community. Stay tuned, there are great things on the horizon.

Fly Safe

OVER THE HILLS AND FAR AWAY

Tyler Paradis, Cu Nim Gliding Club

I'm in a DG-1000S, outside of gliding range to the home field for the first time, I'm getting low, but I'm with the club CFI and XC virtuoso Chris Gough. I'm using all my brain power to make decisions based on very little experience in this situation, but I'm working through the issues and figuring it out with expert guidance.

Rewind three months. The world has entered a pandemic, where public health guidelines say that we should physically distance from others, outdoor gatherings are acceptable, and UV more than likely kills the virus on surfaces quickly. I turn to the woman who married me, an experienced glider pilot, and we say "Let's rope our gliding friends in Okotoks into joining the Cu Nim Soaring Club and we can all hang out together responsibly!"

I climbed up through the Air Cadet gliding program, but I have also flown at numerous gliding clubs in Ontario and at ESC in Alberta, albeit as a towpilot mainly. I've flown a few nice hour-long trips around the patch, but I never had the knowledge or experience to spread my wings and try some of the things I've read about for decades in *Free Flight*.

We enter Cu Nim as a family, and instantly feel connected to the geography and the people – what a feeling! Underlying the inescapable positivity towards our membership is something else that I can't put my finger on at the beginning. As the first few weeks lead to check-outs and transitions to single seat performers, we notice an unmistakable "cross-country culture" bubbling below the surface.

My many newbie questions about everything from "what kind of cloud is that" to "why does everyone fly with their cell phone" is kindly answered and further questions encouraged. The culture that sur-

rounds us, demonstrates a burning desire by all to fly higher and farther with every subsequent flight.

After chatting with one of the clubs experienced XC pilots and instructors (Patrick if you want your name here please insert it) I am briefed that until you earn your Bronze Badge, you are considered a "local pilot". There is no shame intended with this title, but it carries an underlying tone of "you should strive to shed the local pilot brand as soon as able and let us show you how". This leads to a conversation about the clubs' Proving Grounds and a copy of the FAI Bronze Badge requirements. I had heard others talking about the Racetrack, and I had seen the task board in the clubhouse, but it took a confluence of topics to realize what was happening behind the curtain.

I am green – greener than green when it comes to soaring any distance away from the practice area or the circuit. My cone of mental gliding range has very steep sides and has only ever funneled to the home airfield. I have tinkered with *XCSoar* before, but I have never used it while soaring – in the sense that I am using it as a tool, not just as a moving map. The cross-country culture senses this curiosity and soon I am online with the CFI hosting an *XCSoar* seminar for all at the club to attend.

Soon after at the field, on a good soaring day, one of the members (feel free to use Carey's name if that's cool) radioes Ground and asks, "What was my takeoff time?" I'm curious about this and ask the others on the ground about the request. They answer that she is going to try for one of her 2 hour Bronze Badge duration flights! This one request lit the fire for me. Let's do this!

I planned my attack. I would use *XCSoar* every flight to learn how to interact with it. I would ask questions on *Slack* about any-

thing that I stumbled on. I would ask questions while airborne about weather, *XCSoar*, performance – I became a humble sponge.

I think the most important piece of information I was able to glean early from the team was "plan on losing 1000 feet for every 10 km of distance". This piece clicked into place with an audible "snap". Every flight after, if I had a 1000 to burn, I would point in a direction, look at *XCSoar*, and see if this held true. What this typically looked like for me and my steep cone edges, was if I was 5 km away from the field, I would fly over and 5 km past the field and see if I lost 1000 feet. After a few of those, I felt confident that it would hold true in that mysterious air farther away from the field.

The second most important piece of information was "Arm Start" in *XCSoar*. I had read the notes, and attended the seminar, but until I was airborne and had loaded a task, I couldn't understand why every time I thought I entered the start cylinder and exited, *XCSoar* pointed me back into the start cylinder. After learning the function of "Arm Start", and subsequently the "Arm Turn" feature, tasks were now in my reach.

Throughout, I had a Proving Grounds flyer pinned in my kitchen for the family to see and interpret. Every day I pictured the Racetrack and measured how high I needed to be to make a turnpoint and maintain gliding distance to the field. At Cu Nim, those gas tanks look extremely far away.

Over the next month, I probed the racetrack – soar to Millarville then back to the practice area. Verify the 10km/1000 ft rule. Soar to Big Rock then back to the practice area. Verify the 10 km/1000 ft rule. Constantly in my peripheral vision were the Gas Tanks – a galaxy away.

continued on page 26

continued from *Over the Hills*

Then one booming day, I pull the trigger. Groundwork is laid, 2h duration is the goal, Racetrack is the dream. Start cylinder at Leighton Lakes is first. I am in no rush for the Racetrack, but I steer my thermalling towards Big Rock. Soon it is in the rear view mirror, and it's time to stare at the Gas Tanks with determination. I'm confident in my ability to thermal, but reading the sky is at a Grade 2 level. I remember the clubhouse talks about "aim for the darkest part of the underside of a cu". Soon, *XCSoar* is telling me I'm 5 km from Big Rock. I'm at 7000 ft asl. I begin talking to myself, "If I fly there and straight back here I should be at 6000 ft asl. If I was at 6000 ft asl right here, would I be comfortable gliding back to the field?" The math makes sense and I go for it. Pointing away from the field and doing a 5 km straight glide to what seemed like another universe, I make the turnpoint and make a triumphant turn north towards Millarville. I'm rewarded with a 5 kt thermal just north of the Gas Tanks and climb to an easy final glide for the Racetrack!

One small step for a rookie, but the XC Culture didn't end there. Congratulations, and encouragement to post the flights on the internet through Skylines and OLC boost the pride in the achievement. Soon after, the Bronze Badge tasks

fall one by one with timely mentoring by a team of instructors. It's now time for the Bronze Badge dual training.

Present day – after judging the day's conditions, CFI Chris Gough decides we shall do Task 2 of the Proving Grounds. What better way to transition to XC flying than to go do a^{oo} XC? I had studied Task 2 for months, eating breakfast in my kitchen. I became familiar with the area, but always focusing on the yellow line between the turnpoints. What I learned that day was that the meat of the task lies outside the lines. Where can we land? What is the sky showing? What is the sky over the home field looking like? There was no yellow line in the sky, it was a wandering path whose trajectory was steered by good decisions and constant re-evaluation. You could have cooked an egg on the top of my head! With good thermals and good planning, we had to fight to get below controlled airspace on the road home.

After a townhall style Bronze Badge online seminar hosted by our CFI once again, the bow was tied, and the Bronze Badge was mine! True to form, there was no time to rest. The XC culture and main proponents were already whispering in my ear what the requirements for the Silver Badge were, and that there was plenty of summer left to get started! ■

Situational Awareness

Roy Bourgeois – Chief Pilot for the Greater Boston Soaring Club

The Safety Committee spent a lot of time this week talking about "Situational Awareness" and the loss of it. But what exactly is Situational Awareness (SA) anyway? How do you get it? How do you lose it? How do you know if you've lost it? How do you get it back? It's an elusive matter and one that is hard to write about. The part of our brain that helps us maintain multifaceted awareness is different from the part of the brain that thinks and writes about ideas. And those two brain parts don't play well together.

The issue came up in the context of educating student pilots about the dangers of aerial photography while flying close to other gliders. The students did not perceive that their focus on "getting a good photo" ended their process of looking out for other gliders who might be joining a gaggle. Now, reading this it seems quite obvious but why didn't the students see that? Understanding exactly why – and how to recognize the loss of situational awareness can be difficult. For example, you could try reading this article while you are flying next but that would be counterproductive to the very thing we are talking about. The same is true if you are *trying* to be situationally aware. It's actually very hard to think – about how you are thinking. It's even harder to *control what you are thinking*.

Awareness, at least in the simplified way that I am trying to present it here, can be described as "a state of total observation and attention to all matters and inputs impacting the flight". That seems a pretty good definition of what we want to maintain. But the problem is that our brains are wired in a way to completely obliterate the "big picture" in favor of any tiny little thought, detail or function that pops up – regardless of that item's actual degree of importance to the overall flight. Our mind works like a screen with an out of control "zoom-in" feature. We don't ask ourselves, "Is this problem worth thinking about?" Instead we just think about it and it consumes the brain space that we need for a full situational awareness. The world class

marksman, Brian Enos, explained it this way, "A quiet open mind will perceive everything that's happening and send automatic controls to your body in an endless flow. A mind fixed with only one glaring thought can't perceive what's happening beyond that thought."

This is important and explains what we call "tunnel vision". And, the more immediate, complex or challenging the specific thought or job is (like inflight changing a database, fixing a flight computer glitch, or, in the case of the students – framing and taking a photograph), the further back into our minds SA gets pushed. Accident databases are full of cases where a pilot's attention was hijacked by some simple problem that he focused on relentlessly – and fatally. An example of this was the Front Royal Virginia 2-33 / towplane fatality caused by the rear seat CFI's preoccupation with a GoPro camera. He did not perceive that the student had ballooned well above the tow plane - which crashed killing the towpilot. This also explains why we should not fly in times of mental stress or after an argument or other emotional event. Our brains continue to rework, process and reanalyze the emotional event and that takes up the peacefulness and mental space we need for full awareness. Being startled by something also has this effect. Fear and preoccupation with landing out does the same and can actually cause a land out that could have been avoided if the pilot escaped the tunnel vision. (*Didn't you see that bird circling near you?*)

So, now that we know how we lose SA, how do we get it back? There are a couple of tricks. One is to ask yourself a question frequently during your flight, "*Is what I am thinking about right now helping me to fly safer or more efficiently?*" If the answer to that question is "No", then refocus your mind onto something that *IS* helpful for safety or efficiency. Banish the unhelpful thought. Another good question to ask yourself is "*Am I thinking about something right here right now?*" Or, are you thinking about something in another place (a problem in work or at home)? Or, something in the past (a lousy start, an old argument, a

competitor who passed you)? Or something in the future (will I land out? Or, what will be my contest or OLC score)? SA is all about the *here and now* and, if you focus on only that, the score will take care of itself, you will pass that competitor in the next hour, and the land out will not happen. *Here and now* is all you can control anyway.

If a job requiring complex thinking (like checking airspace criteria, or task/waypoint setting in the computer) can be done ahead of time – do those before launch. Don't import jobs for yourself into the flight that will distract you. Stow or leave on the ground the GoPros, cameras and other gadgets that pull your mind away from flying safely and efficiently. For God's sake, don't text, read texts, or fool with your phone or InReach during the flight. Ignore what the other pilots are saying or bragging about on the radio. Unless a transmission is imperative you should be too busy to chat. Ever notice that the best pilots don't talk much?

Lastly, and especially as you get low and begin to worry – get your mind and your eyes outside of the glider. Look at the clouds – which ones are growing? Which are dying? Where are the energy lines? Are there other gliders circling or birds out there? Are there smoke plumes or dust devils? Did some birds just leave a perch? Did smoke that was traveling sideways just start to go straight up? Are there areas of sunlight on the ground that the cloud shadows don't cover? Are there areas of shade or puddles that should be avoided? Is there a paved area that will be warm now? A metal building or structure that is hot and will focus a thermal? Is there a slope to some terrain (or the wall of a quarry) that is perpendicular to the sun? Will that train, truck or tractor kick off a thermal? Where is my safety field? How much altitude do I have to work with and how best to use it? ... And, remember to look UP as well as out and down. There might be birds, clouds or gliders above you. Get your head and eyes out of your instrument panel and outside of the canopy. It's what's out there that matters. There is so much to learn from just seeing and observing. Then, you are back to situational awareness, and you will see what you need to solve the problem. And you will be a safer pilot too.

This article talks about awareness in the context of safety. Awareness is also key to performance generally and contributes greatly to success in flying for records or competitively. But that is a subject for a different article. ■

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Miracle on the

Photo: Glider on Tow ©Chris Foote



Mountain

Charlie Pastuszka, Invermere Soaring Center

The second week of July this season was particularly busy at the Invermere Soaring Centre. For the first time in years, a group of members from the Vancouver Soaring Association were out for a soaring camp and it was clear that excitement was plentiful. The smiles, laughs, learning, and thrills of soaring the Rockies may be familiar to many, but do not wear thin here at the Invermere Soaring Centre.

Instrumental in organizing this opportunity for VSA members were longtime glider pilot Kalli Brinkhaus and partner Heidi Popp. Despite also coordinating and scheduling VSA members for flights in the club DG-505, Kalli was not one to pass up an opportunity to soar and that Friday afternoon, July 10th, was no exception. Swiftly, the towplane and Astir CS77 leapt into the air.

Trevor Florence, owner of the Invermere Soaring Centre, conducted two area introductory flights with VSA members that day and was concluding the second flight over the Purcells. The track brought him over the east side of the valley relatively late in the afternoon. I was also flying, privileged to have the opportunity to fly Joe and Neil Gegenbauer's ASW20, Y3, for the first time. While these were among some special flights that day, a very different scenario was playing out. As Trevor was bleeding off altitude in his Duo Discus with Rob Williams, CFI of the Vancouver Soaring Association on board, an unusual FLARM target piqued his attention. A target linked to VST, the Soaring Centre's Astir CS77, was showing 2000 feet lower than the Duo. Being at slightly over 9000 feet asl with mountain peaks around 7000 ft asl, this prompted Trevor to seek out the target. At the time, the search for the glider was merely in attempt to warn the pilot of

the dangers related to low overflight in this terrain. When the Astir was finally spotted around 6:25pm, and like many that day, I will never forget the words he said over the radio:

"Victor Sierra Tango has crashed. I am landing immediately; call a helicopter and call Search and Rescue!"

Very shortly after hearing the radio call, I also spotted the crash and I must admit, it took a moment to gather composure. At this point, the situation appeared grim. But meanwhile, on the ground, the beginning of an absolutely remarkable sequence of events began to unfold.

It was clear to Gord Spurgeon, Line Pilot at the Invermere Soaring Centre, that there was no time for alarm or delay. Gord directly called local helicopter pilot Greg Flowitt (who also once towed out of Invermere in the late 90's) to initiate search and rescue. Greg activated the required response for a prompt rescue and indicated that 9-1-1 must also be called in order to start a file on the situation. Hearing this, Bryan Deans of the VSA called 9-1-1 and gave additional information.

At the same time, Trevor landed and ran towards another helicopter stationed at Invermere, where pilot Hamish Russell was getting the machine ready to fly to a call destined for Alberta. The gravity of the situation was obvious, and Hamish agreed that Trevor and a crew could be lifted onto the hill and left there while the helicopter continued to its original call. While at first it made sense to bring a total of three people to the initial rescue,

after re-evaluating the situation, Trevor decided that he himself will go up on his own so as not to complicate the pickup later on. With that, the helicopter lifted off for the crash site.

They arrived on the hill just after 7:00 pm, only just over half an hour after the wreck was initially spotted. Armed with a handheld radio, a retroreflective pair of coveralls, and the clubhouse first aid kit, Trevor's immediate task now shifted to getting down to the scene promptly. VST was oriented on an easterly heading, upright, at the bottom of a forested hill with the right wing and horizontal stabilizer separated from the aircraft. Finding the exact location, though only hundreds of metres from the helicopter's landing site, was not easy. A steep escarpment and heavy brush hid the wreck from the ground-level eye. After a pause, Trevor heard the faint noise of the gear-not-down warning buzzer emitting from the glider and was able to home in on the scene. Finally, first contact was made with Kalli and the glider.

During the same time, I was descending to land at Invermere and was thrilled at Trevor's request to relay to ground that Kalli was alive! I could almost feel the energy change. But the job was far from over. While a shift from recovery to rescue was apparent, difficult tasks remained at hand.

Back on the hill, Trevor began caring for Kalli. While it was positive that the final

resting position of the glider was upright, the fuselage was resting about 40 degrees nose up. After radioing that Kalli was alive, Trevor reached in and released the canopy, throwing it away from the glider and spent the next while stabilizing Kalli to the best of his abilities, given the limited resources. Kalli was nearly in a horizontal lay-down position due to the incline of the hill. Once the airway was clear and breathing was apparent, Trevor checked for blood and obvious physical injuries and, remarkably, found none. This was the same when feeling for broken bones and testing for pain. As if in miracle fashion, Kalli was almost completely physically unscathed.

By mountain rescue standards, the rescue team averages a two-hour response time from when a 9-1-1 call is placed to when the helicopter becomes airborne. Thanks to Gord's quick thinking and Bryan Deans being additionally prompt on contacting emergency services, when the call came in, the rescue crew was already getting into the helicopter! Pilot Greg Flowitt lifted off from Invermere airport in the Bell 407 with a rescue crew on board, composed of two local mountain rescue specialists, an RCMP Constable, and a doctor. As he was departing the Invermere zone, he asked for clarification as to the position of the scene and I was able to give a more accurate description of the location and made sure that

Had the Astir flown over a low point in the mountains into the next valley, it may not have ever been found.

Greg knew Kalli was alive. As Greg approached the ridgetop in the helicopter, Trevor radioed him and indicated that the helicopter was on a perfect trajectory for the landable surface. Dropping the team off at the top of the hill, Greg flew back down to Invermere to change machines for the bigger, more rescue capable, Bell 212. As he landed, he asked the Invermere Soaring Centre Team to transfer the required rescue equipment into the Bell 212. Everyone came together to help which almost made it seem like as soon as Greg landed in the 407, the blades were already turning on the 212.

As the helicopter switch was occurring, the rescue team was busy getting Kalli stabilized for transport. Within 5 minutes of assessment, it became apparent to Doctor Stephanie that a neurological event had occurred. Once assessed as stable, extraction

took place with the lifting help of the four rescuers and Trevor. Kalli was placed in a semi-inflated, pliable plastic stretcher 'bag' which was then deflated to create rigidity. What one could call a

short distance was anything but, with a steep vertical incline and brush making the way back up to the helicopter landing site a physically exhaustive effort. Motivated by Kalli's remarkable state, the team pushed through the exertion of pulling the rigid stretcher up the hill in stages with ropes and prepared for transport. When the Bell 212 arrived back at the landing site, Kalli was

loaded in and flown directly to the Invermere hospital with Doctor Stephanie. Shortly after, the Bell 212 returned to pick up the rescue team.

With the rescue complete and Trevor on the ground, there was significant ongoing concern regarding Kalli's condition. By this time, Kalli's partner Heidi was already at the hospital to accompany Kalli. About an hour after the rescue concluded, glider pilot Chris Gough called to find out more about what happened, as he was tasked in his role as a Medevac Captain to fly an injured glider pilot to Calgary. This, of course, being somewhat of a good sign as Medevac patients must be stable in order to be transported by air. Although with positive intent and outcome, it was obvious that Trevor's selfless actions meant seeing a close friend in a disturbing state. For that, friends and staff around the Invermere community were there to offer support. That was a late night for Trevor, Heidi, our wonderful group, and myself as we supported each other with positivity and hope for a good outcome.

The days after the crash could only be described as an attempt at normalcy after a significant event. Fueling the crew and community's desire to continue soaring was Heidi emailing updates about Kalli's progress. In the first 24 hours, Kalli became conscious, his breathing tube was removed, and he could answer questions regarding who he is and his life's accomplishments. On a short walk in the sunny terrace at Foothills Hospital in Calgary, Kalli even joked to Heidi that "A beer would be nice right about now!" It was confirmed that a brain bleed occurred which was the cause of the neurological event. In cooperation with the Transportation Safety Board, the local gliding community is confident that a clearer picture of what happened will become evident. The flight trace extracted from the FLARM shows that a few minutes before the crash, the glider simply flew in a relatively straight line at around 60 kts. Trevor commented that, "In [his] mind, there is no doubt that 5 minutes before the crash, there was no conscious entity controlling the glider." Whether the impact's relatively low energy is attributed to a physical control input or an aerodynamic sequence after impacting the first tree may become apparent after the investigation concludes but is currently unknown.

Given the opportunity to speak on Herrieten Cate's soaring podcast, *The Thermal*, Trevor expressed his confidence that many

things lined up to aid in a swift rescue. Had the Astir flown over a low point in the mountains into the next valley, it may not have ever been found.

"As with any major neurological event, the path to recovery is not without adversity. However, many selfless actions by Trevor and the Invermere community aided in the preservation of life and subsequent opportunity to rehabilitate. As remarkable as his rescue, is Kalli's recovery since the incident. A lack of physical injury meant that a few short weeks spent at the hospital in Calgary is all it took for doctors to be confident enough to safely transfer him to the neurological ward in Kelowna. Another few weeks of recovery led to Kalli's discharge from hospital altogether and...a visit to the Hope club! Since then, Heidi and Kalli have been enjoying great company and support of the gliding community with several more visits to Hope Airfield.

There is no question that the sequence of events after the crash saved Kalli's life. There is also no question that the incredible amount of support in the weeks following the crash by the Soaring community have made a positive impact on both Heidi and Kalli. It is this unwavering support, regardless of circumstance, that makes our gliding community so incredible."



Above: Recent photo of Kalli and Heidi



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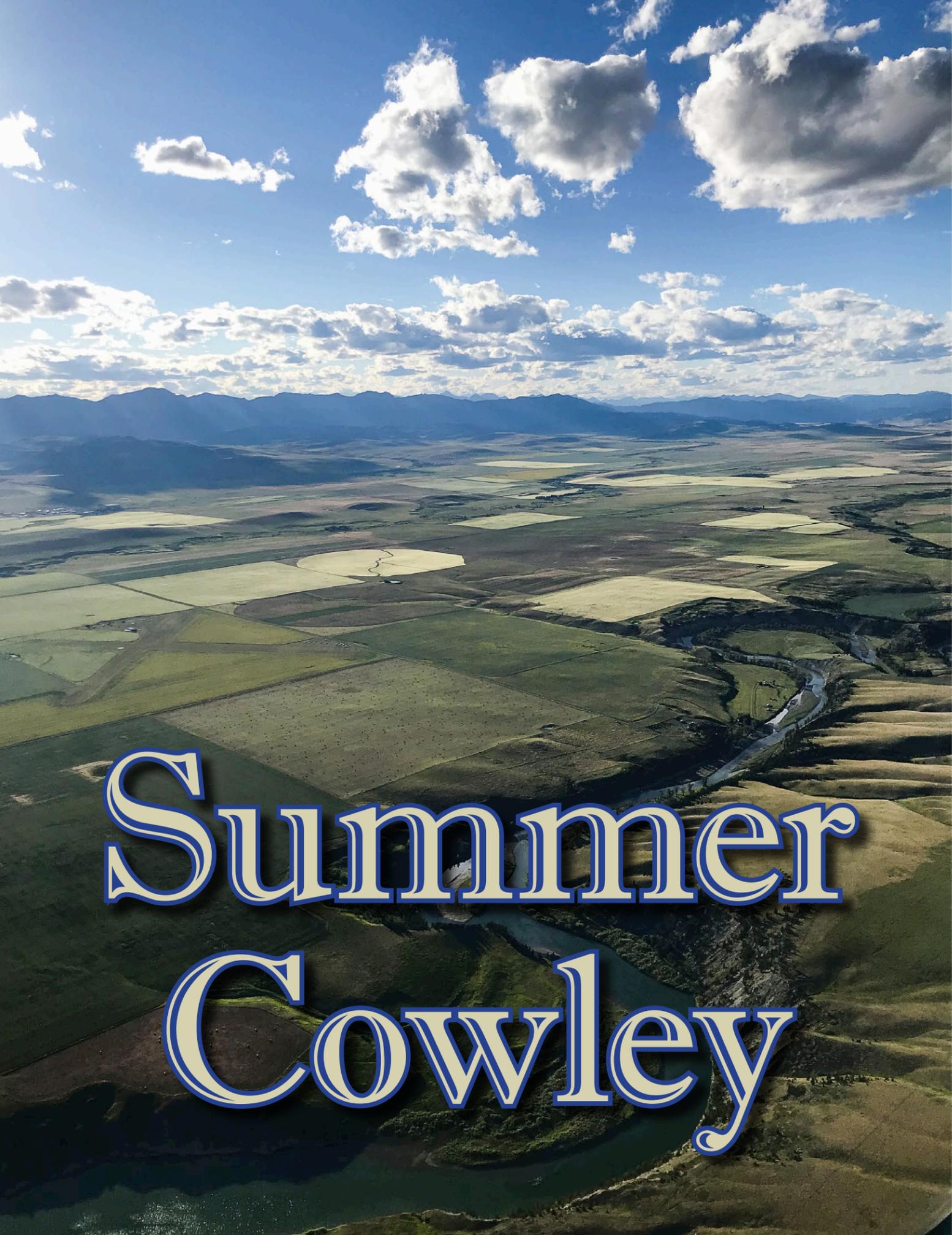
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Summer Cowley

Fall Cowley camps tend to get noticed due to the opportunity for some personal bests and sometimes records. Summer Cowley is more of a highlight for those who can carve out the calendar space to make it to this 'land before time'. COVID19 changed that for 2020. While Albertans expected to welcome pilots from across the country to the Canadian Nationals in Edmonton, the competition was eventually canceled. With most summer plans on hiatus, more pilots answered the call of the Livingstone Range, the Oldman River, Prairie as far as one can see to the east and infinite Rocky Mountains to the west. What follows are two pilots accounts of this classic Canadian soaring pilgrimage.

Jay Allardyce, Winnipeg Gliding Club

I USUALLY RESERVE a week or two of holidays to do some sort of gliding trip and this year was no different. My original plan was to attend the 2020 Nationals which were to be hosted by the Edmonton Soaring Club, but COVID changed all that. This left me with several unused vacation weeks and a blank slate – so once things started to reopen in late spring and travel started to seem like a possibility again, I considered my options. I had seen a couple of emails floating around about Cowley and two of my club mates had already shared their intentions to attend, so I quickly zeroed in on this being the number one option. I had never attended a Cowley camp before as I prefer taking my flying holidays in mid May when the soaring is generally best, so this was also a great opportunity to check Cowley off the soaring bucket list. A few texts to some of my Alberta-based gliding friends confirmed they were planning to attend as well so I at least knew that if the flying sucked, I had people to hang out with.

Once I had committed to making the trip, I had to get my ducks in a row. Not having flown in Cowley before, I wanted to make sure I did a good job preparing, so I pulled out my copy of *Stalking the Mountain Wave* and started reading. I also found the Cowley Guide online and poured through all of the details on airspace, operations and camp logistics. I knew that wave is a low likelihood at Summer Cowley, but I wanted to be prepared should the opportunity arise. Being a flat land glider pilot, I did not have an oxygen system in my glider kit, but a short email to one of my club mates and he graciously agreed to lend me his *Mountain High* system. I also did some studying of *Advanced Soaring Made Easy* which has a good chapter on wave flying. I also did some reading on oxygen use and how to operate the *Mountain High* system. I felt reasonably prepared. Now the anticipation and weather watching began.

I had no expectations weatherwise as I know, Summer Cowley can be a real mixed bag. In talking with those who have attended past camps, there have been years with 14 – 15,000 cloud bases every day for the whole camp, but I didn't want to get my hopes up. As my departure date loomed, both the public forecast and *SkySight* were optimistic for the week ahead.

I arrived at the field in the early evening on Saturday after 1400 kilometers of driving and found the camp was already in full swing. The tie down area was packed with glider trailers and the flight line was buzzing. The cloud base was nearly 14,000 feet, so most pilots were already enjoying their first taste of what Cowley had to offer. I guess I should have left on Friday! I elected to rig my glider this evening to save me a bit of time in the morning.

The Cowley airfield is somewhat unusual for a gliding field because the airport is completely un-serviced. No running water, electricity or wifi whatsoever. I wouldn't classify myself as a "princess" – in other words someone that can't function without his everyday conveniences, but the idea of roughing it in the campground wasn't all that appealing to me. I also wasn't keen on trying to figure out a solution to charge glider batteries and various other electronics, keeping food cold or going a week without a shower, so I opted for a shared room at the West Castle Motel in Pincher Creek, a popular lodging establishment among Cowley attendees. It's way closer to one star than five stars but the bed was (reasonably) comfortable, the shower was (reasonably) warm and at about \$75 per night split two ways, well within the budget. The drive to Cowley from Pincher Creek is about 25 minutes and the scenery makes the drive go quickly. In fact, Pincher Creek is so close that most campers opt to drive into Pincher Creek for dinner instead of struggling with camp stoves and the logistics of keeping perishable food cold. Speaking of camp stoves, if you ever make it out to Cowley, be sure to ask Tony Burton how that red stain on the ceiling in the cook house got there. Dinner options are somewhat limited in Pincher Creek, especially for glider pilots who are only just starting to think about dinner around 8 pm after a long day of flying. Fortunately, Boston Pizza has a decent selection of (microwaved [credit: Patrick]) cuisine and I could pretty much eat pizza all day every day, so we ended up visiting Boston Pizza five times during the camp.

As is typical during a gliding trip, if the weather is sunny and clear, the days start to look a bit like the movie *Groundhog Day*. Fortunately, this year's Summer Cowley was no different. Our 9 am morning meeting

Over the Livingstone Range

©Andrzej Konarzewski



was when everyone gathered to talk about the day ahead, weather, safety matters from the day before and general housekeeping and logistical issues. After the meeting, everyone rushed to the tie down area to prepare their ships and then towed them to the line. Best case scenario, the winds favored runway 21 and the trip to the flight line was nice and short. When the winds were stronger from the east, runway 11 was the runway of choice and everyone begrudgingly marched their gliders to the other side of the airport. Then the waiting began. The airmass we were in for most of the week was quite dry, so cu were few and far between. That made the question of when to launch challenging. Some days we were able to take off just after noon and stay up all day, and others we were waiting until after 2 pm for good thermals. The days in Cowley are known to be long and so even if you launch late, you can still enjoy good thermals late into the evening. Just ask John Gruber.

I won't bore you with a day by day account of the camp, but there were lots of highlights (and lowlights) to share:

- According to Geoff Minors, Cowley Camp Director, this was the biggest Summer Cowley for some time. 16 gliders and pilots from 6 clubs attend (Cu Nim, Edmonton, Lethbridge, Saskatoon, Winnipeg and even Montreal!). Well over 100 flights were flown and countless hours of soaring.
- I launched second on Day 4 of the camp and landed back at the airfield despite the glider ahead of me and behind me managing to stay up. Waiting nearly 3 hours for another tow due to the long line of gliders was not fun. I launched again after 3 pm and managed to get lucky and climb to 14,000 feet in thermals. I also enjoyed a great cloud street which extended from the Porcupine Hills to the Livingstone Range.
- I went for a nice sightseeing flight in the unique and appropriately named Ogar motorglider, owned and piloted by Geoff Minors.
- My first experience flying ridge on the Livingstone Range was on a marginal day with an east wind at Cowley. An \$85 tow behind the Scout put me about 1000 feet above the ridge for my first attempt. Assum-

ing the wind was from the east on the range, I worked the east side of the range but eventually found myself below the ridge top. Not recognizing the west wind, I continued to work the ridge thinking it would eventually work but to no avail. I left the ridge at 6600 asl, well below the recommended threshold to leave the ridge of 7000 asl and by sheer luck managed to do a partial circuit and land on runway 11. It's a miracle I didn't land out. Subsequent attempts at ridge soaring the Livingstone Range were much more successful.

- An unfortunate occurrence with the tow plane led us to miss out on the Wednesday of the camp, which was likely the best day of all Summer Cowley. Fortunately, Edmonton Soaring Club was nice enough to lend us their towplane for the balance of the week to keep the camp going. Many thanks to ESC for entrusting us with their plane, Pat Pelletier for ferrying the plane from Westlock, Andrzej Konarzewski for driving 12 hours to and from Edmonton to facilitate the ferry flight and Soren for coming out to tow for a handful of days, so us dual rated glider and Pawnee pilots didn't have to sacrifice our gliding to tow.
- Seeing Frank Slide from the air is an amazing experience.
- Even when the soaring was tough and the thermals were lackluster, the scenery was a great distraction.
- Seeing many long-time friends and also having the opportunity to meet a lot of new friends. The great people in the gliding community is what makes soaring such a great sport.

Cowley was truly a great place to fly and I'm glad I had the opportunity to visit. While living through this pandemic has not been fun or easy, at least it gave me a new experience which I will cherish. Special thanks to Geoff Minors and the Lethbridge Soaring Club for hosting us for the week. Oh, and of course George Haeh too who was Geoff's stand in for several days. While a bucket list item is something you often do, cross off your list and move onto the next item, Cowley will definitely get added back to the list. I may not be back next year, but I will definitely be back! ■

Bashar Dahabra, Montreal Soaring Club

In 2018 a coincidence brought me to meet Al Hoar from Cu Nim. I discussed the fall camp with him for 2018 and made the decision to travel, booked my flights and hotels, and flew to Calgary. I visited Cu Nim and flew my first flight in Alberta that fall with Al in Cu Nim's DG-1000.

The next day I visited the Cowley campsite and met Geoffrey Minors from Lethbridge Soaring Club. Simon Youens from Cu Nim drove to Cowley with Cu Nim's DG-303 which I had helped to derig the day before at Cu Nim. Simon then drove back to Cu Nim to fly the towplane down the next day.

We woke up to a layer of snow on the ground, and after a few days, that layer grew in depth making it more apparent that Cowley fall camp was not going to happen that year. In the end the camp was called off and my only consolation after driving back in disappointment to Calgary was a flight with Al Hoar in his RV6 from Springbank over Cowley, Banff, and Lake Louise.

Two years later and I am preparing for my IFR checkride in Montreal. It has been an interesting couple of years. I had built up my gliding experience and received my FAI Silver Badge in 2019. I also participated in the MSC Lake Placid Camp in 2019 held in October. I was able to solo in the MSC DG-303 and had many interesting flights over the mountains of Lake Placid and even made it into the wave.

On my PPL front, I also got my night rating and VFR OTT rating. I also sat earlier in 2020 my INRAT written test for the IFR and passed that. I completed my necessary 40 hours for the IFR and was missing only the checkride. Then COVID came and it was a lockdown.

I spent the next 3 months in my condo in Montreal on my home simulator practicing IFR flights with the aid of VATSIM and *Pilotedge* to keep sharp, but I was getting bored and losing interest. Our gliding club was struggling with a decision regarding operations. We held a number of Zoom meetings online as club members and held a safety brief on COVID. In the end, following government directives in April, it was agreed to postpone the opening till May.

The decision was taken by the CFI to allow only pilots with 100 hours of PiC to fly from

May onwards with the CFI performing a visual check from the flight line of the takeoff and landing of each pilot. I had 95 hours and thus fell short of the requirement. More time on the SIM practicing IFR procedures. In June the government relaxed their restrictions and dual check flights were allowed at our club, so I was able to make my first glider flight of the year on 23 June 2020. Around the same time, I received a message from Geoffrey that Cowley Summer Camp was being planned and if I would like to attend.

This was an invitation I could not refuse. I immediately started looking for flights and eventually booked my flight to Calgary and my hotel at Pincher Creek. The flight to Calgary was uneventful four hours wearing the mask sitting on the plane thinking about Cowley and about the gliding this year which so far has been uneventful.

I arrived in Pincher Creek and checked into my hotel. The next morning at 9 am we had our first Pilot meeting for the camp. Geoff in his capacity as the Cowley camp director chaired the meeting which was basically standing in the airfield near the cook shack. This was a routine that was followed every day of the camp and was respected by all the glider pilots.

The glider pilots present introduced themselves and the clubs they came from. It was interesting to note that there were 20 glider pilots with some coming all the way from Saskatoon, Manitoba, Edmonton, Red Deer and myself from Montréal. All the pilots afterward engaged in preparing the field with some pilots rigging their club gliders, preparing the flight line and others preparing the winch cable for the first check flights of the day.

Geoff took the lead in performing the check flights for the pilots on their dual club gliders, using the winch. By the afternoon he had checked all the glider pilots. The towplane eventually arrived from Red Deer in the afternoon and was ready for towing for the next day.

Cowley provides glider pilots with experience in different launches, having both a winch and a towplane present. I was able to get myself checked out again and authorised to go solo on the winch at the end, something I had not done for 30 years.

I had a check flight with Cu Nim CFI Chris Gough in the club's DG-1000. I made three flights in the club's DG-303. Cowley, like any new location, needs time and patience to learn about its terrain. This is best done by flying with the Cowley experienced glider pilots at the camp in the first few days.

On the third day, I had the pleasure to fly again with Chris, and we were able to climb up to 8000 feet and he soared over the Livingstone ridge as well as Frank Slide. It was an exhilarating experience flying over these high mountains at Cowley for the first time. I was glad that I was with an experienced pilot like Chris. By the end of the flight, we had traveled south to the Pincher Creek airport and then over the Porcupine Hills which are on the eastern side of Cowley before we landed on this epic flight.

On my last day at Cowley, I was able to fly with Geoff in his motorised glider, the Ogar. Again, with the flexibility of the motorised glider, we traveled over the Cowley airfield where Geoff pointed out most of the important landmarks. Afterwards, we traveled southwards to Waterton Park on the US border.

In 2008 I tried to fly at the famous Invermere Soaring Centre. The snow then also closed the soaring centre early. This year while I was at Cowley, I called Trevor Florence and arranged with him to fly there over the weekend.

Flying at Invermere over the Rocky Mountains over the snow caps, lakes and glaciers, is one of the most challenging experiences a glider pilot could experience. I think all Cowley glider pilots should make the effort, having reached Cowley to visit Invermere and complete their soaring experiences with a flight at Invermere.

Overall, the Cowley summer camp was a great experience and I was able to cap it off with two flights at Invermere, making the whole experience complete. I highly recommend that all glider pilots in Canada take advantage of using Cowley and Invermere to develop new elements in your soaring experience.

Gliding is a sport where you develop your skills to match challenges – Cowley and Invermere offer some of the most interesting and challenging experiences in Canada. ■

Cowley, looking west

©Ben Hornett



2020 SAC Membership Fees, Jay Allardyce (SAC Treasurer)

2020 has been a challenging year for many clubs across Canada. With most Canadians in lock down in late March, the conversation within and among clubs quickly shifted to whether there would even be a 2020 soaring season. At that point in time, club executives were having discussions regarding how to deal with their fixed costs even though gliders may not grace the skies in 2020. Things like ground insurance for aircraft, property taxes and airfield upkeep still generate a lot of expense even if a club was not going to operate in 2020.

The SAC Board met several times in early spring to discuss how best to support clubs during this challenging time. Several ideas were tabled but the end result was that SAC would ask clubs to charge members the normal SAC membership fee to each member; however, rather than submitting these membership fees to SAC, clubs would retain all but \$1. For a club with 40 members, this meant that a club would retain an additional \$3,160 to help defray fixed expense during this challenging year. While not a signifi-

cant amount, the SAC Board knew that every little bit would help clubs during this challenging year.

If you've read my Treasurer's report and reviewed the budget for the last several years, you will note that only about \$65,000 of the roughly \$200,000 in SAC annual expenses are covered by membership fees. The remainder of SAC's expenses are covered by the various funds that SAC has which have grown over the years and provide investment earnings which allow SAC to cover expenses over and above the membership fees collected. Due to the SAC Board's decision to divert membership fees to clubs, 100% of SAC's expenses will be funded by SAC's funds in 2020. This will result in a reduction in SAC's unrestricted funds, but the Board felt this was absolutely justified to support clubs during this challenging time.

SAC members have likely been accustomed to receiving tax receipts for their SAC membership fees which is allowable since SAC is

a Registered Canadian Amateur Athletic Association (RCAAA). Due to the Board decision for clubs to retain SAC membership fees collected in 2020, SAC will not be issuing any tax receipts for membership fees in 2020. The reason for this is because such an arrangement may be considered a "directed donation" under the RCAAA rules which is not allowed and, as a result, the decision was taken not to issue any tax receipts for 2020.

Fortunately, it appears that most clubs did get flying in 2020; however, typical revenue generators such as introductory flights are likely minimal or non-existent this season. Training flights and overall flight numbers are also likely down significantly at most club. That being said, it appears that Ontario and Quebec are having their best season in many years and many clubs are reporting a lot of enthusiasm despite all the new rules that now govern club operations. I hope that the support provided by SAC helped your club through this difficult time and that you and your club have managed to make the most of this challenging season. ■



Récit de mon expérience
**Planeur en
Namibie**

Denis Pépin, Club de vol à voile de Québec

En août 2019, Jean-Yves Germain, un ami confrère de vol et ex-partner de planeur, m'a invité à l'accompagner à un camp planeur en Namibie. Pour Jean-Yves, ce sera sa quatrième expérience de vol à voile en sol africain.

La Namibie, un pays situé sur la côte sud-ouest de l'Afrique, est une destination qui se classe parmi les meilleures sur le globe pour ses conditions de vol à voile, notamment pour la grandeur du territoire exploitable. Un terrain de jeu de 400 km par 500 km extentionnable si on le veut de 200 par 900 km si on s'aventure au-dessus du Botswana. Un sol de sable rouge qui est la caractéristique du désert du Kalahari. Une combinaison surface-sol et soleil qui déclenche de solides thermiques de 1000 pieds par minutes jusqu'à des hauteurs de 20000 pieds.

Il existe quatre importants sites de vol en Namibie: Bitterwasser, Kiripotib, Veronica et Pokweni. Des sites où des vols de plus de 1000 kilomètres sont presque quotidiennement la norme. Notre destination sera Kiripotib Soaring Guest Farm.

En 2018 et 2019, 2300 vols par saison ont été effectués sur ces quatre sites confondus. Plus de 25% de ces vols dépassent les 1000 km. Inutile de mentionner que de telles conditions attirent les meilleurs pilotes du monde. Certains viennent amorcer leur saison de compétitions dans des conditions fumantes, d'autres y viennent pour réaliser des records de distance et de vitesse et d'autres pour le

simple délice de voler les meilleures machines dans des conditions "tempêtes".

Le fait que le quart des vols dépassent les 1000 bornes en dit long sur la qualité des pilotes et des ascendances. Et parlons maintenant des vitesses:

- En 2019, à bord d'un EB-29, a eu lieu un vol de 1300 km @ 168 km/h de moyenne.
- Le 5 novembre 2019, un vol de 852 km à 192,7 km/h de moyenne.
- La veille de Noël 2019, un vol de 1406 km à 159 km/h de moyenne.
- En 2020, sur un biplace Arcus M, un vol de 1175 km @ 178 km/h de moyenne.

Tout simplement incroyable. Ayant déjà volé par le passé en territoire désertique soit à El-Tiro situé entre Phoenix et Tucson en Arizona, je comprends très bien la portée de l'expérience qui m'attend.

Première action à court terme: acheter rapidement mes billets d'avion, Jean-Yves ayant acheté les siens depuis 1 an déjà. La plupart des scénarios sont compliqués pour se rendre à Windhoek en Namibie. Le cheminement optimal avec le moins de correspondances à partir du Canada, est avec Ethiopian Airlines: Québec-Toronto / Toronto-Addis Ababa en Éthiopie / Addis Ababa-Windhoek. Trois envolées totalisant 21 heures de vol, plus les délais de connections. Une fois atterris, il nous reste 2h30 de route dont 2 heures de gravel poussiéreuse. Comme on dit, on est loin en simonak et je ne trouverai plus

jamais mon 35 minutes de déplacement vers mon club situé à St-Raymond de Portneuf, aussi long qu'avant.

Afin d'être le mieux préparé possible, j'ai aussitôt commencé à me documenter intensément sur les domaines suivants:

- Les procédures disponibles et publiées à suivre sur le site Kiripotib et les fréquences radio.
- Les espaces aériens entourant le site.
- Le flight manual du Schempp-Hirth Arcus M.
- Les notes, commentaires ou témoignages de pilotes ayant déjà volé là-bas.
- La météo à anticiper sur le site durant nos dates de vols.
- Les outils de météo utilisés soient Sky-Sight S oaring weather et Top Météo.
- L'utilisation du dispensateur d'oxygène EDS nouveau pour moi.
- L'exploitation du moteur du Arcus qui représente à lui seul 80 pages du manuel.
- Et enfin, et non le moindre, l'utilisation du LxNav 9000 et du LxNav S-10. Heureusement, il existe un simulateur disponible sur Pc pour mieux se l'approprier. Ce fût d'un grand secours.

J'ai aussi pris le temps d'analyser plusieurs vols récemment enregistrés sur OLC afin de me familiariser avec les waypoints et comparer les vols exécutés durant la journée avec les prévisions anticipées le même matin sur SkySight.

En 2018 et 2019, 2300 vols par saison ont été effectués sur ces 4 sites confondus. Plus de 25% de ces vols dépassent les 1000 km.



Durant les 2 mois qui restaient, j'ai eu à peine assez de temps pour reviser à mon goût et surtout assimiler autant d'informations. Mais de l'étude passionnante, il va sans dire.

Puis préparation des valises. Bien que la température là-bas est dans les 35 à 40 degrés au sol, on doit prévoir des vêtements chauds en vol et pour les soirées. Un gradient de -30°C est à anticiper entre le sol et nos niveaux de vol. Imaginez, des chaussons en duvet, enfilables par-dessus nos chaussures, sont recommandés. Des accessoires pour uriner en vol font rarement parti de mes bagages vacances et un radio VHF non plus. Celui-ci doit obligatoirement être dans



les bagages enregistrés car il est prohibé en cabine. Aussi, Jean-Yves et moi avons soigneusement pris soin de transporter en cabine, tout le nécessaire qui nous permettrait de voler quand-même les premiers jours, advenant le cas où nos bagages tarderaient à nous suivre. On ne prend pas de chances.

Arrive enfin le 25 novembre, le jour de notre départ. Une fois atterris à Windhoek, la capitale de la Namibie, une voiture viens nous chercher pour le trajet vers Kiripotib. Le long de la route, il est difficile de ne pas être impressionnés par le paysage désertique et les nombreux "dust devils", ces colonnes de terre qui s'élèvent du sol à plus de 10000 pieds, rendant les ascendances thermiques parfaitement visibles. Imaginez, pour soulever des dizaines de kilos de terre aussi haut, il faut que ça pompe en s'il-vous-plaît.

Arrivés sur le site le 27 novembre, la première journée est consacrée au repos néces-

saire pour récupérer de la fatigue du voyage et du coup de barre du décalage horaire. Ceci est une règle de la Soaring Society of Namibia. Ludwig Starkl, le manager des opérations, profite de cette journée au sol pour nous donner le briefing des nouveaux arrivants. C'est là qu'on nous explique, entre autres, le déroulement d'une journée type, les consignes d'utilisation des pistes, des espaces aériens et de la radio et les mises en garde basées sur l'historique des incidents antérieurs. On insiste sur le fait qu'on ne doit jamais sortir notre moteur en vol à moins d'avoir déjà un aéroport en-dessous. Il y a peu d'endroits atterrissables dans le Kalahari à part les aéroports répertoriés et, en cas d'urgence, les pans salins 1. Et

comme le Arcus passe d'une finesse 50 à une finesse 13 en sortant le pod moteur, le plan B doit être en-dessous de nous et préalablement jugé praticable.

Dans la semaine précédent notre arrivée, des incidents ont mis deux planeurs hors d'usage. Sans blessés heureusement. D'abord, un planeur est entré en collision avec un oiseau. Euh ... un gros oiseau. Une surface d'extrados de pas moins d'un mètre carré était complètement délamainée comme si on l'avait frappée à répétition avec un marteau. L'équipage a pu revenir au terrain sans difficulté mais l'examen subséquent a révélé un délaminage sérieux du spar. Il faut dire que l'impact s'est produit en face à face lors d'une transition, donc sans doute à des vitesses au-delà de 200 km/h. À ce propos, Ludwig nous recommande de ne pas regarder dans les yeux un oiseau de proie qui exploiterait le même thermique que nous. Par un contact visuel direct, on est perçu

comme un prédateur et leur réaction devient alors imprévisible.

L'autre incident concerne une utilisation inappropriée, voire imprudente, du moteur qui s'est soldée par trois bris consécutifs de l'hélice du planeur et ce en autant de jours. Les trois causés par le même individu. Un cas flagrant de "je lirai le manuel par après". Résultat, le pilote renvoyé chez lui et un planeur en atelier pour une trop longue période, en plein dans la bonne saison.

Un autre incident qui aurait pu être une tragédie est même survenu durant notre camp. Alors qu'un pilote expérimenté placé derrière l'aile, procédait à l'inspection du moteur d'un biplace, un autre pilote, en abaissant le dossier du siège avant, a accidentellement actionné le bouton du démarreur situé sur le manche à balai alors que l'interrupteur d'ignition était à ON. Une pale de l'hélice a touché la joue du pilote exposé en épargnant miraculeusement ses os. Le genre d'évènement qu'on ne peut oublier pour le reste de sa vie. Comme je le disais, l'utilisation correcte et sécuritaire du groupe moteur sur un biplace est complexe et doit se faire avec une très grande attention. Les commandes sont doublées avant-arrière et si on transfère la priorité des commandes d'un siège à l'autre, les interrupteurs et les manettes doivent être soigneusement positionnées avant le transfert.

Le planeur que nous volerons est un Arcus M de Schempp Hirth de 20 mètres doté d'un moteur à essence permettant le décollage. Au fait, il n'y a pas d'avion remorqueur à Kiripotib. Donc, tous les planeurs sur le site sont des moto-planeurs. Quand on voit le premier décollage là-bas, on comprend vite que si c'était un avion qui nous tirait, on ne verrait plus dehors dès que la manette des gaz serait avancée. Les pistes sont longues mais en sable sec et fin.

Donc, revenons au Arcus. Il s'agit d'une super machine qui offre l'agileté d'un monoplace, malgré son poids imposant de 1765 livres gross weight. Par exemple, pour mettre le dolly de queue, il est nécessaire d'utiliser un chariot levier spécial tellement la queue est lourde. Impossible de le mettre ou de le retirer sans ce levier. La cabine du Arcus est luxueuse, large et confortable, ce qui ne l'empêche pas de planer à finesse 50 avec une V_{ne} de 151 noeuds sous 10000 pieds. La capacité de ses ballast d'ailes est de 410 livres. Dans les ascendances qui nous attendaient, on "ballastait" à chaque vol. D-KKEX était équipé des plus récentes versions des instruments LxNav, dont un Lx9070 à écran tactile très récemment disponible sur le marché. Il faut dire que le

proprio du Arcus en question est le pré-sident et fondateur de LxNav lui-même, Uros Krasovic.

La préparation de notre planeur le matin de notre premier jour de vol nous a donné un peu de fil à retordre. Refus du Lx-9070 à reconnaître notre carte SD pour le transfert du profil pilote. Confusion entre les instructions verbales obtenues sur place et le manuel du Arcus concernant la procédure de remplissage des réservoirs d'essence. Tubulures d'oxygène trop petites pour les EDS à bord, nécessitant le recours à des adaptateurs et enfin, un dysfonctionnement d'un headset rendant l'intercom entre les pilotes inopérant. Pour ajouter à cela, en approchant notre planeur le premier matin, on a observé que nos chargeurs avaient été retirés sans savoir depuis quand. On a vite constaté que les charges de nos quatre batteries n'étaient que partielles.

Une fois ces problèmes résolus sous un soleil de 36° C, je vous assure qu'une nouvelle douche était nécessaire avant notre décollage.

Lors des préparatifs d'embarquement, il est obligatoire que nous portions tous un espèce de tablier ventral dans lequel on transporte 5 ou 6 sachets d'eau potable scellés. Désert

oblige en cas d'atterrissage hors site. On doit revêtir à contre-coeur chemise à manches longues et pantalons longs et garder un manteau chaud à notre portée en vol. Un paradoxe vu cette chaleur d'enfer au sol. Balises SPOT activées et vérification pré-décollage terminée, nous voilà prêts pour le run-up moteur avant l'envol. Mais on est pas encore à la fin de nos contretemps. Un soudain virement de vent nous obligera à changer de seuil de piste. De la piste 26 on doit se déplacer au seuil de la piste 36 situé 2,7 kilomètres plus loin. Le Arcus tolère mal les forts vents de travers. On nous avait prévenus de cette caractéristique, possiblement dû à son aile particulière à triple dièdre.

Mais ces contre-temps seront vite oubliés dès le moment où on s'élancera sur la piste 36. Un premier thermique nous grimpera à 10800 pieds puis un second à 14500, vingt kilomètres plus loin en moins de 15 minutes. On sent déjà le rythme que prendra notre journée. Un rythme fulgurant. En tous cas pour moi, car ce sera le plus rapide de ma carrière. Près de 140 km/h sur une distance de 719 km. Notre objectif tout au long de ce vol, tourner le moins possible même si lever le nez sur des ascendances de 10 noeuds avec un vario qui crie comme un malade, n'est pas de ma nature.

La première heure de ce premier vol fût pour moi vraiment déroutante. Je me sentais vraiment comme un élève ab-initio. Trop de nouveautés et d'inconnus en même temps. On a déjà abordé cette notion lors des formations sur la sécurité. Là je l'ai vécu de façon bien concrète. Planeur nouveau, instrumentation nouvelle, piste molle et sablonneuse, altimètre en mètres, indicateur de vitesse en km/h, varios en mètres/secondes, hauteur du sol 1400 mètres asl, références sol pour la navigation inexistantes, pas d'écran FLARM dédié, utilisation de l'oxygène dans les premiers 20 minutes de vol avec un EDS qui nous signalait trop souvent qu'on ne respirait pas adéquatement, rapports de positions en niveaux de vol plutôt qu'en mètres, préoccupation du respect des V_{ne} diminuées en hautes altitudes, et puis quoi encore? Quelle leçon d'humilité. C'est dans de tels contextes que l'on risque de mal gérer l'éventualité d'une situation d'urgence. Par contre, Jean-Yves avait déjà de l'expérience sur ce site et sur ce même type de planeur.

Heureusement, au fil du vol, la maîtrise de tous ces éléments s'acquiert graduellement, et notre concentration se tourne davantage vers la stratégie de notre vol de distance.



Pour profiter de la grande étendue du désert du Kalahari et pour bénéficier du bonus triangle de OLC, nous avons envisagé un task triangulaire. C'est certain que plusieurs allers-retours sur une même ligne de fortes ascendances identifiée par Top Météo le matin, nous permettrait de maximiser notre vitesse moyenne, mais le terrain ici se prête trop bien à des tasks triangulaires.

En cours de route, à l'approche de la frontière du Botswana, des virgas, ces averses de pluie qui s'évaporent en descendant avant même d'atteindre le sol, nous ont obligés plusieurs fois à dévier de notre parcours. En les défiant à un moment de notre vol, on a assez vite compris que si on passe trop près des nuages qui les génèrent, on a droit à des zones "d'ultra-chute" qui portent bien leur nom. Voilà qui explique la forme plutôt polygonale de notre vol par rapport à un triangle. Une situation moins payante sur OLC.

Durant nos vols, on s'accordait, en alternance, 30 minutes de temps comme pilote aux commandes. C'est le Lx-9000 qui tenait le temps, avec un rappel de changement de pilote directement à l'écran. Jean-Yves et moi avons aussi convenu que le pilote aux commandes verbalise le cheminement qu'il planifie faire dans les prochaines minutes afin de maintenir un échange d'opinions favorisant telle stratégie plutôt qu'une autre. Ainsi, nous validions ensemble si l'autre agirait de la même manière que celui aux commandes et si non, pour quelle raison.

Par exemple, selon notre altitude et la perspective sur notre route, on prend ou non le prochain thermique? On file directement sur notre route ou on dévie légèrement pour ramasser les débris de nuages de chaque côté? On accélère jusqu'aux vitesses pénalisantes commandées par un MacCready très élevé, ou on modère dans les plages très basses de la polaire? Ce sont toutes ces questions qui nous passent continuellement par la tête lorsqu'on vole en solo. En dual, on a le privilège de partager nos options pour minimiser les erreurs. Un pur délice tant qu'à nos apprentissages mutuels. J'ai ainsi pris conscience que j'avais tendance à arrêter pour prendre quelques tours dans de bonnes ascendances, alors que simplement ralentir avec un louvoisement nous favorisait davantage notamment sur notre vitesse moyenne. J'avais aussi tendance lors des transitions, à pousser jusqu'aux vitesses extrêmement élevées parfois demandées par le speed-to-fly alors que la finesse tombe drastiquement dans ces plages de vitesses. Il faut dire que durant tous nos vols, nous avons opté pour un ajustement MacCready automatique qui affichait parfois des valeurs de 8 ou 9 noeuds.

Pour vrai, aux altitudes où on évoluait, on devait référer à notre tableau des Vne en altitude pour s'assurer que notre "très optimiste speed-to-fly" ne nous fasse pas voler le Arcus au-dessus du red line.

Le retour des planeurs au terrain survient pour la grande majorité, dans l'heure qui précède le coucher du soleil. Il y a donc à nouveau, affluence sur la piste et les nombreux préposés s'acquittent merveilleusement bien de leur tâche. Parfois, notre aile n'a même pas le temps de toucher le sol que le type l'attrape avec une serviette d'eau glacée et un breuvage froid dans l'autre main.

Le fait de voler sur ces sites de vol renommés, nous en apprend gros même durant les heures au sol. En effet, la possibilité de rencontrer et d'échanger avec des pilotes élités venant de partout dans le monde est très formatrice. L'apéro de fin de journée et le souper permettent des échanges directs avec ces pilotes en comparant nos vols et en parlant des stratégies choisies durant la journée. D'excellents conseils nous sont livrés dans une ambiance de complicité plutôt que de compétition. Un apprentissage inestimable en ce qui me concerne. En volant en même temps, sur le même territoire et sur un planeur identique, après avoir reçu le même rapport météo matinal, on s'entend que si un équipage fait mieux que l'autre, la différence est forcément sur le siège. Voilà pour quoi notre écoute est très élevée lors des échanges et discussions sur nos techniques et stratégies respectives.

Nous avons eu la chance de rencontrer sur le site, Uros Krasovic de Slovénie qui, comme mentionné plus haut, est le propriétaire et concepteur des précieux instruments de vol LxNav. On pu aussi échanger avec Luca Znidarsic aussi de Slovénie. Luca a fondé LZ design et est l'inventeur du moteur électrique FES (Front Electric Sustainer). Il a reçu le prix Lindberg de l'OSTIV pour cette création. (Organisation Scientifique et Technique Internationale du Vol à Voile). Enfin, dans les semaines qui ont suivies notre départ, Matthew Scutter, membre de l'équipe australienne pour les championnats mondiaux et aussi le créateur de l'application météo SkySight, est débarqué sur Kiripotib pour participer au même camp de vol.

Parlant météo, chaque matin, un exposé sur les conditions nous est présenté à l'aide des applications SkySight et Top Météo. Il est impressionnant de voir comment les modèles météo utilisés sur ce territoire africain sont précis et "sur la coche" sur tous les aspects. Heure de début de la convection, force des ascendances, hauteur des ascen-

dances, lignes de convergence, force et direction des vents et heure de fin de la convection.

Vers la fin de notre séjour, nous avons pu visiter un autre site de vol appelé Veronica pour y rencontrer son promoteur et visiter les installations et le complexe d'hébergement. Un site superbe, luxueux, bien organisé et plein d'histoire puisqu'on y pratique depuis plusieurs décennies, la chasse au gros gibier. C'est sur ce site que nous avons pu voir le magnifique et impressionnant planeur EB-29R d'une envergure de 96,3 pieds avec une finesse pouvant l'amener à 68 km plus loin s'il est à 1000 mètres du sol.

Si je résume mon séjour en Namibie en deux phrases :

"Une expérience inestimable en termes d'apprentissage et de qualité de vols, dans des conditions fumantes et sur un planeur sans défaut. Ce camp améliore assurément notre pilotage et nous fait réaliser à quel point, sur certains territoires de la planète, l'énergie disponible est gigantesque et nous permet de réaliser des vols de distance impressionnants à des altitudes hors du commun."

La pandémie qui a frappé subitement la planète le printemps dernier ne fait qu'ajouter à la satisfaction d'avoir saisi l'opportunité alors qu'elle passait et de ne pas avoir remis ce voyage à plus tard. Je souhaite à tous de pouvoir vivre une telle expérience dans les saisons à venir. Ne la laissez pas passer.

Merci Jean-Yves d'avoir pensé à moi pour t'accompagner dans cette aventure. ■

Capsule vidéo du voyage:
<https://www.youtube.com/watch?v=dhsTc0w7Dvg>



Luke Szczepaniak, SOSA GLiding Club

Luke took this photo just after 8PM while on a final glide in August. Luke's photos have also appeared in the past two issues.

On the Covers of FREE FLIGHT

Patrick Pelletier, Lethbridge Soaring Club

Patrick captured the action from a vantage point behind Zulu Zulu at the Livingstone Range during the Summer Cowley Camp.





THE THERMAL

an interview
with Mark Maughmer

Herrie ten Cate

HtC: IMAGINE YOU ARE FLYING your relatively modern glider. Now look at its wingtip. If you have a winglet, my next guest probably had something to do with its design. Glider pilot Mark Maughmer is a professor of aerospace engineering at Penn State's College of Engineering. His winglet designs are on hundreds of production sailplanes around the world. Mark's lifetime of contributions to the field of aerospace is being recognized by the American Institute of Aeronautics and Astronautics with the 2028 IAA Aerodynamics Award. I've reached Mark at his home in Lemont, Pennsylvania.

HtC: So, Mark, first of all, congratulations on this prestigious award.

MM: Thank you very much.

HtC: One footnote says you were chosen because of your foundational developments in airfoil and wing design. Talk to me about your work and how it relates to gliders.

MM: Well, much of the research that happens with gliders is done by people who are passionate about gliders and they try to shoehorn other things they're doing into the work of gliders, which I've been able to do pretty successfully. But I've been at it for a long time; we were doing low Reynolds number aerodynamics in airfoils and wings and stuff before other people. Model airplane people and glider people were the people doing it until UAVs came along. There wasn't much funding to do that, so you did it because you were interested and passionate about it. And now with UAVs there's a lot more activity because there's funding in that area.

HtC: Right. Are you working on glider UAVs?

MM: No, and I'm not really doing much on UAVs, so kind of sneaking into gliders as best I can. The winglets stuff all came from, and was really directed toward, the glider movement early, early on. And that's an interesting one because Karl-Heinz Horstmann in Germany had done winglets and, you know the big guys had done winglets. Basically the notion was, well they help the climb but they hurt the cruise. So, they never found their way onto production aircraft. And I was contacted by Peter Masak, who said I'm going to make winglets for gliders. Do you want to help? I said, Peter, the best aerodynamicists in the world have done this, it doesn't work, it helps the climb, it hurts the cruise. Well he said, I'm going to do it... will you help? He was so persistent, I finally said, what airfoil are you going to use? And we were ultimately successful with a trial and error flight test program – him in Texas and me in Pennsylvania on the phone. At the end of the weekends after he did some flying. And we got into the design space which is I understand better now – it's a miracle we did that. And people started winning contests and ultimately Schempp-Hirth became interested, then the other manufacturers.

HtC: So, what was the sweet spot between cruise and climb? How did you work the design to find that place.

MM: Well, it's interesting, you know, even in the late 20th century, you would think that designing winglets for gliders should be pretty easy, but our tools couldn't do it. And they just didn't have the fidelity to get in the corners. I think that was the same thing that hurt the big guys, they didn't have those tools either. They developed the winglets at the NASA Langley wind tunnel, but didn't get the sweet spot. The

beauty of the sailplane stuff is, Peter would say, "what do I do next" and I would tell him try this and he could make those changes and go fly that weekend. And Sunday night he would call me... this is what I found out, and we picked the parameters in the right order, that we first nailed down the ones that didn't matter, and then went after the ones that really mattered last. And it comes down to a couple of things, like sweep and toe angle can do the same thing, so it's easier to adjust the toe angle than the sweep. So set the sweep and adjust the toe angle. I did a lot of this with tufts and some things, trying to get the winglet to stall about the same time that the main wing did or a little better. And have the tufts stall all at the same time, that means that it's roughly elliptically loaded which is probably a good thing to do. And so relatively quickly, because we can make changes and fly them, we arrived into the design space which you can't do with a 787. So, we got a winglet that was working.

HtC: Speaking of some of the commercial airliners. Is there still a bit of a crossover between say some of the work you've done on aerodynamic design that has still worked its way into the commercial world?

MM: It's hard to say. The guys at the companies are friends of mine, and then of course we talk, and to be honest I think they watch the glider community. They're not advocates or anything, but they watch it and the fact that winglets were working on a glider. I say this is like the canary in the coal mines. The big guys had to notice. They were working with winglets. The 747-400 had the big winglets that they said it didn't help much but it didn't hurt. And so, it gave the airlines a big place to put their logo; so let's go with it, they were slowly getting there but they couldn't

do the quick flight test programs that we were working on, so I think we influenced it. And I know, particularly with Airbus, those aerodynamicists... a lot of them come from the glider world and akafiegs and so forth. So, very much in the Airbus world, winglets and gliders, there's crossover. In fact, we use a lot of the same tools. Once we got into this design space and had a successful winglet, it still bothered me that we didn't have the tools, and that's when M&H Soaring contacted me and said they wanted to do winglets and I said, that's okay, but I want to develop the tools to do this. And so, you're going to test a lot of winglets that we're going to find out about and we did get into the tools that work. Basically, we can design a winglet now that works as it is supposed to right out of the box.

HtC: Wow.

MM: That's pretty important, I think, and we're now using CFD (computational fluid dynamics) to check some of the things, we eyeball like junction flow and so forth, and we're finding out we did a pretty good job. But CFD allows you to get into these corners and exploit whatever advantages are left. We can, we can do things now, like predict how much benefit there is from a retractable tail wheel and is it worth the weight penalties and so forth and so on. You can make those trades now that even four or five years ago you couldn't begin to touch.

HtC: So, speaking of glider designs, are we reaching the limit of what's possible or do you think there's still a lot of room out there for improvement?

MM: There is room for improvement but it's all connected. One of the things that we've done, because of my interest in gliders and aerodynamics, is transition has always been an important area of interest. The transition between a laminar boundary layer and a turbulent boundary layer, which is of critical importance to the sailplane community, but the big guys, the airliners, don't care because there, their Reynold's numbers are so high they've been basically flying turbulent flow airfoils since transports have been flying. It bothered me that CFD completely ignored transition. And there's no way you can do a glider or UAV or even a business jet or GA airplane if you don't include transition in the calculations. So, I had students working on that.

We now have a transition model that works in CFD and that's why we're able to use CFD now to do the flow over a whole glider and get reasonable answers, and that transition model has fallen into the big guys area. I would never get a grant and say I want to do transition measurements and study sailplane

aerodynamics. And so, I would just say that capability allows us to more critically look at glider design, and I would have to say that, in looking at the CFD answers we're getting, we've done a remarkably good job with the tools we had. And it's hard to find any big areas that say, oh, this is going to revolutionize gliding, but the little things will pick up a couple points of L/D every now and then, and that's improvement. I think the biggest thing is our ability with loggers to find out the air that the gliders are flying in. And if we better match the glider to its environment, I think there are some gains to be had there.

HtC: That's interesting.

MM: An example of this is with logger data ... you may be particularly familiar with the European model of handicapping where there's the Karl-Heinz Horstmann model of A1, A2 and B1, B2 thermals that are strong and narrow or weak and narrow or, you know what I'm saying. And they go through this with a sailplane, and they determine its cross-country performance in the average weather conditions. In designing those we looked at these, and with the logger data we found that the 18-metre people or the Arcus people with their 20-metre two-seaters never used an A1 thermal which is the weak narrow thermal and you go, wow!

It really changed the way we think about it, although we still designed a glider that could exploit in an A1 thermal. My opinion is that you don't win contests in strong weather, you lose them in weak weather. So, you need to be able to exploit that. But we also found things – we added areas in there for cruising under cloud streets or final glide and other things like that.

HtC: I was just going to say I interviewed Terry Delore recently who broke another record in New Zealand, flying 1730 kilometres. I can imagine a glider that's designed just for wave conditions...

MM: You could do that, but nobody would sell very many. If my task is designing a glider for Uvalde, Texas for a pilot who weighs 172 pounds, we could design a winner that would be hard to beat. But there would only be one of them. The manufacturers have to worry about weather in northern Germany *and* the weather in Texas.

HtC: Tell me a little bit of your connection with gliding... I saw a great photo of your flying event somewhere over Germany. What's that about your experience.

MM: I just have to say that wasn't me. Yeah, whoever wrote that article picked that photo

off the net. I think that's Tilo Holighaus in a Ventus 3 but it's not me.

HtC: But you're an experienced glider pilot in your own right... so tell me a bit about that?

MM: I've been flying gliders since 1972. And let's see, I've had a Mosquito, an ASW-20, and a Ventus 2BX. I don't fly as much as I'd like to. I flew contests in the past and I'd still probably like to. I tell everybody, as soon as I can figure out how *Clear Nav* works, I'll race again. It's funny when you do technology all day at work. The last thing you want to do is bring a lot of technology into your hobbies. So, it's funny.

HtC: Well, you could get into the vintage gliding movement...

MM: Yeah... I'll buy a Ka-6 and a wiz wheel. So, I've been a flight instructor since 1976 and the faculty advisor and promoter of several university soaring clubs. One at Princeton and one here. So, yeah, it's been an important part of my life for a long, long time.

HtC: So, what is it about gliding that has kept you hooked your entire life?

MM: Wow. You know the test you take when you're young that tells you what you're going to be when you grow up? My test said I should be an artist/historian, which is diagonal across the origin from engineer. So, I think I approach engineering like an artist. And I think it's the beauty and the majesty of gliders that has kept me interested. And, you know, I've always thought, well, if, if your eye likes it, the air likes it.

HtC: That's a great expression!

MM: And I think it's true... if it's pretty, the air likes it. And I've kind of assumed up until after I became a professor... well, I thought all engineers were that way and you kind of find out. No. Some of them are just looking at the problem and ugly is okay as long as it works. If I can make it work and make it pretty that's even better. So, I think these, these highly swept polyhedral platforms, that's me at work.

HtC: Well, I think we're all enjoying it as glider pilots around the world. Mark, it's been a real pleasure speaking with you, and once again congratulations on what appears to be a very well-deserved award. Thanks and stay safe.

MM: OK, and you stay healthy. Take care. ■

For more info on the origins of winglet design, read Peter Masak's article in the 1992/2 issue of Free Flight. It's on the SAC web.

18th Canadian Nationals, 1967, Regina

Given no Nationals this year due to the virus, here is a recounting of one flown a long time ago. Ideally, the one from 50 years ago would have been appropriate, but that contest in Carmen, MB was rained out.

A PILOTS' MEETING on Monday evening, 4 July, started the ball rolling and the competition rules were laid down. It was agreed that, if a pilot exceeded 230 miles on a free distance day, the following day would be a rest day. There was some discussion as to whether a free distance day should be included at all, but though some Gold C pilots felt that the long retrieve would be a waste of money, the will of the majority prevailed to retain this task. Pilots' meetings were set for 9 am daily.

Tuesday, 5 July (first contest day)

Dist. to a Goal – 187.5 mi – 9 pilots completed

The forecast was for winds of 25 knots at 320° at ground level and 40 knots at 6000 ft. Cloud-base was forecast to go to 5000. The Melita airport was a Gold C distance. The hot ship pilots selected 1:15 pm, or thereabouts as take-off time; the less confident, somewhat earlier. The NW wind was slightly cross, drifting competitors to the south of track, but its high speed made good times possible. Seven made it to the correct airport, Wolf Mix being the winner with a very fast 67.5 mph. Charles Yeates was second, Kai Gertzen third, and Dick Mamini a very creditable fourth in an L Spatz 55.

Unknown to the task setters, a second airport had been established east of the town, and John Firth and Dave Webb made the mistake of landing there, and lost a few points because of this. Several other pilots got to Melita, but could not find either airport. It takes a lot to stop a BG12, and Vic Shobridge of Vancouver kept on going and ended up in North Dakota, well over 200 miles away.

Wednesday, 6 July

200 km triangle (129.6 mi) - 22 pilots completed

After a good start on the first day, the second day was even better, with less wind and good thermal development. Winds were 330° at 12 knots at both 3000 and 4000 feet. The task was a good 200 km triangle with turning points at Indian Head, 45 miles to the east, Tyvan, a further 34.8 miles to the south, with a final leg

of 50 miles back to Regina to the northwest. Twenty-two out of 31 pilots completed the task, Wolf Mix winning again and setting a new Canadian record.

Thursday, 7 July

300 km triangle (197.6 mi) – none completed

Light winds were forecast, with 11 knots at 180° at 1000 ft and 8 knots at 260° at 6000 ft cloudbase was forecast to be 5500 agl by 1 pm. The task committee, self-confident with the large number of pilots who had completed the task on the previous day, now declared a task of 300 km, with turning points at Balcarres, 52 miles out to the northeast, and Weyburn airfield to the south.

The clouds never grew to more than wisps, however, and there were few of these. The task proved a little too ambitious, and the first leg was littered with downed sailplanes. A dead area south of Balcarres (probably due to recent rain) caused a few pilots headaches, but a number got well down the second leg, and two pilots, Mix and Yeates, rounded the second turning point. Mix was again the winner.

Friday, 8 July *Overcast, a no contest day.*

Saturday, 9 July

Dist. to a goal (121.0 mi)– 11 pilots completed

Winds were forecast to be 6 knots at 280° at 1000 ft and 24 knots at 290° at 2000 ft above ground, with small cumulus by noon. The task was a goal race to Carlyle airport [due to the high wind]. It was established that there was only one airport this time. Again a crosswind caused some pilots trouble, but 11 pilots reached the goal. Kai Gertzen of Rochester, NY won in a Ka6CR at 49 mph. Wolf was second for the day, and retained his overall lead. Mike was third, Dave fourth, and Charles fifth.

Sunday, 10 July

200 km triangle (129.6 mi) - none completed

At 8 am, ground temperature was 65°, but at 1000 ft it was 81°. Winds were 22 knots at 280° at 1000 ft and 14 knots at 260° at 8000 ft. The ground temperature had to go to 88° to give thermals to 1000 ft. If the forecast high of 92-95° was reached, thermals could reach a maximum of 10,000. So a repeat of the 6 July 200 km triangle was the task. It was difficult at the start, and several gliders landed back at the airfield. Most of those who did get away did well to Indian Head, some reaching 9000 feet and some to 6500 on the way. But at Indian Head there was a hole for ten or more miles to the south.

Several gliders were seen circling over Indian Head at 1600 feet with an occasional single glider above at 2500 or 4000 feet. Setting out hopefully on course, seven gliders all landed together, while two actually set down at Indian Head itself. The seven saw Wolf grinding away for half an hour above them, and then saw him set off with about 2500 feet. Soon after, he reached 8000 and was able to round the second turn. Dave and Gordie Hicks also got to 8000 feet and landed a few miles behind Wolf. Shorty Boudreault gave up some excess altitude to be sure of a safe landing place and came down in the same field as Dave and Gordie. Charlie, John, and Mike landed with the gang south of Indian Head. Charles was unlucky to snag a dive brake on a wire fence.

No one completed the task. Wolf made 93 miles, Dave, Gordie and Shorty, 87. The next best distance was back at 53 miles. Paul Tingskow landed on this hot day to find a glass of beer thrust into his hand. When this was consumed, it was replaced, then a third replaced the second – all on an empty stomach. He was then treated to an excellent supper.

Monday, 11 July

Free distance (winning flight – 241.5 mi)

With warm air above 5000 ft, thermals were not expected to rise above 4-5000 feet. Winds were 270° and 32 knots at 3000 feet, 2700 and 29 knots at (?). With a free distance day, Roy Gray and Dave sensibly took early starting times*.

It turned out that the strong wind did not chop up the thermals as much as expected, but the thermals were the standard ones we had come to expect, with narrow but strong cores. Roy went farthest to Carberry, Manitoba, with 241.5 miles. Firth went 230, Yeates 228, Mix 212, and Webb 185.5 miles. Mamini made 175.5 miles in the L Spatz, Boesch 169 miles, and Trounce 164 miles. Roy said his secret was that he took off early, flew conservatively at not more than 55 mph, and was lucky to pick up thermals late in the day, landing after 6 pm.

Tuesday, 12 July

Indian Head O&R – 12 pilots completed

The pilot briefing included a warning to avoid a turkey farm on the outskirts of town as the silent shadow of a glider causes the turkeys to rush headlong into a corner and suffocate. The task was a 91 mile Out & Return to Indian Head. If by 11 am the temperature rose to 70°, we would have thermals to 3000 ft. First take-off was scheduled for 12:30.

This proved to be a difficult day, with thermals mostly limited to about 3000 ft, and with a wind strong enough to break things up low down. Only 12 pilots completed the task. Perseverance and judgement won this day. Wolf again, at 37.5 mph. Dick Mamini shone again by completing the task and taking 7th place. Trounce did well to make 9th with the

Ka8, and at a late hour who should come floating back, but an old time perseverer, Shorty Boudreault.

Wednesday, 13 July

Rain and low cloud made it a no-contest day.

Thursday, 14 July

This morning was brighter and Contest Director Julien Audette was very keen to set a task, a short one perhaps, but something to round off proceedings. The Task Committee decided on a 100 km triangle, with turning points at Devin and Gray. At 11:30, cloudbase was 1000 ft and winds were 25-30 knots up to 2000 ft.

A number of gliders were rigged, but many pilots, looking at the sky and feeling the strong and gusty wind, decided that there would be too much risk of damage to their gliders. A written notice to this effect was drawn up by one pilot and sufficient support was given to this sentiment to convince the Task Committee that the task should be cancelled.

Summing up, one could say that the weather in general was not up to “classic” western standards, but provided a fair trial of skill to competitors. We had hoped to publish photos of the winners, but our camera technique was poor and the film did not feed into the camera. Some kind soul may yet help us out. ■



Winner Wolf Mix

<i>Pilot</i>	<i>Glider</i>	<i>Final</i>
1 Mix, Wolf	Austria SH1	6833
2 Webb, Dave	HP11A	6183
3 Yeates, Charles	Austria SH1	6125
4 Firth, John	HP11A	5546
5 Trounce P / Werneburg H	K-8B	5080
6 Gray, Roy	Ka6CR	4925
7 Gertzen, Kai	Ka6CR	4601
8 Chabot H / Kovacs K	Austria SHK	4445
9 Stoten, Mike	Austria SHK	4401
10 Mamini, Dick	L Spatz 55	4389
11 Boudreault EA / Bieniada S	Skylark 3B	3904
12 Deleurant, Willi	Std Austria	3696
13 Parsey, Dave	Foka SZD	3519
14 Hicks G / Roach W	SISU-1A	3016
15 Boesch, Oscar	Ka6CR	2811
16 Redzich G / Dahlem H	HP11A	2767
17 Tucker N / Smith E	Skylark 3	2673
18 Ketonen, Eric	Std Austria	2671
19 Krauss, Paul	L Spatz 111	2561
20 Timm P / Brauer J	K8B	2557
21 Gairns, Bob	Ka6BR	2488
22 Hunter, Lloyd	1-23G	2331
23 Tingskow, Paul	BG12B	2195
24 Long, Jim	L Spatz 111	1980
25 Shobridge, Vic	BG12A	1936
26 Bonds, Charles	HP11	1615
27 Pomilartz, John	HP11	1017
28 Eley H / Eley W	1-26	868
29 Bissel, Kerry	Viking 104	699
30 Stachow, Klaus	FS-26STD	672
31 Audette, Julien	1-23G	618
32 Cheston, Robert	1-26	162

SAC Annual Report Package – 2019

TROPHIES & AWARDS – Bruce Friesen

Hearty congratulations go to all those presented with national honours for their contributions to Canadian soaring during 2019:

- **Alex Ackerman** (twice)
- **Cole Bishop**
- **Dale Brochu**
- **Chester Fitchett** (twice)
- **Trevor Florence** (twice)
- **Fernando Garza**
- **Patrick Pelletier**, and
- **Saskatoon Soaring Club**

Two individuals were recognized beyond the routine annual list. The Soaring Association of Canada extends:

- SAC Special Recognition Award to **Phil Stade**, and
- SAC Award of Appreciation to **Virginia Thompson**.

All those individuals and organizations, through their accomplishments and contributions, are sure to inspire soaring enthusiasts across the country.

SAC Special Recognition Award

Recipient 2019: Phil Stade

The Soaring Association of Canada Special Recognition Award was first presented in 1982. It is presented to an individual who has contributed to the growth and development of soaring over a period of several years.

The Association has chosen to extend this highest level of recognition to Phil Stade, acknowledging and appreciating his many years of contribution to soaring in Canada at the national, provincial and personal levels.

Phil served as SAC Alberta Zone Director from 2002 to 2005 and he was the SAC BOD President from 2003 to 2005. During those four years as a board member, including three years serving as SAC President, Phil helped move SAC to the current open operating structure we have. Phil also contributed to SAC as the Trophies Chair from 2003 to 2016.

Phil is thanked for his leadership in developing the sport of soaring and service to the Alberta Soaring Council, acting as

the Executive Director of the Council for many years. That position included development of provincial programs, securing funding from the Provincial government, and delivering value to pilots. Most prominent of the latter was Phil's work as Camp Director for the Cowley camps, summer and wave, requiring a tremendous amount of organization and "running around".

Perhaps most notable is Phil's mentoring of literally a generation of soaring pilots with his genuine enthusiasm for flying, particularly flying the wave at Cowley. Countless times one rolls over in bed at Cowley to the sound of the towplane at 6:00 am, thinking "Yup, there goes Flying Phil" almost always with some less experienced pilot in the front seat of the dual seat glider, off to show yet another wide-eyed neophyte the awesome scenery around the Livingstone Range from the silky smooth wave 'elevator'.

SAC Award of Appreciation

Recipient 2019: Virginia Thompson

The Soaring Association of Canada recognizes by the Award of Appreciation volunteers who have given their time and effort to make the Association work.

For 2019, SAC notes with particular appreciation Virginia Thompson for her efforts 'beyond the norm' as Contest Manager for the 3rd FAI Pan-American Gliding Championship. At that event, teams from Canada, Argentina and the United States, a total of 40 pilots, competed in three classes.

Quoting Joerg Stieber, Chair of the SAC Sporting Committee, "We had the best person to pull this together. She did an absolutely awesome job. Being well known among USA pilots allowed Virginia to very successfully promote the contest in the USA ... she was also instrumental in helping the Argentinian Team ... Virginia is also a very effective fundraiser. She raised many thousands of dollars and non-monetary sponsorships."

Interviewed by the FAI, Virginia shared the credit, saying "Perhaps the most critical element of the contest is the need for a large group of dedicated, like-minded volunteers who are willing to give of their time" and SAC seconds that thought; SAC does include in its appreciation the many members of that contest team while considering it appropriate to single out the leader of that team, Virginia Thompson, for this individual Award of Appreciation.

BAIC Trophy – Best Flight of the Year

The BAIC Trophy is presented to the pilot who achieved the single best soaring flight within Canada; if the best single flight is accomplished in a motorglider, parallel recognition is extended to the best single flight in a pure glider. The OLC scoring system is used to determine the best flight, and the OLC year is used as the surrogate for the calendar year.

a) Motorglider: Chester Fitchett – The Cu Nim Gliding Club

Chester Fitchett flew his highest scoring flight, the highest scoring motorglider flight of the year, on 7 April, earning 1191 OLC points. This is the single highest scoring flight in the history of Canadian OLC participation. Chester launched from The Cu Nim Gliding Club home field at Black Diamond, AB, contacting wave lift south west of the club. He then flew in wave conditions a first leg of almost 435 km, deep into Montana, before finally turning back for an equally long second leg, earning the Canadian record for out and return free distance at 838 km. Two further legs added the Canadian record for three turnpoint free distance at 1120 km. The OLC total scored distance over six legs was 1309.7 km. Overall flight time was 10:56 hours, averaging over the OLC scored distance almost 120 km/hr. A truly remarkable flight on several levels!

b) Pure Glider : Trevor Florence – Canadian Rockies SC

Trevor Florence achieved the pure glider best flight of the year on 12 May, earning 796 OLC points flying a Duo Discus, a scored distance of 831.7 km including a triangle of 140 km. He launched from the Invermere Soaring Centre, and flew legs north and south along the east side of the Columbia River Valley. His longest leg was 307 km from the USA border to Blaeberry just north of Golden. At the end of the day, Trevor applied his last two legs to a dual crossing of the Valley to capture triangle points. He spent 7 hours 41 minutes on task, at an average speed of 108 km/hr. Once again, Trevor displayed the quality of soaring available in 'his' valley!

Canadair Trophy – Best 6 Flights of the Year

The Canadair Trophy is presented to the pilot who achieved the highest total score for six flights within Canada; if the best six flights are accomplished in a motorglider, parallel recognition is extended to the best six flights in a pure glider. The OLC scoring system is used to determine the flight scores, and the OLC year is used as the surrogate for the calendar year.

a) Pure Glider: Trevor Florence – Canadian Rockies SC

During 2019, Trevor Florence garnered with the best six of his numerous excellent flights a total of 4289 OLC points. All of those six flights were flown in a Duo Discus, launching from the Invermere Soaring Centre. Details of his flights are as follows:

May 12	796 points	831 km	108 km/hr
June 4	761 points	720 km	104 km/hr
May 28	759 points	754 km	103 km/hr
May 22	706 points	689 km	104 km/hr
June 11	677 points	692 km	100 km/hr
May 6	589 points	590 km	102 km/hr

It is worth mentioning that Trevor amassed a grand total of 20,754 OLC points during the 2019 OLC season. His two national trophies this year continue an outstanding record of excellence in Canadian soaring. Congratulations Trevor!

b) Motorglider: Chester Fitchett – The Cu Nim Gliding Club

During the 2019 OLC season, Chester Fitchett wrote a new page in the book of Canadian soaring opportunities, demonstrating in dramatic fashion the potential in the Rocky Mountains wave systems for long and fast cross-country flights. Not the first to explore those waves, Chester shifted the bar way up, with three flights earning over 1000 OLC points and each of his six Canadair Trophy qualifying flights topping 900 points. Incredibly, every single one of those flights had an OLC scored distance in excess of 1000 km, not to mention the average speeds achieved!

April 4	1191 points	1310 km	120 km/hr
April 18	1096 points	1225 km	110 km/hr
Sept14	1063 points	1137 km	122 km/hr
Dec 20	929 points	1051 km	166 km/hr
Nov 22	922 points	1052 km	172 km/hr
Dec 11	920 points	1024 km	164 km/hr

Chester snuck in yet a seventh flight over 1000 km, not shown above. Simply outstanding! Thank you, Chester, for showing us the way.

“200” Trophy – Best 6 Flights by a Pilot
<200 hr P1 at Start of Season

Winner 2019: Alex Ackerman – Canadian Rockies Soaring Club

Alex achieved a total of 2181 OLC points with the best six of his flights during 2019. All of those flights were flown from Invermere.

August 3	397 points	324 km	63 km/hr	Astir CS 77
June 30	383 points	318 km	67 km/hr	PW 5

July 12	357 points	294 km	63 km/hr	PW 5
August 4	352 points	287 km	58 km/hr	Astir CS 77
July 31	350 points	286 km	70 km/hr	Astir CS 77
July 25	342 points	281 km	63 km/hr	Astir CS 77

Notable from the above list is Alex's keen desire to fly and to learn the way of the mountains, in whatever chariot is to hand. His total OLC points for 2019 were 4334. The future of our sport is in good hands!

Stachow Trophy – Max Height Gain exceeding 5000 m

Winner 2019: Patrick Pelletier – Winnipeg Gliding Club

Patrick has been an enthusiastic Cowley Camp participant for many years, and has numerous excellent wave flights in his logbook. At the 2019 Fall Cowley Camp, the wave gods smiled on him not once but twice. On October 6, he topped out at 8546 m. I can do better than that, he thought, and so he could, because the next day, October 7, he achieved 8696 m. Remarkably, on both days Patrick achieved his highest points in the secondary wave, out in the middle of the Oldman River Valley – quite unusual. Good hunting, Patrick!

Silver C Gull Trophy – Youngest Silver C Badge

Winner 2019: Cole Bishop – York Soaring Association

During 2019, Cole Bishop of the York Soaring Association earned his Silver C. To qualify for the Silver C Gull trophy, the pilot must age 21 or less. Well done, Cole!

Walter Piercy Trophy – Instructor of the Year

Winner 2019: Fernando Garza – Saskatoon Soaring Club

The Walter Piercy Trophy for the Canadian soaring instructor of the year was awarded to Fernando Garza of the Saskatoon Soaring Club. Fernando has done about 80% of the instructing at his club Saskatoon Soaring Club at 82 flights. He is involved in promoting/teaching cross country flying and is also the club safety officer.

Hank Janzen Award – Outstanding contributions to Safety in Soaring

Winner 2019: Dale Brochu – Edmonton Soaring Club

Dale Brochu has seized the role of Club Safety Officer at the Edmonton Soaring Club with both hands, and in his thorough, thoughtful fashion has actively promoted the safety culture in that club. Dale is relatively new to gliding (5 years) but has been

very active on the safety front including being safety officer for the provincials, and this coming year's nats. He is very proactive on his work as safety officer. He is also speaking at the ASC meeting addressing safety issues.

Jim McCollum Award for Innovation

Winner 2019: Alex Ackerman – Canadian Rockies SC

The Jim McCollum Award for Innovation was created in 2017 as a means to recognize those soaring club members who further the sport of soaring in their club or SAC through imaginative fundraising, organizational restructuring, or creative financing – through the sort of behind the scenes organizational and administrative contributions that otherwise go unremarked amongst the glories bestowed on the 'hot pilots'.

The 2019 winner of this Award is Alex Ackerman, recognized for his contributions to the Canadian Rockies Soaring Club. Alex creatively used social media to help raise financial donations that will be used to help fund future scholarship students Alex set up a Facebook page, <<https://www.facebook.com/groups/578257179667106/>> that invites former students to share their soaring memories and photos on the site. Alex hopes that this will encourage potential students to take the initial step towards acquiring a soaring license.

The site also encourages and suggests a donation be made to CRSC to financially assist in training more students. Donations are made to Youth Flight Canada and the funds are then forwarded to CRSC.

Roden Trophy – Club soaring skills development

Winner 2019: Saskatoon Soaring Club

Saskatoon has done it yet again, securing the Roden Trophy for the fourth year in a row by actively promoting formal recognition of soaring skills development amongst their members. The club generating a Roden score of 121. Their fourteen members were awarded 3 A, B, or C badges and 7 Silver Badge legs flown.

Congratulations to Saskatoon for trying hard and achieving great results. Now, surely some other Canadian club will take on the challenge of unseating the champions in 2019!

FAI Awards

Walter Weir, SAC Badge Chairman

These badges & badge legs were recorded in the Canadian Soaring Register during the period 31 December 2019 to 15 November 2020.

GOLD BADGE

347	Marian Rakusan	SOSA
348	Sergey Skobkarev	Vancouver

SILVER BADGE

1131	Marian Rakusan	SOSA
1132	Keith Laidlaw	York
1133	Ben Hornett	Cu Nim
1134	Toida Toma	Montreal
1135	Kent Pasincky	SOSA
1136	Predrag Kupcevic	SOSA

DIAMOND DISTANCE (500 km distance flight)

Frank Pilz	VSA	512.5	DG-800/18	Hope BC
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DIAMOND GOAL (300 km goal flight)

Marian Rakusan	SOSA	306.7	ASW-20	Hobbs NM
Francois Proulx	CVVQ	302.3	LS-4a	St Raymond QC
Sergey Scobkarev	VSA	303.2	ASW-20	Invermere BC
Bogdan Banas	SOSA	337.5	SZD-55	Rockton ON

DIAMOND ALTITUDE (5000 m height gain)

Tyler Paradis	ESC	6229	SZD-48	Cowley AB
Stephen Godreau	ESC	5597	SZD-48	Cowley AB

GOLD DISTANCE (300 km distance flight)

Marian Rakusan	SOSA	306.7	ASW-20	Hobbs NM
Francois Proulx	CVVQ	302.3	LS-4a	St Raymond QC
Sergey Scobkarev	VSA	303.2	ASW-20	Invermere BC
Bogdan Banas	SOSA	337.5	SZD-55	Rockton ON

GOLD ALTITUDE (3000 m height gain)

Jeremy Bruns	Cu Nim	3285	DG-303	Cowley AB
Marian Rakusan	SOSA	3342	ASW-20	Hobbs NM
Stephen Godreau	ESC	5597	SZD-48	Cowley AB
Tyler Paradis	ESC	6229	SZD-48	Cowley AB
Timothy Fulcher	WGC	3265	SZD-41a	Cowley AB
Ray Troppmann	ESC	4302	SZD-48	Cowley AB

SILVER DISTANCE (50 km distance flight)

Marian Rakusan	SOSA	96.0	ASW-20	Hobbs NM
Keith Laidlaw	York	62.9	LS-4b	Arthur E ON
Toida Toma	MSC	55.7	DG-300	Hawkesbury ON
Kent Pasincky	SOSA	65.6	Club Libelle	Rockton ON
Predrag Kupcevic	SOSA	66.8	SZD-51	Rockton ON
Casey Brown	Cu Nim	53.2	PW-5	Black Dia. AB

SILVER/GOLD DURATION (5 hour flight)

Marian Rakusan	SOSA	6:00	ASW-20	Rockton ON
Ben Hornett	Cu Nim	5:16	LS-6B	Cowley AB
Toida Toma	MSC	5:11	DG-300	Hawkesbury ON
Kent Pasincky	SOSA	5:27	Club Libelle	Rockton ON
Predrag Kupcevic	SOSA	5:26	SZD-51	Rockton ON

SILVER ALTITUDE (1000 m height gain)

Marian Rakusan	SOSA	3342	ASW-20	Hobbs NM
RoseMary Frunchak	CVVQ	1313	Grob-102	St Raymond QC
Kent Pasincky	SOSA	1248	Club Libelle	Rockton ON
Predrag Kupcevic	SOSA	1241	SZD-51	Rockton ON
Tae Woo Kim	Cu Nim	1608	PW-5	Black Dia. AB
David Keleny	MSC	1075	Grob 102	Hawkesbury ON
Tyler Paradis	ESC	6229	SZD-48	Cowley AB
Peter Cromer	Cu Nim	1460	PW-5	Black Dia. AB

C BADGE (1 hour flight)

3137	Marian Rakusan	SOSA	6:00	ASW-20	Rockton ON
3138	Jean-C Ruel	CVVQ	2:08	Puchacz	St Raymond QC
3139	Thomas Gaudet	York	1:32	SGS 1-34	Arthur E ON
3140	Gerald Ashcroft	WSC	3:03	PW-6	Starbuck MB
3141	Bogdan Banas	SOSA			see Gold dist/Dia goal – has Silver from Poland
3142	RoseMary Frunchak	CVVQ	2:06	Grob-102	St Raymond QC
3143	Kent Pasincky	SOSA	5:27	Club Libelle	Rockton ON
3144	Predrag Kupcevic	SOSA	5:26	SZD-51	Rockton ON
3145	Tae Woo Kim	Cu Nim	1:14	PW-5	Black Dia. AB
3146	Melanie Paradis	ESC	1:12	SZD-50-3	ChipmanAB
3147	Tyler Paradis	ESC	1:19	SZD-48-2	Cowley AB
3148	Emeric Auclair	Champ.	1:13	ASK-21	St Dominique QC
3149	Edward Baginski	York	1:17	SGS-1-34	Arthur E ON

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