



MONTHLY NEWSLETTER OF SKYLINE SOARING CLUB, INC November 2012

SKY LINES

Masthead photo by Dick Otis

Message from the President

By John Noss



I hope everybody made it through the ordeals of Hurricane Sandy with minimal stress and damage. We didn't fly last Sunday because the weather was already deteriorating, but we did get a lot done. Thanks to all those that pitched in to get the Cirrus ready for its annual inspection, and to weigh the Cirrus, Grob, and ASK-

21. We now have updated weight and balance calculations on those three aircraft. No significant changes to report on the Cirrus, the ASK-21 now has maximum combined pilot weight of 470 lbs (not a significant factor), and the Grob has gained another 7 lbs so its new maximum allowable combined pilot weight limit is 382 lbs. We will post the new documents online, and print/laminate new cockpit cards. The electronic versions of the cockpit cards will include the loading diagrams for each glider. We still need to weigh the Sprite.

One appeal to anybody who flies club aircraft, whether gliders or towplanes – if you find something that needs to be fixed, please tell the duty officer and follow up by contacting the meister directly. If you send an email, it is not a successful two-way communication until you get a response. Phone calls also work. For towpilots, remember that Shane is our towplane maintenance meister and our single face to the maintenance providers.

I would like to thank Eric Litt for all his recent work 'above and beyond the call' to keep our towplanes flying during the period of transition from Front Royal Aero Services (FRAS) to the new team headed by Tom Schweitz of Aero Engines. Also, thanks to Eric for doing so many of our glider annual inspections, including one club glider and two private gliders last Sunday in the face of the impending storm.

It's a recurring theme, we really do depend on great work by volunteers, and it is especially wonderful when somebody does something needed without having their arm twisted. Jim Kellett didn't have to set up the recent Spin Clinic at Shenandoah Valley Soaring, but he did, and it was a great success. A year or two ago, Joe Parrish didn't have to copy all of the critical aircraft documents and get them posted online, but as we found last week, it really makes life easier when you can get to the information you need online. Mike Christensen just donated a storage locker and with help from Dick Garrity got it to the hangar, so we now will have a dedicated parts locker for each aircraft, and thanks to Ertan Tete we will have a standing spare parts inventory for each aircraft. Go volunteers!



Photo by John Noss

The season is winding down, but there are plenty of great soaring days left before the last day of scheduled ops on 16 December, and even after that we will fly when weather permits and sufficient interest can be generated. Our current plan for the last day of ops is to make it a holiday season social event, with a pot-luck gathering at the terminal building, more details to follow. Plan to come out and fly and have a good time.

Fly Safe, Fly Often, Have Fun!

Windward Performance Visit

By Bill Burner



It was my good fortune, while visiting our daughter Guinevere and her husband Josh (both Skyline members), to check out Greg Cole and Windward Performance in Bend, OR, which is located just four miles from their house. (Not a bad place to buy a house, Gorgeous and Josh!) We spent about two hours there. We were treated royally by Greg Cole, owner and Chief Engineer. The sophistication and far reaching implications of the technology we saw was overwhelming. The mystery which still puzzles us is why hasn't the stuff he is doing caught on in the soaring world? Windward Performance has a ten year history as a reputable and record setting high technology company. It is producing gliders that clearly are ahead of their time, and clearly better than literally any others in the world. Plus it is all happening right here in America. He should be selling fistfuls of sailplanes not just in the US but world-wide. Yet their production line now has plenty of capacity for new orders. Seven Duck Hawks have been sold so far and there are 32 Sparrow Hawks on wing. The DuckHawk sales are slowly increasing but the SparrowHawks are completely stagnant! Greg blames it on the economy. Maybe there is room for additional marketing emphasis. At any rate, here is a look at the three sailplane models we saw. By the way, there is a fourth which is yet to be built, the GosHawk, a self launching two place sailplane with an L/D of 37:1. In powered cruise it will get about 150 mpg at 100 mph!

The DuckHawk



Design emphasis is speed without sacrificing climb performance. Speed is obviously necessary for racing, and penetration. But, Greg emphasizes, running straight out is only half of a soaring cycle. The other half is climb. A sailplane that wastes time climbing gives away its speed advantage and its competitive edge. Because of structural limitations of the fiberglass currently used by all other sailplane designers (e.g. the Germans) they are all forced to trade off climb performance for speed, or vice versa. Windward minimizes this compromise by the use of ultra high strength pre-impregnated oven cured uni and bidirectional carbon fiber. The DuckHawk structure is almost completely constructed in this wonderful material. This allows high aspect ratio, extremely thin wings and clearly superior aerodynamics. To contrast, German sailplanes use a room temperature curing system, often with a post cure. The new German sailplanes, particularly the recent racing designs, do use a lot of carbon fiber in their construction. Windward uses an oven cured prepreg system that is a very high quality aerospace grade product. The cured composite has a Tg (glass transition temperature) of 250 DEG F wet to 290 DEG F dry. The bonding adhesive is also special and has equally good

high temperature performance (also used in planes like the F22). Materials like this are costly, but very strong and stable. This is some of the strongest aerospace grade construction material available – stronger even than the carbon fiber being used by the race community at Reno. It is much stronger than the fiberglass which is used in European or any other gliders. With it Windward is producing true state-of-the-art sailplanes. Having only a single, 15 meter wingspan the DuckHawk is competitive in 3 race classes. Could a 15 meter sailplane compete against 18 meter and open class gliders? Check out the final results at this year's Open Class Nationals! On Day # 6 the DuckHawk and a Schempp-Hirth Arcus started their final glide at the same time, from the same altitude, with the Duck Hawk 1.1 nautical miles in trail. This became the much anticipated "side-by-side" mano-a-mano fly-off against a German high tech machine. Flying down the same glide slope the Duck Hawk made up the 1.1 mile gap, catching the Arcus in only 10 miles. Case closed. The Duck Hawk is available in three models, which differ only in the strength of the spar and other structural members. Vne ranges from 168 KTS (smooth air) to 225 KTS (smooth air), for the heaviest - by 65 lbs - VNX max performance racer model. 225 KTS is 259 mph and this limit is good to 24,000 FT! Loads on manually actuated flaps would be significant at the higher DuckHawk speeds. So the DuckHawk is equipped with electric flaps. An additional advantage of electric flaps is that the pilot can select automatic scheduling of the flaps by a flight computer, as a function of airspeed, etc (this is in the design stage). The computer's near instantaneous flap adjustments will be a big factor in optimizing climb performance when entering a thermal. It will also decrease the pilot workload at a time when he needs to be concentrating on centering the thermal and avoiding gaggle traffic. The G limit is placarded at 11gs. With that kind of a flight envelope the DuckHawk is designed for much more distant horizons than just racing. Consider the aerobatic potential of this glider! Greg is interested in exploring dynamic soaring, a whole new frontier that is currently accessed almost exclusively by radio controlled model gliders. Those small, extremely sturdy gliders are now building up to speeds well over 400 mph, by flying repetitive, tightly closed circuits in the small airspace on the lee side of ridges. No other manned sailplane comes close to the performance requirements that it appears dynamic soaring dictates. Greg wants to find out, with the DuckHawk, how feasible dynamic soaring is for manned flight. Greg states the obvious: this is a glider built for the future. In ten years it will be using instruments for dynamic soaring, and who knows what else, that have not even been invented yet.

The SparrowHawk:



Whereas the design premise of the DuckHawk is ultimate

optimization of speed and climb, thru the use of high strength pre-preg oven cured carbon fiber, the premise of the SparrowHawk is practicality and fun. Again, Windward takes advantage of the extraordinary strength of prepreg oven cured carbon fiber this time designed to produce a small, light weight sailplane with club class performance. Amazingly, the tiny (11 meter wing span) SparrowHawk uses basically the same commodious fuselage as the DuckHawk. Yet it weighs in at only 155 pounds – not the fuselage; the whole glider weighs just 155 pounds, empty! Rigging it is a breeze, and slipping it into a small field on an out landing will be much easier than any other fiberglass sailplane. Can't get a trailer into the field to bring it home? No problem! You could almost put the wings in your hip pockets and carry the fuselage out by yourself... well, almost. With a min sink of 119 FPM (at 38 Kts) it would be easy to call this glider a floater. But Greg resists that appellation. Its wing loading of up to almost 6 pounds per square foot and L/D of 37:1 means that this little butterfly can really zip along! It can penetrate, run straight out, and hold its own against any club class (fixed gear, no flaps, 15m) sailplane. With a large well ventilated cockpit, feather light controls, high maneuverability (45 – 45 degree roll reversal in 2 seconds), authoritative rudder, and exceptionally benign stall characteristics this plane is a pure joy to fly. Ask any one of the thirty two owners. This glider is equally appropriate for a student's first single seat flight or for standard class competition. Why has no one else come up with such a glider? Again, the Windward advantage is the ultra high strength pre-preg oven cured carbon fiber material which no other manufacturer uses.



The Perlan Project



How would one define the ultimate end of the performance spectrum, for winged manned flight? Most sailplane designers would probably be thinking in terms like a little faster, a little higher L/D, longer wings. Not Windward. Greg's current horizon is 90,000 feet and Mach 0.3. The Perlan glider which Greg is confident can reach that altitude by flying stratospheric mountain waves, already exists. Almost all of the pieces have been fabricated. They are positioned in huge jigs in his shop at Bend, Oregon, awaiting final assembly. Greg gets serious when discussing this challenge. "If we cannot agree that a rapid decompression at 90,000 feet would be fatal then we might as well stop talking now." Having looked at the problems of full pressure suits, which Steve Fossett and Einar Enevoldson experienced on their record flight to 50,000+, the Perlan team has decided that those suits are not practical for a longer duration flight to 90K. Unlike U-2 and SR-71 pilots, who use the same suits but not fully inflated, at 90K the suits would be as rigid as the ones astronauts use during extra vehicular activities. The suits are so cumbersome when inflated that the pilot cannot even touch his hands to each other. Even the smallest movements are a major effort. Their hands are of little more use than clubs. Steve and Einar had to have a large, cantelope sized ball on the top of the control stick so that they could reach it with either hand. Hence the Perlan attempt to 90K will be made in a pressurized cabin without back up pressure suits. No decompression allowed! There will be a lot riding on the structural strength of the pressure hull, but that has already been proven. The project needs about a million dollars to go on. Greg points out that that amounts to a tax deductible donation of \$1,000 each, from a thousand glider pilots. Windward is considering offering placards citing such a donation which would be on board the Perlan during its historic flight and then visible to the public once it goes on display in the Air and Space Museum, or wherever it winds up. The Perlan project is open to additional pilot sponsors, who would fly on these historic missions. Yes... it could possibly be you, for a substantial donation! Greg says much of the soaring world sees this as an American project, since it is located

in Bend. But it is a project that the whole soaring world will take pride in. The project is a lot further along than we realized. The technology issues have been addressed and all the plane's components are finished. It is basically ready for final assembly. Most of the funding is needed for the actual attempt itself. Testing is a real problem. There are no tow planes that can take the Perlan to altitude for test flights, so the record attempt(s) will also serve as the flight testing. This turns the record challenge into a major expedition – to Argentina, probably, or New Zealand. That is how most of the money will be spent. Why not soar to an even 100,000 ft? Greg believes that the wave could take the Perlan that high. But the aerodynamics get really tough above 90K. In explaining this out came a bunch of Reynolds numbers, temperature gradients, Mach numbers, flutter problems etc., that left us weak kneed and humbled. Bottom line is that building a transonic or supersonic glider is not in the cards. It may be in Greg's fertile mind, but it is not within the budget constraints that Windward is working under. Frankly, we were thrilled just to walk among the components that are someday going to 90K and feel that we were, well not part of history but at least watching history in the making. Even in pieces and with an unfinished coat the Perlan is breathtakingly beautiful. What a thrill it will be to see it take wing!

Greg Cole



You would probably guess that the driving force behind the extraordinary stuff we saw at Windward is some kind of a super intellectual, wild eyed unapproachable nerdy engineer incapable of forming sentences that are not half filled with numbers and equations, and with a business mind like a steel trap. A modern day, more practically oriented Einstein. What else could possibly put something like Windward Performance together and achieve what it already has? That is not Greg Cole. He comes across as an ordinary guy who appears to be in his mid 30s (but that cannot be true), affable, easy to talk to, generous with his time, and genuinely enthused with what he is doing. A next door kind of guy whom it would be fun to drink a beer with and talk about sports, or whatever. He spent a couple of hours with us. He was not at all

hurried, patient with our questions and informal. At the end we got to talking about families and it emerged that he is as enthusiastic about his two adopted sons as he is about the works of Windward. He and his wife, Neva, journeyed to the furthest outreaches of northeast Siberia (seven hours from Vladivostok) to pick them up from an orphanage. He talked about how he and Neva went over there "all in." They were fully committed to adopting the boys even before first meeting them. The story of the previous life of their sons, who are brothers, is tragic. It has been the thrill of a lifetime to watch them make the slow and still, after two years, difficult transition into their new lives. It has been a series of challenges for Greg and Neva, but one they enjoy and are dedicated to. It was clear to us that Greg has as much to look forward to when he goes home after a day at Windward as he does in the morning going back to work.

A Quick Tour of the PowerFLARM



By Mike Ash

The PowerFLARM is an exciting new anti-collision device now available for gliders in the US. Jim Kellett and I pre-ordered one when they were first announced about two years ago, and after many delays, we finally received our unit this summer and got it installed last month.

What exactly is PowerFLARM? It's actually three anti-collision devices in one. It includes the proprietary FLARM technology, developed specifically for gliders and light aircraft in Europe, as well as an ADS-B receiver and the equivalent functionality to a PCAS device.

FLARM

The FLARM functionality is simultaneously the most and least interesting part of the device. A FLARM device contains a GPS receiver and a low-power digital radio. The FLARM unit broadcasts its current position, as determined by the GPS, as well as a prediction of its flight path out to about 20 seconds into the future. Other FLARM receivers within a few miles will receive these broadcasts. They can compare the other traffic's position and predicted course with their own, and sound the alarm if it looks like a collision is imminent.

FLARM was designed from the start with gliders in mind. It understands the kind of flying we do, and is smart enough to avoid sounding an alarm when two gliders are nearby but not on a collision course (e.g. hanging out happily on opposite sides of a

gaggle). However, if they change course and a collision threatens, it will then alert both pilots of the impending problem. Similarly, two gliders relatively far apart but pointed towards each other and moving quickly will result in an alert going off at a fair distance, typically enough to give the pilots 20 seconds to take action.

This advanced and intelligent technology makes FLARM the most interesting part of what PowerFLARM offers. Unfortunately, PowerFLARM is the only device available in the US which speaks FLARM, and so the odds of another glider also being equipped with FLARM is remote. This capability remains somewhat theoretical for now, although I anticipate that it will proliferate rapidly in contests and other places where close-quarters flying is common. I certainly hope it will, at least, because this technology will save lives if widely adapted.

ADS-B

In addition to FLARM, the PowerFLARM device also features an ADS-B receiver. ADS-B is conceptually a bit like FLARM, except higher powered and without the advanced flight path prediction and collision-avoidance smarts. It's eventually intended to be the primary surveillance technology in US airspace, although adoption is not moving particularly quickly. It's hard to find aircraft equipped with an ADS-B transmitter in the US at the moment, but for those that exist, PowerFLARM will detect them and provide collision alerts much like the FLARM functionality.

Transponders

Since most aircraft in this country don't have either FLARM or ADS-B, the PowerFLARM provides a final fallback mechanism in the form of a PCAS-like system. This system simply detects transmissions from the radar transponders which have been a feature of the air traffic control system for decades. Note that it does not interrogate transponders, which would require a far larger and more expensive box. It requires some other source of interrogations, such as a ground radar facility or an airliner's TCAS system. We're never far from such a source where we fly, as the airliners going overhead are constantly interrogating nearby transponders.

Transponders provide altitude, but not position or range. Radar systems figure out position and range by moving their antenna and timing the delay in responses. The PowerFLARM doesn't have this luxury, as it's an entirely passive device when it comes to transponders. Because of this, it can tell how high a transponder target is (and thus how far away from your own altitude it is), but it can't precisely determine whether it's a collision threat. The PowerFLARM makes a rough guess at distance based on the signal strength. As the remote transponder gets closer, it also gets louder, and the PowerFLARM will use this to guess at how far away it might be. When it comes to direction, the PowerFLARM has no idea whatsoever. When a transponder-based collision alert sounds, it will tell you whether you need to look up, down, or level, and give you some idea of the distance, but it's up to you and your trusty eyeballs to scan your surroundings and find the thing.

Despite the limitations, the PowerFLARM still shows the same smarts with transponders as with the other systems. If the altitude separation isn't converging, then it won't sound an alarm. Likewise if the target's distance is holding steady or increasing. Only targets which are closing and at or moving toward a similar altitude trigger an alarm.

Additional Functionality

Besides its primary role, the PowerFLARM can also provide GPS

data to other instruments, PDAs, etc. Although not yet available, the PowerFLARM will also provide an IGC-approved flight logging facility, good for badges, OLC, etc.

Installation

There are two different versions of PowerFLARM available. One, the "brick" is intended to be permanently installed in an aircraft. The PowerFLARM smarts live in a fairly blank and boring box which you can stash anywhere, and it comes with a separate display module that goes into your instrument panel.

Installation of the brick is a bit tricky. It has three separate antennas (GPS, ADS-B/transponder, and FLARM) which all need to be positioned some distance away from each other. However, with a bit of creativity, plastic, and plenty of 3M Dual Lock, it's entirely doable and not overly difficult. Once installed, the system just does its thing without any manual intervention.

A portable unit is also available. This unit contains everything necessary in one box, including batteries for internal power (although it will also accept external power if desired). This can be attached to the top of your glare shield or another convenient location, and easily moved between aircraft if need be.

Real-World Use

We haven't had our PowerFLARM up and running for long, but I've had a chance to at least get an idea of how it works.

Jim Garrison helped with our installation, and also brought his own PowerFLARM unit along. Once everything was installed, we fired up both units and they showed up to each other just as promised. It wasn't practical to trigger collision warnings, but each unit showed the other's relative position and altitude just like it's supposed to. When a collision doesn't threaten, the unit simply displays the position of other traffic in an unobtrusive manner, for you to use or ignore as you wish.

The system frequently alerts while sitting on the ground, just about any time a transponder-equipped airplane lands, including our own tow planes and the ASK-21. These false alarms would be annoying in flight, but are a good illustration of how the system works when sitting safely on the ground.

In the air, it works as advertised. I've yet to test the FLARM or ADS-B functionality while airborne, but the transponder detection works nicely, within the limitations of the technology. I've picked up the ASK-21 and some other light aircraft in the area. One interesting feature of the system is that it will display relative altitude of a transponder target even when it's not a collision threat, making it trivial to figure out just how much headroom you have above or below when thermalling with another (transponder-equipped) glider at different altitudes. This taught me that I need some practice at estimating altitude differences, as I was thermalling below the ASK-21 at an altitude difference of what I would have guessed was about 500ft, but the PowerFLARM assured me it was actually a 1,200ft difference.

Conclusion

PowerFLARM is exciting technology and its arrival in the US is most welcome. Mid-air collisions represent a significant risk for us, and one that can be tough to mitigate. The Mark-I Eyeball has many faults and is not entirely ideal as an anti-collision device. PowerFLARM is not ideal either, but adds a significant second layer of protection.

I highly encourage as many glider pilots as possible to equip their aircraft with PowerFLARM units. They work best when everyone has them, after all. While not a magic bullet, widespread installation of these systems could make a significant impact on safety.



PowerFLARM is available from many online glider equipment dealers. The cost is \$1,695 for the portable unit or the brick with a rectangular external display, or \$1,845 for the brick with a display that mounts in a 57mm instrument hole.

Spinning on Purpose

By Dan Earnst



The weather did not look at all promising as four Skyline members left the parking lot at KFRR and headed south for Eagle's Nest Airfield west of Charlottesville for spin training with the Shenandoah Valley Soaring Club (SVS). Low clouds and patches of fog hung in the air most of the way down I-81.

Why did these folks make the long journey for spin training? Aren't

spins something you should avoid at all costs? Why do it on purpose? Because, as Bob Wander says, "Spins have been with us since the Wright Brothers and probably always will be." So it makes good sense to try a couple under controlled circumstances, know what they are like and how to recover from them. But our trainers won't stall and with out a stall you can't spin, right? Well you can stall our trainers with a shallow skidding turn, but they are very difficult to spin. But if you plan to move up to the Sprite, it will stall and it will spin. As will any of the high performance ships.



Upon arrival at Eagle's Nest the overcast was still stubbornly hanging around as our hosts at SVS welcomed us to their hangar and temporary classroom. Coffee, doughnuts and pleasant conversation occupied the first half hour. This was so enjoyable the weather could take its sweet time. Then it was time for our instructors, the CFI-G duo of Graham and Jeanne Pitsenberger, to start the ground school. After a short lecture on the hows and whys of spins, we learned how we were going to be able to spin the usually unspinnable ASK-21. The nearly new SVS K has a factory installed capability to add weights to the lower vertical stabilizer to get the required aft CG. Since the weights of the instructors and each of the students varied, an intensive weight and balance calculating session ensued to determine how many weights each of the students would need to get the aircraft to spin.

As we finished up the math and headed for the field, the clouds parted and we were treated a stunning fall day in the Shenandoah, ceiling and visibility unlimited. Widely scattered Cu only served to accentuate the blue of the sky. The SVS folks set up their tents and established ops at the approach end of the field. Their distances are a bit shorter than ours and a golf cart works wonderfully to tow the glider on the ground. Each student got one flight with either Graham or Jeanne. The CFIs flew the take offs and landings, but turned the 4,000 foot tow and the rest of the flying over to the student. Each sortie consisted of a five turn spin, an insipient spin and recovery both right and left and a steep turn.

The spin was not violent and g force was light. Other than the nose pointed almost straight down and the world spinning rapidly, it didn't feel too much different than straight and level flight. After five turns anti-spin controls were applied and the glider recovered quickly with a 3.3G pull out. Insipient spins were quickly recovered from with anti-spin controls and

This was a most pleasant to add spin awareness and recovery to your bag of flying tricks. The SVS members turned out in force to support operations and their hospitality was phenomenal. Graham and Jeanne are great instructors who imparted knowledge as well as physical skills. It is always a good thing to visit another club and airfield to learn how things are done differently, like hanging your gliders from the hangar beams for storage! Eagle's Nest is beautiful place nestled in the Shenandoah. So the next time this

opportunity comes up, Jump on it! All the participants owe a big Thank You to Jim Kellett for setting this up.



By Evan Dosik

I was one of the 6 "Skyliners" who participated in the "Spin Clinic" hosted by Shenandoah Valley Soaring on Friday 10/19 at Eagles Nest in Waynesboro, VA. We started the grey cloudy day @ 10 AM with an informative ground school presented by Graham Pitsenberger, and just as we were finishing the training in their hangar, the clouds burned off and we were treated to flight instruction by Graham and his wife Jeanne in their gorgeous 2009 ASK-21 with a factory spin mod training kit. (More details in the attached SVS newsletter). Besides the six who took the training (Rob Creedon, Ertan Tete, Dan Ernst, John Noss, Bruce Zivic, Evan Dosik) Jim Kellett, who I believed organized the training with SVS, and his wife Pat were also there. A couple of us recorded videos of the training flights and will provide them as training tools asap to Jim.



SVS's very cool hangar that's reminiscent of an exhibit at the Air & Space Museum. Note their 1-26 and 2-33 space saving storage and the homemade Pawnee peddle car, painted similar to, and with all instrumentation photo copied from their tow plane!

sing!



Ratings, Badges, Milestones

Chuck Stover completed his silver badge with his distance task approved and Badge #6907 awarded:



Photo by Chuck Stover - DG200 RW



Here is John Seymour looking back at you. (Bruce and Karl)

Turnpoint Exchange

By John Noss

For those interested in the wealth of information on Lynn Alley's "Turnpoint Exchange" website, there are some major updates, including new maps for soaring applications, at <http://www.soaringdata.info> .

Additionally, John Leibacher has posted an 'unofficial' and unpublished version of turnpoint data for Front Royal, at http://soaringweb.org/TP/Front_royal_temp , just for review for now, comments to me directly please.

Condor Virtual Contest

By Piet Barber

In the winter months, when the real-outdoor-flying isn't possible for much of the country, many pilots sit around and talk about flying. The rec.aviation.soaring newsgroup gains traffic, and many subjects wander off-topic. There aren't any contests to speak of...

...Except for this year! There is actually a contest in late November -- a Condor Virtual Contest! Check it out.

Recycled
Inforation

Worth
Repeating



SAY AGAIN

This is a picture of yours truly (Bruce Zivic) with Karl Striedieck in his Duo Discus at 14,000 over Pennsylvania, Karl can smell lift, vario chirped the entire ride. We also flew in formation with John Seymour for a while, wings tips no further than 10 feet apart . In addition we flew about 3,000 over a Lufthansa craft. I hate it when great stuff like this happens because its going to be awhile before it happens again.

I learned to fly at SSC and Karl showed me how to make a bird

This is the contest where everybody can afford a Ventus2bx, and the weather is always perfect for soaring.

I'm mulling joining up and see how well or how badly I fare. Currently, there are only 2 contestants. The top 3 finishers get a 25 dollar gift certificate from Cumulus Soaring.



Skyline Soaring Club, Inc.

Is a private, 501(C7) non-profit organization, dedicated to the enjoyment and promotion of the sport of soaring. SSC is based at the Front Royal-Warren County, VA. Airport

and is an affiliate club of the Soaring Society of America

For information about the club go to:

www.skyinesoaring.org

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