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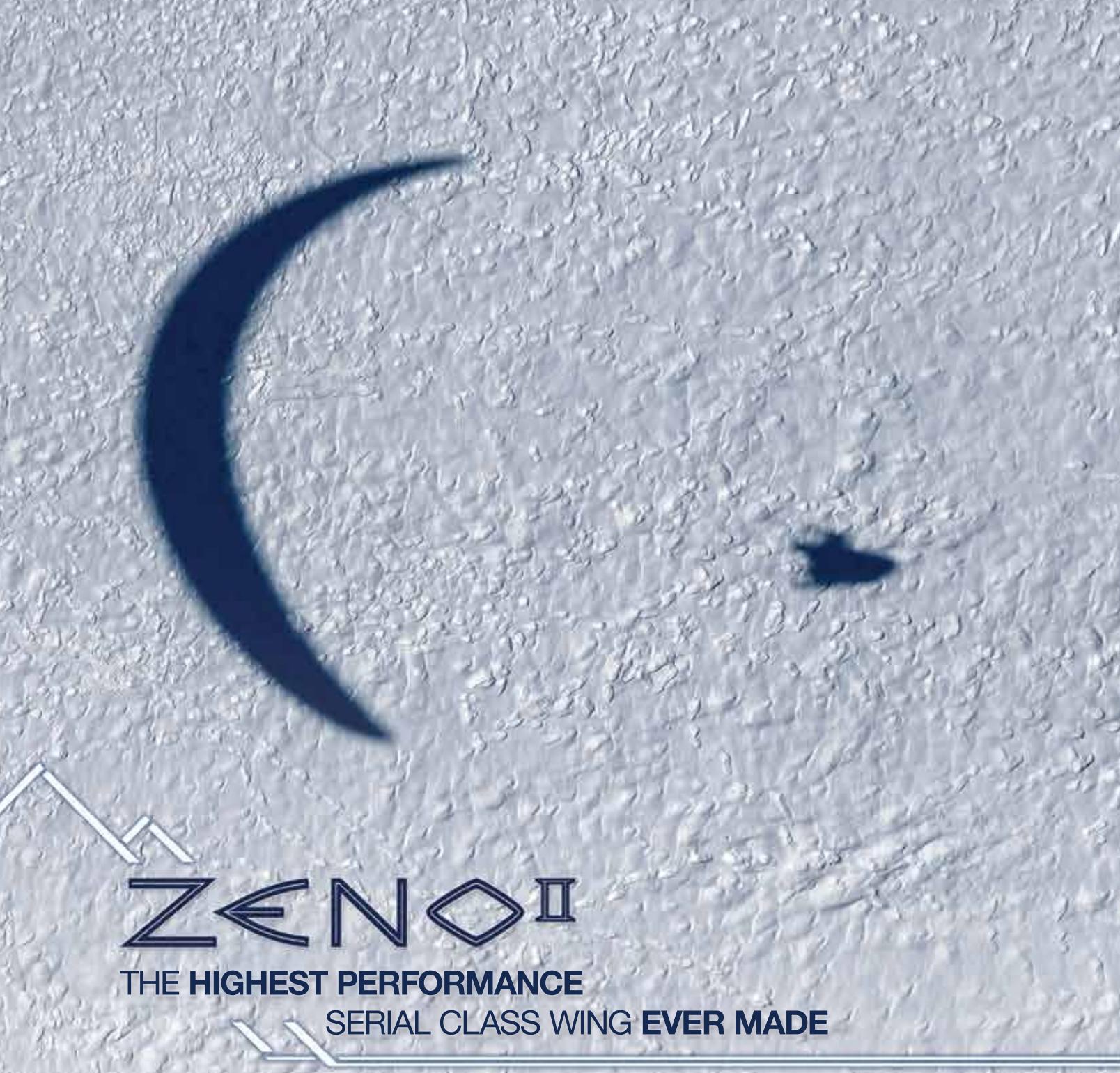
PILOT

FALL 2022

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USHPA recommends pilots complete a pilot training program under the direct supervision of a USHPA-certified instructor, using safe equipment suitable for your level of experience. Many of the articles and photographs in the magazine depict advanced maneuvers being performed by experienced, or expert, pilots. These maneuvers should not be attempted without the prerequisite instruction and experience.

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EDITOR > Liz Dengler

■ We've all heard the adage that the only constant is change. And if the last couple of years don't prove this, I don't know what would. We've weathered a global pandemic, a national housing crisis, and a tanking economy. On top of this, we've had our own personal challenges and changes we've had to incorporate into our lives. And regardless of whether a change is for the better or worse, it always leads us somewhere different.

This applies to changes made in our lives by forces beyond our control, but it also applies to changes we can make within ourselves. We can choose how we interact with the ever-evolving world.

You're probably thinking, "Liz, what's your point?" I have one, I promise.

For the last few months, I've been chatting with many pilots about their flying. One topic of discussion that keeps coming up is where they are versus where they thought they might be in their flying careers. Many, like myself, have struggled with balancing a work/life schedule that enables them to get out to fly. Adding to that difficulty, this year in my home state of Colorado, not only has the monsoon season been long and rather torrential, but also, the forecasters and models can't seem to predict the weather anymore.

As I chat with more and more pilot friends around the country, I've seen a theme. As changes keep coming—to the weather and to life—more pilots are finding comfort in simple flights around their local hills. It's not that they don't still send it cross country, but are instead finding they enjoy more straightforward flights closer to home. They are opting to take a few miniwing sledgers in the morning or to boat around during glass-off in the evenings—taking advantage of, and finding enjoyment in, these local flights knowing that those big days will come again.

We all love a big and grandiose story from senders and explorers. But I also find it satisfying to hear stories from folks about their "smaller" adventures and to see how pilots are making the most of their local areas. You don't have to travel the world to experience new adventures and landscapes. Maybe by changing your perspective, you can better enjoy whatever flying options are available to you on a given day, whether that is the next state over, at a local event, or simply exploring up a canyon—adventures abound if you know where to look for them. And fear not, those big days always come around again.

Liz



△ cover photo by

AUDRAY LUCK

Long time pilot Mitch Shipley takes a moment in the shade of his glider before running off the dune. He is competing in a spot landing competition at the 50th Annual Spectacular at Kitty Hawk..

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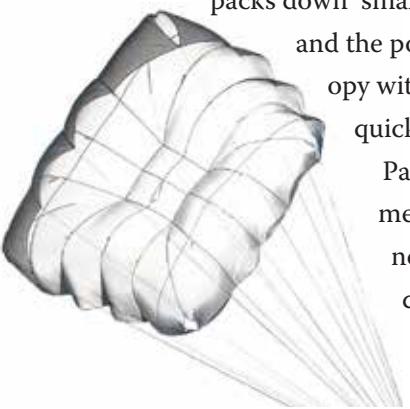


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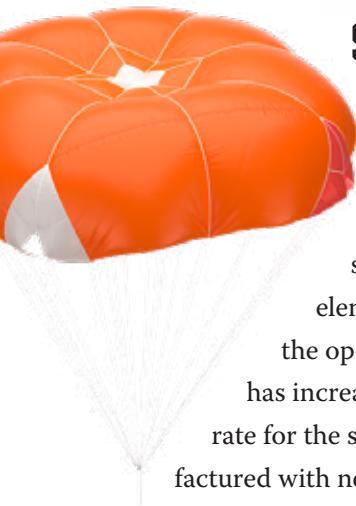
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ASSOCIATION > Martin Palmaz, Executive Director

■ Drone use is expanding quickly with a multitude of anticipated uses in commercial, health, military, recreation, and transportation applications. The money and influence behind this industry is immense. When drones were first introduced, it was clear this new technology would change the future but also create concerns for privacy, national security, and all other forms of aviation.

Since this form of aviation originated from the technology sphere, it has a vastly different approach to development and policy. Not surprisingly, the drone industry is at odds with the FAA's historical focus on safety when it comes to integration with the aviation ecosystem. The

the evolution of drones for quite some time. Despite regular engagement on our unique characteristics and collective safety concerns, the FAA did not grant much diversity of representation on the Aviation Rulemaking Committee (ARC) for Unmanned Aircraft Systems operating Beyond Visual Line Of Sight (UAS BVLOS ARC) that drafted the final report on recommended rules for consideration. Since the ARC consisted mostly of drone industry representatives, it was not a surprise to see their report contain recommendations leaning heavily in their favor. Without including other perspectives, the committee may not have understood existing constraints, so the report

IF THE DRONE INDUSTRY ULTIMATELY WINS THIS BATTLE, WE COULD BE FORCED INTO A NEW ERA OF INSTRUMENTATION.

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FAA finds itself in a predicament regarding how to handle this nimble industry which has forced them to modify prior regulatory methods and relax standards for technical requirements.

USHPA, along with other aviation organizations, has been monitoring

does not acknowledge the limitations to achieving their recommendations.

Ultimately, the industry does not want to be responsible for the liability associated with autonomous operations and is suggesting that users of the National Airspace System (NAS) either have some



The United States Hang Gliding and Paragliding Association Inc. (USHPA) is an air sports organization affiliated with the National Aeronautic Association (NAA), which is the official representative of the Fédération Aéronautique Internationale (FAI), the world governing body for sport aviation. The

NAA, which represents the United States at FAI meetings, has delegated to the USHPA supervision of FAI-related hang gliding and paragliding activities such as record attempts and competition sanctions. The United States Hang Gliding and Paragliding Association, a division of the National Aeronautic Association, is a representative of the Fédération Aéronautique Internationale in the United States.



way of transmitting location or must give right of way to drones. This is untenable for numerous reasons, and, essentially, is a requirement to carry instrumentation that is incompatible with several forms of aviation, including hang gliding, paragliding, and other users of the NAS. This would change the current priority of safety for manned aviation, which is unacceptable and contrary to the FAA's long-standing mandate.

The FAA will use this report, along with the comments submitted, to draft initial rules and publish a Notice of Proposed Rulemaking (NPRM) for public comment. This will be our final opportunity to voice our position before the regulations are finalized and implemented. Unless the FAA is incorporating recent comments to accommodate more diverse needs and

adjust the requirements accordingly, we will want to reiterate our concerns and objections to the proposed rules. If the drone industry ultimately wins this battle, we could be forced into a new era of instrumentation. Our sports already have too many barriers to entry. Hopefully, we can eliminate or minimize this additional burden to comply with potential new instrumentation requirements. USHPA and the National Coordinating Committee will continue monitoring this NPRM and notify the community on how to participate during the comment period.

To see the ARC's final report and comments submitted by USHPA, please go to www.ushpa.org/drones. We will also post updated information and action members can take. Please check back and monitor our newsletter for updates. 



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What's your region? See page 63.

ACCIDENT REVIEW COMMITTEE > Sam Washburn

■ To fly or not to fly? That is the question.

Over the past nine months, I have spent many hours pondering this question. I started flying hang gliders six years ago when I was 64. I am now a 70-year-old H3 with 250 flights and 90 hours of airtime, with aero tow, mountain, and dune certifications. I have had no serious crashes; my worst injury was a broken finger when I launched unhooked on a training hill. I have had many happy hours flying with great people.

So why am I pondering whether or not to fly? There are a few reasons.

First, I have begun to “feel my age,” as they say. I had a bumpy landing last February that caused my left shoulder to freeze (a condition known as frozen shoulder). I also strained my back while ground handling my glider on launch and in the LZ. Unlike in the past, these injuries took months of physical therapy to resolve. They drove home one point about getting older—it’s easier to get injured and takes longer to heal. I also have tender Achilles tendons and can easily pull my calf muscles doing activities ranging from playing pickleball to launching my glider. In a nutshell, I am physically more fragile.

Aging can also diminish cognitive skills. Staying focused during preflight checks, analyzing weather and flying conditions, remembering all the details about my gear, and making split-second flying decisions when something goes wrong are all critical components to safe flying. I haven’t noticed any decline in this area, but cognitive decline does happen to people as they age, often without recognition.

Second, I sensed that I had a couple of near-misses earlier this year: an LZ thermal that kicked me into a lawn dart trajectory on final at Valle de Bravo, Mexico and a tow at Wallaby Ranch, Florida that felt like riding

a rodeo bull. I handled both, but in this sport, you never know how close you came to going over the edge.

My assessment of the risk/reward ratio in hang gliding is changing with age. Death is death; I’m not worried about that. But if I have a serious accident, I could be crippled forever, face years of healing, lose my ability for most physical activity, and place a significant burden on my wife and children.

So what are my options?

Keep flying as I have been, and hope nothing bad happens before a major health issue due to aging decides for me.

Give up flying now. But that would mean no more exhilarating thermal flying with great friends. No more intellectual challenges planning launches and landings and analyzing conditions. No more beautiful sunset or fall foliage flights. To stop flying now would feel like I’m leaving an amazing party before it’s over.

Dial back the conditions and sites where I fly to less and less risky situations. This would involve fewer windy launches and landings, fewer mid-day tows, more wheel landings, no hike-in launches, and shorter and fewer flights. I would shift to flying at places where friends could help me with some of the lifting chores. The problem with this option is that you get rusty when you fly less often and thereby incur more risk. Free flight isn’t casual. You have to be all in and on your game every flight. And my already low reward-to-effort ratio gets lower: six hours of round-trip driving for a no-fly or sledger day would be brutal!

So what have I decided to do?

My rehab experience addressing the minor injuries mentioned above taught me that good physical therapy and sports medicine can make your body stronger and more flexible, even at 70. This added strength can make

DEATH IS DEATH; I'M NOT WORRIED ABOUT THAT. BUT IF I HAVE A SERIOUS ACCIDENT, I COULD BE CRIPPLED FOREVER, FACE YEARS OF HEALING, LOSE MY ABILITY FOR MOST PHYSICAL ACTIVITY, AND PLACE A SIGNIFICANT BURDEN ON MY WIFE AND CHILDREN.

you more resistant to the nagging injuries that older people often suffer. For example, I used to routinely pull my calf muscles while playing pickleball. Now with strength training and stretching, that's not happening. For the time being, I think I can manage the minor injury issue.

So for now, I've decided to keep flying, but I will be more risk-averse in choosing when and where I fly. I will only fly in places that I already know and land in LZs I am familiar with. I'll default to landing on my wheels unless I feel my landing setup has been perfect as I round out into my glide-in-ground effect. I'll be careful to avoid mid-afternoon landings in thermally

LZs. And I'll fly in places where there are people who can help me with some of the lifting. In fact, my next flying trip is to Valle de Bravo. I've been there four times, and I am familiar with the launch and the LZ. Plus, the crew sets up and breaks down the glider for me—perfect conditions for the aging warrior who can't let go!

I know there are many PG and HG pilots getting into their 60s and 70s. If they have been able to fly safely to make it to this age, they are smart enough to wrestle with this question of whether or not to fly. And I hope my own reflections on this issue gives pilots, both old and young, some food for thought. 



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Flight Report

A Record FAI Adventure in Colorado

by Joey Jarrell

In early July of 2022, my friend and mentor, Arash Farhang, forecasted a huge day in the San Juan Mountains of Colorado. Wanting to go but not wanting to go alone, he found two more pilots motivated to join at a moment's notice—myself and Arias Anderson.

As he so often does, Arash did all of the research on the flying day—he forecasted the weather, found the best possible launch for the day, and created a flight plan to attempt a 240 km FAI triangle the next day. Given the remoteness of the terrain, I went equipped with a minimal bivy kit, consisting of my glider for a sleeping bag, a small pad, and a water filter on the chance that I bombed out deep.

We left the Salt Lake City, Utah area at 4 p.m. on a Thursday and arrived in Telluride late in that same evening. Local pilot Mark Simpson was kind enough to put us up for the night. With an early rise of 6 a.m. the next

day, we were hiking by 8 a.m. and arrived at launch just before 10 a.m. Launch, a site long established by the local Telluride flying community, was a small false summit below Ballard Mountain in the Uncompahgre National Forest, sitting at 12,200 feet. The altitude combined with the NE-ENE aspect allowed for the early start we would need for the proposed flight.

At 10 in the morning, the cycles were already coming up strong but not strong enough to make us feel like we were late. I launched after Arias at 10:35 a.m. and almost immediately caught my first thermal, which took me up to 15,000 feet. As I waited for Arash, I watched Arias fly—he planned to fly for a while and then act as our retrieve driver should we not be able to close our triangle to land in town. I waited for Arash for about 10 minutes, and once he was up, we went over the back at roughly 16,800 feet.

I was immediately overwhelmed and intimidated by the terrain. Given my quick decision to join the trip, I was not able to spend much time studying the terrain or the flight path. Though I regularly fly over big terrain in Utah, I had never flown in Colorado, and I was awed by the size and remoteness of the landscape. Surrounded by 13,000- and 14,000-foot peaks, I drooled over the thought of how strong the thermals must be on such huge thermal triggers. My instrument told me the direction of our planned course line, but I couldn't help myself—I decided to tour deep in the backcountry near Silverton. I was particularly drawn to the sharp, teeth-like Grenadiers, a sub-range of peaks jutting out of the otherwise green and hilly terrain to the north.

However, in my desire to see the Grenadiers, I nearly bombed out. I later learned that, had I bombed out, I



◀ Hiking above Silver Lake. Photo by Arash Farhang.



was at least one painful day away from a road where I could hitch back. Luckily, I managed to read the valley winds and scrape together a low climb that consolidated and gave me the height to cross over to the more sunny side of the valley. After linking into terrain that was working well, I told myself to fly smarter and safer. Of course, this did not mean flying slower—I needed to catch up to Arash. My tracker told me he was flying fast between 15,000 and 17,999 feet along the course line. I thought I had blown it, but it turned out that the clouds in my area, though sparse, were marking micro-convergences, and I struggled (though managed) to stay below Class A airspace (18,000 feet). I spent the next hour or so flying full bar!

Arash and I finally linked back up as we faced the day's second crux—turnpoint 1. It was in a blue hole, and we saw significant OD in the NNE. To avoid both landing out and OD on the next leg, we cut this turnpoint short. This meant that our hopes of a 240 km FAI triangle vanished—a decision that barely fazed me. The terrain we were flying was incredible, and I had started the day with the mindset that I was happy as long as I didn't bomb at launch!

We attempted to stay together on the second leg, but I lost Arash when I had to make a low save. We linked back up on the way to Lake City, heading toward our second turnpoint. I was leading out on this section and



▲ Arash near Lake City, looking towards turnpoint two.

▲ INSET: Admiring the view of the Grenadiers.

intentionally skipped a slow climb, having absolute confidence that there was something stronger in front of us. Unfortunately, the glide toward Continental Reservoir was not working, and we wasted at least 10 minutes because of this choice. We had to scratch our way out of a small, flat valley with a large reservoir. In my mind, I felt a bit foolish for putting us in this place, which hurt my confidence a bit. But I reminded myself I had caught Arash and kept up by flying fast and only taking the fast climbs. So after digging out of the hole, it was back to flying fast!

Over the Jarosa Mesa, between Continental Reservoir and Lake City, we found ourselves flying under a huge



▲ **Low save over Continental Reservoir.**

cloud street at 17,500 feet. Though the terrain below was sparse and made me uncomfortable, I eased my mind by remembering that I had great lift laid out in front of me and was flying almost as high as I could legally go. As such, the flying from here until turnpoint 2 was pretty uneventful.

North of Lake City, we had a little bit of sleet drop on us at Cannibal Plateau. Though I was a bit concerned, Arash seemed unfazed. Knowing Arash is more experienced in reading clouds and OD, I radioed looking for some reassurances. No reassurances were given about the sleet, but he mentioned that he thought the clouds wouldn't get bigger. The dropout had me a bit on edge, and I was unwilling to sit in any weak lift—I would immediately leave anything under 3 or 4 m/s. This method worked in our favor since, now that we were in it, we anticipated the day would shut down around one or two hours earlier than we had originally hoped.

Around 4 p.m., we turned around and headed back under the big clouds that had previously dropped some sleet on us. They weren't any less intimidating, but somehow they weren't any more intimidating either—it seemed Arash's experience reading clouds panned out again. The next transition was a large valley crossing

directly over Lake City, and the clouds gifted us a surprise—a nice cumulus building outside the main cloud street, giving us a headstart over the valley. We took this strong lift and then started the transition to Crystal Peak. This imposing peak stands at 13,852 feet and is the 82nd tallest peak in Colorado, and I felt like I was inches above it. Unfortunately, I wasn't high enough above it to catch the consolidated lift that Arash had. He specked out above me and left me in the dust.

Now on my own, I felt the need to shift gears. The terrain looked huge, the shade was intimidating, and I absolutely did not want to land. I could see Arash making slow progress ahead of me, further increasing my anxiety. The dark red talus slopes of Redcloud Peak on the way to Cinnamon Pass was probably the terrain that made me the most nervous out of the entire flight. It looked like it was going to throw gnarly lift at me. Unfortunately, I caught almost nothing to Cinnamon Pass. At this point, my flight instrument told me that Arash was transitioning to Red Mountain Pass, which appeared to be in a black hole of shade.

Given the shade ahead, I felt forced to fly down the valley to Silverton, which I thought meant I would land there—short of my goal and unable to extend the triangle. Shortly after making this painful decision to abandon closing the triangle, I caught a gradual climb back up to

16,500 feet over Cinnamon Mountain. The slow speed of this climb made me feel agitated, but I reminded myself that staying in the air was more important than speed at this point in the flight.

At 16,500 feet, I had to decide if I wanted to push back upwind and fight to get into the black hole of shade and rising terrain or if I still had to go to Silverton. I opted for Silverton, as it appeared there might be some sort of glass-off happening in the valley, with a cloud street parked in the middle. I recalled reading a passage in *The Soaring Engine V2: Wave and Convergence* by Gerrard Dale about this type of phenomenon in the bigger mountains. I thought I might have hit the jackpot. Instead, I was greeted with a strong headwind, some friendly rotor/sink, and a sunny west-facing slope. At least I had that sun...

I tried all of the triggers I could around Silverton but was getting low enough to start thinking about cheeseburgers and french fries—that's never a good sign. I am usually extremely opposed to landing, but at this point, I had been flying all day, most of it at high altitude, after a night of little sleep and a long hike that morning. I began to wallow in self-pity. A couple of thermic bubbles reminded me that it's not over until it's over—I remembered how Bill Belcourt always seems to catch that final climb, and that's how he usually crushes everyone. He just makes it happen.

So I made it happen. I was at 11,000 feet over Silverton and working the slopes of the 13'er, Mount Kendall. I was fighting hard but slowly descending and pushing into a 10 mph headwind. I looked at the valley systems hoping to find a sign indicating where the flows would allow a reservoir of heat to accumulate. I just couldn't figure it out. So I did the next best thing. I went to the biggest piece of terrain, right in the middle of two valley flows, and I started to feel lift. I got punched with some scrappy and unpleasant 2 and 3 m/s lift, the type of bubbles often felt on the outside of something huge. I felt like Ol' Red in that George Jones's country song. I was excited and wasn't letting this thermal get past me. I followed my intuition and searched for the climb. Before long, I found consistent 6 m/s lift. After entering, I didn't let it escape.

I took it from 11,000 to 17,500 feet, averaging 4.7 m/s over 7 minutes. The timing, consistency, and smoothness made this one of the best climbs of my life. It even gave me goosebumps. I was satisfied with my day at this point, but I wanted to make it back to Telluride.

I started gliding towards Telluride and Ophir Pass, which meant I was finally going toward the black hole that led Arash to land. Nothing was working well, but I kept scraping and managed to climb enough to close my triangle.

I landed after 8 hours 37 minutes, and I completed a 180.40 km FAI Triangle for 288.64 points. I later learned that this was the new Colorado State Record FAI Triangle and the highest point value FAI Triangle for any C Class wing in the United States. More importantly, I had an absolutely insane adventure that I will never forget.

▪ Thank you to Arash for all the motivation and help with planning, organizing, and driving. Thanks to Arias for spending his birthday flying with us in Telluride and picking me up in Ridgeway. Thanks to Mark Simpson for some coaching, encouragement, and a fantastic place to stay. 

xcontest.org/world/en/flights/detail:DrinkMoWa-ter/8.7.2022/16:35



△ **Setting up to land in Red Mountain Pass.**



Celebrating a half-century of annual gatherings *by Paul Voight*

In late May 2022, Kitty Hawk Kites (KHK) hosted the 50th annual Hang Gliding Spectacular fun competition. For fifty years running, usually sometime in mid-May, a gathering of like-minded hang glider pilots and their families have convening from all parts of the planet at Jockey's Ridge State Park in Nags Head, North Carolina. They come to fly the big dune, celebrate the sport, enjoy the camaraderie, and, sometimes, hit the beach. This event is believed to be the world's longest-running annual hang gliding event.

Over the years, I have been a regular attendee of the Spectacular, and I knew the 50th would be the party of all parties. So, of course, I cleared my calendar and made the drive (nine hours from Ellenville, New York). The 50th anniversary held additional meaning for me because Memorial Day 2022 was also



50 Spectacular Years

▲ Say hello to the attendees of the Kitty Hawk 50th Spectacular! Photo by Paul Voight.

Pilot Dalton Nagel takes to the dunes for his first ever spectacular celebration! Photo by Audray Luck. ▶

the 50th anniversary of my first flights in a hang glider. (I'm not that old, I just started quite young!) Those flights were in Nags Head, and my instructor was none other than John Harris.

I arrived for the 2022 Spectacular two days before the dune competition and one day before the aero tow event. (An aero tow day was added to the event





“The tasks are set up so that trying for all the cones may make reaching the bullseye impossible.”

many years ago as a fun, high-flying side option.) I made the rounds to the dune, the school, and the store, reconnecting along the way. Many pilots were already in town, and the fun factor was already in high gear. “Low and slow” dune flying is not in everyone’s wheelhouse, so some pilots were already out practicing.

Reuniting with other pilots at the Hang Gliding Spectacular makes it a special event. Over the year, many pilots and instructors have come through Kitty Hawk Kites and gone on to fly, open schools of their own, and teach worldwide. Several U.S. National champions started their flying careers at Kitty Hawk. This annual get-together is a fantastic time to reconnect with old friends and make new ones.

The aerotow day turned out to be too windy to fly via aerotow. Jonny Thompson and his crew organized that part of the meet, but despite their perpetual optimism, the winds would not lay down, and the day was called. However, KHK sponsored a lunch at the airport, and a day-long hang out ensued as more and more pilots arrived throughout the day.

The fun really got going that night with Eileen’s Traditional Thursday Night opener, the annual pre-competition meet-and-greet party. For the last few years, Mary Vaughn and her family have hosted this event. This year, Mary rented two homes on the beach, complete with a large pool and decks, to host this larger-than-usual reunion. A few hours into the evening, long-time attendee Bill Robertson took the stage and turned his back to the crowd. He proceeded to peel off, one by one, dozens of past event T-shirts that he had collected over the decades. Those in attendance can attest that the opener party, once again, lived up to its reputation.

Friday morning brought nice weather and switchy but doable winds, and the Spectacular officially

△ *Kyle Orth wearing his signature parrot helmet takes a moment to focus on the spot landing bullseye and check the wind before running off the dune. Photo by Audray Luck.*

TOP: Emily Webb, with Instructor Paul Mazzoni on her wing! Photo by Paul Voight.. ▷

MIDDLE: Shade was a rare commodity Photo by Paul Voight. ▷

BOTTOM: Almost a bullseye in progress. Photo by Paul Voight ▷





Cole Stewert sticks his landing! Photo by Audray Luck. ▲

commenced. Registration at the school in the morning was followed by the trek to the dune for glider set up and the pilots' opening meeting. Pilots tend to pair up on dune friendly gliders, to make the portage out to the dune easier. I had brought a glider to share with Tom Peghny who came down from Connecticut. Tom actually won the very first scored Spectacular meet 50 years ago!

In total, there were 108 pilots registered to compete in the meet. Many more, including regulars from years past, were in attendance to spectate and celebrate. Added to that was their families and friends. I'm sure the crowd easily exceeded 200 people.

At the pilot's meeting, the course layouts and rules were explained. There are always two tasks: a novice (safer) serpentine cone course towards the bullseye and an advanced division version that coaxes pilots further off the line to the bullseye. The tasks are set up so that trying for all the cones (five points each) may make reaching the bullseye impossible. Decisions must be made before and while in flight. Twenty-five points are available for the cone course, and up to 25 points are available in the 5-ring bullseye. It's an entertaining and challenging format!

With challenging conditions, it took the full day to get all 108 competitors a scored flight. Much of the day consisted of sitting in the shade under our gliders while catching up with old and new friends and

cheering at increasingly ridiculous attempts to hit the bullseye. With so many pilots, one round took so long that there was insufficient time to attempt a second one. Which was fine as everyone was happy to be done and out of the heat a little early.

Friday night's party was the annual Hang Gliding Film Festival, this year held at local brewpub Swells-a-Brewing. Three screens ran loops of old and new hang gliding footage, and our crowd overwhelmed the place with people spilling out onto the decks.

Saturday's winds were an exact repeat of the day before, without as much heat. Highlights of the day included David Glover's "high" flight, the comical gyrations and high flares by multiple pilots just missing the bullseye, and Mike "Cranstone" Brown's epic Rogallo Ring Grab when he snatched the ring off a pylon and held it through a landing in which he almost decapitated the landing judge. But the flight of the day belonged to Josh Laufer, who scored the only perfect 50-point flight of the meet.

Later on Saturday night, the organizers hosted the annual Woody Jones Memorial Street Dance and Instructor Reunion, with live music, dancing, and assorted shenanigans. We never got an accurate count of how many former KHK instructors were in attendance, but a conservative estimate is probably 80 to 100. As always, this year's street dance rocked on for hours, and the weather and temperature were perfect!

Sunday's winds were west, strong, and extremely switchy in the small landing area, prompting the



△ Michael Vaughn holds a very important job at the spec. He stands out in the hot sun to relay the score from the judges to the crowd and fellow competitors. Photo by Audray Luck.



△ Legendary hang glider pilot Wolfgang Siess takes his turn at the spot landing competition. He put on an impressive show for the crowd! Photo by Audray Luck.

Some “Spectacular” history by Billy Vaughn

The Hang Gliding Spectacular is the longest-running, continuously held hang gliding meet worldwide. Originated by northern Virginia pilot Vic Powell in July 1973 as the Tactile Flight Meet, the first year was a simple “fly-in.” Pilots came from as far away as California and South Africa to fly Jockey’s Ridge, the largest living dune on the East Coast of the U.S. This dune is just a couple of miles south of the Wright Brothers Memorial and National Park (and hill), where the Wright brother’s successful experiments in unpowered and powered flight took place.

At that time in hang gliding history, few pilots were capable of soaring flights, and most of the meet featured a myriad of different designs, many truly homemade, simply skimming down the 160-foot dune. The question asked at the end of the day wasn’t “How high did you get?” or “How far did you go?” but rather, “How many flights did you make?” As gliders and pilots evolved, so did the meet.

Kitty Hawk Kites began sponsoring and running the meet as a competition in 1974 and renamed it the Hang Gliding Spectacular. The first competitive year was won by influential early hang glider designer Tom Peghiny, now president of Flight Star Aircraft, in Connecticut. Not only did Tom come down from New England to attend the 50th, but he also competed in the meet!

Over the years, the competition grew to include soaring tasks, slalom courses, and spot landings. By the late 1980s, the Spectacular had a reputation for requiring a highly precise skill set for technically advanced, close-to-the-ground flying, but it was also FUN. The great Larry Tudor came as a Wills Wing rep in 1988 and was amazed by the skill of pilots (or dune goons) who

could make multiple passes along the face of the dune, often less than a foot above the sand. “You guys are flying at the ground in order to stay up—I can’t do that!” he exclaimed

During these years, a typical pilot turnout was 50-75. By the mid-2000s, the meet and the dune had both waned a bit, with only 35 or so of the regulars attending for several of the leaner years. An instructor reunion was part of the event, but like any reunion, if you have one every year, not everyone will show up.

We decided to push the reunion aspect for the 35th Spectacular, and by cold calling old instructors and twisting arms, we got 75 pilots to attend. It was the jumpstart the Spectacular needed. An aerotowing day was added into the mix very early on when aerotowing became popular, which enhanced the draw for pilots. On this day, pilots can fly their normal high-performance gliders, get high, and enjoy the view in all directions around the tiny peninsula of land.

Today, Jockey’s Ridge is a shadow of its former self—it changes shapes and moves around based on wind, rain, vegetation growth, and other odd factors. Once 160-feet tall and soarable for hours on good days, the old South Bowl is nearly gone. The south landing terrain is now full of grown trees. The main east face, while still an excellent training hill, hasn’t been soarable for more than minutes in years. The Big Dune seems to have morphed into a series of smaller dunes, which certainly keeps things “interesting.”

Despite these changes to the landscape, the fun factor and camaraderie have kept the meet alive. It has evolved into a nearly week-long celebration of our extended flying community and the bonds we share through flying, with many pilots having deep roots in Jockey’s Ridge.



PHOTO BY AUDRAY LUCK.

meet director to cancel the day. However, a multi-way tie for third place in both the advanced and novice divisions prompted a tie-breaker task. The pilots, who were all current or former dune instructors, flew on KHK Eaglet training gliders to minimize the chance of overshooting into the shrubs in the tiny west LZ. No real surprise that the winners were both current dune instructors.

Just after the tiebreaker, two of the most experienced dune pilots in the country, Ken Brown and Kevin Coltrane, pioneered a site on the back (bay side) of Jockey's Ridge. The 20 mph west wind created just enough lift on the small tree line on the water, and Kevin made it look really good for about 10 minutes—the longest soaring flight in Jockey's Ridge State Park in many years.

The awards ceremony commenced Sunday afternoon with the Rogallo Foundation Hall of Fame induction. This year, Vic Powell was posthumously inducted for his early work with USHGA. Vic also founded the Capitol Hang Gliding Club, opened multiple sites in the area, and was an influential liaison with the FAA and other governmental entities on behalf of the early hang gliding community.

Also inducted this year was long-time Sequatchie Valley icon, Rick Jacob. Rick is a former regional director who was recognized for his tireless efforts and exceptional leadership in developing a vibrant hang gliding community in the Sequatchie Valley in the '80s and '90s. A four-time winner of the local chapter's Tennessee Tree Topper of the Year award, Rick continues to support free flight in the valley, most recently through his work with the local paragliding community.

To add to the "award theme," I had arranged to have the 2021 USHPA Rob Kells Memorial Award sent to me so that I could award it publicly at the Spectacular ceremony, to the recipient, John Harris. This prestigious award is bestowed annually to a person who has dedicated huge portions of their life to advancing and promoting our sports. John has certainly done all that and more!

In terms of meet scoring from the weekend, the 50th Hang Gliding Spectacular's advanced division winner was Josh Laufer, from California, who scored the only perfect round of the meet. Second place went to Kevin Coltrane, and Nic Baack came in third. In the novice division, Larsen Christiansen took first place, with brothers Oliver and Jude Denton coming in second and third, respectively.

▼ *The judges carefully score each competitor from the comfort of a shade tent. They are directly parallel to the spot landing bullseye. Photo by Audray Luck.*



▼ A competitor takes off in his beautiful Dream Glider. Will he swing around and hit the target? Photo by Audray Luck.





“And, of course, a huge thank you goes to John Harris, whose lifelong efforts (and early vision of growing this sport) have resulted in 50 years of Spectacular fun while producing more hang gliding instructors over the decades than any other program.”

■ No event this successful can happen without an amazing set of organizers. Special thanks go to the entire staff at Kitty Hawk Kites for throwing such a great, week-long party, especially Megan Turner, who handled a daunting list of behind-the-scenes details, effectively making the whole event come off without a hitch. Billy Vaughn (meet director extraordinaire) and his son Michael did the lion’s share of the contest scoring (while baking in the sun), with Willy Vaughn and Dalton Burkhalter jumping into scoring mode when the other Vaughns had to take their flights. Kathy Bauman did the announcing and score recording from under the LZ basecamp tent, staffed by a group of the KHK marketing crew who managed the daily lunch and drink offerings for all the pilots and workers. Also, thanks go to the energetic, young volunteers who carried the gliders back up the hill for those looking like they needed assistance.

And, of course, a huge thank you goes to John Harris, whose lifelong efforts (and early vision of growing this sport) have resulted in 50 years of Spectacular fun while producing more hang gliding instructors over the decades than any other program. 

Miso Soup

Originally published in Cross Country Magazine

Finding the next thermal becomes increasingly vital as you sink ever lower on your cross-country flight. The day is far from over, and you are desperate for a low save. The question of where the next thermal will be is as old as soaring itself. Over the years, much has been written on how thermals form and behave. Yet, much of what is known about thermals is based on anecdotal evidence. The main reason is that, outside the soaring community, there has not been an overwhelming interest in this topic. Most atmospheric science research focuses on larger-scale phenomena. Additionally, it is very computationally expensive to run high-resolution models, and even these models have a hard time with steep and complex topography.

The overarching concept is that thermals are cyclical in nature and they are just one component of the convective, heat-driven, circulation that occurs in the boundary layer. Most pilots understand that finding a thermal is a game of probability. However, thermals are not dispersed randomly because semi-persistent circulation patterns develop throughout the day. Good pilots are skilled at deciphering clues regarding the type of circulation that is currently present. They are also aware of how it is changing throughout the course of the day. They stack the odds of finding the next thermal in their favor.

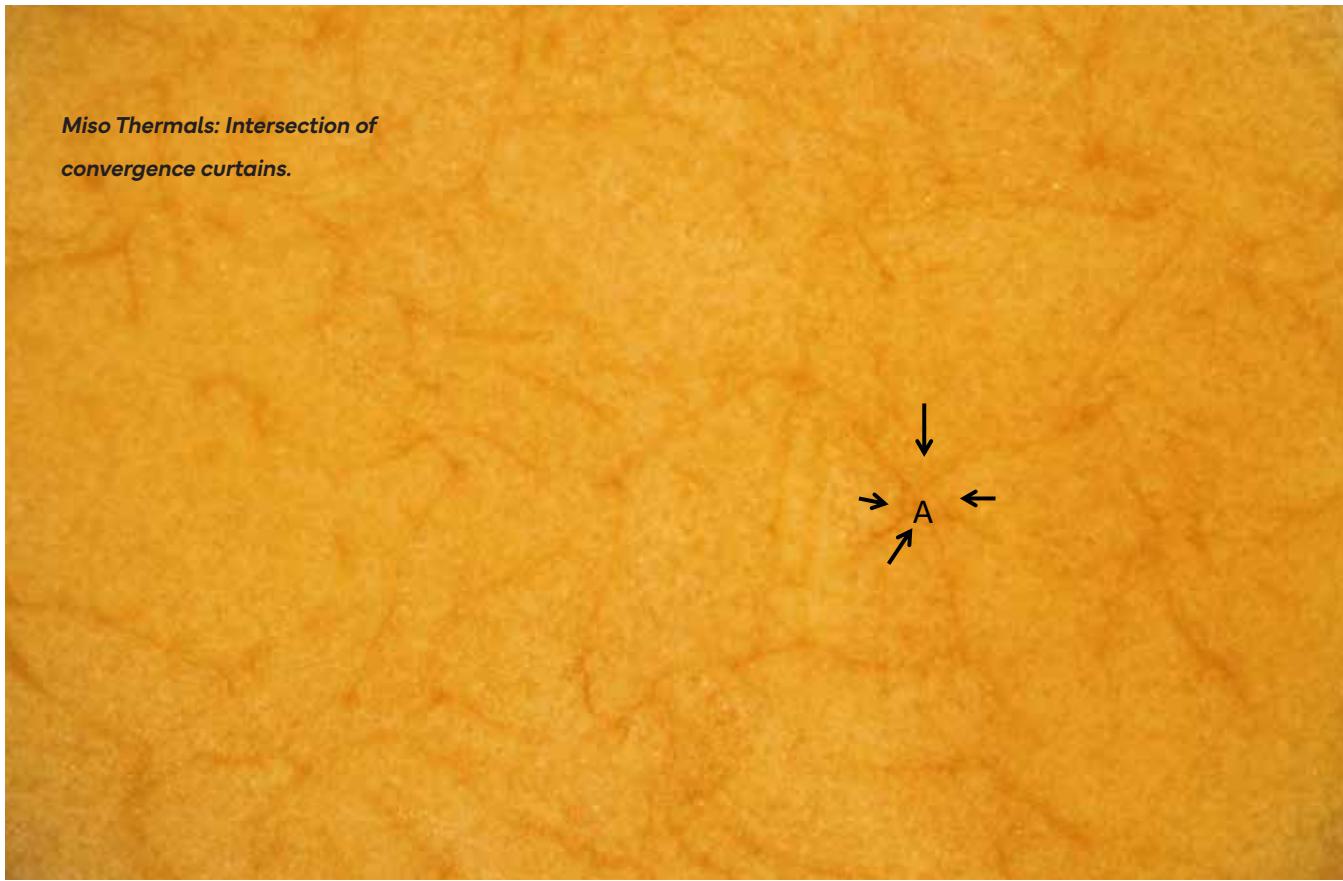
As the boundary layer becomes convectively active, meaning when thermals turn on, there is close to a net balance in the amount of air that is moving upwards and downwards. This holds especially true over a large, uniform, flat surface. With even heating and light winds, a polygonal, or cracked mud, pattern of convection sets up. This has been referred to as the hexagon theory.

Hexagons are the most efficient way of organizing cells. A honeycomb is a good example. However, when it comes to cellular convection the pattern is more reminiscent of cracked mud.

A great way of visualizing this convection pattern is to make miso soup and watch it cool in a bowl. This is exactly what we are looking at in this abstract-looking photo. The only difference is that the surface of the soup is cooling and this negatively buoyant layer sinks. However, with a little imagination, you can pretend that you are underground beneath a transparent surface looking up rather than staring down at your soup. The surface is heated and converges along the darker lines which make up the polygonal shapes. The air in the center of the polygons was sinking before it hit the surface and spread out in all directions. The areas along the periphery of the polygons are analogous to convergence curtains of air near the surface. Above where several such curtains intersect, we are likely to encounter a nice thermal.

Sometimes on final approach, it is possible to find yourself flying along a really buoyant line low down. The irony is that sometimes strong lift low down can be the result of two descending batches of sinking air hitting the ground and colliding. This collision boundary is the convergence curtain. Most convergence curtains do not rise very far up, and they are too thin to properly turn in. Birds will often use these because they have a tighter turn radius and can cheat and flap their wings if the full circle is not in lift.

With increasing wind, this polygonal pattern becomes elongated and eventually transitions to a helical circulation pattern which results in thermal streets. If the tops of the thermals reach high enough for condensation to occur, we get cloud streets. In flat terrain, different



surface types can start to modify some of these simple patterns. Most books on soaring flight discuss differences in thermal production over dry fields versus green fields. Certainly, given the same amount of sunlight, air will heat faster over a dry surface than over a vegetated surface. When you are getting quite low in the flats your probability of finding rising air over dry fields is certainly greater than over a wet field. However, it is still possible to sink out over a hot, dry field or to get a low save over a vegetated one. Given that thermals are cyclical in nature, it is possible that it was just a matter of bad timing.

Nonetheless, it is important to not think of thermals as independent entities. Realizing that a thermal is just one component of the convective circulation occurring in the boundary layer helps a pilot explain why good-looking sources might not be working. A patchwork of dry and wet fields might be too small to induce individual local circulations from the wet fields to the dry fields. In fact, each tile in this patchwork would have to be several kilometers wide in order to really

dictate the circulation pattern. This can be the case the day after localized thunderstorms have occurred in an area leaving big wet patches of ground adjacent to areas that were missed by the storms.

Returning to our miso soup example, it is important to be tuned in to subtle clues, especially when flying over the flats. The percentage of the sky covered in air that rises faster than our banked-up sink rate is rather small. Lower down it is smaller yet, because the thermals are just beginning to accelerate due to buoyancy. Watching your miso soup cool, you can start to appreciate that subtle changes in ground speed when low down can help you fly towards lift. If your ground speed picks up then there is a chance that you are flying towards a convergence curtain. If you are extra lucky, you are then heading for an intersection of several convergence curtains. Here the chance of getting a low save is good, and if your whole circle fits into lift low down, you have a good chance of taking the thermal back to base and continuing on your flight. Don't forget to celebrate with a big bowl of miso soup! 🥣



Practice Makes Perfect

What I've learned from my HG bumps

by Richard Nakai

The Search and Rescue helicopter was lowering a rescuer to my location on a ridge top. A resident had called in my crash. "I'm OK." I yelled, "I'll hike my equipment out! Thank you!"

This particular situation is one scenario of many during my years flying hang gliders where I learned a few useful things that I thought I would share. I learned these things the hard way, so you don't have to.

Be committed, and know the play

It was a strong spring day at Trancas Canyon in Malibu, California. A few of us were thermalling up and flying around back in the canyon, then flushing out front to boost up again. Unfortunately, on one of my rounds, I

was too low to get back up. I was either going to land on houses or on the terrain. Having previously successfully landed on a canyon ridge on the north side of Pine Mountain in Ventura County, California, I reasoned I knew how to do this again. Just turn 90 degrees toward the canyon wall and land like a "fly on the wall."

As I slowly pitched up, my up-canyon wing was in ground effect and accelerated fairly quickly, turning me down-canyon along the ridge top. When I "landed," I had broken both downtubes and was unaware that I was center stage for Malibu residents who called in the helicopter.

Though this is not a tutorial on how to land like a fly on the wall, I could have tried two things to avoid breaking my down tubes: 1) turn about 120 degrees, back into

◀ **Eagle launch site.**

the canyon, to square up my wings with the canyon wall, and 2) perform a rear wire snap flare to stop the flight at higher than stall speed. However, when practicing a snap flare, you need to be 100% committed and pull through so the wing snaps to 90 degrees. I practiced this flare once downwind and upslope and hurt myself by not being 100% committed.

On the other hand, by being 100% committed on one occasion, I destroyed the 30-foot tall, 2-inch steel pipe base windsock on the north end of the Kagel Mountain LZ in Sylmar, California. I failed to pay attention to my drift as I corkscrewed down to lose altitude, which shifted my whole aircraft landing pattern northwest towards the windsock. I was a new H2 at the time. What I did right, however, was pull the bar in to hit the windsock at full speed. I bent my base tube and, the windsock pole which bent over 60 degrees and smashed the bread can of my Roberts vario, but I had a perfect turn onto final with an immediate flare and perfect landing. My high speed really saved me here.

The saving power of speed

Though I had learned that speed was my friend from the incidents above, I gained a higher appreciation of the saving power of speed later as a new cross-country pilot. A friend, Guy, was flying the eastern Warner Mountains in Oregon/northern California at the Eagle launch. We were all on a flying trip and Guy's roommate, Dane, had been teaching him to fly (mind you this is an H4 site). At one point, Guy found himself behind 100-foot tall pine trees, and it was either crash into the rocky terrain or hit hard and stick in the pine trees which he knew to be like Teflon, unlike the Velcro of oak trees. He chose the latter, pulled in, and impacted at full flying speed, grabbing at branches to prevent himself from slipping out of the trees. He survived and climbed down the tree.

On another occasion, I was the wind dummy launching in a borrowed glider at Black Eagle in the Inyo Mountains in the Owens Valley, when I was hit with a strong cross-

wind from the left. The glider instantly rolled 30 degrees to the right. I dared not look at the lower wingtip. Instead, I pulled in on the upwind downtube and rammed my shoulder even harder into it running towards the upwind wing. The upwind wing was stalled and I needed speed to get that tip flying! Eventually, the wings leveled out, and I took off. After this happened, all of the pilots moved to the more southwesterly facing slope to launch that day.

I remembered being with my instructor, Ken De Russy, in Santa Barbara on one of those training days watching more advanced pilots land from the mountains, when a local pilot known as Captain Nasty told the story of using this launch recovery technique, and I never forgot the way he told it using his body to mime the way he drove his shoulder into the downtube. I have no doubt that his storytelling panache saved my body and my life that day at Black Eagle.

Another time when I was a new H2 learning to ridge soar the dunes at Marina Beach, California, I was mesmerized and feeling glorious when I crossed a gap in the dunes without putting on extra speed. When I lost my orographic lift, my angle of attack dropped, but my speed was too low. The glider pitched sharply downwards towards impact on the top of the dunes. Fear wanted me to push out to pitch the nose back up, but instead, I pulled the bar in, speeding down towards impact. With the extra speed, I pitched up just skimming the dune tops back into the wind flow and continued soaring.

This lesson imprinted into my muscle memory and came in handy back in the Kagel Mountain LZ when I was impacting that concrete and steel windsock, as well as on many other occasions while exiting screaming thermals.

Exhausted? Stay home

Though I had remained relatively uninjured during my flying days, one time my body did suffer. While launching from Yarnell, Arizona, from an escarpment over the Saguaro Desert, I was hit with turbulence late in my launch run on my big and lumbering Wills Wing HP 2. I had dragged a wingtip on a bush and was airborne in a slow,



left turn. As I watched the boulders come up, I thought, "This is gonna hurt." I impacted the terrain, totaling my glider. My buddy, Bret Warren, radioed from the LZ asking if I needed medical help. I wasn't sure so I stood up and then I sat right back down. "Yes, I need medical help," I radioed back. I broke my left tibial plateau and spiral fractured the fifth metatarsal of my right foot. These fractures happened even though I was wearing baseball shin and knee guards. In those days, we always looked like we were headed into battle every launch, but those guards saved me a bruised leg or two landing out in turbulence in the desert.

When I reflect on the flight and my injury, the root cause of the crash was clear to me. The day prior, I had hiked a 16-mile route in the Grand Canyon which left me mentally and physically drained. I was exhausted and never should have been flying. I was "brain dead" and never initiated a recovery maneuver, which when one was needed on other occasions, I executed quickly and perfectly. My only saving grace was that I remembered what Ken De Russy always taught—stay upright after launch because you never know when Mother Nature will smack you down prematurely!

Always use protection

Then there was the time I went completely blind during the latter part of my 110-mile Owen's Valley flight. My corneas clouded up so much that my vision was like looking out through a very steamy shower. My normally dark brown eyes became white. I was blind flying at over 16,000 feet over the White Mountains and radioed my

predicament to my friends. Any other time, I would have been terrified, but I knew the route, and I was able to see general forms through the "steam." I knew that Highway 6 had unobstructed fields on either side for a safe landing.

As I flew due north expecting to see Highway 6, all I saw was white and more white. Finally, a thin black line appeared from the mist which I had to assume was the road. I knew from experience that the wind would likely be from the west. It was late in the day, so I followed the light to the ground. I landed perfectly by wind sound and foot braille (a technique used to land from higher speeds is to drag your feet on the ground to provide friction to slow you down) along Highway 6.

Fortunately for me, David Duke, an emergency room physician, was in my chase crew. He took one look at me and said, "We need to get you to a hospital right away!" I am grateful to David for calling medical facilities and making arrangements. By the time we arrived, my eyes had cleared up, and they had no explanation for what happened to me.

It turns out that extremely bright sunlight can constrict your pupils so much that people who are anatomically predisposed can have their irises pull tight against the lenses (despite wearing sunglasses). This blocks the pupil and prevents nutrients from flowing to feed the cell pumps of the cornea stopping the pumping of fluid out of the cornea. The fluid then backs up in the cornea making it milky white, and the person suffers blindness.

Some told me that the problem was dehydration, lack of supplementary oxygen, or the wind drying my eyes, none of which were the cause of my problem. I wrote

◀ LEFT: Easter flying. RIGHT: Overlooking Palm Springs.

about the experience in Cross Country vol 186. My only solution was to keep blinking hard and frequently—this dilates the pupils allowing nutrients to feed the corneal cell pumps and prevent the problem. Before I discovered this technique of blinking hard, this blindness happened a second time. After using the technique, it never happened again.

I learned another important lesson when Guy smashed his glider into pine tree. Flying at full speed, his head impacted a three-inch diameter branch, but his helmet smashed the branch to smithereens. If he had been wearing a $\frac{3}{4}$ Bell helmet that we all wore in those days, he would have died that day. Fortunately for him, he was wearing a full-face motorcycle helmet. From that day on, we all flew with full-face motorcycle helmets. Today, many pilots wear full-face mountain bike helmets for better safety.

Help the other pilot

When landing at the Sandpile LZ below Pine Mountain, California, near a river bottom where the wind can be switchy, the pilot who landed before me threw some dirt into the air. As it drifted and cast a shadow on the ground, I saw the wind direction and speed and altered my approach to this small, roadside-turnout LZ. I had a perfect spot landing. I was shocked to read in “Choose your Wingman Wisely” in Cross Country vol 216 that this courtesy has all but vanished. I haven’t flown since 2007, so I asked a couple of current pilots who began flying in the 1980s about this change in attitude. I was shocked that they both verified this change. Pilots used to communicate wind speed and direction, the presence of turbulence, wires, or fences, and even used our body to indicate wind direction as Lucho Machado wrote in this article.

What I loved about cross country flying was doing it with friends. My mentor Tom Truax would get on the radio, a number of times, and offer help. Early on in my flying days, I was ready to land on the north side of Pine Mountain, when Tom got on the radio and said, “Richard,

the sun’s going to break past the clouds in five minutes, and the thermals will start kicking off. Hang in there.” Sure enough, five minutes later, I was climbing back up with all of my buddies. I appreciated that advice, so I always returned the favor when I could, preventing my friends from “hitting the deck” prematurely.

Enjoy nature

The beauty of nature and the camaraderie on flying-camping trips will always be with me. There was the time Mingus Mountain, Arizona was covered with millions of ladybugs over Memorial Day—we camped and told flying stories among millions of ladybugs. We would go skinny dipping in untamed hot springs or cool off in the Owen’s River after long flights. When it was blown out, Don Taber and I would day hike to over 11,000 feet in the Sierra Nevada to glistening high alpine lakes. I found rainbow obsidian at abandoned obsidian mines in the Warner Mountains with friends and played chess in the quiet times.

Nature never ceased to provide the required entertainment. Once when I was thermalling up at Hart Mountain east of Lakeview, Oregon in post-frontal skies, a flock of white tundra swans circled up like a pearl necklace glistening against Hart Lake in the background. Or the day at Trancas Canyon after the rescue helicopter left, and I was hiking my gear out of the hills with Dehwei Wu, who had hiked up to help me. We learned that brushing past green shrubbery in spring would cover us in ticks but that brushing past dead plant material, there would be no ticks to brush off. Or the time I landed in Ojai, California in an empty field to avoid those white sheep in the other field, only to find that my chosen field had three horses that tried to eat my glider as I broke it down! I was constantly shooing them away with a batten. Those white “sheep” I avoid turned out to be large, white bulls!

Over my years of flying I might have had a few hang glider bumps and close calls, but now that I have stopped flying and am looking back, all of these memories remain magical for me. 



Lakeview Flying

A 30-year hang gliding perspective on a legendary site

by Greg Krutzikowsky

Lakeview was on my radar when I moved to Oregon from Maui in December 1991. At the time, one of the things I was looking forward to after spending five years bouncing back and forth between Maui and Queensland, Australia, was a bit more flying. Although I got to fly on Maui during the golden age for hang gliding, I only got to fly once in Queensland.

Those years of limited flying opportunities after 15 years of flying had been the sacrifice I paid for my job working with humpback whales and living in the

tropics with opportunities for diving and surfing. I was looking forward to being able to fly throughout the year, but I was also sure that mainland flying would offer more XC opportunities than Maui. And one place in Oregon that I knew offered real XC opportunities was Lakeview.

Lakeview had already earned quite a reputation in the flying community at that point. The self-proclaimed "Hang Gliding Capital of the West" hosted a Festival of Free Flight held on the weekend closest to the Fourth

◀ Ronan Krutzikowsky takes his final step before taking to the air during his first ever altitude flight. Photo by Greg Krutzikowsky.

of July. So, in July 1992, I headed to Lakeview with one of my new Oregon flying buddies, Bruce Waugh, to meet my brother Doug who was traveling up from Santa Cruz—the first of many trips I took to fly in Lakeview that have spanned the last 30 years.

The 1992 Umpteenth Annual Festival of Free Flight had more than 300 pilots registered. When we arrived, we noticed two to four gliders seemed to be loaded on every vehicle everywhere we looked. We registered at the Chamber of Commerce and got a packet full of goodies that included detailed information on flying sites in the area, flight declaration forms for various contests and prizes, and coupons for discounts at local businesses and restaurants. It seemed like a treasure trove. But the real treasure was the flying potential.

Before the day was out, rumor had it that Terry Taggart had done a hundred miler from Sugar Hill out to somewhere around Denio, Nevada, a “town” with a population of fewer than 50 people located just across the Oregon border where Highway-140 dips south into Nevada. I was psyched since the forecast looked great

for the following day!

When people talk about flying at Lakeview, they are actually referring to a whole suite of sites within about a 50-mile radius that includes sites both in Oregon and just over the border in California. Some of the sites include:

Black Cap: A short drive up from Lakeview, known for its multiple launch directions, evening glass-offs, and XC potential

Palisades: A west-facing site between Lakeview and Abert Rim

Tague's Butte: A southwest launch on Abert Rim

Hadley Butte: A north-facing site above Summer Lake

Winter Ridge: An east-facing site above Summer Lake

Doherty Slide: A southwest to northwest site that features a long ridge with vertical escarpment about 50 miles east of Lakeview

▼ Hang gliders set up at the launch on Sugar Hill. Photo by Greg Krutzikowsky.



SUFFICE IT TO SAY THAT I LEARNED MANY THINGS
FROM THAT FLIGHT, INCLUDING THAT SOMETIMES
THE ADVENTURE STARTS AFTER YOU LAND.

Sugar Hill and Sweet n' Low: Southwest-facing launches about 30 miles south of Lakeview in California, with Sugar being one of the best XC launches in the area and Sweet n' Low being a great launch for evening glass-offs when the wind is up

Buck and Bald Mountains: East-facing launches a bit south of Sugar in California overlooking the Surprise Valley on the east side of the Warner Mountains

■ We opted to go to Sugar Hill for our first flying day. Launching at Sugar with countless other pilots, the four of us—Ray Berger, Bruce

Waugh, my brother Doug, and I—were on the same radio channel and shared Ray's driver Gretchen, who took Doug's dog Chewy with her. Of course, this plan presumed we would all manage to get up and go XC.

The trick of Sugar is to get up high enough to get across the Fandango Valley. Ray and Bruce, along with many others, had gone over Fandango Peak then into the desert well away from Goose Lake, which is out in front of Sugar. Unfortunately, Doug and I both tracked too far back into the valley, too low to get back out in

▼ *A small gathering of pilots and drivers at launch at Sugar in July 2021. Photo by Greg Krutzikowsky.*





▲ Ronan Krutzikowsky turns into some lift just after launching from Black Cap during his first altitude flight.

Photographer: Greg Krutzikowsky.

front of Sugar against the wind. Doug landed in Fandango Valley, but I got a lucky thermal that got me up, out, and over Fandango Peak, even though I was far behind Ray and Bruce.

I'll spare you the details, as this flying tale is best told over a beer around a campfire. But suffice it to say that I learned many things from that flight, including that sometimes the adventure starts after you land. I'll entice you to bribe me with a beer for the full story by letting you know it includes a borrowed truck, a three-dog night for Gretchen sleeping in the van with Bruce, Chewy, and I, and another encounter with the borrowed truck's owner who was transporting another pilot back to Lakeview. Lakeview flying had me hooked!

One other memorable thing about that first

trip was that after all the pilots who had flown the glass-off from Black Cap had landed, I watched another pilot flying over Black Cap from the south and coming to land. That was the first time I met Roger Jackson. He had launched Sweet n' Low and flown almost 30 miles in the glass-off along the Warner Range to land at Hunter's Hot Springs shortly before sunset. Roger is a glass-off specialist and is currently the president of the Hat Creek Pilots Association. This organization has worked with the forest service to keep the Hat Creek Rim flying site, known for its glass-offs, open. Over the years, I have flown with Roger many times in Lakeview.

Flying hang gliders in the Lakeview area dates back to the 1970s. Pilots like Jeff Van

Datta, Doug Hildreth, Bill Shaw, and Steve Bisset of hang gliding fame from the then-Rogue Valley Hang Gliding Association, were among those who ventured out on an annual eastern Oregon thermal hunt, and pilots from northern California often joined in the fun. But it wasn't until 1989 that the RVHGA sponsored a fly-in, and 19 pilots showed up.

Things quickly grew from there. Jay Busby, who was then the regional director, with support from the Lake County Chamber of Commerce and local businesses, helped arrange the first big Fourth of July Fly-In that welcomed pilots of all wing types. This fly-in ultimately became known as the Umpteenth Annual Festival of Free Flight. In 1990, over 100 pilots registered; in 1991, there were 165 pilots registered; and when I first went in 1992, over 300 pilots registered. Dave Baleria was the early meet director and put together the site guide with information on a number of the flying sites that can still be found on the things-to-do section of the Oregon Outback website: <http://www.oregonsoutback.com/todo/hanglide/index.html>.

The Chamber continued to put on the Festival of Free Flight for well over two decades and offered a suite of contests with prizes. These changed somewhat over the years but always included a trophy dash from Sugar to a landing field in front of Hunter's Hot Springs Resort (known for its geyser and hot springs pool) and a spot landing contest in the same field, followed by a big BBQ feast and awards ceremony. Of course, there was also the "coveted" unofficial Golden Hammer, awarded for the most "spectacularly less than perfect" landing done during the spot landing contest. In the early years, \$1,000 prizes were even awarded for the longest XC flights.

However, after 2016, the Chamber stopped putting on the Festival of Free Flight. Perhaps a contributing factor was a change of ownership of the burnout (backup) LZ for Sugar. The new landowner didn't live nearby but, even still, did not want gliders landing in his field. Unfortunately, in 2016, more than a dozen

pilots were flushed and landed in that field. The landowner happened to be in the area, pulled up, and read them the riot act. I can only speculate that this was one of many factors contributing to the Chamber's decision not to hold the festival in subsequent years. Folks from the Chamber tried to reach out to the landowner, but they were unsuccessful in securing landing access.

Nevertheless, pilots kept coming back to fly Lakeview even though there was no longer a sponsored fly-in. After all, the flying is still great, there are many sites in the area, and alternate burnout LZs have been found for Sugar. Lakeview is still a flying destination for pilots, with many coming out during the Fourth of July time frame.

On my most recent trip in July 2021, I found myself thinking about my first fly-in in 1992. On the last day, a group of us, including my now 21-year-old son, launched Sweet n' Low in the evening for the sweetest glass-off flight ever. Roger Jackson acted as our guide. We flew a bit past Lakeview, and all landed in the same field as the sun dipped below the horizon. We broke down after dark and had a pizza and beer celebration.

Lakeview is legendary. The area offers excellent flying as well as activities for other outdoor enthusiasts like fishing, birding, hiking, mountain biking, lovely alpine lakes, and rockhounding. I have seen many things change over the years, like the ownership of Hunter's Hot Springs Hotel and that of the adjacent RV park as well as several new businesses opening up in town. There have also been more wildfires that have impacted flying activity in recent years, and I have seen two started by lighting while at launch. But some things seem to last forever, like the barn just south of town that I thought was about to collapse when I first saw it in 1992—it was still standing 30 years later in 2021. Lakeview is still known as the Tallest Town in Oregon and the Hang Gliding Capital of the West, so come on out and enjoy the great flying! 

▼ Prize winning pilots in the 2011 edition of the Umpteenth Annual Free Flight Festival in Lakeview, Oregon along with Princess Katherine and Queen McKenna and spot landing and trophy dash timer Mark Webber. Pilots include Doug Krutzikowsky, Ray Berger, Erich Heinrich, and Scott Huber from left to right back row; and Ken Dawe, Rob Stevens, and Dan Wells left to right bottom row. Photo by Greg Krutzikowsky..



Lakeview 2022 Report

Another amazing trip to Lakeview for flying on the 4th of July in 2022. At least 20 pilots showed up this year, coming from southern and northern California and Oregon. Pilots and their friends enjoyed a variety of activities including rock hounding, mountain biking, hiking, wildlife viewing, and soaking in various hot springs. Continuing our tradition my brother Doug and I met to fly. This year my two oldest sons both joined us to fly. Although my son Niko had been to Lakeview many times before, it was his first trip to actually fly. He flew from Blackcap with his brother Ronan. Ronan had four flights, his longest being 28.5 miles from Sugar to the field behind the newly renamed Wild Goose Meadows RV park just north of town flying with Scott Michalek and I on July 3rd. A number of pilots were camped there and some watched us land. The funny thing about that flight was that both Scott and I had our vario battery die while we were flying and Scott waited for Ronan to catch up with him so he could help him find lift. My longest flight this year was 40 miles from Sugar on July 6th. Rick Christien from the Bend area had the flight of the trip this year on the same day. He flew all the way to Riley, Oregon for a distance of 127 miles! Lakeview is a great flying destination, hope you come out to join in the fun next year!

Flying in Wind

Part 1: Paragliders and hang gliders on a downwind path

by Dennis Pagen

Very early in our experience as pilots, we learn to fly in light wind, then gradually fly in higher and higher wind up to the safe limit for our wings and each particular site. At first, we normally only fly in a headwind from takeoff to landing. Perhaps we experience a bit of crosswind if we land at a site where the LZ is not directly upwind from takeoff. Early ridge soaring experience introduces us to even more crosswind exposure. But for the most part, upwind is our familiar friend and foe in the early days.

But we don't want to be stuck in the takeoff-to-landing groove forever. As soon as we start exploring our aerial home, we learn that there's more to this flying in wind than we initially thought. In this series, we are going to explore this "more."

DOWNDOWN FLYING

Typically, we would begin with the familiar (upwind flying), but downwind flying introduces the most dramatic changes to our performance and perceptions, so we begin with the wind at our tail. Generally, a pilot never experiences downwind flying until flying cross-country (XC), except in the landing setup pattern (downwind, base, and final—DBF). Pilots familiar with and using a DBF setup quickly learn the differences between upwind and downwind flying, especially as the wind gets stronger.

Of course, in the landing pattern, we are close to the ground and can detect it racing by us on the downwind leg. Higher up, this perception may be lost, so the understanding needs to come from our experience and store of lore.

When flying downwind, the most important thing to realize is that our glide ratio over the ground is great-

ly enhanced. We cover a lot more distance for a given amount of altitude loss. If, for example, our glider gets a maximum glide ratio in still air of 10 to 1 at 15 mph, and if we have a 15 mph tailwind, our glide ratio will be 20 to 1. For a given altitude loss, we will go twice as far as we would in still air. Given that most of us experience at least a little headwind when going out to land, our early experiences when flying downwind will present a dramatic difference.

Our glide ratio varies with the amount of tailwind we are in (and, of course, the lift or sink we encounter as well). We can do the math as in our example; however, every day, flight path, and condition will alter the outcome. All we can do is keep repeating the experience until we gain some level of judgment regarding our ongoing performance. In the initial stages of our downwind flying experience, we must be cautious and not take things for granted. Eventually, we can come much closer to estimating where we will end up with what altitude. The key to gaining the necessary judgment is XC flying.

CROSS-COUNTRY

Most of us get our early XC experience moving along a ridge or mountain chain. A typical pilot progression is learning to soar in ridge lift, then learning to thermal, then learning to fly XC on successive thermals. Assuming that method of approach, we'll jump to the point where a pilot is getting high enough in thermals to safely fly over the back of the soaring mountain and head downwind.

This piece is not a guide to XC flying, but we should pause here to mention a few safety items. The first point to ponder is how high we need to be to safely go over the back of a hill, ridge, or mountain to avoid all possi-

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bility of hitting serious turbulence or rotor downwind of the steep terrain. The rule of thumb is to be above the highest point of the ridge or mountain, at least as high as its altitude above the flatter terrain in front (upwind) of the peak. For example, if I am flying a 1,000-foot high ridge, I want to be at least 1,000 feet above it before considering going over the back. A long ridge or mountain chain requires more clearance than an isolated hill or mountain because ridges disrupt the airflow more than single peaks.

The second point is that the stronger the wind, the more clearance you need when going over the back. Often, in high mountains and dry conditions, the upper wind or general wind flow may be very light, while near the mountain (and at takeoff), the wind may blow strong enough for us to stay aloft searching for thermals. In this case, heading over the back does not require as much clearance because there's not much wind once we get above the terrain's influence.

Here's an illustration of the previous point. When I first traveled to Crestline, California, for the 1979 Hang Gliding Nationals, I was on the 3,500-foot launch by 11 a.m. The wind at takeoff was howling above 20 mph. I thought, "Well, this day is blown out." Soon a couple of local plots arrived, set up, took off, and blithely flew around. I soon realized that the strong wind was upslope thermal flow in the hot, high, dry conditions. The wind was confined to a layer less than 100 feet thick. Since that time, I, along with hundreds of others, have experienced similar strong upslope flow with very light general winds at many arid sites in the American West, the Alps, Italy, Greece, Spain, and Australia, to name a few notable instances. The main point here is to detect the true wind strength as soon as possible at such sites to determine how much clearance above them is a safe margin for crossing them.

With these caveats and cautions out of the way, we can focus on the joys of XC flying, which mainly incor-

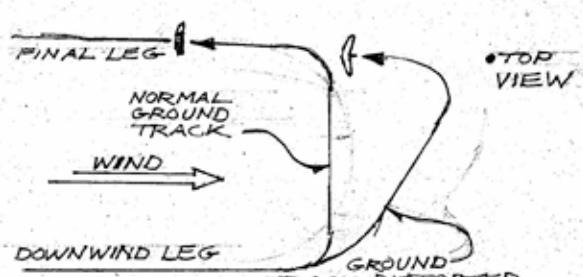


FIGURE 1. WIND EFFECT ON LANDING.

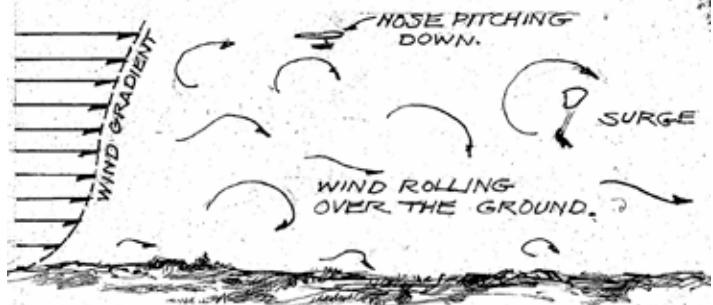


FIGURE 2. ROLLING OF AIR NEAR GROUND.

porates downwind flying. On your first over-the-back experience, you will probably feel a thrill and sense of freedom. You have suddenly cut the umbilical cord. Your first downwind XC is memorable (I remember mine 43 years ago) and is right up there with your first flight, your first soar, and your first successful thermal climb.

On this flight and the following downwind treks, pay attention to how far you glide with a loss of 500 feet (or any amount you choose) to start learning to judge your enhanced glide and assess the increased potential landing fields available. But don't get too distracted, for early on in your XC experience, you must be aware of the location of the big, safe landing fields that you can reach. When we put on XC seminars, we often take the students to safe landing fields before they fly to them. This is good practice for every pilot. Eventually, of course, you will learn to judge a landing field and wind from the air, but slow, gradual steps are always the safest and sanest approach in aviation.

One more point on this subject relates to thermaling. When we first learn to thermal and throughout our experience before flying "over the back," we normally have to leave a drifting thermal to fly back out to the front of the mountain. Except in very light winds, this necessity can limit how much of the thermal's rising air we can use, and often we hit quite a bit of sink in front of the thermal as we fly forward. But once you have committed to flying over the back, you can stay with the thermal and often get thousands of feet higher than you could if you left it to fly back out front.

Of course, this bonus altitude increases the distance

you can progress over the back. However, be aware that with mountain chains and ridges, the down-flowing air on the lee side will often diminish or stop the thermal, so don't count on the additional climb. Take lift where it comes (it is efficient to stay in the initial thermal when going over the back, assuming it drifts in the direction you want to go), but don't over-rely on it in this situation. I have often found it challenging to reach cloudbase when the thermal is attached to a ridge in higher winds. The reverse is often true in light winds or when climbing above an isolated peak. Once we gain skill and experience, we welcome stronger winds aloft because we make better distance downwind for our altitude payout.

DOWNWIND LANDING FIELDS

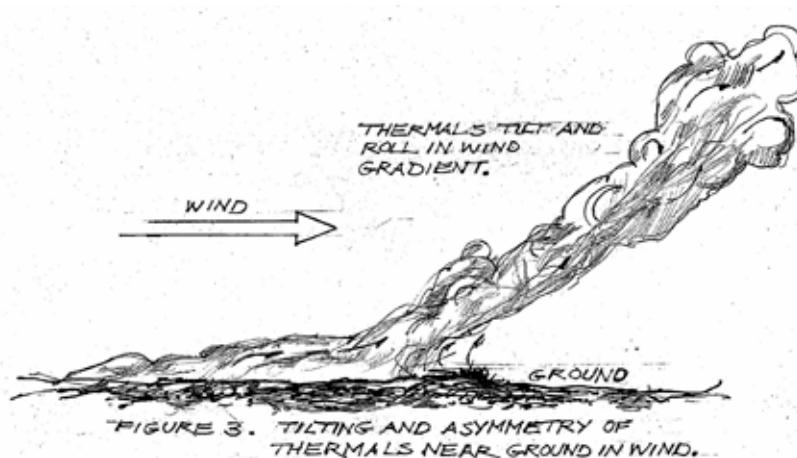
We will finish our downwind excursion with a bit more focus on awareness and caution. Consider that after you have been flying downwind for some miles, it is easy to be mesmerized by your performance, then get a rude surprise once you turn 180-degrees and have to fly upwind. The main danger, in this case, is not being able to reach a safe landing field once you've passed it. Even as an experienced XC pilot, I do not go past the downwind end of a landing field that I intend to land in, at least not until I have turned to fly upwind and tested my penetration. Nothing is worse than that sinking feeling over a sea of trees or debris.

Also, be aware that when you turn in a tailwind, your ground track will be somewhat altered compared to that in no wind. This difference is illustrated in Figure 1. You see here that the ground track is somewhat lopsided due



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to more drift when your glider is sideways to the wind. Of course, this happens when we are landing with the DBF approach at our home landing field too, but once we are very familiar with our local field, we know where to be when we start our setup turns. Again, the point is not to be caught unaware and drift downwind during your turns when landing out. Don't cheat until you know the rules of the game.

Modern instruments can give us a calculation of our glide ratio over the ground and even an estimation of how far we will go. But it cannot foresee the possibility of encountering sink or a change in wind strength (as happens when flying perpendicular to waves), so you should not rely on your instruments as infallible guides. Always remain in reach of a safe landing field and maintain safe margins.

Our final point is that you may feel a difference in the turbulence and bumps when flying downwind within the influence of the terrain. Mechanical turbulence caused by the wind flowing over the ground, trees, buildings, small hills, and other solid features tends to roll with an axis perpendicular to the wind flow, as shown in Figure 2. Of course, the turbulent swirls can be quite mixed up, but plenty of times, they feel fairly organized. The difference between downwind and upwind turbulence is that downwind turbulence often feels like it hits you from behind, while upwind turbulence feels like it comes from the front.

In a hang glider flying downwind low, you can feel more occasions where the air texture wants to dump

your nose downward and sometimes stall you if you get a strong increase of flow from the rear. The safe solution is to fly faster for more control and to prevent a stall. Of course, you are already moving fast over the ground, and you might have the urge to slow down as the ground goes racing by, but the only safe mode is to fly faster (perhaps up to 10 mph faster than stall speed, especially in strong wind). In a paraglider, when flying low downwind, you may feel a more frequent tendency for the canopy to surge. In this case, be aware of the possibility and remain ready to apply your well-learned canopy position control.

In both aircraft, when flying downwind and encountering thermals down low, we may experience a slowing of airspeed if the thermal is tilted enough so that the main flow of the thermal is from our rear. This effect is shown in Figure 3. When thermals initiate in wind, they can drift along the ground and usually follow a slanted track until they consolidate and exercise their full power upward (usually several hundred to a couple of thousand feet). Sometimes you can see this effect in dust devils. You can most readily observe it in wildfires burning in wind. This effect goes away in light winds and increases with wind strength.

For many of the reasons discussed above, we highly recommend that any pilot learning to fly downwind starts with very light winds and gradually increases the accepted wind by small increments—perhaps 5 mph—until reaching the maximum safe limit. 

SUMMARY

- ❖ Be aware of your significantly increased glide path and performance when flying downwind
- ❖ Allow safe clearance to avoid turbulence when flying over a mountain
- ❖ Do not pass a safe landing field in stronger winds
- ❖ Note that your landing setup ground track will be altered in stronger tailwinds
- ❖ Be ready for a possible difference in the feel of turbulence close to the ground
- ❖ Have fun and make downwind flying your friend



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2022 FLOAT AND FLY

Speedflying the Lower Salmon River by Carl Weiseth

As the U.S. speedflying community continues to grow, so has the ingenuity of our pilot community in pioneering new locations to safely and legally fly.

In late June 2022, a group of 16 speedflying pilots boarded whitewater rafts and inflatable kayaks to spend the next four days paddling 46 miles down the Lower Salmon River in Idaho. During this first annual Float and Fly, we camped on soft, sandy beaches overlooked by rolling, grassy launches. We hiked, flew,

and water-swooped until our legs were exhausted. By mid-day, we happily plopped into duckys and rafts to navigate rapids, enjoy the scenery, and relive the previous evening's flights.

"This was, absolutely, hands-down, one of the best adventures I've ever been on," said first-year pilot Byron Encarnacion. "The group of people, the weather, the terrain—everything just lined up perfectly for us to get to fly a wide variety of lines while rafting an iconic



△ A day on the water. Photo by Mathew Weiseth.

◀ Pilot Riley Marshall flies into camp.



stretch of river.”

Our trip began with a 6 a.m. wake-up and an early river put-in just outside the small town of Whitebird, Idaho. We loaded speedwings and clothes into dry bags, applied copious sunscreen, and made final judgment calls about whether or not to bring the cooler-sized battery-powered speaker which would later fuel celebratory beach parties. As we loaded into our boats, there was a tangible sense of both excitement and uncertainty. It was early season on the Salmon, and water levels were at the highest possible point for a trip of this nature.

“I think everyone was pleasantly curious that first

△ *LEFT: The group hikes up to launch. Photo by Sarah Saturday.*

△ *MIDDLE: Pilot Julia Lieberman. Photo by Lesia Witkowsky.*

△ *RIGHT: Pilot Wyatt Grow cruises off launch. Photo by Ben Peck.*

△ *BELOW: Group camp down the river.*

morning,” said veteran speedflyer Bridger Henriksen. “Very few of us had ever been down this stretch of river, and none of us had attempted to speedfly it. Everyone was optimistic, but with such high water, it was hard to predict what our campsites and landing areas might look like.”

As our group began to paddle, the steep canyon walls dwarfed the thin band of inflatable kayaks. The terrain



△ **LEFT:** Pilot Byron Encarnacion skims in. Photo by Alec Page.

△ **RIGHT:** Pilot Alec Page practices toe drags. Photo by Byron Encarnacion.

△ **BELOW:** Byron Encarnacion and Calvin Freeman wing down to camp. Photo by Sarah Saturday.

was both daunting and inspiring. If we could make flights here work, they were going to be epic! Rapidly, our uncertainty transitioned to confident excitement as potential launches and landings began to present themselves around each bend in the river. The weather was forecasted to be sunny and calm. We were surrounded by potential flights and LZs. This was going

to work.

“Pulling into camp that first night was pretty surreal,” said Calvin Freeman, the one member of our group to insist on a hard-shell kayak for the entirety of the trip. “There were obvious, beautiful flights coming off the hillsides on either side of the river. We had an enormous sandy beach to land on with a calm eddy for foot drags. The wind was perfect. Everybody was just like, ‘Game ON! Let’s set up camp and start hiking!’”

As the trip continued, our group was blessed with perfect sandbar beaches to camp and land on every night and multiple grassy launch sites overlooking each of our three camping locations along the way.

Pilots flew speedwings and miniwings of all sizes, from 8m to 18m, often trying to skim the water with their feet on landing.

"Several of the pilots went for a dunk by the end of the weekend—I know I did," said Colorado-based pilot Scott Dobson with a laugh. "We took potential water landings really seriously and came prepared with hook-knives and ground crew ready to intervene if anyone had problems. The locations we chose for our landings were all in calm, shallow areas of the river, so even when we came up short, no one was in danger of getting taken downstream."

In addition to action-packed days, evenings around the campfire presented an opportunity for camaraderie and community amidst a diverse group of both male and female pilots from five different states—many of whom had never met. Inevitable dance parties ensued, skinnydipping commenced, and our last-minute decision to pack the portable speaker was heralded as a stroke of genius over the occasional pop of champagne bottles.

"Before this trip, I was primarily a paraglider, who occasionally flew speedwings," said Julia Lieberman. "But after getting the opportunity to connect with world-



▲ The group is all smiles. Photo by one of the river guides.

class pilots and inspirational female flyers, I can say I'm officially in love with the sport! This trip really helped me build confidence in both my flying and in evaluating new launching and landing areas. I felt so lucky to learn from such a welcoming community."

After four full days on the water, our group arrived at the confluence of the Salmon and Snake rivers, thoroughly exhausted and somewhat surprisingly excited to sit in a chartered jet boat shuttle back to civilization for the next two hours. After eating a hefty lunch and deflating/loading all of our boats and gear, nearly every member of our Float and Fly posse passed out cold, as the drone of the boat's

engines lulled us into welcome relaxation.

Upon arrival back to our cars in Lewiston, Idaho, our motley crew of stiff pilots unloaded from a giant yellow school bus and began to gather our belongings. Already, plans for next year seemed to be the ubiquitous topic of conversation amidst discussions of other flying meet-ups and road-trip adventures en route back to our respective homes.

"I can't imagine how this could have been a more successful trip," said top-level skydiver and speedwing pilot Beau Riebe. "We got tons of flights in, stayed safe, made a bunch of new friends, and all of us expanded our knowledge base

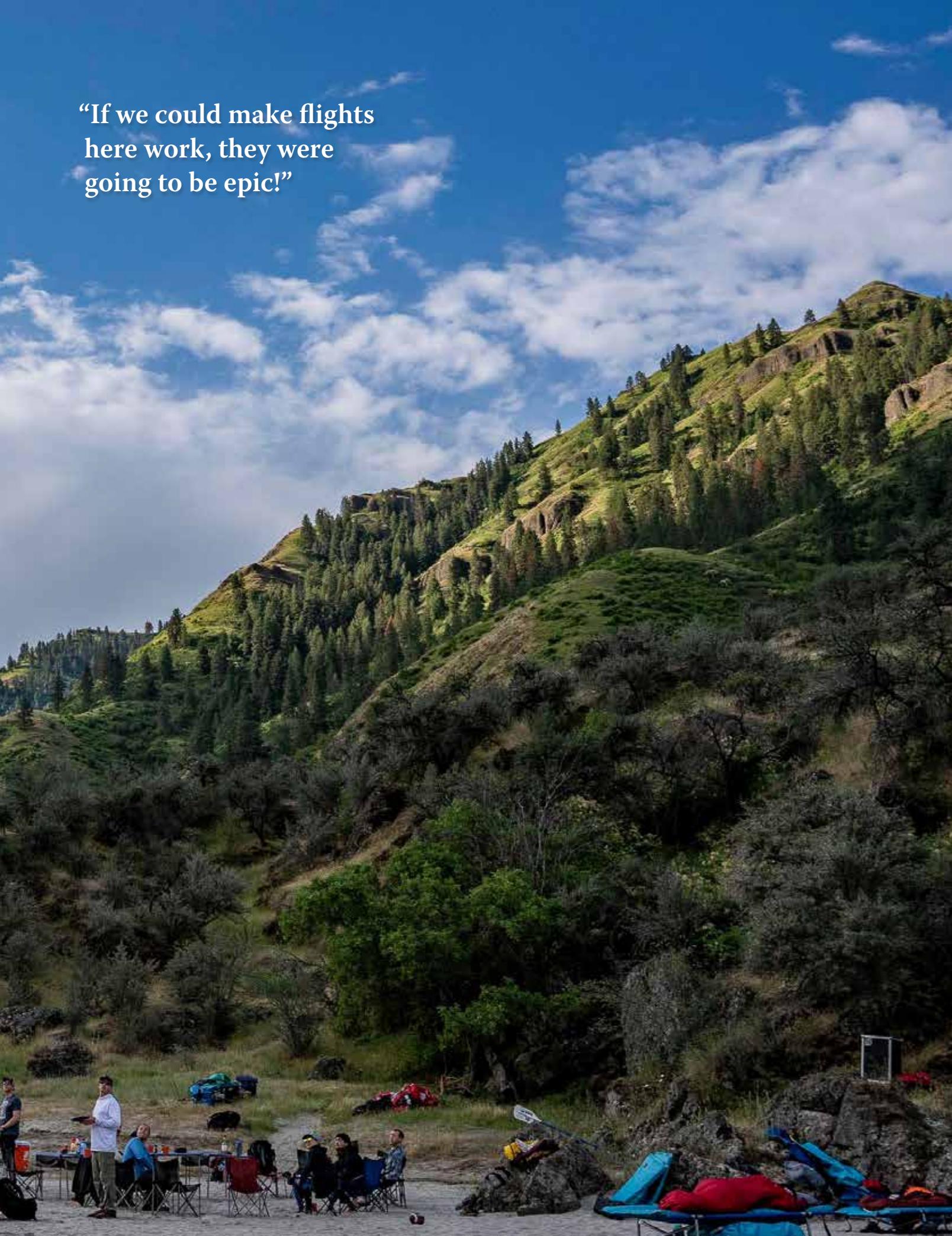


▲ Enjoying post-float and flying libations and company around the campfire. Photo by Sarah Saturday.

▼ Pilot Sarah Saturday cruises into camp. Photo by Byron Encarnacion.



**“If we could make flights
here work, they were
going to be epic!”**



Now and Then

by Richard Dery

I often tell people that hang gliding is the purest, most graceful kind of flying imaginable, where men and women soar effortlessly on puffs of warm air with gossamer wings like butterflies. But standing atop the 150-foot training hill at Morningside Flight Park, New Hampshire, under a blistering sun with sweat running off my nose, I feel more like a caterpillar with short chubby legs than a graceful butterfly.

As I wait for the wind to come around, I find myself thinking about the many times I trudged up the bunny slope hoping for a westerly breeze to assist my 60-year-old legs in getting this oversized beach umbrella off the ground. On a good day a few weeks prior, I made six glorious flights from a streamer that marked the 50-foot spot on the hill. I have since continued my battle against gravity by inching my way up to gain the 75-foot streamer. Now, all at once, I find myself standing next to

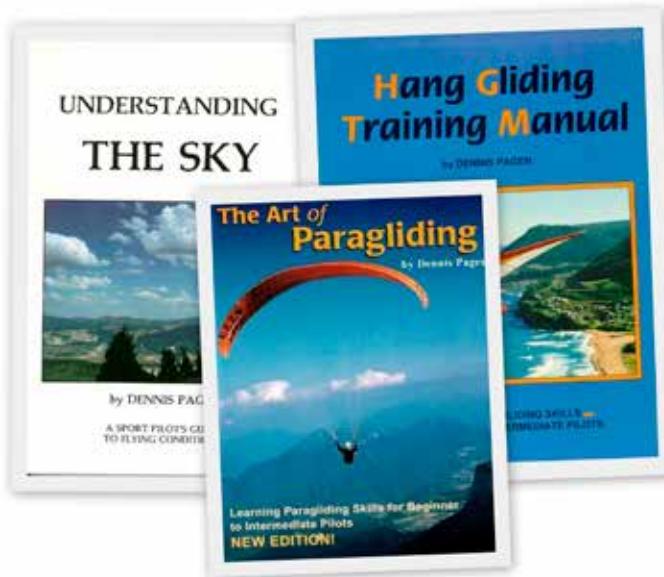
the windsock 150 feet above the LZ with a gentle breeze working its way around to point a piece of ribbon at my nose.

I don't remember it being this hard 40 years ago when I first learned to fly. I remember standing on this very same spot under the shade of my Sky Sports Merlin with a piece of red yarn pointing at my nose when I simply took three steps and floated into the air like Peter Pan. The fact that I was 40 years younger and in much better shape may have had something to do with it, but I think it's more than that. After years of telling my wife and kids about the good old days of hang gliding, it's possible that I may have romanticized things just a little and conveniently left out the part about lugging the thing back up the hill after each flight. Not to mention the broken wrist and bent down tubes—but I'm getting ahead of myself.

I first flew in 1978 when I was 17. My brother Paul and



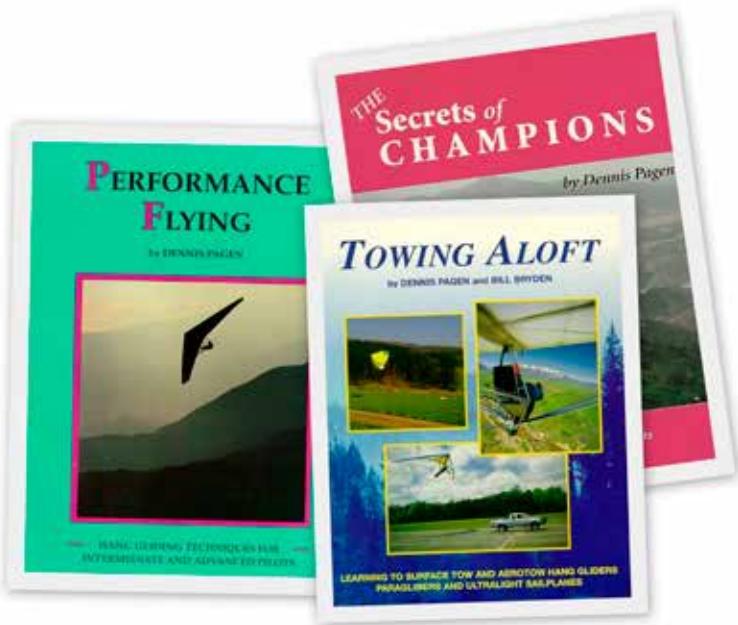
Winsted, CT in the winter of 1981. Flying a Sky Sports Merlin at a training hill we called the "Bowl". Photo by Dave Buyak. ▲



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I had pooled our resources to buy an Eipper-Formance Flexi Flyer. This was a simple rogallo wing with a plastic swing seat for a harness. Our adventure began with a trip to North Carolina in an old school bus that had been converted to an RV that could sleep six. Paul and I had spent many hours in Bob (RT) Trail's garage helping him construct a home-built Easy Riser.

RT had been our high school earth science teacher, and after completing the Easy Riser, he invited us to accompany him to the sand dunes of the outer banks, where he planned to learn to fly the thing. The Easy Riser was a foot-launched biplane design with swept wings and rudders at the wingtips. We struggled a bit sliding his folded wings into the elongated plywood box RT had mounted on top of the "bus." Then we tied our Flexi Flyer alongside and headed south.

Back in the '70s, the dunes by Kitty Hawk Kites were

about 120 feet high. My first flight was made from a spot about 30 feet up. How does one describe their first flight? Orville Wright said it was like shaking hands with the wind. In his famous poem "High Flight," John Gillespie Magee wrote, "[I] Put out my hand, and touched the face of God." Paul said it was like watching an old Disney movie where an eagle flies over a canyon, and the ground just drops away.

I experienced all of that in the 10 seconds I was in the air, floating, bare feet dangling just over the hot sand. It was the sum of my 17 1/2 years on this earth wrapped up in 10 seconds. Then I pushed the bar out and landed with a soft thump. My feet sank in, engulfed in burning sand, but I hardly noticed. I had flown!

After a few days, I was flying from the peak of the dunes, making 90 degree turns and landing in a small 6-foot deep pond to cool my burning feet. As for RT and his

Easy Riser, I can still close my eyes and see him skimming five feet above the dunes with his dog, Noop, nipping at his heels all the way down. I made several flights that week and felt like an accomplished pilot. Then, we came back to New England and reality.

Returning to Connecticut after learning to fly the dunes at the outer banks of North Carolina was a lesson in hard knocks. Literally. The unyielding, unmoving, rocky terrain that put the firm in terra firma proved to be a hard taskmaster indeed. Then there were the wind streamers that could never agree on which way the wind was blowing. I quickly learned that holding the nose of my Flexi Flyer with no luff-lines or washout tubes too low during a take-off run would end in a sudden, painful stop after running full tilt, downhill.

I felt like a giant lawn dart, throwing myself at the ground and trying in vain to miss. Nose too high was like pulling a parachute. Finding the sweet spot in-between meant I no longer had to straighten my down tubes after every other run. I became accustomed to “fixing” my downtubes by setting the “kite” on its keel and leaning all of my 132 pounds on my foot firmly placed at the bow in the down tube. At this time, my brother Paul, for some inexplicable reason, decided to walk away from hang gliding. Perhaps while he still could.

Soon after, a chance meeting at a gas station with a high school acquaintance led to a life-long friend, who just happened to own a hang glider. Dave Buyak and I began flying together at our local training hill. These were happy times. My “lawn dart” days were behind me, and I was making routine flights straight down the channel of the horseshoe-shaped hill we called the bowl. Each flight went further than the last, but I soon realized my beloved Flexi Flyer was sadly outdated. I bought a used glider from Tom Peghiny, one of the chief designers and co-founders of Sky Sports, Inc., for \$350. My Merlin came with a prone apron-style harness, and I quickly adapted to prone flight.

Dave and I began making numerous trips to New Hampshire to fly at Morningside Flight Park, where I got my H2 rating. Sadly, it was also there, after a few won-

derful years of foot-launched, free flight, that it all came to an unexpected end. They say, “any landing you can walk away from is a good landing,” but unfortunately, one of those “good” landings rendered my Merlin flightless. As I was working my way through college with no money to spare on repairs, this meant my hang gliding days were over. At least for then.

Fast forward to July 2019, my wife and kids gave me an intro lesson and tandem flight for my sixtieth birthday. Now I find myself standing once again at the 150-foot training hill at Morningside Flight Park. I hear myself yell “clear” and begin to walk, then jog, then run, down the hill till my feet, still running, leave the ground. I pull in



▲ The author flying a Wills Wing Falcon in autumn of 2021 at Morningside Flight Park in Charlestown, NH. Photo by Cindy Dery.

for speed as a bubble of warm air lifts my Falcon in the buoyant air above the landing zone. A slight turn, then level out. Hold it in. Keep your speed up. Now round out to trim. Slide your hands up. Get ready to flare. Keep your feet under you. Now, flare. Run it out.

Forty years melt away as I think about how tomorrow when I go to work, I'll tell people that hang gliding is the purest, most graceful kind of flying imaginable, where men and women soar effortlessly on puffs of warm air with gossamer wings like butterflies—and soon I'll be up there right alongside them!

Author's note: While I look back on my past hang gliding experience with fondness, it is also with more

than a bit of trepidation. Hang gliding was still relatively new in the late '70s, and we did things I would never recommend today (such as straightening down tubes by leaning on them after a hard landing). We were also self-taught. Three years my elder, my brother always went first and taught by example. He was an excellent teacher and showed me exactly what not to do. In truth, we all made many mistakes. Fortunately, these mistakes happened close to the ground, and the most severe accident we had was my broken wrist. There are many good flying schools around today, and I highly recommend taking lessons from a certified instructor as I am now doing. 

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In contrast to all books on the subject, it takes the reader right up to the present day, to the aerodynamics laboratories of the German Aerospace Center, where Lilienthal's airplanes underwent spectacular tests with today's aeronautical research equipment, and to the coast of California, where one of the authors – supported by American hang glider veterans – learned to master the world's first aircraft. Markus Raffel and his supporters devised training equipment and a personal training program to follow in Lilienthal's footsteps to learn and test flying in his spirit. The second author, Bernd Lukasch, was for many years director of the Otto Lilienthal Museum in Anklam, Lilienthal's birthplace, where Lilienthal's numerous aircraft constructions are documented and reproduced today.

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Springer.shop directly (eBook and print): <https://link.springer.com/book/10.1007/978-3-030-95033-0>

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H1 1 Paul Sherman	OR Theodore Hurley	P1 2 Ryan Zirkle	CA Wallace K. Anderson
H1 3 Tyler Gregory	CA Josh Patrick Laufer	P1 3 Ronen Azulay	CA Jordan Neidinger
H1 3 J. Nicholas Hamilton	CO Mark A. Windsheimer	P1 3 Benjamin Bartelle	AZ Chandler Papas
H1 3 Gary Ott	CA Bob Steven Bendetson	P1 3 Juan David Garcia Villalon	CA Luke Weaver
H1 3 Ilia Ovsiannikov	CA Josh Patrick Laufer	P1 3 Jesse Littlejohn	AZ Chandler Papas
H1 3 Kimberly Wright	CA Bob Steven Bendetson	P1 3 Ryan Lucas	AZ Chandler Papas
H1 4 Nicholas Angle	VA William G. Vaughn	P1 3 Matthew Mallon	AZ Chandler Papas
H1 4 Jacob Haynes	NC Billy B. Vaughn	P1 3 Torrey Nommesen	CA Emily Wallace
H1 4 Madison Head	NC Nic Baack	P1 3 Jacques Poirier	AZ Chandler Papas
H1 4 Craig Head	NC Nic Baack	P1 3 Andrea Rogers	CO Douglas Brown
H1 4 Atticus Head	NC Nic Baack	P1 3 Sarron Simpson	NM Charles (Chuck) Woods
H1 4 Aleksandr Karpenko	NC Billy B. Vaughn	P1 4 Jordan Bruce	MO Richard McDermott
H1 4 David Kitterman	VA William G. Vaughn	P1 4 Silas Sutterby	VA Steve A. Wendt
H1 4 Ernest Knight	NC William G. Vaughn	P1 4 DEREK WOLF	VA Steve A. Wendt
H1 4 Paras Mainkar	VA William G. Vaughn	P1 5 Chris Borden	NH John E. Dunn
H1 4 Benjamin Nash	NC Nic Baack	P1 5 Reto Frei	WI Mariyan Radev Ivanov
H1 4 Nano Ogura	VA Steve A. Wendt	P1 5 Krystal Kim	MA Christopher Grantham
H1 4 Kyle Tarro	VA Dalton Burkhalter	P1 5 Jacob Weier	WI Mariyan Radev Ivanov
H1 4 Braden Yundak-Moran	NC William G. Vaughn	P1 5 Michael White	NY Jordan Neidinger
H1 5 Alexander Austin	NJ William G. Vaughn	P2 1 Griffin Adams	WA Marc Chirico
H1 5 Calvin Cady	NY Rick Brown	P2 1 Maggie Anthony	WA Matt Henzi
H1 5 Oliver Denton	PA William G. Vaughn	P2 1 Scott Atkins	WA Lawrence Wallman
H1 5 Noah Ephriam Freedman	MD William G. Vaughn	P2 1 Daniel Barton	AK Jonathan Jefferies
H1 5 Stefan Lucas	NY Rick Brown	P2 1 Alexander Bayer	AK Grayson Brown
H2 1 Trace Gentis	AK William C. Dydo	P2 1 Keaton Blair	HI Scott Gee
H2 1 Paul Guerra	OR James W. Tibbs	P2 1 Ben Buettner	WA Rob Sporror
H2 1 Jade Stevens	ID Ian Brubaker	P2 1 Cody Clark	HI Paul Gurrieri
H2 2 Kenneth Mattison	UT Theodore Hurley	P2 1 Ian Curtis	OR Kelly A. Kellar
H2 3 Matthew Barlow	CA Andrew T. Beem	P2 1 Toshia Cypher	AK Kelly A. Kellar
H2 3 Travis Brown	CA Andrew T. Beem	P2 1 Clay Davis	OR Jonathan Jefferies
H2 3 Weiming Hu	CA John Heiney	P2 1 Taylor Davis	WA Rob Sporror
H2 3 Max Mansouri	CA Josh Patrick Laufer	P2 1 Olivier Deiss	WA Marc Chirico
H2 4 Heather Erickson-Wallace	GA James E. Tindle	P2 1 Joseph Delaney	HI Jonathan Jefferies
H2 4 Wilbur Gilbert	FL James E. Tindle	P2 1 John Duncan	MT Andy Macrae
H2 4 Michael Hanrahan	TX Tiki Mashy	P2 1 Trevor Elsbree	OR Kelly A. Kellar
H2 4 Carter Henne	FL Malcolm A. Jones	P2 1 Luke Fanning	AK Paul Gurrieri
H2 4 Travis Voisard	FL Malcolm A. Jones	P2 1 Kevin Forster	AK Christopher Grantham
H2 5 William Pourcho	MI William C. Dydo	P2 1 Samuel Forsyth	OR Chris W. Santacroce
H3 1 Brian Svik	WA Eric Ollikainen	P2 1 David Goodnack	WY Patrick Johnson
H3 2 Simon Cacy	CA Andrew T. Beem	P2 1 Luca Gorman	OR Kelly A. Kellar
H3 2 Clemence Lepold	CA Masayo Miyachi	P2 1 Dalton Green	WA Patrick Kelly
H3 2 Reavis Sutphin-Gray	CA William C. Dydo	P2 1 Danis Gristiuc	WA Kelly A. Kellar
H3 2 Cherian Thomas	CA Patrick J. Denevan	P2 1 Shellie Habel	HI Christopher Grantham
H3 3 Matthew Corley	CO Mark A. Windsheimer	P2 1 Randi Harman	WA Kelly A. Kellar
H3 3 Devin Frank	CO Dan DeWeese	P2 1 Sean Hartman	WA Christopher Grantham
H3 3 Derek Simpson	CA Dan DeWeese	P2 1 Shane Hayes	WA Chris W. Santacroce
H3 5 Mark Donahoe	NY Rick Brown	P2 1 Brian Healy	AK Nathan Alex Taylor
H3 5 Daniel Johnston	IL Daniel Lange	P2 1 Danny Hodges	WA Kelly A. Kellar
H3 5 Paul Olson	WI Li Omara	P2 1 Robert Howell	WA Stephen J. Mayer
H3 5 Loren White	SK Malcolm A. Jones	P2 1 Jonah Jensen-Young	WA Denise Reed
H4 1 Luis Ramos	WA Rick Lai	P2 1 Diana Johnson	WA Chad Uchino
H4 3 Edwin Ayala	CO Mark A. Windsheimer	P2 1 Bryce Johnson	WA Chad Uchino
H4 3 Peter Song	CA John Heiney	P2 1 Blake Johnson	OR Jonathan Jefferies
H4 3 David Wayne	CO Kevin Berry	P2 1 Damon Jordan	WA Maren Ludwig
H4 4 Read Bixby	TX Tiki Mashy	P2 1 Michael Kiebach	HI Kincaid Kawanakanakoa
H4 4 Javier Figueiras	FL James E. Tindle	P2 1 Tony Kim	WA Christopher Grantham
H4 4 Alejandro Riera	TX Eric Williams	P2 1 Oleg Kuybeda	OR Maren Ludwig
H4 5 John M. Fritsche	WI William C. Dydo	P2 1 BRANDON LAMB	WA Matt Cone
H4 5 Randall J. Schultz	MI Greg Chastain	P2 1 Doug Layman	OR Cynthia Currie
P1 1 Alina Ernst	WA Heather Amaryllis	P2 1 Michael Lee	WA Kelly A. Kellar
P1 1 Fellipe Fernandes Alves	OR Heather Amaryllis	P2 1 Marc Leglise	OR Randolph Ruffin
P1 1 Bailey Hernandez	OR Kevin R. Lee	P2 1 Kyle Lemoire	WA Marc Chirico
P1 1 Brennan Hosley	OR Todd Joseph Weigand	P2 1 Clinton Lindsey	OR Kelly A. Kellar
P1 1 Greg Price	OR Kelly A. Kellar	P2 1 Carl Lofgren	WA Denise Reed
P1 1 Clark Shimeall	OR Todd Joseph Weigand	P2 1 Darren Macpherson	WA Robert Black
P1 1 Jimmy Vaughn	OR Maren Ludwig	P2 1 Amy Malouf	AK Harry Sandoval
P1 2 Brady Aiken	UT Patrick Johnson	P2 1 Samantha Menendez	WA Marc Chirico
P1 2 Tobin Fricke	CA Wallace K. Anderson	P2 1 Jeffrey Milhorn	HI Kincaid Kawanakanakoa
P1 2 Shaun Jordan	UT Clara Kamahale	P2 1 Bryan Miner	HI Paul Gurrieri
P1 2 Jazzie Paskett	UT Chris W. Santacroce	P2 1 Kara Neils	OR Stephen J. Mayer
P1 2 Kristen Rosser	UT Ken W. Hudonjorgensen	P2 1 Carol Nishikawa	WA Denise Reed
P1 2 Unmil Tambe	CA Jeffrey J. Greenbaum	P2 1 Conner Petersen	WA E. Scott Edwards



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RTG	RGN	NAME	STATE	RATING OFFICIAL
P2	1	Adrian Peterson	AK	Chris W. Santacroce
P2	1	Erin Pollinger	OR	Zion Susanno-Loddby
P2	1	Niccolo Porcella	HI	Paul Gurrieri
P2	1	Marc Redman	OR	Randolph Ruffin
P2	1	David Regula	WA	Maren Ludwig
P2	1	Anton Richards	WA	Matt Cone
P2	1	BENJAMIN RIORDAN	OR	Randolph Ruffin
P2	1	Aidan Romano	HI	Paul Gurrieri
P2	1	Brandy Romano	HI	Paul Gurrieri
P2	1	Keoni Romano	HI	Paul Gurrieri
P2	1	Joseph Ruhnke	NE	Marc Noel Radloff
P2	1	Paul Rymarz	WA	Matt Henzi
P2	1	Adam Sanders	WA	Matt Cone
P2	1	Matt Schilling	WA	Patrick Kelly
P2	1	David Revel Sheets	OR	Kelly A. Kellar
P2	1	Thomas Shelstad	OR	Zion Susanno-Loddby
P2	1	Hamid Shukur	OR	Kelly A. Kellar
P2	1	William Smith	MT	Cynthia Currie
P2	1	Bon Stewart	OR	Samuel Crocker
P2	1	Tom Stoa	MN	Kevin R. Lee
P2	1	Amy Swan	OR	Denise Reed
P2	1	Christopher Swan	OR	Denise Reed
P2	1	Ian Vaughn	WA	Kelly A. Kellar
P2	1	Gaoying Vigoa	OR	Kelly A. Kellar
P2	1	Lauren Webber	WA	Denise Reed
P2	1	Galen Weld	WA	Patrick Kelly
P2	1	Adam Weld	WA	Stephen J. Mayer
P2	1	Christopher Wiley	OR	Randolph Ruffin
P2	2	Scott Aldinger	CA	Robert Black
P2	2	Stella Beauchamp	CA	Nate Scott
P2	2	Jeremy Bernstein	CA	Robert Black
P2	2	Alexander Bowen	UT	Jonathan Jefferies
P2	2	Jesse Byler	CA	Robert Black
P2	2	Johnny Chen	CA	Jesse L. Meyer
P2	2	Jean-Francois Clavreul	CA	Robert Black
P2	2	Thorin Day	CA	Rob Sporrer
P2	2	Shannon DeJong	CA	Robert Black
P2	2	Grant Dobson	CA	Jesse L. Meyer
P2	2	John B. Dougherty	CA	Robert Black
P2	2	Brenden Doyle	CA	Chris W. Santacroce
P2	2	Jean-Jacques Dunyach	CA	Jesse L. Meyer
P2	2	Eugene Thomas Edmonds	CA	Jesse L. Meyer
P2	2	Heidi Esh	NV	Patrick Kelly
P2	2	Kiely Faroe	CA	Jesse L. Meyer
P2	2	Evan Felt	UT	Paul Gurrieri
P2	2	David Fowler	CA	Robert Black
P2	2	Braxton Francis	UT	Nathan Alex Taylor
P2	2	Scott Garman	CA	Robert Black
P2	2	Michael Gasaway	UT	Stephen J. Mayer
P2	2	Stuart Gleason	UT	Dale Covington
P2	2	John Grimisch	CA	Robert Black
P2	2	Mitchell Harris	UT	Jonathan Jefferies
P2	2	Kelsey Hausman	UT	Chris W. Santacroce
P2	2	Nick Hawthorne	CA	Robert Black
P2	2	Landin Hayter	UT	Patrick Johnson
P2	2	Tugrul Ilter	CA	Jason Shapiro
P2	2	Bryant Irawan	CA	Robert Black
P2	2	Gregory Jensen	CA	Jason Shapiro
P2	2	Nathan Jones	CA	David Blacklock
P2	2	Elena Jones	CA	David Blacklock
P2	2	Jonathan Karpfen	CA	William Purden-Jr
P2	2	Kolton Kellogg	UT	Nathan Alex Taylor
P2	2	Brian Kellogg	CA	Jesse L. Meyer
P2	2	Randall Kerr	CA	Cynthia Currie
P2	2	Deanna Kerr	CA	Cynthia Currie
P2	2	Spencer Kipfmuller	UT	Jonathan Jefferies
P2	2	Johannes Sebastien Koopmans	CA	Robert Black
P2	2	Kyle Krueger	UT	Cynthia Currie
P2	2	Dany Labrecque	CA	Robert Black
P2	2	Owen Ta-yuan Lee	CA	Rob Sporrer
P2	2	Sean Liu	CA	Jesse L. Meyer
P2	2	Lydia Lloyd	CA	Robert Black

RTG	RGN	NAME	STATE	RATING OFFICIAL
P2	2	Morgan Lynch	UT	Stephen J. Mayer
P2	2	Rachel MacBride	CA	Robert Black
P2	2	Hrishikesh Mehendale	CA	Jeffrey J. Greenbaum
P2	2	Daniel Morse	CA	Jesse L. Meyer
P2	2	John Murphy	UT	Nathan Alex Taylor
P2	2	Benjamin Nagengast	UT	Stephen J. Mayer
P2	2	John O'Byrne	CA	Jesse L. Meyer
P2	2	Mark Overdevest	UT	Harry Sandoval
P2	2	Hari Sudhan Parameswaran	CA	Wallace K. Anderson
P2	2	Eric Pitsch	CA	Rob Sporrer
P2	2	Michael Raye	NV	Chad Uchino
P2	2	Dwane Richardson	UT	Jonathan Jefferies
P2	2	Alexander Rosenberg	CA	Cynthia Currie
P2	2	Kristoffer Schmarr	CA	Johannes Rath
P2	2	Wes Scribner	CA	Kevin R. Lee
P2	2	Alexey Shvets	CA	Jesse L. Meyer
P2	2	Abhinai Srivastava	CA	Jesse L. Meyer
P2	2	Trevor Steele	UT	Chris W. Santacroce
P2	2	Katherine Sydnor	UT	Patrick Johnson
P2	2	Zachary Tyndall	CA	Robert Black
P2	2	Aniruth Udomlak	CA	Jesse L. Meyer
P2	2	Darren Vega	NV	Patrick Kelly
P2	2	Justin Warren	CA	Robert Black
P2	2	Loic WEI YU NENG	CA	Jesse L. Meyer
P2	2	Bradley Wu	CA	Jesse L. Meyer
P2	2	Julia Wythe	UT	Patrick Johnson
P2	3	Hunter Amsbaugh	CO	Harry Sandoval
P2	3	Forrest Aylsworth	CA	William Purden-Jr
P2	3	Yangyang Bai	CA	Jeremy Bishop
P2	3	Alber Xavier BARNEDA ZAHONERO	CA	Christopher Grantham
P2	3	Kevin Barry	CA	William Purden-Jr
P2	3	Daniel Bayon	CA	William Purden-Jr
P2	3	Logan Bonn	AZ	Stacy Whitmore
P2	3	Diana Boyer	CO	Misha Banks
P2	3	Mark Byron	CO	Christopher Grantham
P2	3	William Mark Caughell	CA	William Purden-Jr
P2	3	John Congdon	CA	William Purden-Jr
P2	3	Sarah Crosier	CO	Misha Banks
P2	3	Chris Dodd	AZ	Gary Begley
P2	3	William Doolittle	CA	Jeremy Bishop
P2	3	Elizabeth Flournoy	CO	Stephen J. Mayer
P2	3	Jeremiah Frazier	CO	Gregory Kelley
P2	3	Jonathon Friedl	CO	Misha Banks
P2	3	Stephen Glenwalker	CA	William Purden-Jr
P2	3	Russell Goff	CA	Jordan Neidinger
P2	3	Jason Gollan	CO	Rob Sporrer
P2	3	Georden Grabuskie	CA	Stephen Nowak
P2	3	Michael Greninger	CA	William Purden-Jr
P2	3	Julius Hayden	AZ	Gary Begley
P2	3	James Dean Heiman	CO	Patrick Johnson
P2	3	Erick Hernandez	CO	Ryan J. Taylor
P2	3	Johnathan Himka	CO	Misha Banks
P2	3	Simon Hoblik	CA	Jeremy Bishop
P2	3	Casey Horgan	CA	Stacy Whitmore
P2	3	Jason Hughes	CA	Stephen Nowak
P2	3	Benjamin Huntley	CA	Emily Wallace
P2	3	Grady James	CO	Misha Banks
P2	3	Ian Jones	CA	Robert Black
P2	3	Grayson Kemp	CA	Rob Sporrer
P2	3	Brian Kurowski	NM	Marcello M. DeBarros
P2	3	Conrad Kutsch	CA	Rob Sporrer
P2	3	Guillaume Lavigne	CA	Jeff Katz
P2	3	Ronald Lee	CA	Christopher Grantham
P2	3	Richard Lesan	CO	Ryan J. Taylor
P2	3	Alyse Little	CO	Misha Banks
P2	3	Eli Mansour	CA	Emily Wallace
P2	3	William McCarthy	NM	Kelly Myrkle
P2	3	Justin McDuffie	CO	Chris W. Santacroce
P2	3	Joshua McQuay	CA	Cynthia Currie
P2	3	Jonas Neichin	CA	William Purden-Jr
P2	3	Christian Nunnally	CA	Emily Wallace
P2	3	Andrew Patrick Palmaz	CO	Alejandro Palmaz

REGION 1**NORTHWEST**

Alaska
Hawaii
Iowa
Idaho
Minnesota
Montana
North Dakota
Nebraska
Oregon
South Dakota
Washington
Wyoming

REGION 2**CENTRAL WEST**

Northern California
Nevada
Utah

Southern California
Arizona
Colorado
New Mexico

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Alabama
Arkansas
District of Columbia
Florida
Georgia
Kansas
Kentucky
Louisiana
Missouri
Mississippi
North Carolina
Oklahoma
South Carolina
Tennessee
Texas
West Virginia
Virginia

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Delaware
Illinois
Indiana
Massachusetts
Maryland
Maine
Michigan
New Hampshire
New York
New Jersey
Ohio
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Vermont
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Ratings Issued March, April, May & June 2022 (continued)

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RTG	RGN	NAME	STATE	RATING OFFICIAL	RTG	RGN	NAME	STATE	RATING OFFICIAL
P2	3	Mike Perrin	CA	Rob Sporrer	P2	5	Kevin Chirico	MI	Kevin R. Hintze
P2	3	Ala Raddaoui	CA	William Purden-Jr	P2	5	Aaron Connell	IN	Kelly A. Kellar
P2	3	Kate Radley	CA	Jeff Shapiro	P2	5	Chris D'Urso	NJ	Nathan Alex Taylor
P2	3	Cody Ragone	CO	Harry Sandoval	P2	5	Ryan Del Grosso	MA	Jeff Katz
P2	3	Adam Rampley	CA	William Purden-Jr	P2	5	Nathan Eagle	MA	Brent McCoy
P2	3	Scott Rights	CA	Christopher Grantham	P2	5	Alexander Escarría	NY	Esau Diaz Guerrero
P2	3	Eunika Rogers	CO	Grayson Brown	P2	5	Maxwell Ettelson	NH	William Purden-Jr
P2	3	Christian Rose	CA	Rob Sporrer	P2	5	Clinton Fought	PA	Thomas McCormick
P2	3	Benjamin Jacob Rose	CA	Andy Macrae	P2	5	John M. Fritsche	WI	Joseph B. Seitz
P2	3	William Rose	CA	Jordan Neidinger	P2	5	Don George		Christopher Grantham
P2	3	Orion Ross	CA	Christopher Grantham	P2	5	Joseph Giglio	PA	Kelly Myrkle
P2	3	Christopher Smedley	CO	Stephen J. Mayer	P2	5	Miranda Graham	WI	Rob Sporrer
P2	3	Mason Smith	CO	Misha Banks	P2	5	Thomas Hafner	NY	Rob Sporrer
P2	3	ANDREW SMYTH	CA	Rob Sporrer	P2	5	Lucas Hanson	NY	Gary Begley
P2	3	Erik Stanton	CA	Paul Gurrieri	P2	5	Jeff Harris	NY	Thomas McCormick
P2	3	Josiah Stephens	CO	Kelly Myrkle	P2	5	Brian Jones	NY	Chris W. Santacroce
P2	3	Daniel Carl Studer	CA	Jordan Neidinger	P2	5	Spencer Kane	MI	Harry Sandoval
P2	3	JP Summers	CO	Misha Banks	P2	5	Jonathan Kim	MA	Salvatore Scaringe
P2	3	Christopher Swan	CO	Nathan Alex Taylor	P2	5	Steven Kragt	NH	Rob Sporrer
P2	3	Deanna Urnezis	CA	William Purden-Jr	P2	5	Frederik Linnemann	NY	Joachim P. Roesler
P2	3	Abby Vandenberg	CA	Jeremy Bishop	P2	5	Caleb Maccarone	OH	Rob Sporrer
P2	3	Leigh Waggoner	CO	Rob Sporrer	P2	5	Jonathan Medwig	ON	Rob Sporrer
P2	3	Noah Wilke	CA	Rob Sporrer	P2	5	Juan Mejia	IL	Jeff Katz
P2	3	Hunter Williams	AZ	Gary Begley	P2	5	Ryan Mello	MA	Christopher Grantham
P2	3	Paul Yunker	AZ	Chandler Papas	P2	5	Kevin Misamore	OH	William Purden-Jr
P2	3	Jack Ziemer	CO	Misha Banks	P2	5	Gwen Ou	NY	Christopher Grantham
P2	4	Bruce Arrington	NC	Grayson Brown	P2	5	Roxie Paine	ME	Nathan Alex Taylor
P2	4	Mark Brewer	MO	Charles (Chuck) Woods	P2	5	Kristopher D. Reynolds	MA	Calef Letorney
P2	4	Ross Bright	TX	Christopher Grantham	P2	5	Patrick Saylor	VT	Misha Banks
P2	4	James Brownell	AR	Britton Shaw	P2	5	Robert Skinner	NY	Stephen J. Mayer
P2	4	Brandon Brundridge	KS	Marc Noel Radloff	P2	5	Austin Sloan	MD	Chris W. Santacroce
P2	4	Zachary Carpino	DC	Zion Susanno-Lodddy	P2	5	Andrei Stuliy	NJ	Thomas McCormick
P2	4	John Chamales	TX	T Lee Kortsch	P2	5	Daniel Tanis	NJ	Philippe Renaudin
P2	4	Ryan Collins	FL	Cynthia Currie	P2	5	Fernando Thies Barbachano	CT	David W. Prentice
P2	4	John Conger	TX	Philippe Renaudin	P2	5	Christopher M. Toomey	NY	Nathan Alex Taylor
P2	4	Chris Dennis	MO	Britton Shaw	P3	1	Josh Anderson	WY	Jonathan Jefferies
P2	4	Matthew Doyle	AR	Britton Shaw	P3	1	Kristin Bindl	MT	Andy Macrae
P2	4	Martha Echols	AR	Britton Shaw	P3	1	George Bristow	ID	Randall Shane
P2	4	Jochen Fischer	NC	Joe D. Hutton	P3	1	Evan Burgess	MT	Andy Macrae
P2	4	Devin Fraleigh	NC	Nathan Alex Taylor	P3	1	Skylar Clark	AK	Rob Sporrer
P2	4	Brandon Goforth	OK	Britton Shaw	P3	1	Adrienne DeCotes	OR	Maren Ludwig
P2	4	Malcolm Goodman	FL	Zion Susanno-Lodddy	P3	1	Danny Filice	WY	Fred Morris
P2	4	Eric Hall	OK	Britton Shaw	P3	1	Steven Gilson	MT	Andy Macrae
P2	4	Charles Hamrick	OK	Britton Shaw	P3	1	Scott Graves	IA	Jordan Neidinger
P2	4	Zak Heald	AR	Britton Shaw	P3	1	Vincent Griffith	OR	Kelly A. Kellar
P2	4	Nandor Kalli	GA	Alejandro Albornoz	P3	1	Birch Hansen	MN	Steve Sirrine
P2	4	Travis Lamson	VA	Jonathan Jefferies	P3	1	Jeffery Hart	WA	Roger Brock
P2	4	William LaRue	AR	Britton Shaw	P3	1	Lorina Haxhaj	WA	Roger Brock
P2	4	Felipe Londono Ceballos	OK	Britton Shaw	P3	1	Jonathan Henckel	MN	Steve Sirrine
P2	4	Daniel Martin	TN	Zion Susanno-Lodddy	P3	1	Thomas Hoole	WA	Marc Chirico
P2	4	Dan McElroy	KS	Marc Noel Radloff	P3	1	Jesse T. Hunter	AK	Joshua Phillips
P2	4	Patrick McIntosh	OK	Britton Shaw	P3	1	Dane A. Jacobson	OR	Rob Sporrer
P2	4	Stephen Messinger	VA	Jonathan Jefferies	P3	1	Roberto Jones	ID	Randall Shane
P2	4	Daniel Monda	GA	Jonathan Jefferies	P3	1	Kim Keller	MT	Rob Sporrer
P2	4	Evan Robinson	FL	Harry Sandoval	P3	1	Daniel Koster	OR	Mert Kacmaz
P2	4	Cory Schultzen	MO	Britton Shaw	P3	1	Julia Lieberman	WA	Marc Chirico
P2	4	Ryan Shawhan	TN	Grayson Brown	P3	1	Quinn Murphy	WA	Emily Wallace
P2	4	Bryan Shelton	MO	Britton Shaw	P3	1	Marcus Nelson	WA	Marc Chirico
P2	4	Jackie Stanfill	OK	Britton Shaw	P3	1	Dwayne Parton	MT	Jennifer Bedell
P2	4	John Stinnett	VA	Nathan Alex Taylor	P3	1	Derrick Peppers	OR	Randolph Ruffin
P2	4	Kendra Swetland	FL	Harry Sandoval	P3	1	Jeffrey Rogers	OR	Marc Chirico
P2	4	Scott Tucker	OK	Britton Shaw	P3	1	Alicia Sam	AK	Jake Schlapfer
P2	4	Cathy Van Dyke	AR	Britton Shaw	P3	1	David Schiavone	OR	Maren Ludwig
P2	4	Brandon Weaver	VA	George R. Huffman	P3	1	Steve Schufreider	WA	William Purden-Jr
P2	4	Chris White	GA	Grayson Brown	P3	1	Jordan Sherman	WA	Kelly A. Kellar
P2	4	Daniel Willis	OK	Britton Shaw	P3	1	Nick Stahler	MT	Jennifer Bedell
P2	4	Bob Wood	MO	Britton Shaw	P3	1	Nathaniel Wheeler	WA	Steven R. Wilson
P2	4	Troy Wright	VA	Joe D. Hutton	P3	1	Joshua Wiseman	WA	Marc Chirico
P2	5	Sassan Aria	ON	Hadi Golian	P3	2	Rachel Beaird	UT	Dale Covington
P2	5	Robert Barlow	MA	Rob Sporrer	P3	2	Christian Black	NV	John E. Cady III
P2	5	Robert Boothe	ME	Rob Sporrer	P3	2	Landon Boufford	UT	Patrick Johnson
P2	5	Yash Chavan	NJ	Thomas McCormick	P3	2	David Christian Brown	UT	Jonathan Jefferies

RTG	RGN	NAME	STATE	RATING OFFICIAL
P3	2	Asher Brown	UT	Ben White
P3	2	Brianna Clark	UT	Jonathan Jefferies
P3	2	Brian Cooper	CA	Robert Black
P3	2	Mark Deem	CA	Jesse L. Meyer
P3	2	Brian Duffy	CA	John E. Cady III
P3	2	Guilhem Espuche	CA	Robert Black
P3	2	Jochen Frey	CA	Christopher Garcia
P3	2	Andrea Greyling	UT	Jeff Shapiro
P3	2	Allen Justh	CA	Jeffrey J. Greenbaum
P3	2	Julian LeMoine	CA	Mike Fifield
P3	2	Lionel Marks	CA	Wallace K. Anderson
P3	2	Anthony Massie	CA	Robert Black
P3	2	Philip Massoud	CA	Mitchell B. Neary
P3	2	Eric Montandon	UT	Stephen J. Mayer
P3	2	Ajit Narayanan	CA	Jesse L. Meyer
P3	2	Thomas Neff	CA	Robert Black
P3	2	Sam Neustadt	CA	Robert Black
P3	2	Michelangelo Nicholas	UT	Patrick Johnson
P3	2	Jaron Piacitelli	UT	Chris W. Santacroce
P3	2	Chad Pranger	UT	Chris W. Santacroce
P3	2	Jacob M. Rendina	CA	Mike Fifield
P3	2	Peter Scheidl	CA	Robert Black
P3	2	Sabrina Snow	UT	Chris W. Santacroce
P3	2	John Boudin Stoa	CA	Kevin R. Lee
P3	2	William Wagner	CA	Robert Black
P3	2	Nicholas Weighall	CA	Christopher Garcia
P3	3	James Acres	CA	Christopher Garcia
P3	3	Diane Anderson	CA	William Purden-Jr
P3	3	Jimmy Baghestani	CA	Marcello M. DeBarros
P3	3	Sean M. Beinert	CO	Chris W. Santacroce
P3	3	Doron Ben-Yehezkel	CA	Jordan Neidinger
P3	3	Felix Castillo	CA	Jeremy Bishop
P3	3	Geoff Cheeseman	CO	Mauricio Fleitas
P3	3	Rafael Cosman	CA	Jeremy Bishop
P3	3	Luis Costantini	CA	William Purden-Jr
P3	3	R Wolfgang Daniel	CA	Christopher Garcia
P3	3	Elizabeth Dickinson	CO	Dustin Miller
P3	3	Kyle Douglas	CA	Emily Wallace
P3	3	Josiah David Dryer	AZ	Chandler Papas
P3	3	David Echeverri	CA	Cynthia Currie
P3	3	Samuel Eck	CO	Misha Banks
P3	3	Sean Eric Englund	CO	Jeremy Bishop
P3	3	Casey Evanoff	CO	Misha Banks
P3	3	Wesley Fowler	CO	Dustin Miller
P3	3	Nathan Franklin	CA	Jeremy Bishop
P3	3	Matt Gardner	CA	Jeremy Bishop
P3	3	Chad Halstead	CA	Rob Sporrer
P3	3	Matthew Hayden	CA	Max Leonard Marien
P3	3	John Jaugilas	CO	Stephen J. Mayer
P3	3	CJ Jessett	CA	Christopher Garcia
P3	3	David Kissane	CO	Don Hillmuth
P3	3	Aaron Levy	CA	Jeremy Bishop
P3	3	Martin Madar	CA	Jordan Neidinger
P3	3	Mike Matlock	CA	Cynthia Currie
P3	3	Brendan McLoughlin	CO	Misha Banks
P3	3	Nellie Milfeld	CO	Christopher Garcia
P3	3	Joshua Moore	CA	Christopher Garcia
P3	3	Quint Morrison	CA	Marcello M. DeBarros
P3	3	Rebeca Perren	CA	Jc Perren
P3	3	Bruno Perthus	NM	T Lee Kortsch
P3	3	Naasha pithawalla	CA	Rob Sporrer
P3	3	Nathan Potgieter	CA	Hadi Golian
P3	3	Edward Reiter	CA	Emily Wallace
P3	3	Casey Rhea	CO	T Lee Kortsch
P3	3	Tina Salehi	CA	Jeremy Bishop
P3	3	Darrin Schechinger	CA	Emily Wallace
P3	3	John Schultz	CO	Jonathan Jefferies
P3	3	Riebeek Van Niekerk	CA	Rob Sporrer
P3	3	Brendan Wills	CO	Gregory Kelley
P3	3	Michael Zhou	CA	William Purden-Jr
P3	4	Jason Arnold	AR	Hadley Robinson
P3	4	Michael Andrew Bene	KS	Marc Noel Radloff

RTG	RGN	NAME	STATE	RATING OFFICIAL
P3	4	Dennis Blackstad	OK	Hadley Robinson
P3	4	Maria Blandin	LA	Chris W. Santacroce
P3	4	Timothy Bova	VA	Christopher J. Pyse
P3	4	Kelsey Burke	SC	Brian Clark
P3	4	Paul Condron	AR	Hadley Robinson
P3	4	Shannon Cook	GA	Thomas McCormick
P3	4	David Farmer	FL	David W. Prentice
P3	4	Mike Farney	OK	Hadley Robinson
P3	4	Ryan Glowka	TX	Chris W. Santacroce
P3	4	Chad Gobber	KS	Marc Noel Radloff
P3	4	Corey Graves	LA	Stephen J. Mayer
P3	4	Karen Hualme	TX	Kevin McGinley
P3	4	Thomas Huber	FL	Jonathan Jefferies
P3	4	Mark Huneycutt	NC	Shane Parreco
P3	4	David G. Jones	KS	Marc Noel Radloff
P3	4	Kelton Kenney	FL	David W. Prentice
P3	4	Aaron Kosht	FL	John Atwood
P3	4	Joseph Levin	OK	Hadley Robinson
P3	4	Carlos Longoria	TX	Alejandro Palmaz
P3	4	LINA MARIA MARTINEZ SUAREZ	FL	Davidson Da-Silva
P3	4	Cheryl A. Morgan	NC	Emily Wallace
P3	4	Kenneth U. Mowll	FL	Steve Sirrine
P3	4	Ryan Stoa	LA	Kevin R. Lee
P3	4	Stuart Wilson	OK	Hadley Robinson
P3	5	Reynaldo Aquino	NY	Joachim P. Roesler
P3	5	Jonatas Da Silva Cardoso	MA	David W. Prentice
P3	5	Tina De Santo	NY	Max Leonard Marien
P3	5	Matthew Etter	IN	Marc Chirico
P3	5	Doug Fairfield	AA	Calef Letorney
P3	5	Vineet Joseph	NY	Emily Wallace
P3	5	Andrew Kerber	PA	Thomas McCormick
P3	5	Caleb Phillips	MI	Christopher Grantham
P3	5	Krzysztof Rus	WI	Christopher Garcia
P3	5	Benjamin Tabone	NH	Calef Letorney
P3	5	Jacob Talley	NH	Harry Sandoval
P4	1	Stephen Arwine	MT	Jennifer Bedell
P4	1	Anne B. Bradley	HI	Paul Gurrieri
P4	1	Justin Brown	HI	Paul Gurrieri
P4	1	Michael Coppock	WA	Brian Kerr
P4	1	Garrett Daybell	ID	Randall Shane
P4	1	Ari DeLashmutt	OR	Misha Banks
P4	1	Gus Dupuis	WA	Marc Chirico
P4	1	Brock Fehler	WA	Marc Chirico
P4	1	Robert Fitzgerald	WA	Rob Sporrer
P4	1	David Gridley	OR	Maren Ludwig
P4	1	Julian Harmon	WA	Kelly A. Kellar
P4	1	Patrick Hooper	MT	Jennifer Bedell
P4	1	Brice Johnson	WA	Marc Chirico
P4	1	Maxim Kazitov	WA	Roger Brock
P4	1	Kaviyaan Khalil	OR	Brad Hill
P4	1	Luc Lachapelle	WA	Matt Senior
P4	1	Nathaniel Mote	WA	Matt Senior
P4	1	Nicholas Pagel	WA	Marc Chirico
P4	1	Richard Romano	HI	Paul Gurrieri
P4	1	David Thulin	WY	Brian Howell
P4	2	Gabriel Beas Diaz	CA	Juan A. Laos
P4	2	Nicola Candussi	CA	David Oddy
P4	2	Loren Cox	UT	Blake Pelton
P4	2	Omar Del Valle	CA	Jason Shapiro
P4	2	Paul Feeley	CA	Jason Shapiro
P4	2	George Fraser	UT	Jonathan Jefferies
P4	2	Lb Golemon	UT	Blake Pelton
P4	2	Yong Pil Kim	CA	Jason Shapiro
P4	2	Brian Lloyd	CA	Robert Black
P4	2	Noah Rasheta	UT	Nathan Alex Taylor
P4	2	Andrew Ross	UT	Stephen J. Mayer
P4	3	Francisco J. Acosta	CA	Rob Sporrer
P4	3	Tanner Biglione	CA	Max Leonard Marien
P4	3	Phill Bloom	CA	Rob Sporrer
P4	3	Christopher Budicin	CA	Mitchell B. Neary
P4	3	Dennis Canty	CA	Blake Pelton
P4	3	George Du	CA	Stacy Whitmore

Ratings Issued March, April, May & June 2022 (continued)

RTG	RGN	NAME	STATE	RATING OFFICIAL	RTG	RGN	NAME	STATE	RATING OFFICIAL
P4	3	Jorge A. Escobar	CA	Jaro Krupa	S2	1	Sebastian Rivas	HI	Chair Safety and Training Committee
P4	3	Austin Fisher	CO	Misha Banks	S2	1	Johnathan Ross	AK	Chair Safety and Training Committee
P4	3	Ryan Friedman	CO	Dustin Miller	S2	1	Ben Smith	MT	Chair Safety and Training Committee
P4	3	Deryk Goerke	CA	Juan A. Laos	S2	1	Skye Stafford	WA	Chair Safety and Training Committee
P4	3	Jason Gore	CO	Johannes Rath	S2	1	James Stevens	MT	Chair Safety and Training Committee
P4	3	William Graf	CO	Jeremy Bishop	S2	1	Aaron Thorp	MT	Chair Safety and Training Committee
P4	3	Kevin Jones	CO	Johannes Rath	S2	1	John Vaughan	AK	Chair Safety and Training Committee
P4	3	Ana Krulec	CA	Jerome Daoust	S2	1	Thai Verzone	AK	Chair Safety and Training Committee
P4	3	Stephanie Linsley	CO	Lindsey Ripa	S2	1	Sam Volk	AK	Chair Safety and Training Committee
P4	3	Fernando Azpeitia Lopez	CA	Max Leonard Marien	S2	1	Seth Warren	MT	Chair Safety and Training Committee
P4	3	Matthew Merina	CA	Jordan Neidinger	S2	1	William Wehrheim	AK	Chair Safety and Training Committee
P4	3	Ladislau Molnar	CA	Jerome Daoust	S2	2	Kelie Bailey	UT	Chair Safety and Training Committee
P4	3	Wouter Myburgh	CA	Charles Beaudoin	S2	2	Gabriel Beninati	UT	Chair Safety and Training Committee
P4	3	Alexandre Nascimento Ramos	CA	Marcello M. DeBarros	S2	2	Adam N. Black	UT	Chair Safety and Training Committee
P4	3	Nik Rasheta	AZ	Nathan Alex Taylor	S2	2	Logan Donovan	UT	Chair Safety and Training Committee
P4	3	Taylor Rice	CO	Dustin Miller	S2	2	Matthew Draheim	UT	Chair Safety and Training Committee
P4	3	Brian Richey	CA	Marcello M. DeBarros	S2	2	Toby Ebens	NV	Chair Safety and Training Committee
P4	3	Dakota Rieb	CA	Christopher Garcia	S2	2	Joshua Ellison	UT	Chair Safety and Training Committee
P4	3	Bill D. Soderquist	CA	Marcello M. DeBarros	S2	2	Chris Gallagher	UT	Chair Safety and Training Committee
P4	3	Joel St John	CA	Jerome Daoust	S2	2	Christopher C. Greci	CA	Chair Safety and Training Committee
P4	3	Bijan Tuysserkani	CO	Dustin Miller	S2	2	Joshua Gutzwiler	UT	Chair Safety and Training Committee
P4	3	Sebastian Uribe	CA	Jaro Krupa	S2	2	Ryan Hayes	UT	Chair Safety and Training Committee
P4	3	Wyatt Weaver	CA	Marcello M. DeBarros	S2	2	Tabor Henderson	CA	Chair Safety and Training Committee
P4	4	Marshall Mosher	GA	Calef Letorney	S2	2	Patrick Joyce	NV	Chair Safety and Training Committee
P4	4	Ethan Weir	TN	Austin Kasserman	S2	2	John Kinsella	CA	Jeff Katz
P4	4	Steve A. Wendt	VA	Paul Voight	S2	2	Jeremy Knight	UT	Chair Safety and Training Committee
P4	5	Rico Chandra	Switzerland	George R. Huffman	S2	2	Brandon Knotts	UT	Chair Safety and Training Committee
P4	5	David L. Dalva III	NY	Marcus V. Santos	S2	2	Mark James LaBarge	UT	Chair Safety and Training Committee
P4	5	David Flannery	NSW	Marcello M. DeBarros	S2	2	Jonathan Lang	UT	Chair Safety and Training Committee
P4	5	Douglas A. Hase	MA	Charles (Chuck) Smith	S2	2	Kris Lunt	UT	Chair Safety and Training Committee
P4	5	Martin Henry	BC	Mike Bomstad	S2	2	Alec Page	UT	Chair Safety and Training Committee
P4	5	Yamel Alicia Tejeda	NJ	Thomas McCormick	S2	2	Christopher B. Parrish	UT	Chair Safety and Training Committee
P4	5	ALBEIRO TORRES	NY	Zion Susanno-Loddby	S2	2	Blake Pelton	UT	Chair Safety and Training Committee
P4	5	Herbert Wootton Jr	PA	Marcus V. Santos	S2	2	Will Prechter	CA	Chair Safety and Training Committee
S2	1	Griffin Adams	WA	Jeff Katz	S2	2	Orion Remaniak	UT	Chair Safety and Training Committee
S2	1	Stephen Arwine	MT	Chair Safety and Training Committee	S2	2	Hope Rineheimer	NV	Chair Safety and Training Committee
S2	1	Dan Betts	ID	Chair Safety and Training Committee	S2	2	Richard Sibley	CA	Chair Safety and Training Committee
S2	1	Teague Block	WA	Chair Safety and Training Committee	S2	2	Andrew Skoog	UT	Chair Safety and Training Committee
S2	1	Casey Campbell	MT	Chair Safety and Training Committee	S2	2	Dominic Spagnoletti	UT	Chair Safety and Training Committee
S2	1	Robert Carey	MT	Chair Safety and Training Committee	S2	2	Adam Symonds	UT	Chair Safety and Training Committee
S2	1	Michael Cook	WA	Chair Safety and Training Committee	S2	2	Brian Tupper	CA	Chair Safety and Training Committee
S2	1	Robin Cushman	WA	Chair Safety and Training Committee	S2	2	Kali Turner	UT	Chair Safety and Training Committee
S2	1	Colin Darrah	WA	Chair Safety and Training Committee	S2	2	Michael Westwood	UT	Chair Safety and Training Committee
S2	1	Steve Davidson	AK	Chair Safety and Training Committee	S2	2	Chris Williams	UT	Chair Safety and Training Committee
S2	1	Zachary Delaney	HI	Chair Safety and Training Committee	S2	3	Drew Ames	CO	Chair Safety and Training Committee
S2	1	John C. Dorrance	WA	Chair Safety and Training Committee	S2	3	Misha Banks	CO	Chair Safety and Training Committee
S2	1	Hillary Dorsey	WA	Chair Safety and Training Committee	S2	3	Jamie Bishop	CA	Chair Safety and Training Committee
S2	1	Brian Duchovnay	OR	Chair Safety and Training Committee	S2	3	Jeffrey Boehler	CA	Chair Safety and Training Committee
S2	1	Peter Forster	WA	Chair Safety and Training Committee	S2	3	Daniel Borrero	CA	Chair Safety and Training Committee
S2	1	Kevin Fowler	HI	Chair Safety and Training Committee	S2	3	Austin Bozeman	CO	Chair Safety and Training Committee
S2	1	Michael M. Fujioka	HI	Chair Safety and Training Committee	S2	3	Glenn Brady	CO	Chair Safety and Training Committee
S2	1	Damien Germano	MT	Chair Safety and Training Committee	S2	3	Bob Brown	CO	Chair Safety and Training Committee
S2	1	Christopher R. Gibisch	MT	Chair Safety and Training Committee	S2	3	Philip Chamberlain	CA	Chair Safety and Training Committee
S2	1	Kelsey Hasterlik	MT	Chair Safety and Training Committee	S2	3	Elizabeth Dengler	CO	Chair Safety and Training Committee
S2	1	Patrick Hooper	MT	Chair Safety and Training Committee	S2	3	John R. Dobbins	AZ	Chair Safety and Training Committee
S2	1	John Irraggi	OR	Chair Safety and Training Committee	S2	3	Petar Dopchev	CO	Chair Safety and Training Committee
S2	1	Andrew Jenkins	MT	Chair Safety and Training Committee	S2	3	Alex Haberich	CO	Chair Safety and Training Committee
S2	1	Joe Edward Kaiser	AK	Chair Safety and Training Committee	S2	3	David Hach	CO	Chair Safety and Training Committee
S2	1	Quentin Kawanananako	HI	Chair Safety and Training Committee	S2	3	Mitchell Hackman	CO	Chair Safety and Training Committee
S2	1	Julia Knowles	WY	Chair Safety and Training Committee	S2	3	Jacqueline Harlow	CO	Chair Safety and Training Committee
S2	1	Matt Lawrence	HI	Chair Safety and Training Committee	S2	3	Jeremy Hayes	CO	Chair Safety and Training Committee
S2	1	Alicia Leggett	WA	Chair Safety and Training Committee	S2	3	Brian Hellenbrand	CA	Chair Safety and Training Committee
S2	1	Tyler Lucas	MT	Chair Safety and Training Committee	S2	3	Marshall Lukas Hill	CO	Douglas Brown
S2	1	Jenna Lyons	MT	Chair Safety and Training Committee	S2	3	Kristopher Holub	CO	Chair Safety and Training Committee
S2	1	Evan Matthers	AK	Chair Safety and Training Committee	S2	3	Keith Hutchinson	AZ	Chair Safety and Training Committee
S2	1	Thomas Merkt	WY	Chair Safety and Training Committee	S2	3	Gregory Kelley	CO	Chair Safety and Training Committee
S2	1	Chris Moody	WY	Chair Safety and Training Committee	S2	3	Guillaume Lavigne	CA	Jeff Katz
S2	1	Sara Newgard	MT	Chair Safety and Training Committee	S2	3	Cody Leibert	CA	Chair Safety and Training Committee
S2	1	Levi Njord	OR	Chair Safety and Training Committee	S2	3	Charles Martin	CO	Chair Safety and Training Committee
S2	1	Marissa Olberding	HI	Chair Safety and Training Committee	S2	3	Dustin O'Hara	CO	Chair Safety and Training Committee
S2	1	Chris Reynolds	AK	Chair Safety and Training Committee	S2	3	Ryder Okumura	CO	Chair Safety and Training Committee
S2	1	Christopher Richardson	HI	Chair Safety and Training Committee	S2	3	Lianne O'Neal	CA	Chair Safety and Training Committee

RTG	RGN	NAME	STATE	RATING OFFICIAL
S2	3	Matthews Pereira	CO	Chair Safety and Training Committee
S2	3	Chris Stromberg	CO	Chair Safety and Training Committee
S2	3	Mitchell Szpila	AZ	Chair Safety and Training Committee
S2	3	Joshua Taylor	CO	Chair Safety and Training Committee
S2	3	Julie Taylor	CO	Chair Safety and Training Committee
S2	3	Austin Thomas	CO	Chair Safety and Training Committee
S2	3	Peter Tschannen	CO	Chair Safety and Training Committee
S2	3	Bradley Tudor	CA	Chair Safety and Training Committee
S2	3	J-Karl Welter	CO	Chair Safety and Training Committee
S2	4	Jeremy Barr	TN	Chair Safety and Training Committee
S2	4	Andrew Barton	NC	Chair Safety and Training Committee
S2	4	John Brouillard	GA	Chair Safety and Training Committee
S2	4	David Burgess	TX	Chair Safety and Training Committee
S2	4	Kyle Daniels	OK	Chair Safety and Training Committee
S2	4	Ian De Mallie	TX	Chair Safety and Training Committee
S2	4	Eduardo E. Delahoz	FL	Chair Safety and Training Committee
S2	4	Lance Ferguson	TX	Chair Safety and Training Committee
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CALENDAR

Submit listings online at ushpa.org/page/calendard. A minimum 3-MONTH LEAD TIME is required on all submissions. Tentative events will not be published. **COVID reminder: Please contact event organizers regarding the status of events and any local COVID requirements.**

SEP 26 - OCT 1 > 2022 RED ROCKS FALL FLY IN > Monroe, UT. Get on the Facebook page for daily updates: Morning meetings 8:30 a.m. Landing Zone 201 East. 800 South. Monroe. Evening Presentations 7:00 PM. Monroe City Park (across from Bullies) Main St. Monroe. Rides to launch will be leaving from the Canyon View LZ. Great presentations every evening: Tuesday Paul Gushlbauer and Tom De Dorlodot; Wednesday Aaron Durogati, Patrick Von Kanel and Gavin McClurg. | Organizer: Stacy Whitmore 435-979-0225. stacy@cuasa.com | www.cuasa.com

SEP 29 - OCT 1 > 2022 XREDROCKS > Monroe, UT. The XRedRocks is a premiere hike-and-fly race in North America, organized in a similar way to the Eigertour, Vercofly and DolomitiSuperfly. This is a multi-day hike-and-fly event that take participants into magnificent mountains to see what they're made of when we pair back free-flight to its most raw and exciting form. Travel is only allowed by wing or on foot. There are no supporters. It's just you and the elements for 3 days! Organizer: Gavin McClurg, gavin@cloudbasemayhem.com | www.xredrocks.com

 **OCT 7-9 > EAGLE PARAGLIDING OWENS VALLEY CLINIC** > Bishop, CA | We fly the Owens in the spring and fall. The Owens Valley offers a variety of launch locations, and we will make a move to the launch which matches our forecast for the day. We can work as a group and team fly here as well. The area is world famous and worth a trip in the fall or spring for some classic flying, and XC opportunities. The Eagle Team will lead this 3 day clinic. Cost is \$1195. www.paragliding.com or call 805.968.0980

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F I N A L > Michael Van Dorn

■ In 1974, a few of us Oahu flyers who were accustomed to jumping off the 1,300-foot cliff at Makapu'u in our standard rogallos, got the bright idea to go over and launch off the giant sea cliffs of Molokai, the island between Oahu and Maui. The cliffs there are almost twice as high as those at Makapu'u. We planned to soar for miles along the spectacular scenic cliffs and then land on the black sand beach at Kalaupapa; at the time, there was still a leprosy colony in the area.

Flying Molokai had its problems and dangers. It's a straight down, do-or-die cliff launch with no roads in or out. We would have to hike all the way back up along a narrow, zigzag mule trail. Also, the Molokai cliffs face north; therefore, the usual NE tradewinds don't come straight up—it's a crosswind launch. Also, visitors to the leper colony were rare, and we didn't consider that perhaps we weren't allowed to just drop in.

Despite the challenges, we (Jim Nurse, Bob Thorneburg, Russell Smoot, Jeff Land, and I) shipped our gliders over to Molokai. Poised at the top with a fantastic view, we paused. Who would be the brave wind

dummy, and who would be last to tackle launch alone with no wireman? Jim stepped forward, and Russell gave him a nice cliff edge launch. We could see the air was smooth, so we followed. The wind was a bit cross on launch but not too strong, so we didn't have any issues. But because of the light wind cross to the cliff band, there wasn't much lift, and we couldn't stay up.

It was still a beautiful flight, and we all landed safely and happily on the nice, long black sand beach. Upon landing, we were confronted by a large Hawaiian man pointing a shotgun at us—to him, this was some kind of weird invasion as he had never heard of hang gliding before. (Hang gliding was relatively new at that time, especially on sleepy little Molokai).

It turned out that he was the sheriff of the colony. After some fast-talking, apologizing, and assuring him we wouldn't fly again without a special permit, he relaxed. He was a friendly guy and even took us on an extended tour of the colony in his Jeep.

The trip was great, but due to it's remoteness few people have flown the majestic sea cliffs of Molokai since. ☺



▲ Jim Nurse flying off the cliff (Russell Smoot is launcher).



▲ Author lands on black sand beach at Kalaupapa, Molokai.



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