Radio Controlled
Soaring Digest
September-October 2013 Vol. 30, No. 9-10

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Front cover: Jo Grini's Pike Perfection electro at Smørkollen, with Bitihorn in the background, at the beginning of the Jotunheimen National Park, Norway. Photo by Jo Grini
Panasonic DMC-LX7, ISO 80, 1/1600 sec., f2.8

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Canon Powershot SX20 IS, ISO 160, 1/1250 sec., f8.0

Mark Nankivil photo

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Contact — bsquared@rcsoaringdigest.com
rcsdigest@centurytel.net
http://www.rcsoaringdigest.com
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In the Air

We are all aware that our RC models operate at what is considered to be low Reynolds numbers (Rn). While the record setting DS machine (498 mph) has Rn = ~3.75 million at the wing 10" chord, a Supra landing at 15 mph has Rn = ~45K at the root of its stabilizer and at 4" from the wing tip where the chord is 4". As Rn is proportional to velocity, density, length and viscosity, a 4" chord traveling at 15 mph in water has Rn = 6.77 x 10^5 (677,000). Pitch has a viscosity approximately 230 billion (2.3×10^{11}) times that of water - according to the Wikipedia entry, that is - and so we were curious to know if we could figure out the approximate Reynolds number(s) involved in the longest running scientific experiments - one at Trinity College Dublin <http://www.tcd.ie/Physics/news/index.php>, the other at University of Queensland <http://www.physics.uq.edu.au/physics_museum/pitchdrop.shtml>. The basic experiment is described at GIZMAG after a video of a falling drop of pitch was actually able to be recorded at Trinity College Dublin <http://www.gizmag.com/pitch-drop-experiment-video-trinity-college/28381/>. The video is at <http://www.youtube.com/watch?v=yCj5krgpX9M>. Our calculations give Rn = ~1.46 x 10^{-13} (approximately 0.0000000000000146). That's based on available estimated data and assuming pitch has the same density as water. Anyone care to give a better estimate?

Speaking of videos, check out these taken at Rétroplane 2013:
<http://www.youtube.com/watch?v=ocUpZ6djPb4>
<http://www.youtube.com/watch?v=G0IqURpVVgY>

Time to build another sailplane!

Some Days Are Like This...

Keith Altimus, keithaltimus@hotmail.com

I spent the winter of 2012 building a four meter sailplane I named Altimus S7. It is a design that I have been developing in my head for quite a while now. I found myself out of that year's ski season with an injury, so finding the time was suddenly off the excuse list and the design came to life.

Winter seemed long being house-bound and the building helped pass the days. The hours of thought and time spent on the computer soon came to fruition and a sailplane was now ready for its maiden flight.

Why is it that life's most spectacular moments go by in a flash, while heartache seems to last for great periods of time, yet somehow they always seem to balance each other out? Today was a day like that, a spectacular moment that

went by like a flash. I wanted to write it down to tell all my friends who share in my passion for soaring.

I took the S7 to a new field this morning. There was a storm front working its way up the valley. I used to come to this very field when I was much younger and park my truck and turn the music up high and watch these same storms roll by. Spectacular displays of nature. Lightning and rolling thunder that my loud music couldn't begin to drown out.

Today was different though, it was quiet, no loud music... pristine. I love flying in front of storms like this. Many times I've launched like this where everything seems to be feeding up and into the approaching storm.

This particular storm is still at the end of the valley maybe 35-40 miles away as I laid out my high start, hooked up the S7 and launched. As soon as I came off the tow I turned 90 degrees and headed south. The model started on its way to the cloud base. I was just carving large circles and watching it climb. I find myself happily surprised by the cruising speed of this airfoil combination.

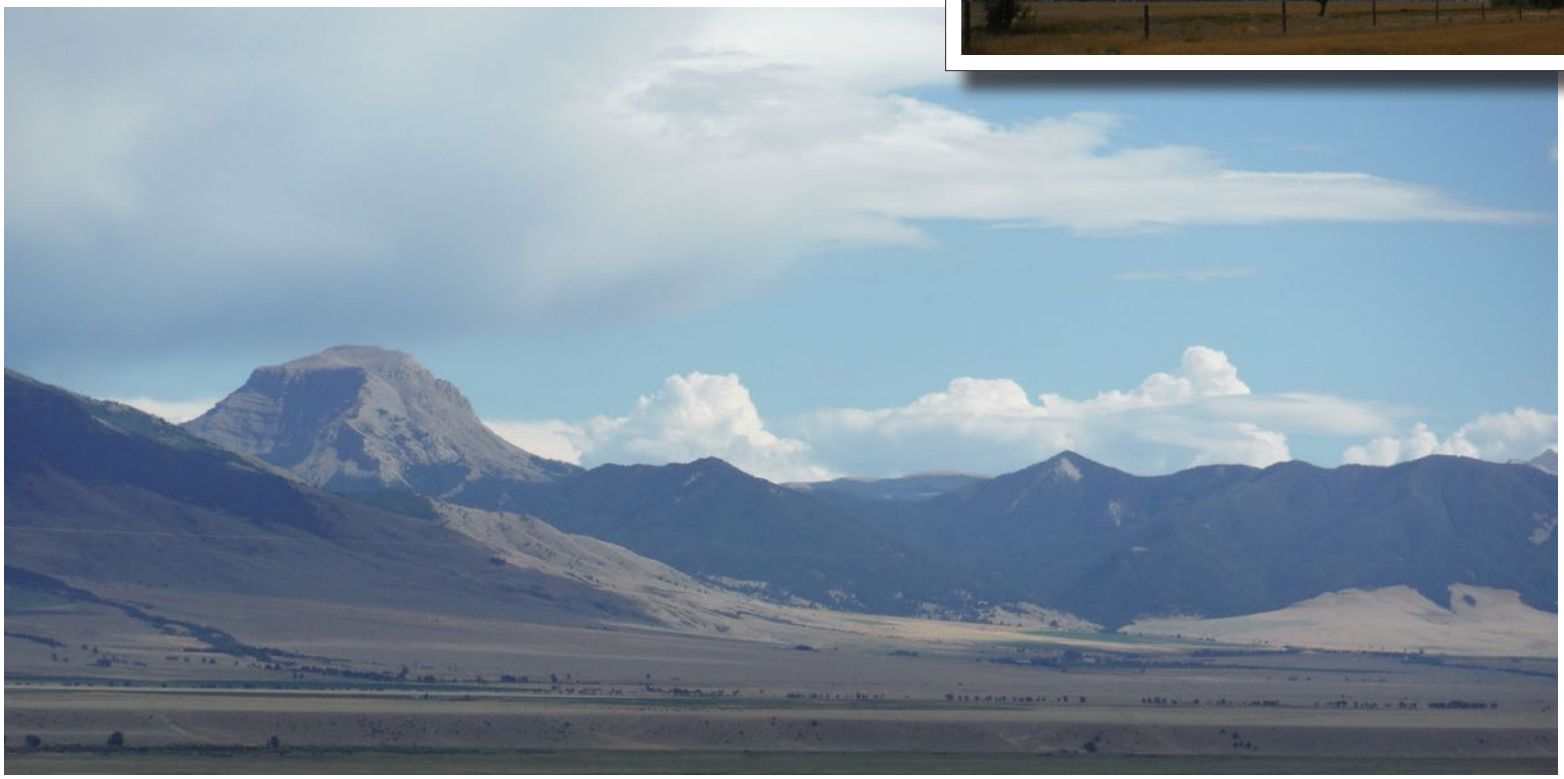
The wind is calm on the surface now. Things are peacefully quiet. I can hear the roar of well-off distant thunder. I am watching a 4 meter glider in the enormous "Big Sky" of Montana climbing so nice and graceful. I'm flying the Madison Range, with Sphinx Mountain as the backdrop. It puts the scene into a ridiculous, over the top, classification... So much beauty!

I'm climbing effortlessly; the air is smooth as a windless lake. Perfect for checking out the new settings on the S7. I bank left then right. The differential is about perfect...

I level off and let the glider just cruise. Now, I drop the nose and put the plane in a dive and let off the sticks... She starts to climb out a little more than I want, but I just smile, knowing that just means I can pull some more weight out.

I camber it up and she really starts to climb out. The sun begins to be covered by the approaching clouds. I notice the sun rays are painting the distant valleys and I start to think of all the things that have happened throughout my days in those mountains. My thoughts go to my memories and away from the sailplane.

You see, I ran with three of the most gifted, beautiful black and tan hounds that you could possibly imagine. I raised them from eight week old puppies. I remember the first mountain lion that those hounds treed at 8 months old. We had started



that race approximately 12 or 15 miles north of where they finally caught up to the huge cat. I was so proud of them.

I remember being in an avalanche on top of the ridge just south of the saddle of Bear Creek... Completely alone except for the three dogs' tracks in the deep snow that I was following. I was cold, exhausted and in the best shape of my life. Including my bike racing days.

fearlessly chasing and eventually treeing some tremendously large tom cats.

Their spirits are with me every day, but today is special.... You see, I believe when a spirit passes, it is gifted the ultimate freedom... The freedom of flight. To me, birds are the souls of spirits. When two of my hounds, Ozark and Marley died, two red tail hawks kept appearing over and over in my life. When

and climbing up through the sun rays. They seemed to be calling on me.

I left the thermal I was in and changed my heading to the north. They were upwind, but I didn't lose much altitude getting to them. I joined in formation and we climbed together for just a hand full of minutes.

It was surreal, like a familiar dream that crashes with reality, then BOOM, the

This could have been my ONLY flight with this sailplane and all the hours of work and time would have been well worth every second invested.

There's nothing to get you in shape to run high mountains in the snow chasing the most determined of hounds. The only thing that can prepare a human body for that is just doing it! I spent many nights out in those mountains just looking at the stars and listening to my friend's voices as they echoed through the rocky canyons.

I miss my three best friends every day. Those were some of the best days of my life chasing after my friends. I put many miles and many days in the hills listening to their big voices singing out and

my third hound Cougar passed away the two red tails now appeared as three.

You might think this is crazy but it's the truth. I see them together a lot as I climb through the canyons alone, my three friends far overhead guiding me along.

What does all this have to do with flying a glider? Well, today it fits together like this...

As I was getting higher and higher with the S7, I hear their cry... PSSssssss PSSSsssssssssss... I look over my shoulder to the north east and there they are! Three red tails circling in a thermal

thunder brought my thoughts back to the approaching storm. I was pretty high as the fuselage on the S7 was starting to disappear. I rolled out and started down, leaving my three buddies to their sky playground.

I had a blast carving big giant turns and rolling over and over as the sailplane returned to the earth, all the while hearing the three hawks calling for my return... PSSSsssssss PSSSSSsssssss...

I had goose bumps and the hair on the back of my neck was standing on end.

I pulled the flaps and did a couple more slow rolls and set it up for landing. The air was still as it could be and the S7 sat down comfortably in the grass of the huge meadow. I ran to grab my camera that was at the head of my high start and took pictures of my three friends as they thermalled high above me.

This could have been my ONLY flight with this sailplane and all the hours of work and time would have been well worth every second invested... and that's why I design and fly sailplanes my fellow soaring enthusiasts.

I can't wait till tomorrow!!!

6th International Vintage Glider Meeting Luigi Teichfuss

Vincenzo Pedrielli, vincenzopedrielli@fastwebnet.it

OY-XWL Danish Kranich IIB

After an endless winter and a completely nonexistent spring, summer finally arrived, just in time for the 6th International Vintage Glider Meeting Luigi Teichfuss in Pavullo nel Frignano.

The meeting was held at the airport G. Paolucci, from the 14th to the 22nd June with 18 wood and fabric and tubes and fabric sailplanes coming from Denmark, France, Germany, Nederland, Switzerland and of course from Italy.

The weather was perfect, not a drop of rain was poured during the whole meeting, so all days were flyable. In total 62 aero tows were performed with the French tow plane DynAéro type MCR 180R with a five bladed propeller, and there were 101 winch launches.

About sixty people were registered, including pilots, crew and gliding fans, partially camped near the airfield and others staying in a small and comfortable hotel in Gaiato, facing monte Cimone. Among these people some couples from Belgium, England and the United States,

Great presence of public, mainly gliding fans and model builders, busy with their photo cameras to take pictures even for the smallest detail of those beautiful vintage sailplanes.

Outstanding was the hospitality of the Pavullo Aero Club and remarkable the efficiency of the ground support.

Aero Club Italia winch

Highly appreciated by the foreign guests were the special evenings in good company, with local gastronomic specialities watered with the famous sparkling red wine Lambrusco.

A meeting of great success in all respects, exceeding also the most optimistic expectations. Everyone is looking forward to the next International Vintage Glider Meeting in Pavullo... when? ...hopefully soon!

OY-AXO a Danish Grunau Baby II

OY-XWL Danisch Kranich IIB

I-PLOC, Italian ASK13

D-1420, a German Olympia Meise

PH-110, a Dutch Slingsby T21

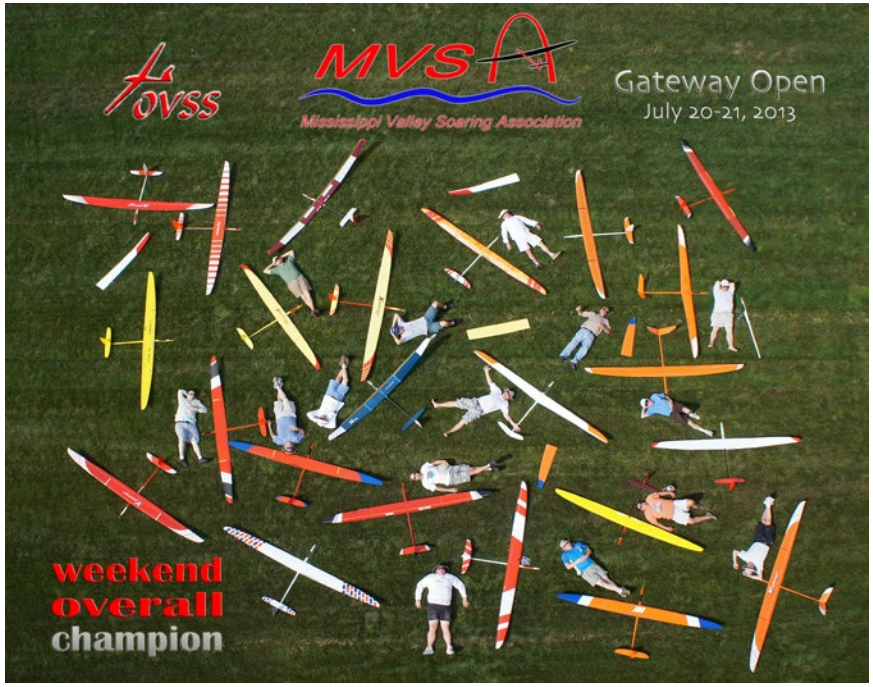
HB-703 a Swiss Ka-6CR

Mississippi Valley Soaring Association

GATEWAY SOARING OPEN

July 20-21, 2013

Mark Nankivil, nankivil@covad.net



Trophy photo shot by Chris Lee with his quad copter.

It has been an odd year weather wise here in the U.S. Midwest. After last year's drought conditions and high temperatures, most of the spring and early summer in Missouri had plenty of rain and cool temperatures.

Along with heavy rains north in Iowa in late May, the rivers were running high and the Mississippi River went to flood stage, directly impacting the sod farm that the Mississippi River Valley Soaring Association (MVSA) calls home. With the flood waters covering portions of the sod farm in the week leading up to the originally scheduled May date, the decision was made to postpone the event until July.

So along comes July and weather conditions turned out to be quite nice with cooler than normal temperatures and days that were generally conducive to good flying leading up to the rescheduled contest.

Saturday morning was cool with a mid-level overcast sky with patches of blue poking through. The early morning check flights before the contest start showed neutral air and everyone was leaving the ballast in the flight box or choosing their models accordingly.

With 16 fliers showing up to fly, attendance numbers were down compared to the normal May date, but the flip side of this was the

After the Saturday morning pilots' meeting, Chris Lee rounded up everyone and their models for a group photo with his quad copter, the photo being used for the contest trophies. (See the title page.)

chance of everyone flying more rounds during the day.

Once Chris' quad copter had captured the trophy photo, the flight groups were posted and in many ways the first flight group set the tone for the rest of the weekend with local flier Chris Lee facing off against Jim McCarthy and Marc Gellart.

With a 10 minute target time, getting close to the target time required a good launch and smooth flying as defined lift had yet to develop.

Both Chris and Jim launched well and kept control inputs to a minimum with both making 9:59 flights with Marc coming up a bit short with a 6:28 time.

After normalizing the flight score and adding in the landing, Chris was in the lead by just two points.

No one in the 2nd flight group came close to the target time, but Robert Samuels made the most of what was there and nailed a 99 landing for the best score in the 2nd flight group.

By the time the 3rd flight group launched, light lift could be found and all six fliers were within seconds of the target time and landing scores sorting out the scores in the flight group.

As the rounds moved along and the lift started to cycle and be accompanied by sink, individuals were getting caught out here and there and the scores were spreading out as a result.

Karl Miller, Mike Johnson and Adam Quennoz were making this a tight race as was Marc Gellart, Brendan Miller and Robert Samuels.

Lift continued to improve throughout the morning and into the early afternoon as the skies cleared, but it generally never developed into strong lift which in turn required the fliers to look for more than one source of lift to make their times.

As the afternoon moved along, a line of thunderstorms developed off to the northwest of the field and bloomed into a few strong cells as it moved closer, making for a dramatic background for gliders that flew on the north side of the field.

As one storm cell closed in and clearly was going to pass over or very near the field, the decision was made to pack up and not be caught out by the storm. This happened at the GSO a few years ago and made for a wild time holding down canopies and models as the rain was driven sideways by strong winds. As the gust front closed in, there was a bit of scare when dust on the crop fields north of the field got swept up and looked like a funnel cloud. Thankfully, everyone was packed up and safely in their vehicles when the gust front hit and the rain started coming down.

Gil Gauger's Eagle 4.0 RES. This lightweight weighs just 40 ounces.

With the day done, the final results showed Chris Lee finishing in 1st place, just 17.67 points ahead of Jim McCarthy with Adam Quennoz, Brendan Miller and Mike Johnson rounding out the top 5.

Sunday started off with a more solid overcast sky than the previous day which did not deter CD Glauco Lago setting the target time at 12 minutes.

In the early morning air of the first round, Jim McCarthy was the only flier to get close with an 11:59 flight, but the lift was more prevalent as the 2nd round moved along and flight times across the board went up as a result.

Chris Lee and Jim McCarthy carried on with the previous day's battle with Karl Miller and Marc Gellart applying pressure as well.

Chris stumbled a bit in the 1st round but fought back round by round to close the gap.

It was also fun to watch the MVSA's own father and son team go at it in the second flight group of Round 2 with Brendan (son) beating out father (Mark) by just two seconds to win the flight group.

When all was done after 6 rounds, Jim McCarthy held off Chris Lee to win by a 5.25 point margin, with Marc Gellart, Karl Miller and Robert Samuels taking 3rd through 5th places.

Chris took the weekend overall trophy with his total combined score from both days.

Upper left: Robert Samuels building a little line tension prior to launch

Above: Steve Goulet sends his model off

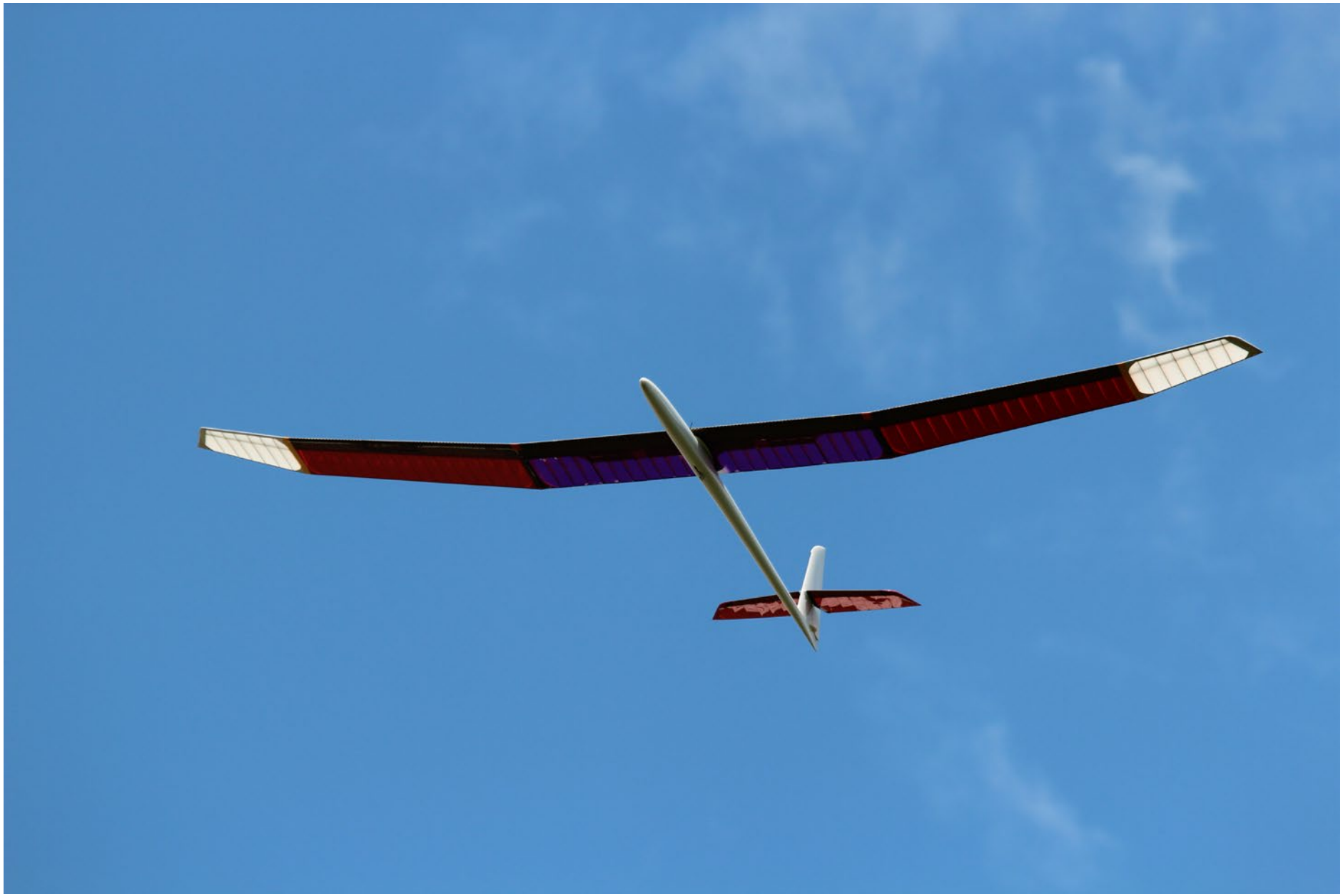
Left: Gil Gauger launching hard

Above: Mike Johnson launching his Pike Perfect

Upper right: Robert Terry about to release his Supra

Above right: Adam Quennoz keeps his finger ready on the stopwatch as Chris Lee gets set to release his glider

Steve Goulet's V-tailed Explorer



Mark Miller's Soprano RES floating over on final

Supra floating about

Robert Samuels' Aspire(?) coming home after a nice flight

Brendan Miller with his Cluster

Mike Johnson with his Pike Perfect

Steve Goulet with his Explorer 4000

Father and son Mark and Brendan Miller

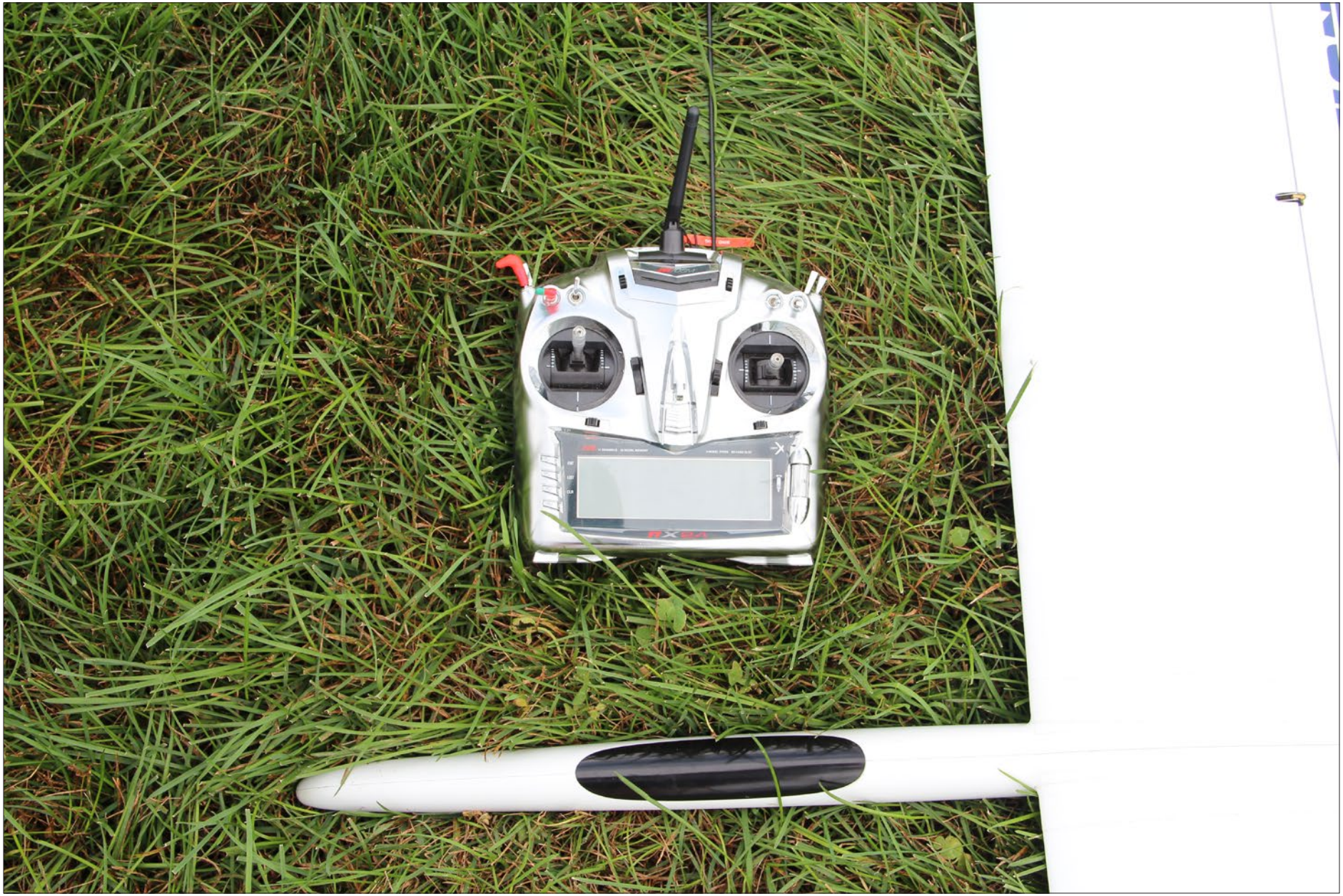
Left: Johnny Berlin With his Egida

Below: Marc Gellart flies while Jim McCarthy watches and offers advice

Right: Gil Gauger with his Eagle 4.0 RES

Above: Karl Miller and Chris Lee talking mind games while walking out to the winches

Right: Robert Samuel enjoying a bit of altitude under his sailplane



JR 11X 2.4


Xplorer
4000

Above: *Jim McCarthy and Marc Gellart look on as models in the flight group before them scratch for lift*

Above right: *Gil Gauger walking out to the winches*

Right: *Steve Goulet waiting for the launch call*

Left: Marc Gellart's Tragi closing in on the tape

Below: Chris Lee intently focuses on nailing the landing

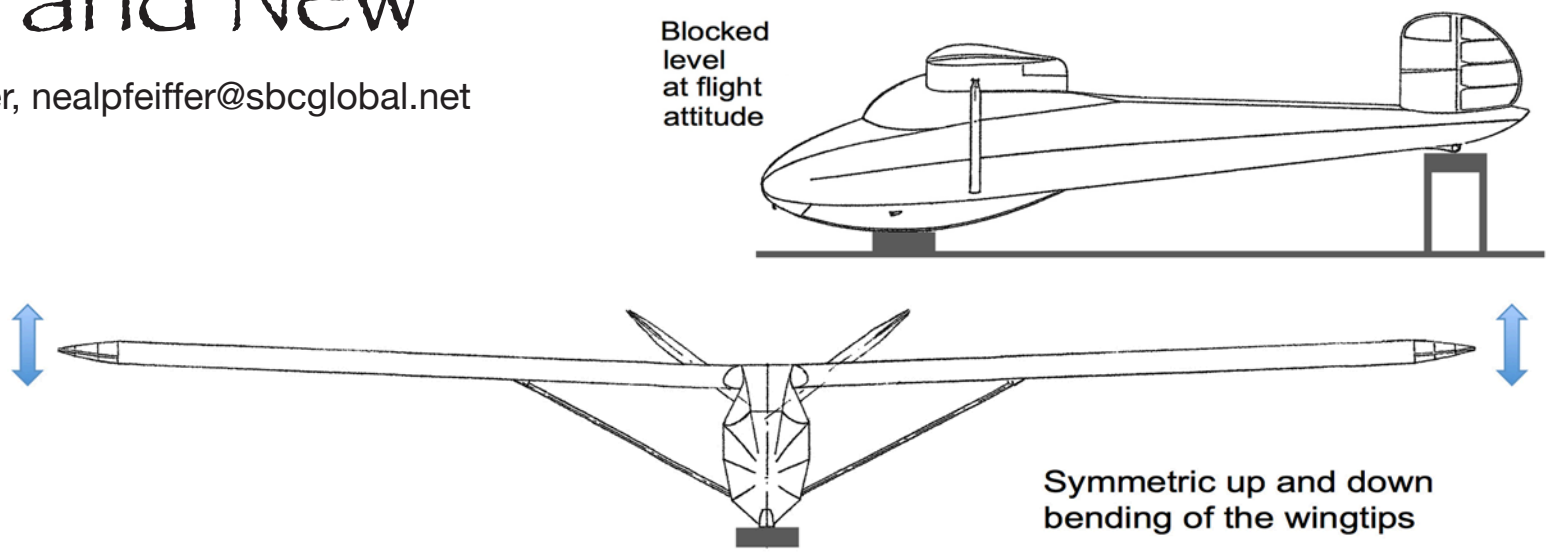
Right: Johnny Berlin's Egida

Below: Rob Terry calmly guiding his model in for a landing

Eagle 4.0 RES and an Icon circling in light lift above the field

Wing Structural Check for Sailplanes, Old and New

Neal Pfeiffer, nealpfeiffer@sbcglobal.net



The inspection sheet used for gliders in Germany includes an interesting item, the oscillation frequency for wing bending. For inspection sheets in the original German, it is identified as “Flügelbiege – Schwingungszahl”, and in sheets written in English, it is called the “Wing warping rate of oscillation.” In either case, the value is defined by some number of oscillations per minute.

So what is the importance of this number?

A typical wing is constructed of one or more spars with ribs and skins that provide the aerodynamic shape. This structure acts like a beam. When a vertical load is applied near the tip of a wing and then released, the wing will continue to vibrate up and down for some time. These up and down oscillations will occur at a timing that is called the natural bending frequency of the wing. This is a primary bending characteristic of the wing.

The bending frequency is due to the physical dimensions of the structural members of the wing and the characteristics of the material from which the wing is constructed. For a newly constructed wing, its frequency is recorded on the original inspection sheet. This reflects a baseline value of the new structure that can be used for comparison at any time in the future.

These newly built LK-10 wings will soon be completed and their natural bending frequency determined. Sam Armstrong and Thomas Evelo photo.

For normal usage, and with proper protection from the elements, the value should not change by any significant amount over the years. The wing bending frequency should be measured regularly, at least at each annual inspection. If the frequency changes by any noticeable amount, it is a warning to investigate the integrity of the wing structure.

The frequency can change by either a change to the stiffness of the structure, delamination or gross glue failure, or by a failure in some part of the structural material. This could occur if the aircraft experiences a very hard landing or a ground loop with the wing digging in. It could also occur if the glider experienced an overload during an aerobatic maneuver or the aircraft executed a significant event above maximum rough air airspeed. One should carefully read the flight manual and consider the airspeed margin that is available before undertaking a maneuver that applies a significant load factor.

Note that this frequency is measured for all German gliders, regardless of material. But for vintage, wood gliders, this can be a very important tool to keep track of structural health. The measurement should be done annually but also immediately following any time that there is concern that a landing may have been too hard or any other significant event occurred that could stress the airframe.

In order to measure the frequency, a structural vibration is induced by applying rhythmic movement up and down on a wingtip in time with the natural vibrational frequency of the wing, so that the entire wing (left and right) attains a symmetrical up and down bending motion. The natural frequency is best found with an initial vigorous push to the wingtip, after which a slight tapping with fingertips at the proper rhythmic time is sufficient to build up and maintain a useable amount of up and down motion.

A group of three people are needed to measure the frequency. One excites the wing and keeps it oscillating. Another counts a predetermined number of cycles and the third person keeps track of the times with a stopwatch. The number of cycles can be selected so that a period of 15 to 20 seconds is measured. The counting and timing is started once the oscillation is stabilized. This should be repeated for a total of at least three measurements. The frequency per minute is calculated by dividing the number of oscillations by the fraction of a minute of time. The average of the three measurements should be recorded in the inspection record.

The manufacturer may specify blocking the glider so that it is off its tire and leveled at a flight attitude. Do not let worries over getting the glider fully supported keep you from making the measurement, since the basics are similar if the measurement is done on the glider's wheel and tailskid. There may be some difference with the axis of the rotation slightly shifted; that could be remedied with a box under the tail skid. If the tire is fully aired up, the spring in the tire should be secondary to the wing oscillation. Just note how the measurement was made so that it can be compared to future measurements. Also, vibrate the wing without timing it and just look along the entire span of the wing. Check for any unusual bumps or behavior and any sounds of loose joints or foreign material rattling inside. If anything seems unusual, investigate.

This article appeared in Bungee Cord Volume 39 No. 2, Summer 2013.

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Our sincere thanks to Simine and Jim Short, *Bungee Cord* Editors, for their cooperation in allowing reprinting within *RC Soaring Digest*.

The following lists have been collected for various vintage glider types. The measurements are in cycles per minute.

From Werkstattpraxis (by Hans Jacobs):

Kranich II	180
Weihe	240
Olympia	230
Rhönsperber	210
Grunau Baby IIb	310
ES-49	270

From specific inspection sheets:

Ka-6BR	S/N 337	192
Ka-6BR	S/N 461	186
Ka-6CR	S/N 6534	184
Ka-6E	S/N 4135	187
Ka-2	S/N 38	208
Ka-2B	S/N Balgo-2	220
K-7	S/N 536	210
ASK-14	S/N 14004	190

From aircraft handbooks:

Mg23	180
Kestrel	124–130
DG 600 (15 meter)	148
DG 600 (17 meter)	128
ASH 26E	126

The Aircraft of George Cornelius

David Nutt, Jr., dnutt2300@aol.com

Excerpted from Dayton Daily News
Sept. 26 1943, Sunday
Herbert Shaw, Jr.

George Cornelius, President of the Cornelius Aircraft Corp., 809 North Ave., Dayton Ohio

“He’s one of those fellows who is not talking idly when he seeks of postwar aviation. Cornelius not only has ideas - but he’s putting them into form. Most have progressed from paper to model stage and an experimental ship which offers safe and smooth flying has already been test-flown satisfactorily.”

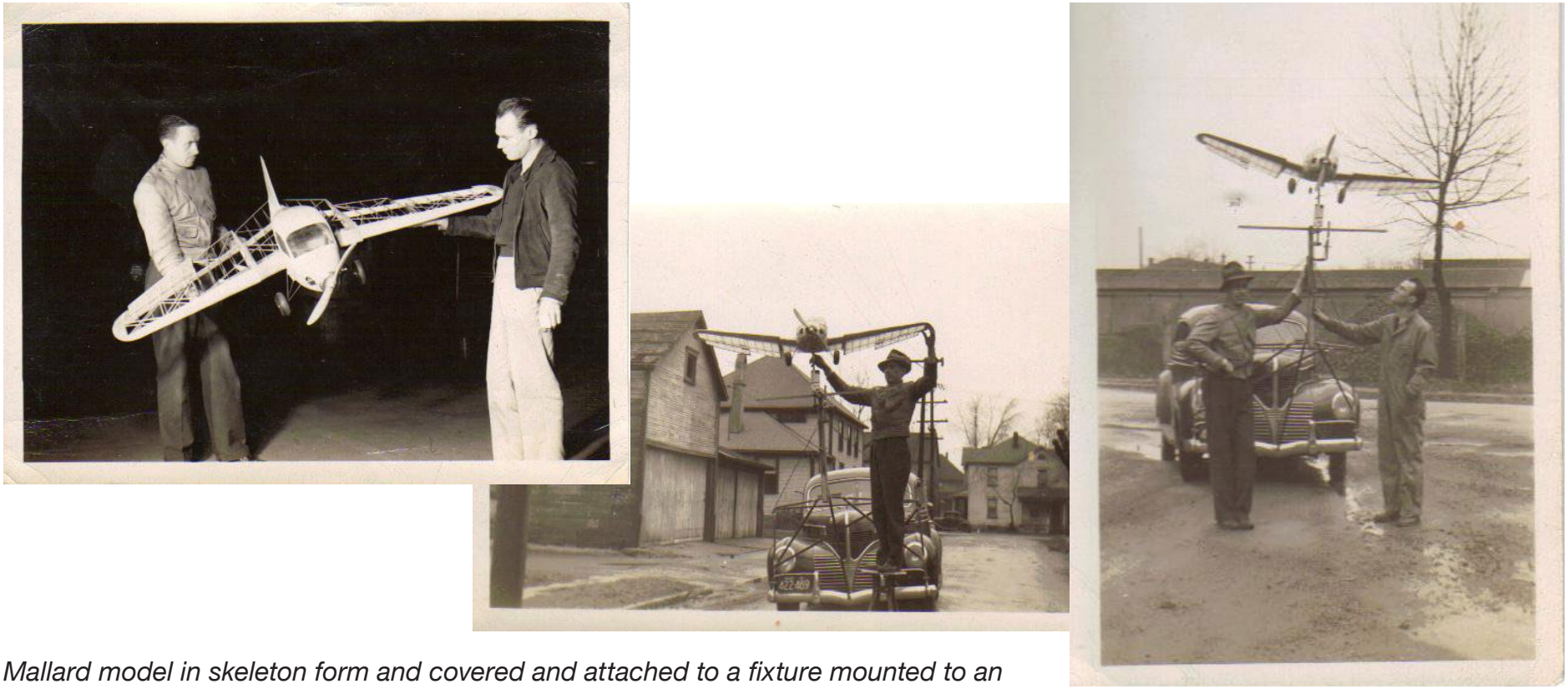
“Through application of his latest development - a moveable winged plane - successfully flight tested in past weeks at the Dayton Municipal Airport - Cornelius knows that planes can be made safe for the novice, and comfortable.

“These new type wings, requiring no elevators, not only smooth out the “bumps” in air travel, but at the same time prevent stalls and spins by automatic adjustment of their angle of attack into the air..

“By making a plane safer Cornelius says you must only make it simpler to operate and foolproof. In both cases his moveable wing innovation answers the question of safe flying, for it not only makes flying simpler, but at the same timer prevents mistakes in the air which might be serious.”

“This progenitor of the postwar plane first saw the light of day at Colfax Washington 43 years ago. He attended

HERE CORNELIUS IS SHOWN viewing two of his most promising models. To the left is the “movable wing” ship which has been successfully flight tested. On the right is his model of the “auto-plane” which he believes is the answer to the postwar plane.



Mallard model in skeleton form and covered and attached to a fixture mounted to an automobile as an "open range" wind tunnel.

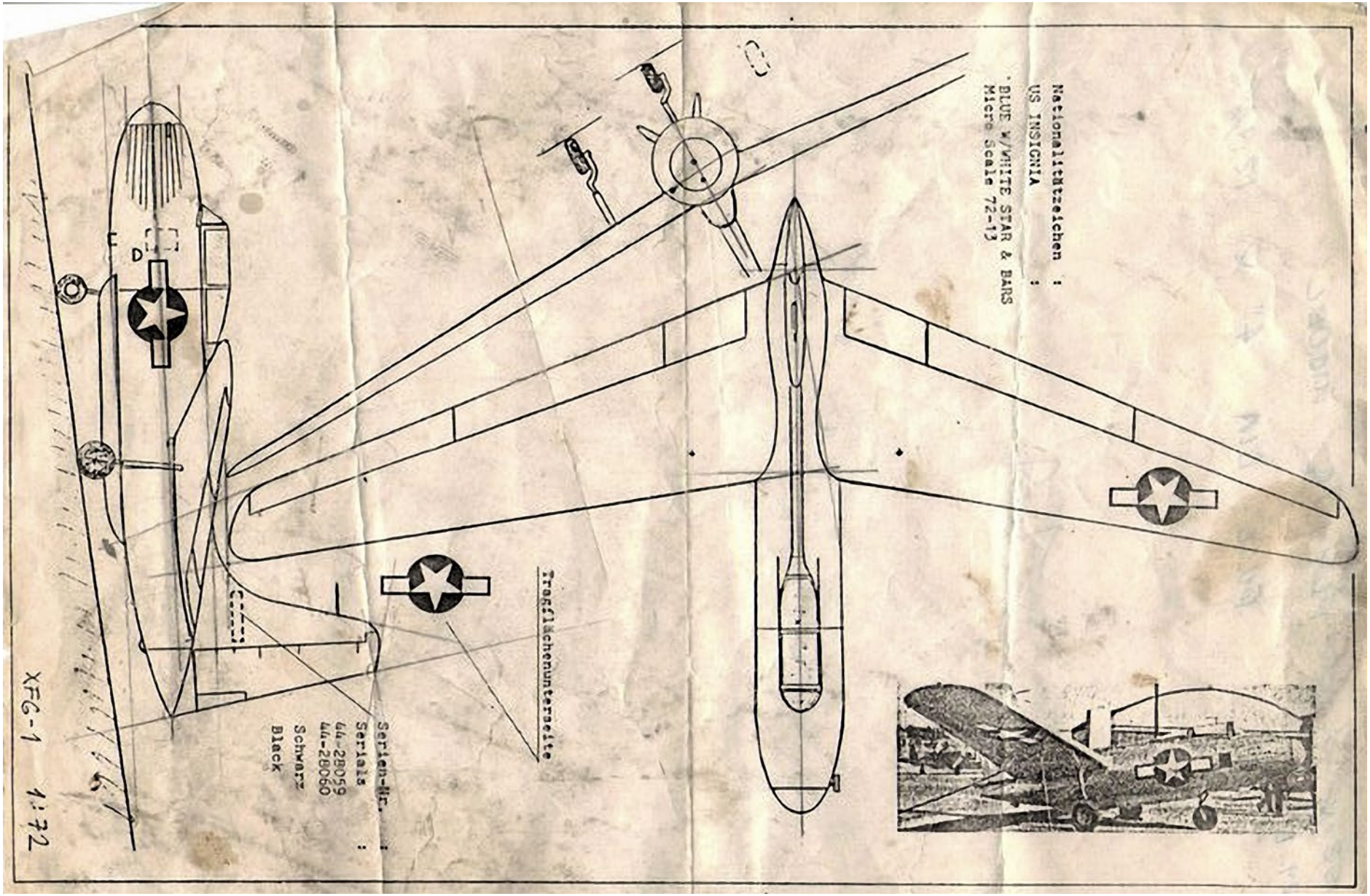
Turner High School at Turner Oregon and later the Washington State College and the Hancock Foundation College of Aeronautics at Santa Monica California.

"From 1929 to 1943 he operated a plane repair shop in Los Angeles during which time he built a flying boat and continued development of a moveable wing plane which has been in reality a furtherance of an idea grasped when still a student at Turner back in 1918.

"Later he was in New York and a consulting engineer, and then came to Dayton in 1940.

"His plant, the Cornelius Aircraft Corp. on 809 North Avenue here, is now being fitted with a 3ft wind tunnel. Powered by a 75 horsepower electric motor, a fan will speed air through the tunnel at 130mph, furnishing the speed necessary to test his models."

The moveable wing design was built as the FreWing and LW-1, both conventional tailed designs, and then as a swept forward wing tailless planform named Mallard. The Mallard was built by Spartan Aircraft Corporation and was successfully flown a number of times, the first in mid-August 1943. Controls for the Mallard were very similar to what RC slope soarers refer to as "pivot wings."


Nationalitätszeichen :
US INSIGNIA
BLUE W/WHITE STAR & BARS
Micro Scale 72-13
Tragflächenunterseite
Serien-Nr. :
Serials
44-28059
44-28060
Schwarz
Black
XFG-1 1:72

XFG-1 3-view

The outer portion of the Mallard wing was engineered to rotate around a fixed spar. Pulling or pushing on the control column forced the outer panels to change incidence in unison, acting as an elevator, while a side-to-side-motion moved them independently, the differential incidence rolling the aircraft as would ailerons.

Cornelius seemed to have a penchant for forward sweep tailless designs. One of the more well known examples is the XFG-1, developed under project code MX-416, a design which came about in response to a perceived need for an aerotowed tanker to extend the range of the B-29 bomber.

Holding 677 gallons of fuel, the XFG-1 could either be piloted and towed to a destination with the usual tow line, landing on a belly skid, or as a pilotless expendable fuel tank, semi-rigidly mounted to the parent aircraft by means of a long boom, to be released once the fuel carried in the XFG-1 was used.

One of the more interesting points of the XFG-1 design was the ability to adjust the wing incidence on the ground to either +3 or +7 degrees.

Despite Cornelius' claims of his designs being "safe," either because of the forward sweep or the "wobble wing" system, one of the two XFG-1 prototypes crashed after falling into a spin, something Cornelius claimed could not happen.

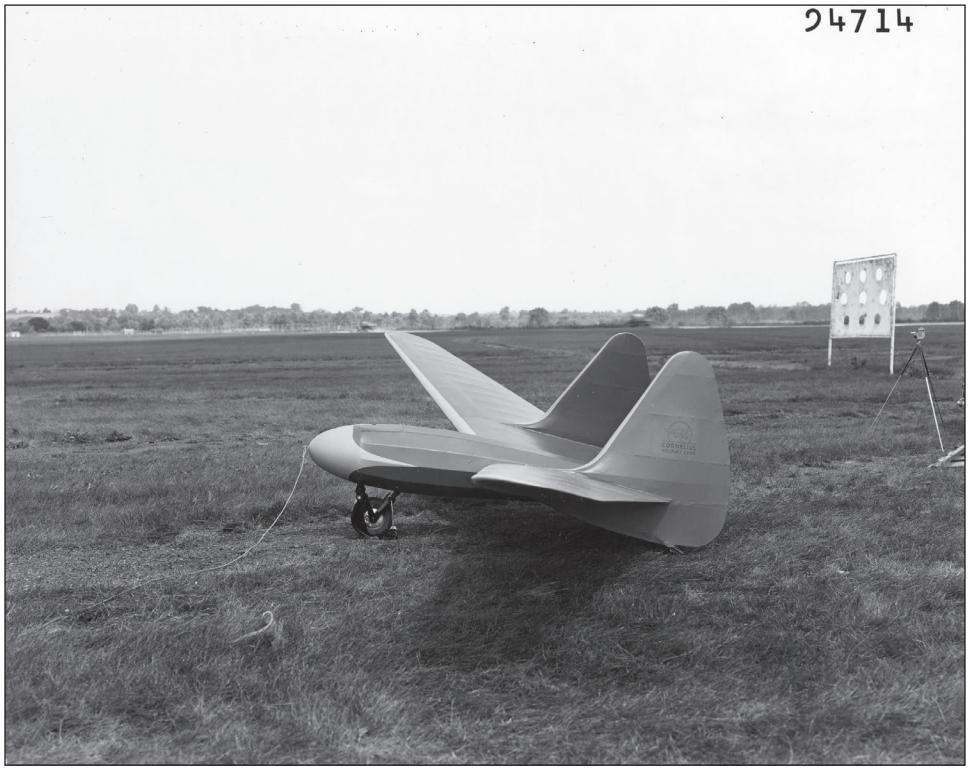
Still, those looking for a unique full size aircraft to model for slope soaring or aerotowing might consider a large scale XFG-1. As two piloted examples were flown before the project ended, the design does fulfill established Scale requirements.

Mallard Data

Crew:	1
Wingspan:	38 ft 0 in (11.58 m)
Gross weight:	2,470 lb (1,840 kg)
Powerplant:	1 × Franklin flat four, 130 hp
Performance:	V_{cruise} 125 mph (200 km/h)

XFG-1 Data

Crew:	1
Length:	29 ft 3 in (8.92 m)
Wingspan:	54 ft 0 in (16.46 m)
Performance:	V_{cruise} speed on tow 250mph



Cornelius aerial target, circa WWII. Photo courtesy of Mark Nankivil and the USAF Museum Archives.

Tom's Tips

A Simple Flat Rack

Tom Broeski, T&G Innovations LLC, tom@adesigner.com

I needed a simple rack that wouldn't take up much room in my truck. See Photo 1.

Here's what I used to construct the rack in Photo 1, but it can be easily made to fit your collection and vehicle as well.

Parts:

1/2" pvc pipe unless otherwise noted

(4)	24"
(8 to 10)	13" for 14" chord. You can make it smaller if you don't have big planes.
(4)	5" or less for bottom
(12)	6" for uprights
(8)	1" for T connection at cross members
(20)	T (Check for contractor packs; 10 cost $1.98)
(0 or 4)	end caps
(4 or 8)	elbows

Photo 1

The first step was to make up two “ladders.” See Photo 2.

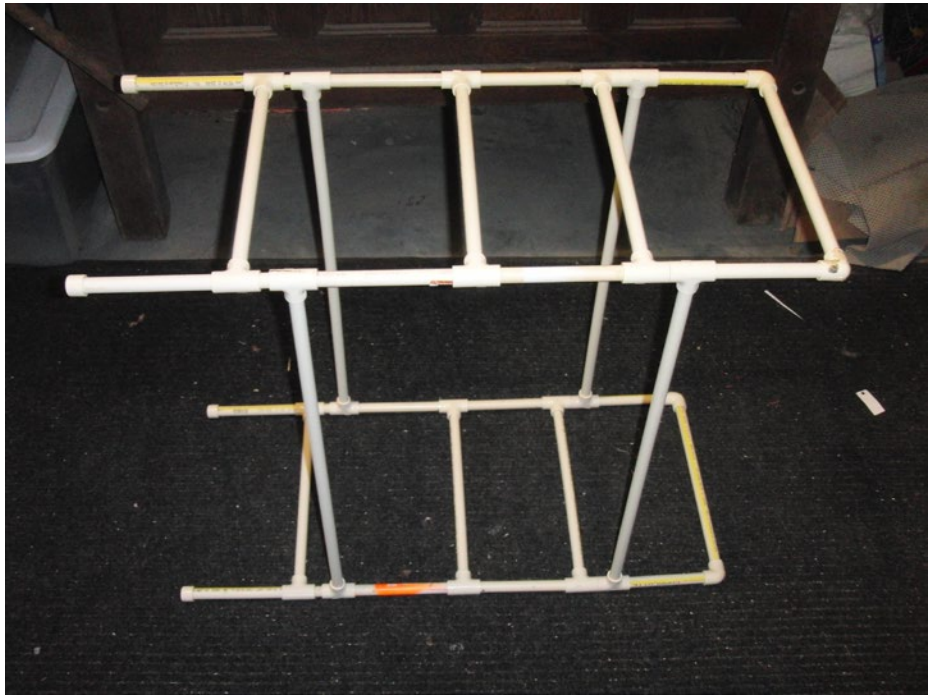
I have a bracket in the way on my truck and wanted as much height as possible, so I did not close in the top. You can just add elbows and do the top the same as the bottom. This will give you a handle for carrying.

Photo 2

I assembled the whole unit and then used thin CA to keep it all together. See Photo 3.

You can use PVC cement, but I’ve found that if I want to change the rack at a later date, I can use CA solvent to take it apart.

Photo 3

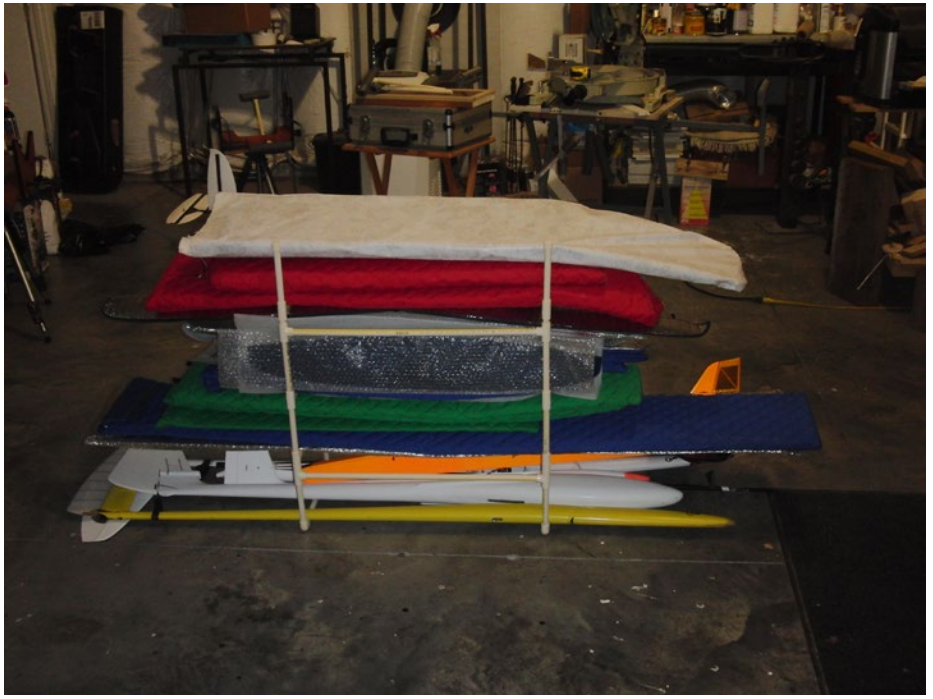


The rack holds a good deal of planes that are in bags. See Photo 4.

This one has:

(2) Icon2 with extra tips and tails
(1) AVA pro
(1) Stoble
(1) Aquila XL
(1) Mako
(1) Oly II

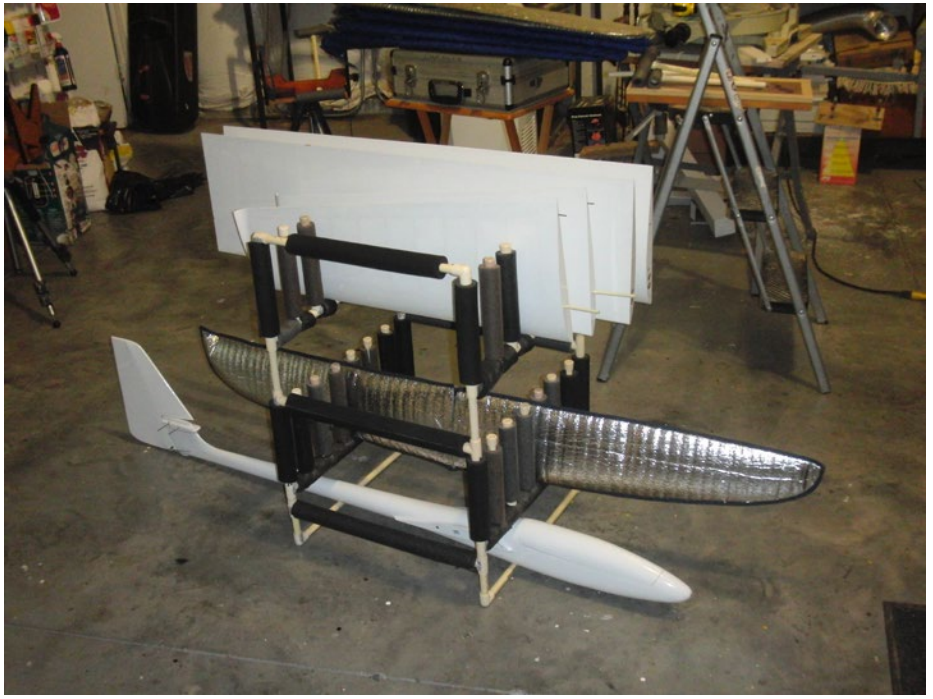
Photo 4



I use another type for my wings without bags. See Photo 5.

This rack features foam surrounds on the uprights to supply a bit of cushioning and inhibit slipping.

Photo 5



Creating a sturdy PVC rack for your individual requirements is both quick and inexpensive. All that's needed is to determine the dimensions of your project and have an appropriate supply of PVC pipe and fittings.

THE FIRST ANNUAL
MONTANA ALES TWO DAY COMPETITION

Text by Keith Altimus
Photos by Chip and Robbie Baber

The sun is rising over the capitol of Montana. There are a few motor homes and fifth wheeled trailers parked in an alfalfa field out of town towards Canyon Ferry Lake on Eames Lane. The occupants have traveled from all corners of the continent. Some from as far away as New York and others from Washington state. California is represented as is Pennsylvania and numerous other states as well as a representative from Canada.

These are not senators or lobbyists that have found their way to Montana. These are sailplane pilots that have come to join in a friendly competition that has been organized by a very talented and giving person. His name is Curtis Suter, and he is the founder of a sailplane spin-off club from the local RC club, the Helena Flying Tigers.

The field belongs to a friendly and gracious farmer named Wayne Venetz. He is also a member of the club and a soaring enthusiast who has unselfishly

Pilots lining up for first round launch of the contest on Saturday.
Photo by Robbie Baber

Curtis Suter, a happy CD!
Photo by Chip Baber

cut out a portion of his valuable field to give the club a beautiful space in which to gather and practice their hobby.

Today is different though. Today there is no practice, today is August 24th, competition day and the start of the two day man-on-man (MOM) ALES competition that was the dream of Curtis. He wanted to organize a competition to give all pilots a chance to come to the State Capitol for a fun and relaxed weekend of soaring. This will be a chance for local glider enthusiast to see how their skills stack up to those from other parts of the country.

It's Saturday morning now and the sun has just appeared over the mountains of Montana. The sky is still, the temperature is perfect. If you wanted to design a day for soaring it would look just like this.

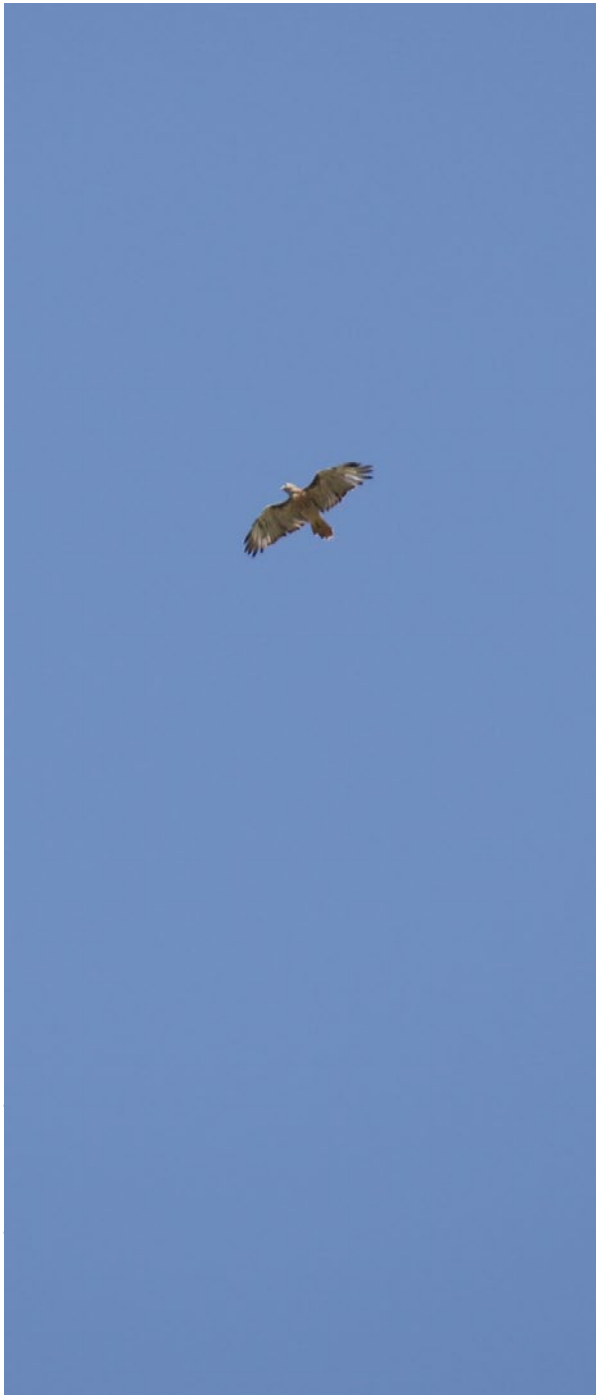
The pilots are arriving and the models are being assembled. The club is expecting

28 pilots to the field today and they are ready. The field is cut and the landing tapes placed awaiting the arrival of the models. The cars are still streaming in and smiles are worn by all those lucky enough to be present at the first ever Montana ALES AMA sanctioned two day event.

The pilots' meeting is called and the rules are set forth by the CD Curtis Suter. Curtis has worked hard for this day. He is a kind but competitive guy who has brought a great group of folks together to share the love of soaring. He organizes an event once a month throughout the summer to get the club

Right: Curtis Suter, a happy participant! Photo by Chip Baber

Below: Dave Register with his Helix making landing points. Photo by Chip Baber



Above: *Fred Maier launching his Oracle. Photo by Chip Baber*

Right: *School is in session! Photo by Chip Baber*

together and test their skills that they have developed over the past weeks of practice.

Today there will be a seven minute task to start in dead air conditions and then on to 10 minute tasks with two twelve minute tasks to end the afternoon. The rules are kept to a minimum and the main goal of the contest is to let everyone fly and to have fun, and that is exactly how the day proceeds.

Every type of sailplane is present, from beautiful home built woodies to high end moldies. There are even a few foamies represented. Everyone flies in the same class.

Photo by Robbie Baber

Opposite page, upper left: *"Little" Jon Garber, our youngest competitor, with his Pi2 scratch built Loughran design. Photo by Robbie Baber*

Opposite page, upper right: Jim Thomas and his E-Supra. *Photo by Robbie Baber*

Left: Wayne Venetz provided a portion of his farmland for the event. *Photo by Robbie Baber*

Above: *Rod Musgjerd and his freshly recovered Pulsar. That transparent white glows at altitude! Photo by Robbie Baber*

Above right: *Ann Stimers with her Radian, always with a smile. Photo by Robbie Baber*

Photo by Robbie Baber

Brad Garber timing for Jim Loughran and having fun. Photo by Robbie Baber

Randy Brust and his Ava Pro. Photo by Robbie Baber

Some great flying is witnessed by the out of state fliers as well as some of the local talent. Curtis is busy running the contest as well as competing, but his demeanor doesn't waiver. He is calm and friendly to all that approach him with their questions and comments. His flying is precise. This is the first contest for some of the pilots, but the seasoned professionals are eager to help and the morning events run very smoothly.

Lunch is served and one of the club members, Jim Loughran, has brought a crock pot full of pulled pork. Sandwiches are served with baked beans and potato salad. Everyone enjoyed the fabulous lunch and took the opportunity to rehydrate and check the scores to see how they ranked. The competition was very close at the top with only a few points separating the first five pilots. Maybe the afternoon's twelve minute rounds would separate the field a little.

The twelve minute rounds are flown and there is plenty of lift to be found by those adventurous enough to range out and find it. Some pilots found themselves specking out to the limits of their vision and some found the lift elusive.

Everyone had fun with a great day of soaring and only 35 points separated the top two pilots. Jim Thomas was on top of the leader board followed closely by Curtis Suter and Jim Frahm closing out the podium.

The flying was over for the day but the festivities were not. All that wanted to gathered at Bert & Ernie's in downtown Helena for a great dinner and a few well

deserved glasses of their favorite ale. The evening culminated a fantastic day of soaring and the joining of new friendships. Laughter and smiles were prominent as the day's events were relived and embedded into the memories of the pilots and their families.

Sunday brought another spectacular August summer day to the flying field. Pilots were eager to get their planes assembled and either continue their good fortune or find a strategy to improve standings.

The day started out as the previous with big blue sky and calm air. Then by mid-day the gentle breezes began to loft through the field. Lift was there for the taking and many pilots were circling their way to new found heights in the thermal generators. Lift seemed to be everywhere for some flight groups and nowhere for others. The top pilots were having no troubles with the sink cycles or the downwind landings. Some, however, were having difficulty with the increasing wind. There were a few who found themselves in trouble and a few off-field landings were witnessed.

Lunch was served again, giving the pilots that were struggling a chance to calm their nerves. A few thunderheads were building, but all seemed to skirt around the field. The winds were patiently waiting for the competitors after lunch and a few pilots couldn't manage their models in the stiff breeze. A handful had found the winds a little too much and the scorecards reflected this fact with five or six

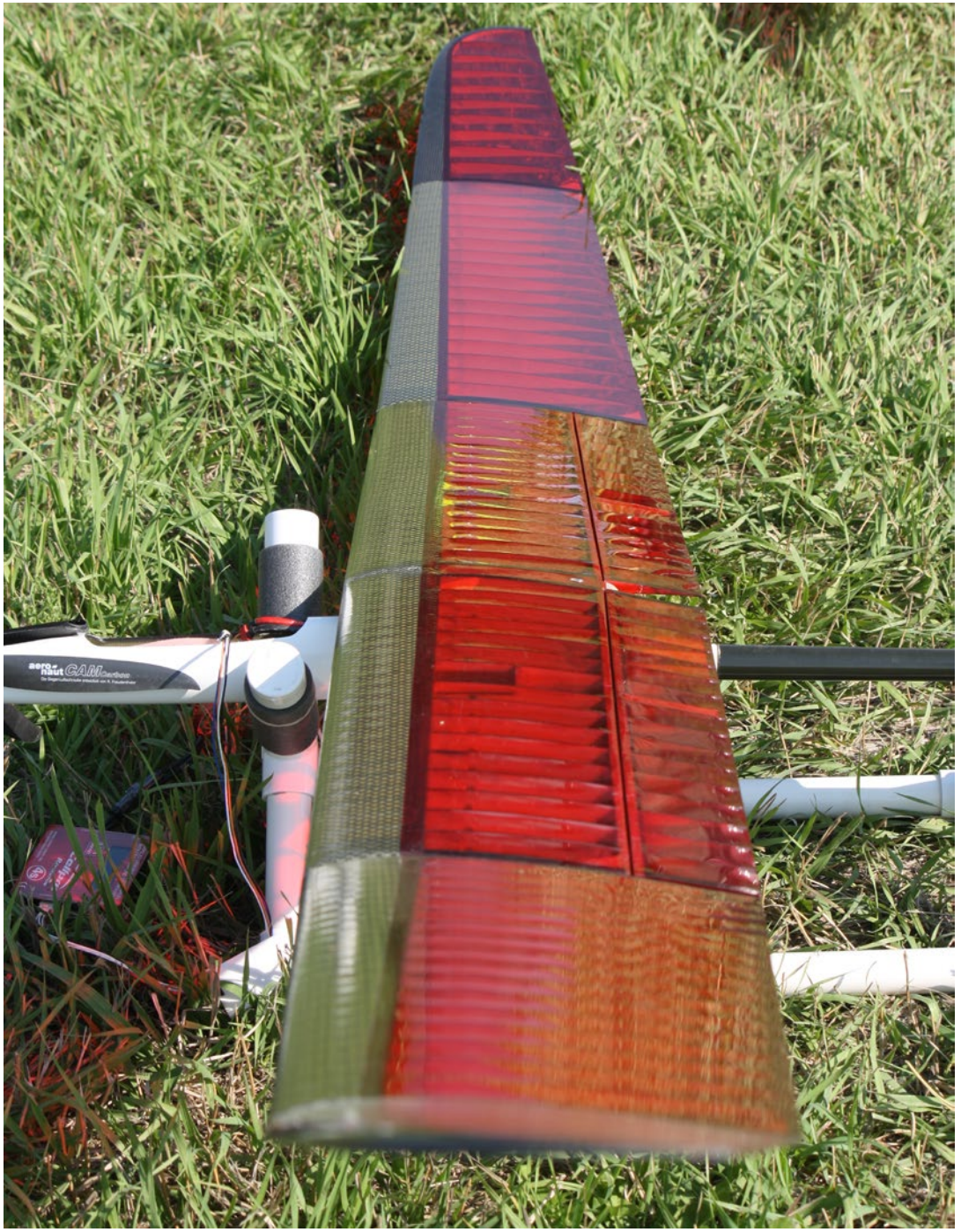


Photo by Chip Baber

pilots scratched out for the day.

The winds were challenging, but most pilots were able to manage unharmed. Notable pilots were once again Jim Thomas, Curtis Suter and Jim Frahm with a couple of locals making a terrific showing. Rod Musgjerd was flying fantastic as was young talented “little” Jon Garber. Ann Stimers was flying her Radian with authority and sticking every landing in the increasingly tough conditions. Randy Brust was also making a late charge with some very impressive flying in the late rounds.

In one of Sundays rounds Rod Musgjerd and his father Dean were the only two planes left in the sky in their flight group. Rod was flying his beautiful newly covered red, white & blue Pulsar and Dean was airing out his Radian. They would battle it out, father and son, right to the buzzer. The gallery was rooting Dean on with his Radian trying to show his son how to “win with foam.” Both pilots were neck and neck on the downwind leg and when they turned to base, Dean pulled the flaps a little too soon and dropped out of the sky short of the tape. The crowd let out a collective sigh and Rod flew the Pulsar right up the tape for a high point landing. Priceless!

After the twelve minute rounds were complete, the events of the weekend had come to a close. After the huge raffle prize giveaway, the winners were

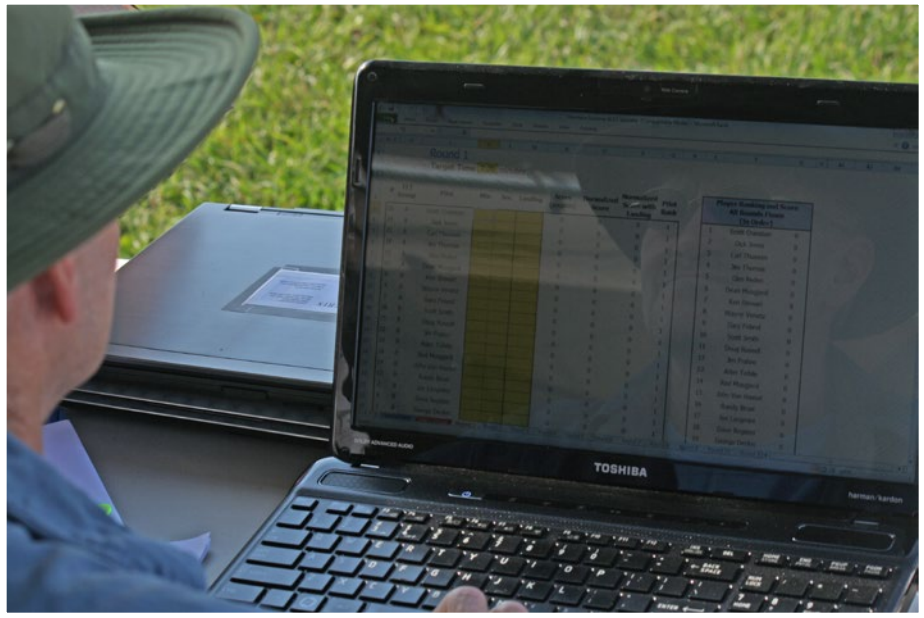
Mystique in for landing points. Photo by Robbie Baber

announced… Randy Brust third, Jim Frahm second and the man of the weekend and winner of the first Montana ALES two day contest was Jim Thomas flying a beautiful red and black Supra. Congratulations Jim! Great flying all weekend and we hope you return next year to defend your title.

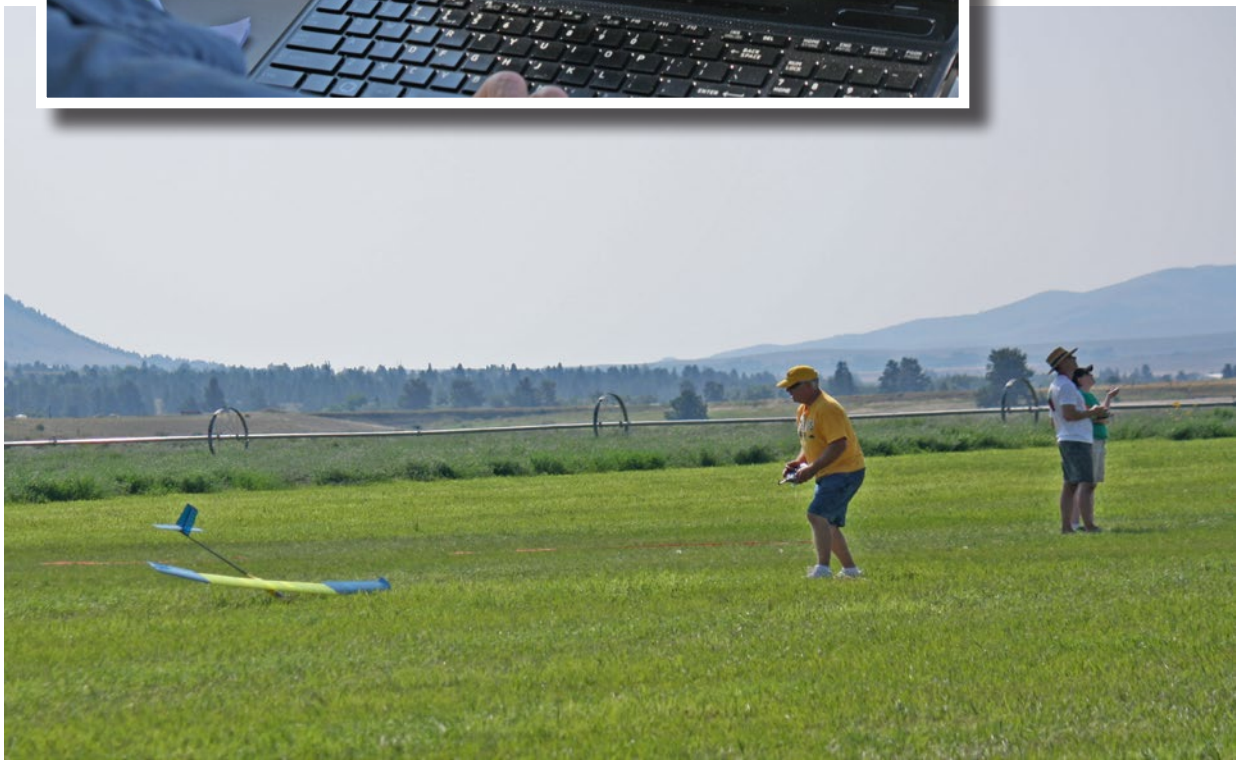
Thank you to all that attended and especially those that drove all the way across the country to visit us in Montana. It was a wonderful contest. Thanks to Curtis for CDing the event. It was run very smoothly and everyone had a great time. Curtis had a few small mistakes on the last day and came in fourth, but flew an awesome contest. The competition was fierce and one mistake is all it took to drop your name down the scoreboard.

Hope to see everyone next year and if you live in the Helena area or are coming for a visit, please give Curtis a call or find him on RC groups and leave him a message. You're always welcome at the Helena Flying Tigers. It's a great club with very friendly and helpful folks.

A special thank you to Wayne for providing a great place in Helena for soaring enthusiasts to gather and have fun. Look for next year's contest dates on RC Groups and please come fly in Montana!



CD Curtis Suter entering scores. Photo by Chip Baber



Arlen Tofslie going for landing points with his Oracle. Photo by Chip Baber

Above: Randy Brust taking 3rd Place overall, Curtis Suter CD. Photo by Robbie Baber

Above middle: Jim Frahm taking 2nd place overall, Curtis Suter CD. Photo by Robbie Baber

Above right: Jim Thomas 1st place overall, Curtis Suter CD. Photo by Robbie Baber

Right: 1st, 2nd, and 3rd Place contest trophies. Photo by Robbie Baber

Photo by Robbie Baber

Sponsors

Helena Flying Tigers and Contest Director Curtis Suter would like to thank all of our sponsors for aiding in making this contest a huge success!!

Jim Frahm's donation of RC Model Glasses

Fast Freddies

Polecat Aeroplane Works

RTL Fasteners

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Peak Electronics

Soaring Circuits (CAMS)

Castle Creations

Tailwind Gliders Instructional DVD's

RC Sport Flyer Magazine

CLM Pro (Pods/Booms)

Helena Flying Tigers
scratch-built composite ALES pod/boom
for 2-3.4 meter model

Helena Flying Tigers and Curtis Suter would also like to thank all of the contestants for a great Soaring Event! We hope to see you all again next year!


Photo by Robbie Baber