

Newsletter of the Skyline Soaring Club for October, 2020



ilemyr

PETE MAYNARD FLIES WEST

Pete started his flying in high school at a local field in New Jersey. Over his career in aviation he also flew military (USAF, Colonel, retired) in heavies, in the airlines, at United (pretty much all the Boeing fleet, retiring on the 787 Dreamliner) and with us at Skyline Soaring Club.

I'm no statistician and don't have the actual numbers, but at 65, Pete was probably about average, maybe a little bit over, for SSC's age. Where was he less than average? Maybe his height (all of 5'6")....but Pete always liked to wear his Wright Brothers Shirt which said "Since December 1903, pilots have been looking down at those who don't fly!" Tongue in cheek humor, but maybe it was Pete's chance to be a bit taller than genetics allowed. Where did Pete break the bell curve? Enthusiasm and energy at Skyline. 1/2 Napoleon and 1/2 Tasmanian Devil (re:Warner Bros



cartoons) Pete was never idle, never still, and always had something to do at Front Royal. Not just the President, also the WoT Logistics and Super-DO, the hangar door fixer, the Reggie consigliere and supporter, the guy who had no issues getting things fixed and making sure stuff was getting done. That was Pete.

The Pete you might not have known...he had a big heart, too. He listened, he empathized, and he tried his hardest to do the right thing.

The Club needed Pete, and he stepped up. His untimely passing leaves a hole, in my heart, and hopefully in the collective sentiments of all of us.



The sendoff was perfect this last weekend of September. His ashes were released and quite a few folks shed tears. We could make excuses and say we had the sun in our eyes, or the breeze was blowing dust, but I have no shame in saying I cried just a little. A great guy, sorely missed. He did right by us, and our farewell memorial did him appropriate honors. Farewell Pete Maynard, see ya up there, someday!!!

>Erik van Weezendonk

For more pictures (credit: Ed Filemyr) see <https://tinyurl.com/PeteMaynard>



The following article is a tad long for SKYLINES, but is an excellent read for those preparing for the OCTOWOT!
>Editor

RIDGE RUNNIN' 101

Jim Garrison

Introduction

Thankfully, the summer doldrums have given way to the more hospitable weather of Fall. The weather in late September thru December provides some great soaring days. What is more exciting is that it offers the possibility of good ridge soaring with winds out of the Northwest and cool temperatures to make the ridges glow with fall colors. Skyline Soaring is truly fortunate to be located just downwind of the Massanutten Ridge, an excellent venue for learning to fly a ridge. Flying the ridge is exciting and much more engaging than thermal flying. Many of my favorite flights have started at Signal Knob and used it as a starting point for flights to the South, West and North. It is hoped that the information which follows will be useful to those who are not experienced in flying the ridge. The information comes from my own experience flying ridges at many sites but will specifically focus on flying the Massanutten ridge. Realize that the article is not intended to offer a comprehensive coverage of ridge flying techniques. For additional reading, see the references at the end of the article. Also, in February, 2020 I attended a ridge flying seminar sponsored by Aero Club Albatross which featured talks by Bill Thar, Erik Mann, Karl Striedieck and others about ridge flying and more specifically, ridge safety. Salient points from their lectures are included as well.

Geography of the Massanutten Ridge

The Massanutten Ridge is a 47 mile long ridge in the middle of the Shenandoah Valley. This is a very short ridge compared to other Allegheny ridges, however, it has 5 major advantages for learning how to fly ridges. First, it is just upwind of the Front Royal airport and is easily reached by a short aerotow. Second, it is straight and well positioned for producing ridge lift in most Northwest winds caused by post frontal conditions. Third, as shown in Figure 1 (below) its' front edge is convex and directs even light winds into usable lift. Fourth, unlike most Allegheny ridges, it has hundreds of agricultural fields on its upwind (western) edge and

numerous small airports along its entire length. Finally, most of it approaches 3000 feet MSL which gives a good margin above the valley floor.

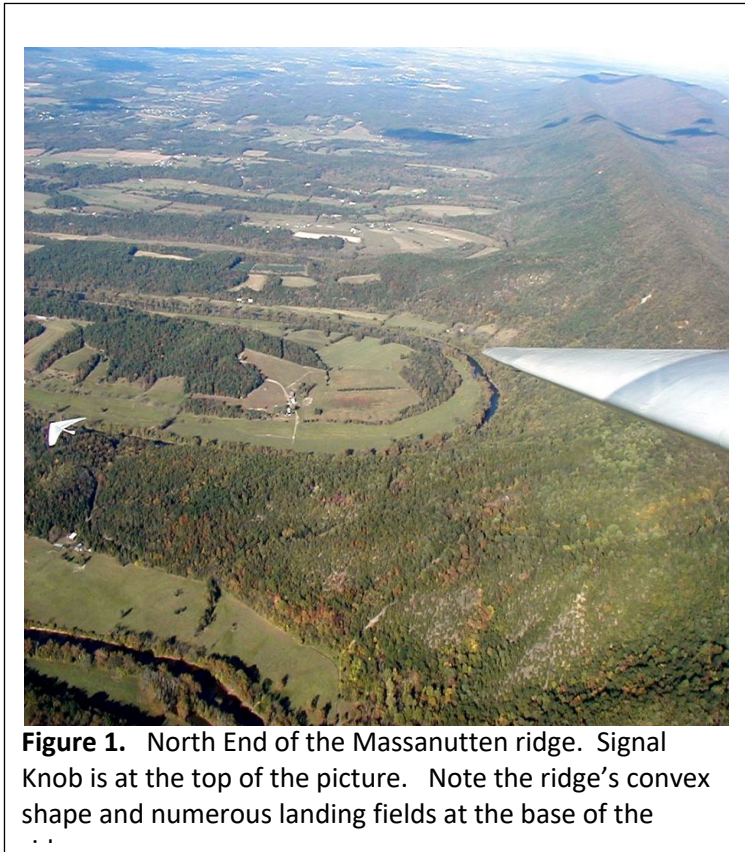
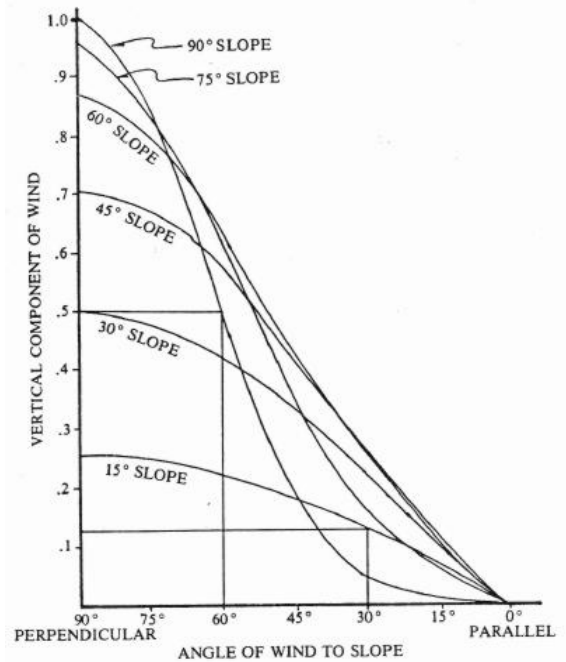


Figure 1. North End of the Massanutten ridge. Signal Knob is at the top of the picture. Note the ridge's convex shape and numerous landing fields at the base of the

A major advantage of the Massanutten ridge over some other ridges is its convex shape. As shown by the diagram in Figure 2, the slope of this ridge and its shape are able to turn most of the wind hitting the ridge into usable lift even when the angle of the wind is not actually perpendicular to the ridge itself.



Weather for Ridge Flying and Winds

The weather needed for flying the Massanutten ridge is a vertically consistent, moderately strong wind flowing directly into the ridge over its 47 mile length. In practice, the above means winds of about 15 kts out of the northwest. The weather pattern that brings this kind of wind is the same as we have outlined before for good soaring – post frontal, with a low pressure system well to our north and a high pressure located to our southwest and filling in behind the front (see Figure 1 from the July Skylines newsletter article for an example). The Massanutten ridge is relatively straight and runs NE / SW on headings of 31 and 212 degrees meaning that a wind from the Northwest at 300 degrees is perpendicular to the ridge over its whole length. So, a really nice ridge day occurs after a cold front has passed the area providing winds of 10-15 kts on the ground, 15-18 kts at the top of the ridge (about 3000 feet) and blowing from 300 degrees. These days also tend to provide good thermals which are important for safely flying the ridge (see below).

Does one need this perfect wind to fly the ridge ? The answer is no, but the more nuanced answer is that “it depends”. There are many factors involved in the answer, but let’s consider the following four items; (a) wind direction, (b) wind speed and pilot experience, (c) type of glider flown, (d) intent of the flight.

Wind Direction: As noted above, the perfect wind direction for the Massanutten ridge is 300 degrees. If the wind is about 25 -30 degrees off of 300 degrees, the ridge will still work if the wind is strong and consistent. Thus, winds between about 270 - 275 degrees and 325 – 330 degrees will support a sailplane on the ridge. For your early flights, stick with winds of 290 – 310 degrees and as you gain experience, you can experiment with greater variations (but see the Rules section below about the trap of flying downwind and downhill on the ridge).

Wind Speed: Obviously, you need enough wind to make the ridge support your sailplane. Just how much wind depends on your glider – a glider with a high sink rate will need more wind to sustain on the ridge than one with better performance. As a general rule, about 12-15 kts is about the minimum wind strength to make the ridge work solidly. Flying in less wind makes the ridge too soft to be really safe. That said, you don't need a fancy flight computer to tell you the wind speed on the ridge; you need your altimeter, airspeed indicator and more importantly, your eyes and other senses. As one flies along the ridge, one traverses areas of lift and sink. To be safe, one needs to be able to fly consistently about 500 – 1000 feet above the ridge top at 65-70 kts. If you find your altitude above the ridge or your airspeed is decaying, the ridge is not working well enough to be safe. Find a thermal and climb off the ridge.

Vertically Consistent Wind: For a ridge to work solidly and consistently, there needs to be wind at the valley floor and the entire front surface of the ridge needs to feel some wind (See Figures 3 and 4 in the next section). There are days where the wind gradient is such that only the top of the ridge is experiencing 15 kts of wind. These days can be treacherous because the ridge lift does not exist on the lower parts of the ridge. Avoid these days, because if you fall below the top of the ridge for any reason, it can be difficult to climb back into the lift. You may have to land out without much warning.

Too Much Wind: On the other side of the scale, too much wind makes the turbulence on the ridge

uncomfortable and may make it very hard to takeoff and / or land safely. The amount of wind which is too much depends greatly on your sailplane and your experience. It is wise to gain experience with gradually increasing wind strengths to learn your own tolerances and preferences. In general, winds of 15-25 knots give comfortable ridge flying; once the wind exceeds 25 kts on the ridge top, the turbulence becomes uncomfortable, landing becomes more difficult and I am not overly inclined to fly.

Type of Glider Flown: As noted above, a glider with a high sink rate will need more wind fly the ridge safely. Also, gliders with light wing loadings, like a 1-26 will be tossed about by the turbulence on the ridge more than a ship with flexible wings like the ASW-20 series. These issues should be considered by each pilot in deciding if the weather is suitable for the intended flight.

Intent of the Flight: If you are hoping to use ridge lift to make a long flight you will need to make a much more careful analysis of the weather and preparations than if you plan on just experiencing the ridge. For example, if you plan on making your first long or solo ridge flight for a badge, you would like a more solid ridge day with winds that will last all day and produce decent thermals. Once you have committed to the ridge, you going to be low and rapidly leaving Front Royal and any familiar territory. You will need some type of lift to get home and want to be fairly sure there are thermals or ridge lift to get back. However, if you are flying with an instructor and just planning to fly a couple of miles south from Signal Knob and then return to FRR for the experience, a more moderate day will likely work very well.

Flying the Ridge - Zones of Best Lift

Flying the ridge is actually fairly easy, one heads along the ridge, crabbing as needed into the wind and you fly using airspeed and altitude above the ridge. Turn your audio variometer down as it rapidly becomes annoying. You need to keep a good speed (at least 65 - 70 kts) and some altitude above the ridge (about 500 -1000 feet).

You need to be very attentive and fly the sailplane all the time so that the lift, sink and wind are not allowed to alter your intended course.

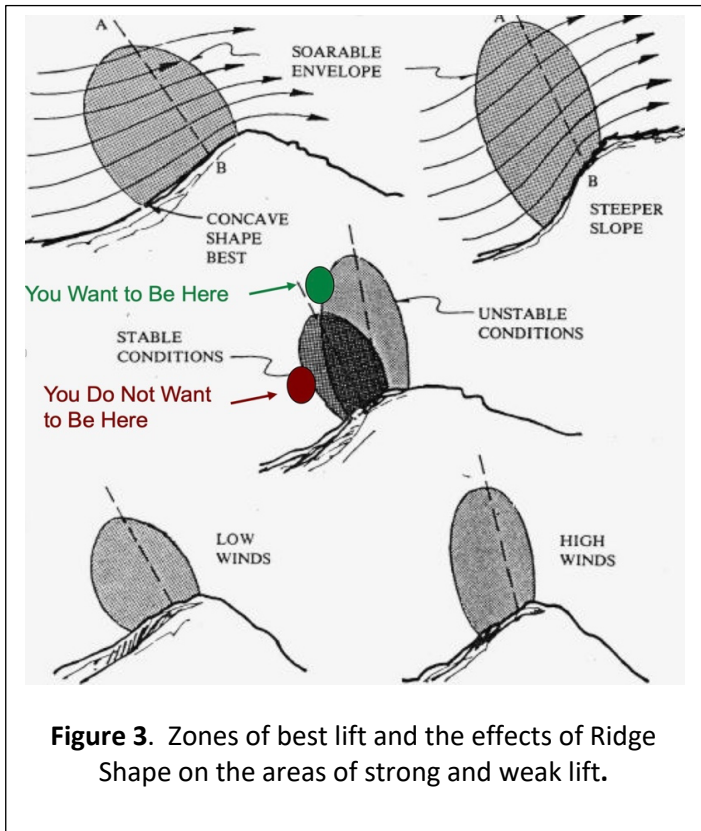


Figure 3. Zones of best lift and the effects of Ridge Shape on the areas of strong and weak lift.

Note from Figure 3 that the best lift is found in front of the ridge, not on top of it. On good ridge / thermal days, the zone of best lift moves toward the top of the ridge, because thermals add to the strength of the lift. The height one can fly above the ridge depends on many factors, but running at an altitude of 3500-4000 MSL is common for the Massanutten Ridge. Also note that once the lift reaches the top of the mountain it decreases in strength and may become zero. There are no good reasons to fly low over the actual top of the ridge. This is not safe. You can increase your speed and fly lower in the zone of best lift as you gain experience. On good days you can easily increase the excitement and blast along at over 100 kts if you like.

Note from Figure 4 that the back of the ridge is occupied by sink and turbulence. Again, there are no good reasons to fly over the back of the ridge unless you are high in thermal and planning on leaving the ridge for some downwind destination. Letting the wind blow you over the top of the ridge

may lead to a quick and unplanned landout. Also note from the top diagram in Figure 4 that ridges with “sewer pipe” shapes (like the Blue Ridge north of Front Royal), have small areas of lift and large areas of zero lift and sink. In contrast, the Massanutten ridge (the bottom diagram) usually has a whole front face of lift. This is another reason it is a good ridge for gaining ridge flying experience.

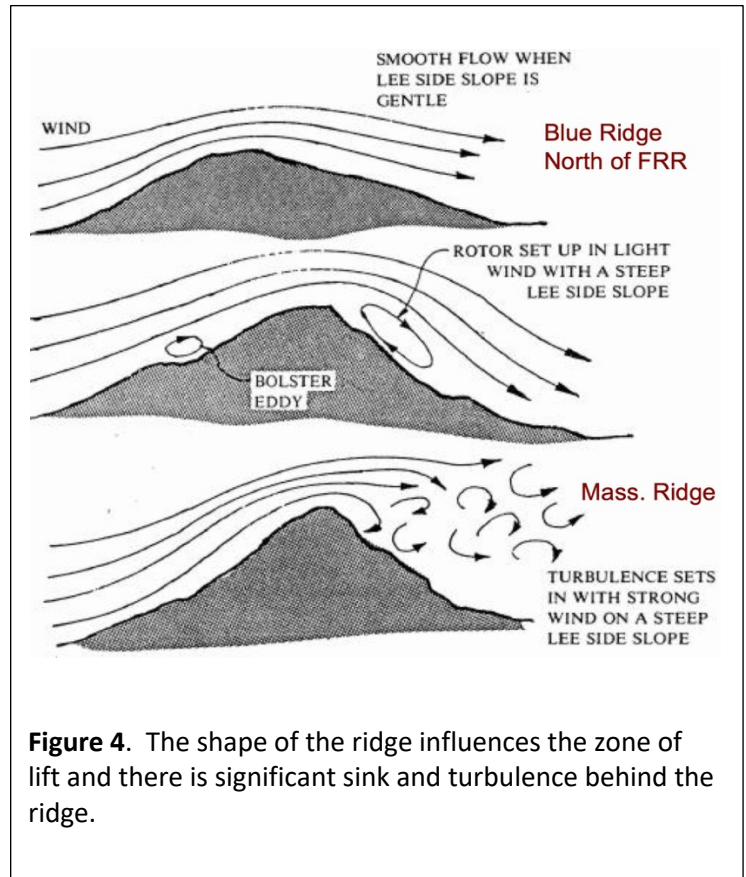


Figure 4. The shape of the ridge influences the zone of lift and there is significant sink and turbulence behind the ridge.

Transition and Wind Flow in Gaps - The Gap Vortex

The Massanutten ridge does not have major gaps like the “main” ridge just east of the Allegheny Plateau. However, as shown in Figure 5, a somewhat unique feature of the Massanutten ridge is a higher, short ridge just north of New Market which lies in front of the main ridge. This ridge is called Short Mountain. When the wind is hitting the whole of the Massanutten ridge, the wind flows around the ends of the ridge system with a vortex that is much like the vortex coming off the tip of an airplane wing. Figure 5 shows the vortex as an orange cone that is flowing off the South end of Short Mountain. There are similar vortexes coming off the North end of Short Mountain and the North

and South ends of the whole Massanutten ridge itself.



Figure 5. The vortex coming off the South End of Short Mtn is indicated by the orange triangle. Note that the actual continuation of the Massanutten ridge is high there, but there is no place to land between the ridges. Red arrows indicate the route of flight going North.

(and sink). If you hit them on the edge that is going up, it is possible to fly along this vortex and not lose too much altitude flying upwind to Short Mountain. As an example, the red arrows show the path of flight going North from the ski area back toward Signal Knob. Note that an angle of about 45 degrees to the flight path may help you find the lift in the vortex. Also note the important warning not to fly into the turbulence and sink behind Short Mountain (even though the main Massanutten ridge is fairly high there)

Other Transitions on the Massanutten

If you make a flight from Signal Knob down the whole length of the Massanutten ridge to the ski area and back, you will make 1 upwind transition and 2 downwind transitions going South and 2 upwind transitions and 1 downwind transition going back North (these sites are labelled A, B and C in Figure 6) The upwind transition going South (A) is from the lower part of the Massanutten to the higher North end of Short Mountain. It is wise to slow up here and gain some altitude before crossing. On your first trip down the ridge, a thermal would be good idea. Going South, the 2 downwind transitions (B and C) are easy – just slow down a bit and go across. Going back North, the first upwind transition (C) is just after you leave the Ski area. It is short, but a bit of extra altitude is always a good thing. The second upwind transition (B) is shown in Figure 5 (above). A climb to gain at least 500 feet before crossing is a good idea. The downwind transition from Short Mountain back to the lower ridge (A) Is easy and visually quite fun.

These “end vortices” can help jump upwind and downwind gaps as they are circulating zones of lift

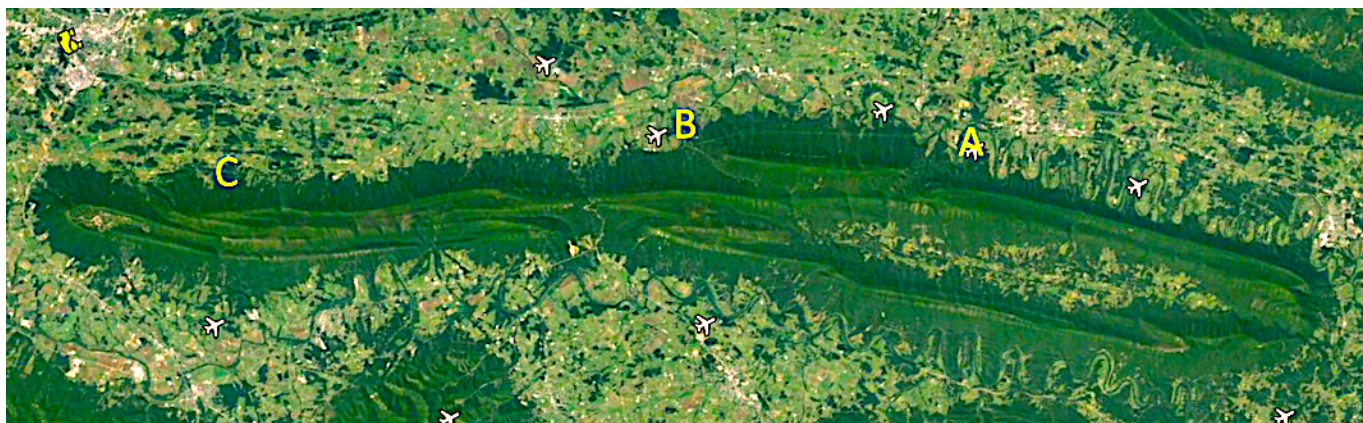


Figure 6. Transitions needed when flying the Massanutten Ridge. The major gaps at Short Mtn are labeled A and B and the small one just north of the Ski Area is labeled C

Now that you are back at the North End of the ridge, it is a really good idea to find a thermal and climb before heading home on the transition to the airport. The airport is 5 miles downwind and there is significant sink behind the ridge. Fortunately, there are almost always thermals at Signal Knob.

Rules of the Ridge

Figure 7 diagrams some obvious rules for safe flying on the ridge. There are many other wise suggestions in the points below.

- Pay attention to your airspeed and altitude on the ridge. Don't worry about your variometer. It will indicate both lift and sink all the time. Turn down the audio.
- If you cannot maintain a safe speed and height above the ridge (say 65 kts and at least 500 feet above), the ridge is not working well enough to be useful. Find a thermal and climb off the ridge.
- DO NOT fly slowly on the ridge close to the ridge top. Sink could put you in the trees.
- Be vigilant for changes in wind speed and / or direction. You must adapt to changes quickly if the ridge stops working well.
- Never fly behind the ridge. The turbulence and sink can lead to a quick, unplanned landout. Big Trouble.

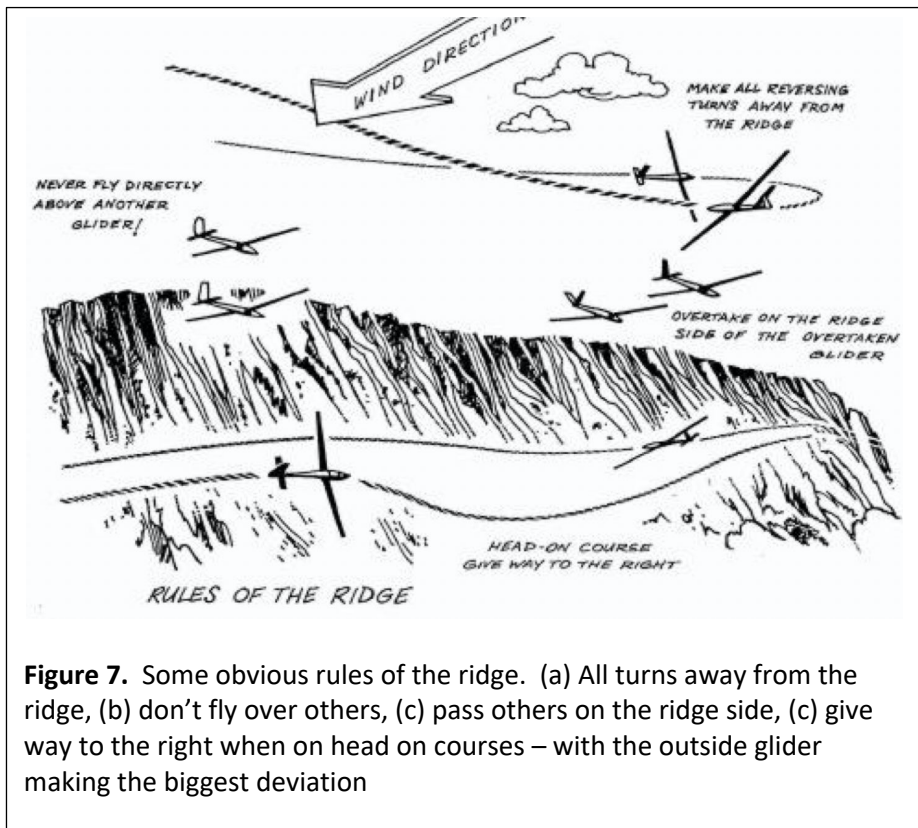


Figure 7. Some obvious rules of the ridge. (a) All turns away from the ridge, (b) don't fly over others, (c) pass others on the ridge side, (c) give way to the right when on head on courses – with the outside glider making the biggest deviation

- Always approach the ridge at an oblique angle (like 30-45 degrees). Never fly directly toward it. This angle will allow you to ease onto the ridge more slowly and keep you from being blown into the ridge.
- When climbing off the ridge in a thermal, begin your climbs with figure eights in front of the ridge. DO NOT circle close to the ridge top. The wind will blow you over the ridge quickly. If the thermal shuts off, you are in a

really, really bad position. Also realize that the sight picture of the ground movement when thermalling close to the ridge will be unusual. Keeping the airspeed correct is critical. Do not get slow. The figure 8 turns are unusual and it is best to

practice them on a thermal day at altitude.

- The North end of the Massanutten ridge is low. You will be at about 2500 MSL North of Woodstock and very close to pattern altitude.
- When winds are not close to perpendicular to the ridge, be careful that you are not flying downwind and downhill on the ridge. This is a trap as the ridge may not work well enough to make the return flight.
- Tighten your seat belts and shoulder straps. The turbulence and thermals from the ridge

can be significant. The degree of turbulence increases with speed and proximity to the ridge. No loose items in the cockpit. Some ridge pilots have 5 point harnesses.

- Beware of birds. If you fly underneath them they may fold their wings and dive. A hawk can easily penetrate your canopy.
- Flying fast and low on the ridge puts you near pattern altitude. Do you have landing areas in view ???
- Hang gliders and other sailplanes are likely on the ridge. Hang gliders are easier to see than white sailplanes. If at all possible, stay in radio contact with other gliders on the ridge. Closing speeds of 200 mph are common on a good day. FLARM is really a good instrument on the ridge. Keep a lookout at all times for traffic.
- As you fly along the ridge, you often look out into the valley and may get the illusion that you are high above the terrain. Yes, you are high above the valley, but it is those rocks and trees off one of your wing tips that are close and potential trouble. Always be very vigilant about your altitude and position above the ridge.

Summary

Flying a ridge is an exciting and educational part of soaring. Our ridges offer a way to make interesting or long flights on good days with Northwest winds. If you are new to ridge flying, begin by learning to fly the ridge safely with an instructor. Read about flying in the ridge environment. Know the basics and then build your own experience base with a series of flights that provide increasing challenges in small steps. It will be a very satisfying journey.

More Advanced Reading - (there is so much more)
Tom Knauff – “Ridge Soaring the Bald Eagle Ridge” (2008). Available from Ridge Soaring Gilderport’s book store.

Jean-Marie Clement - “Dancing with the Wind” (2015). Chapters 3 and 4. Published by TopFly and available from Cumulus Soaring.



SO YOU THINK YOU CAN FLY?

Think your 500K soaring flight was pretty good, eh? Well, this bird –

a common cuckoo, can pretty much top that (although to be fair, he DOES have an FES in



the form of being an ornithopter. In June, 2019 one of these birds, with a tracker attached, took off from the Khurkh valley in Mongolia on his usual seasonal migratory flight to South Africa. He returned to Mongolia on May 27. Using the telemetry from the tracker, the researchers and fans all over the world tracked him over the borders of 27 countries, and he became a celebrity in Sweden, India, and Kenya. He covered 26,000 Km round trip, the longest migration flight of any land-based bird. With the occasional tailwind, he made over 1,000 Km a day for over a week!!



I WON'T DO THAT AGAIN!

I think we all take flying and safety seriously. But before this my thought was that as long as I focus on the task at hand and don't get distracted everything should work out. I learned a lesson on that.

In flying the Sprite I wanted to do a better job simulating off field landings where you make a minimum energy landing with short roll out. I wanted to avoid coming in at a steep angle at 60 + with full spoilers. So this time wanted to focus on

coming in at the perfect speed (50 - 55) with play left in the spoilers as needed, at the perfect rate of decent and focused on the landing spot. I tried to start the process early and line it all up. I was totally focused on the landing spot and happy with my rate of decent, air speed and thought I had everything as I wanted it. After I landed Andrew and others mentioned that I came within two feet of hitting the parking area in front of Reggie's house. (see photo)



I would never have known had Andrew and others not mentioned it to me. I never even noticed the hill when coming in. I makes no difference that I had the energy needed to gain altitude if needed, I just never saw it.

I got off cheap but learned a lesson. I was focused on a number of aspects of the landing but not the entire picture, I had tunnel vision and was not relaxed and seeing the whole picture. I could totally see me coming in for an off field landing heading for a touchdown spot that I pick out from above and then hitting a berm in the road or a bush/low tree. I'm looking forward to applying this to my future landings.

>Kip Ongstadt



1984 LS-4 (N370JS) For Sale – ½ share for \$15K

Asking \$15,000 for ½ share in LLC of a 1984 Rolladen Schneider LS-4 15-meter standard class sailplane. N370JS S/N 4370, TT ca.1900 hours, last inspection Spring 2020. Experimental Airworthiness Certificate.

JS is a great flying Club class glider (no flaps), with a 40:1 L/D and great thermalling ability, and the newly sanded, polished and waxed gelcoat looks shiny and feels great. This is a perfect glider for newly minted pilots transitioning to single seat fiberglass ships - it flies straight and easy, thermals nicely, and handles itself well in cross-country and contest flying.

Basic instrument panel, including a Nano flight logger and an SN10 flight computer with good speed to fly indications and simple moving map. Comfortable and big interior, even for taller pilots, and very easy to rig. Includes a parachute, tail dolly, trailer, and Mountain High oxygen system.



For sale either as 1/2 share at \$15,000 or the entire glider for \$30,000. A long time resident at KFRR, this is a known SSC plane (ask Piet Barber about it!), and includes a simple and low-cost ownership transfer - No Sales tax will be owed since the LLC has already paid it. It is kept in Hangar B13 and costs are shared equitably among the tenants, currently \$112 per glider per month.

Current partner is Mike Hess, who has been very flexible and easy to work with.



BOARD MEETING UPDATE

Keith Hilton, Secretary

The Board of Directors continues to be busy on your behalf. The Board met on 3 September and again on 24 September via ZOOM video teleconference. Various Club members also attended the teleconferences. If you would like to attend any of the online ZOOM meetings and see your Board in action, Brian Clark always sends

out a notice and will provide the link to the meeting if requested.

The Board continues to evaluate and monitor CDC, Federal, and State COVID-19 guidance and modify operations as necessary. John Noss noted that a small number of members have been volunteering for *ad hoc* operations and he was concerned that they would burn out. He thought it was time that other Club members shared the load and recommended to the Board that they consider resumption of scheduled operations and a normal duty roster. As you have seen by Jim Kellett and Mike Ash's emails, there was extensive discussion on how to resume with a normal duty roster. The Board discussed having members "Opt-IN" (say they were willing to volunteer to be on the duty roster) vs "Opt-OUT" (respond to Mike Ash as not-available on the Blackout Date request). The Board voted in favor of scheduling members on the duty roster beginning with the 17 October duty crew with members required to "Opt-OUT" by responding to the availability request sent out by Mike Ash. It was noted that COVID-19 health concerns are valid reasons to "Opt-OUT."

The Board discussed the VA requirement for the wearing of a helmet when operating the Club's Honda ATV and voted to REQUIRE the wearing of a helmet when riding the Club's Honda ATV. Additionally, they agreed that when not in use, the helmet must be attached to the handlebars of the ATV. As you know it is unreasonable to ask members to share a helmet during this COVID-19 epidemic (and probably not healthy during "normal" times either).

Some members have proposed allowing the DO and ADO to find an authorized alternate at the field to allow them to take a flight during the duty day. It was noted by Brian Clark and Dick Garrity that there is no prohibition for the assigned Duty Officer or Assistant Duty Officer from taking a flight the day they are assigned as the Duty Crew. It was noted that they can take a flight IF a qualified Club Member agrees to fill in while they are flying.

Chris Carswell pointed out to the Board that Duty Officers are the only duty crew member that requires a Full membership in the club. The Board asked Chris to propose a change to the Club's Operations Manual and present it to the Board for consideration.

The Board approved the conduct of a second Week-of-Training to be held in October.

Erik van Weezendonk offered his Cirrus to the Club for Member use if the Club assumed the hangar and insurance fees. The Board discussed the pros and cons of the offer and ultimately voted to reject Erik's very generous offer.

The Board agreed to take up an offer by the Front Royal Airport for an additional hangar if that offer is ever received.

As our volunteer for the Friends of Front Royal Airport, Matt Vosika presented to the Board an overview of recent meetings. He commented that the "Friends" pooled funds and installed a TV in the FBO.

Brian Clark asked if the Board would allow additional Student on the Student Wait list to begin training. It was noted that the decision to accept additional students was delegated to John Noss as the Chief Instructor and Tim Moran as the Membership Officer.

In my glider maintenance report I noted that the new seatbelts for N341KS were finally received after being on order for nearly one year. The new belts cost \$1,391.70. The seatbelts must be replaced every 10 to 12 years. The Discus was repaired and annual completed by Gehrlein for a cost of \$1,440. Piet Barber and Chris Norris transported the Discus back to KFRR. New lead acid batteries were installed in N341KS for \$89.02. Fred Winter donated two new K2 Energy Lithium Ion batteries and chargers for N341KS. They were installed on 26 September. All the chargers for the Dittel battery boxes now have the new K2 chargers so there is no chance of the wrong charger being used on the battery boxes.

The next Board meeting is scheduled for 15 October 2020 via Zoom video conference.





Skyline Soaring Club, Inc.

is a private, 501(c7) non-profit organization, dedicated to the enjoyment and promotion of the sport of soaring. SSC is based at the Front Royal-Warren County, Va. Airport and is an affiliate club of the Soaring Society of America.

For information about the club go to

www.skylinesoaring.org

Jim Kellett - *President*

Directors

Brian Clark

Bill Burner

Evan Dosik

Jim Perlmutter

Ken Ring

Dick Garrity - *Ex officio*

Keith Hilton - *Secretary*

Steve Rockwood - *Treasurer*

John Noss - *Chief CFI*

Shane Neitzey - *Chief Tow Pilot*

Chris Carswell - *Chief Duty Officer*

Erik van Weezendonk - *Safety Officer*

Tim Moran - *Membership Officer*

Ken Ring - *Hangar Meister*

Ertan Tete - *Field Computer Meister*

Mike Ash - *Duty Roster Chief*

Piet Barber - *Webmaster*

Brian Clark - *Assistant Webmaster*

Jim Kellett - *Newsletter Editor*

David Collier - *Tow Vehicle Meister*

Andrew Neilson - *Tow Plane Chief of Maintenance*

Peter Melenson - *Club A&P*

Keith Hilton - *ASK-21 (N321K & N341KS) Meister*

Evan Dosik - *ASK-21 (N321K) & Grob Meister*

Guido Kramp / Rob Jacobson - *Discus Meister*

Peter Ross - *Sprite Meister*

Matt Vosika - *Organizations Liaison Officer*