Radio Controlled Soaring Digest

December 2014 Vol. 31, No. 12

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Front cover: Henryk Kobylanski's self-launch Paritech DG303. Further information and additional photos can be found beginning on page 114 of this issue.

Back cover: Elia Passerini's "antiqued" photo of the Rhönsperber at the recent Vintage Glider Club meet in Denmark. More photos of this sailplane can be found starting on page 59 of this issue.

R/C Soaring Digest

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Managing Editors, Publishers — B² Kuhlman

Contact — bsquared@rcsoaringdigest.com
rcsdigest@centurytel.net
http://www.rcsoaringdigest.com
Yahoo! group: RCSoaringDigest
FaceBook: https://www.facebook.com/RCSoaringDigest

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In the Air

On November 5th, ten days before the deadline for this issue, we posted a plea for materials on the *RC Soaring Digest* FaceBook page. The response was immediate and nearly overwhelming. Our sincere thanks to all those who submitted items for publication.

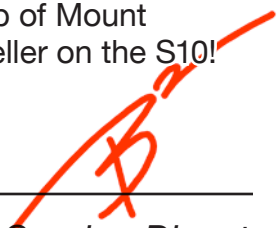
In late October we received the following email in response to an article in the November issue:

> "I enjoy every month the *RCSD* magazine, I like the aerodynamic articles and construction notes. I do not fly RC gliders, but I fly the F1C FAI free flight class. In the last number I read and article about the Explorer lost... ...and found (pp. 22-25), and I liked it very much. This story is similar with some of our retrievals of free flight models. This year I lost a model in a mountain 1200m high, and it took me 14 days to retrieve it. We use a lot of devices, compass, GPS, a Cessna, and finally it was recorded with an hexacopter drone. I share with you the link to the video: <http://youtu.be/u08ECavkhPE>."
>
> — Fernando Zito, Argentina

The video is a mixture of movies and stills and is really quite impressive. We contacted Fernando and he quickly produced the an article covering the entire adventure (along with a link to the video). You'll find it beginning on page 75 of this issue.

We're hoping someone will convert a large scale model of the Stemme S10-VTX to match the aircraft used by the DLR (German Aerospace Center) to create the first ever 3D map of Mount Everest. Personally, we love the retractable propeller on the S10!

Time to build another sailplane!



F3F World Championship 2014

Donovaly, Slovak Republic

Pierre Rondel, pierre.rondel@gmail.com

f3f | FAI World Championship for Slope Soaring Gliders | 2014

The second F3F World Championship was held beginning of September in Donovaly, Slovak Republic, a ski resort located at 200 km east of Bratislava. 51 pilots from 17 countries attended.

Wold Cup Opening Contest

This is almost a tradition, the World Championship starts always with another competitition which is a great opportunity for the pilot to discover the slope, tune their gliders, and observe other competitors. At Donovaly, the “before” WC was organized by another club from Czeck Republic, with their own logistics. The first day, we have been able to complete 3 rounds in extremely variable conditions, with times going from 41s to more than 120 seconds! The day was a mix of thermals, sinking air, cross wind, and no lift period. Simon Thornton (GB) took the best avantage of theses changing conditions to lead comfortably the competition. Curiously, despite the conditions in the middle of the afternoon were improving, the organisers decided to stop the competition around 3pm, asking the competitors to reach the lift within an hour, as 4pm was apparently the last ride to go down to the resort. This has been a big mistake but we didn’t know it yet. The second day has been worse than the first day and despite all the efforts of the organizers, the 4th round lasted for five hours and was canceled two pilots before the end when the wind dropped completely and definitively. Because of this, the competition, with 3 rounds, is therefore not valid and didn’t count for the World Cup ranking. We paid dearly for stopping the competition too early the first day.

World Championship, Day 0

The day 0 was dedicated to the model registration in the morning, each team having a time slot to register their model and make them checked, and the official opening ceremony in the evening. All the day was very cloudy and a huge storm with heavy rain erupted in the late afternoon. At 7pm all teams joined the opening ceremony, followed by a banquet outdoor in the cold and still post-storm wet air.

Day 1, no wind ... no flight !

To be honest, all participants were very worried about the whole week regarding the weather forecast. And it started badly with a first day without wind. After the daily briefing, we took the lift to the slope

around 11am and waited till 2pm, before the organiser decided to declare the day off and every body to go down. We didn't even begin to fly ...

Day 2, finally some action !

Second day was finally a flying day. We got a weather window from 10 AM till 5:50 PM where we could complete 3 rounds and two pilot groups of the 4th round (group scoring). At the beginning of the first round of the day was several reflies due to low conditions, but the wind improved to reach 5-9m/s with some thermals on top. But later the wind got weaker to the 3m/s limit and reflies started to appear.

Overall this is like a lottery. You absolutely don't know what conditions you will get until you are in flight. Several pilots took some risk and damaged and crashed their models. The most spectacular was a Stinger hitting the cross located on the right side of the course, behind the pole and judge. surprisingly, the plane survived quite well with "only" a big hole on the leading edge to the spar, but the rest of the plane was almost fine.

With such lottery some of the favorie pilots suffered already a lot and are out for some of them. But some other like Espen Torp (Norway), Mark Redsell (GB) are still in the race. Philippe Lanes (France) is leading the championship after 3 rounds but everybody knows that the 4th rounds will change everything with the discard.

Day 3 WC validated

The weather forecast for this 3rd day sent us to the north slope. After some wait, we started with the wind slightly above 3m/s but we didn't manage to finish round as the wind stopped. Then followed another long wait, making the 3rd group round 4 to be cancelled. Around 2:00 pm, the decision was made to move to the south slope, hoping for some breeze to raise, with the sun. After some waiting we have been finally able to fly the 3rd group and successfuly finish the 4th round. 5th round started immediately, but after 15 pilots, conditions became again marginal and we had to cancel 5th round after 30 minutes of interruption.

Day 4, day off

Following several pilot briefings, the day has been finally declared OFF.

Apart from the competition, a meeting has been organised by Tomas Bartovsky in order to discuss around F3F rules modifications.

It quickly appeared that the group scoring is the only way to achieve as many rounds as possible for F3F. However, everybody also agreed that the current scoring method was absolutely not appropriated for group scoring. French re-introduced the idea of a new scoring formula using the average time instead of the best, eliminating the "3rd man effect." Some other ideas came out like dividing into groups based on the wind speed (German proposal), using current group scoring systematically without waiting for an interruption like it is stated in the current rules (US proposal), increase the number of rounds (8 rounds) to make a championship valid (Spain), Slovakia proposed to have a discard every 4 rounds (not 4, 15 like today).

The problem of such a meeting is that all ideas are just discussed, and are never followed by real proposals and rule modifications. From my point of view the problem comes from the way proposals are officially made, reported to countries, and followed up by country representatives. It simply doesn't work.

For example, we all discovered at this WC that a rule modification has been proposed by Slovakia, then adopted by the CIAM during the plenary meeting beginning of 2014, with immediate effect, so not following the normal calendar which says that changes can be made only every two years, so normally next change could only happen 1st of Janury 2015. It was a shock for most of us.

Day 5, rain ... rain and ... rain

For me the worst day of the week, as we went to the south slope in the fog, with lots of cross wind, but quickly the rain arrived with even more wind, gusts being around 28m/s. We stayed under the rain and wind for a few hours, some teams having tents or umbrella to protect themselves, but still a nigthmare. Around 1:00 pm, the organiser declared the day off so we could walk to the lift under the rain. Here we still waited 45 minutes because the lift was closed without any people to operate it. Believe me, when we arrived at the apartment, everybody was totally wet.

Last day

It was raining in the morning, but forecast was optimistic, so after the daily breifing we went to the east slope. After the course has been setup, we started round 5, once again with crossed wind from the right, variable conditions, and low lift. After several interruptions, the 5th round has been cancelled and the contest Director did a short meeting with team managers to discuss it before deciding the end of the flights and so the championship. The time to go down, the rain arrived and didn't stop for the rest of the day.

At the end ...

After 4 rounds and a discard, František Ruisl (Slovakia) won this second F3F world championship with his Rotmilan, followed by Philippe Lanes (France) flying a Shinto and Espen Torp (Norway) an Avatar. On the Junior Side, the young pilot Lucas Kugler won the title for his first participation at a WC, flying a Freestyler 3. He is followed by Marián Mrva (Slovakia), a Needle 124, and Adam Bury (Poland) a Freestyler 4. With 3 pilots in the top 8, France wins logically the team ranking by a good margin, with Slovakia at the second place and Norway in 3rd. Regarding the planes used, popular gliders are the FS 3 and 4, the Stinger, the Pitbull, some Shintos and a few other planes, but due to the flying conditions, it is difficult to say which one was better or competitive.

In conclusion, the organisers did everything they could to run this championship smoothly and we cannot blame them. The weather only decided different and didn't allow more than 4 rounds, which is frustrating for everyboby, I agree. It remains that any WC is a unique opportunity to meet people and friends from all over the world, sharing the same passion, and just for this reason it will stay in my memory.

The next F3F World Championship will be in 2016, and Denmark just informed the F3F community that they are candidate to organise it on slopes near Hanstholm in the north of the country. There won't be a European championship in 2015 as there wasn't any candidate to organise it.

Note: As a member of the French national team, I would like to thank our aeromodeling federation (FFAM) and also our sponsors for their support:
<http://www.flashrc.com/>,
<http://silencemodel.fr/>,
<http://www.absolu-modelisme.com/>,
Cimalp Sportwear,
Orao Eyewear,
Corimao,
Telnowedge,
and FacCopies.

Enjoy the Photo Album!

The Place

The cable car allowed us to reach the summit where the slope is located.

Entering the cable car required some practice because of the backsack, gliders and all the equipment.

Banská Bystrica, the city near the WC site.

Team UK in the cable car and ready to go.

The Place

The cross on the right of the course. It was hit by a Stinger but didn't move.

Donovaly, the ski resort.

Landscape with map.

The upper the cable car station. Then we have a walk of 500m to reach the south slope.

Opening Ceremony and Teams

L to R: Contest Director Marian Maslo (SVK), President Tomas Bartovsky (CZE), Jury Members Sydney Lenssen (GBR), Miroslav Majercik (SVK).

Organizing team.

Team Austria.

Team Czech Republic.

Opening Ceremony and Teams

Team Denmark.

Team France.

Team Germany.

Team Great Britain.

Opening Ceremony and Teams

Team Hong Kong.

Team Korea.

Team Norway.

Team Poland.

Opening Ceremony and Teams

Team Singapore.

Team Slovak Republic.

Team Spain.

Team Switzerland.

Opening Ceremony and Teams

Team United States.

Team Ukraine.

Team Venezuela.

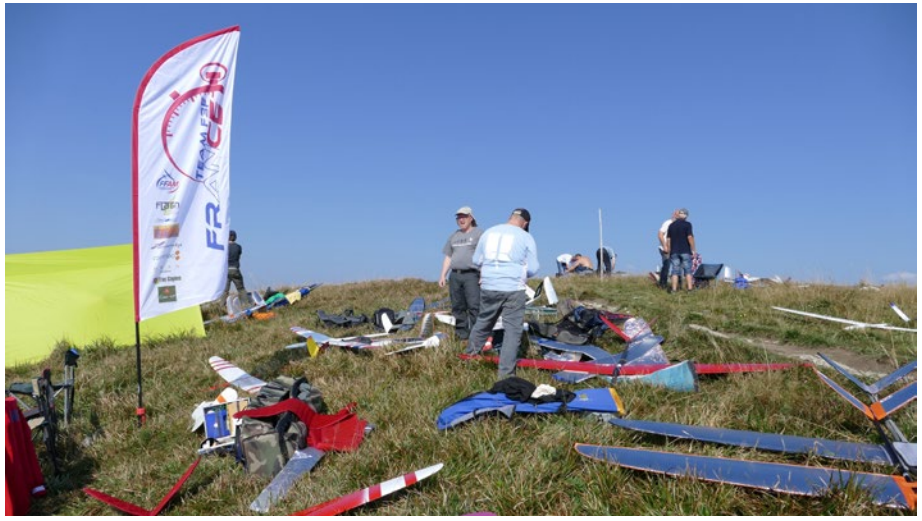
The place - panorama of the F3F World Championships venue.

Simon Thornton (GB) during the practice prior to the championship.

Pierre Rondel (France) about to launch his team mate's plane.

On the Slope

Siegfried Schedel enjoying free flying on the back side of the slope.



The french camp on the slope.

Jin-Ho Kim (Korea) waiting better condition to test the slope.

Nice national team logos.

Lucas Kugler (France), Junior world champion during the opening world cup contest, flying his Freestyler 3.

Lukas Gaubatz 's (Austria) Pitbull.

On the Slope

Warren Day's Pitbull (USA).

Steve Situm (USA) about to launch for practice.

A Freestyler 4.

Álvaro Silgado‘s (Spain) Pike Precision with slim fuselage.

On the Slope

Sidney Lenssen (GBR) checking Martin Ulrich's (Switzerland) planes during the model registration.

A bunch of french planes on the table waiting for registration.

Espen Torp (Norway) launching to test his model and the slope.

Espen Torp (Norway) showing us his new Avatar, acquired few days before the competition.

On the Slope

Relaxed atmosphere on the slope while waiting for the wind and the competition to start.

Stanley Chan and Chi-Sang Leung from Hong Kong.

Mataczyno Jerzy from Team Poland.

Venezuela flag marking their territory on the slope.

On the Slope

Pilot briefing before to start the flights.

Team Norway L-R: Bjorn Tore Hagen, Espen Torp, Olav Kallhovd.

Tim Traver's (United States) Pike Precision.

(Team Switzerland) Markus Meissner launching Martin Ulrich's Radical.

The flight preparation area.

The organizers working. We can see the horizon pointing device to enforce the anti diving rule.

The famous cross on the right of the course.

On the Slope

(Team USA) Warren Day launching Tim Traver's Pike Precision.

(Team Hong Kong) Loh Boon Seng launching Stanley Chan 's Freestyler.

Freestyler 4.

Stanley Chan (Hong Kong) on the course.

A Stinger starting a run.

The Rotmilan Midi, one of the planes used by the new world champion František Ruisl.

(Team France) Frédéric Hours launching Philipe Lanes's Shinto.

Philipe Lanes (France) on the course.

On the Slope

Another Freestyler 4

Radovan Plch (Czech Republic) and his Pike Precision with slim fuselage.

Danish team members Soren Krogh(left) and Knud Hebsgaard.

Team Singapore and Hong Kong planes in the grass.

Team USA having a rest and waiting for the competition to resume.

On the Slope

Team France ready for combat!

The three Shintos from Aerotec present at the WC.

Team Singapore enjoying the competition.

The juniors, L to R: Lucas Kugler (France), Adam Bury (Poland) and Marián Mrva (Slovakia).

Team Singapore.

Team Switzerland, Reto Blumer, Martin Ulrich and Markus Meissner waiting for the wind to come … maybe ...

Team Ukraine.

After spending hours under the rain and fog, competitors are now waiting 45 minutes the cable car to restart ...

Closing Ceremony

Above left: Junior podium

Above: Senior Individual podium

Left: Team podium

The 42nd VGC Meeting in Denmark

Elia Passerini, eliapasserini@valdelsa.net

I have been interested in model aircraft for about 25 years and have dedicated myself almost exclusively to the crafting of gliders. In the early years of my activity, I built commercial-kit models, but with the passing of time, increased knowledge and enhanced dexterity, I have undertaken the complete construction of models from drawings, especially of vintage gliders.

Over the years, my passion has driven me to research documents, drawings and photos, to visit museums and, above all, to participate in the meetings organised yearly by the VGC (Vintage Glider Club) in different European locations.

At the beginning of August, I was in Denmark, in Arnborg, Herning, venue of this year's 42nd International Rally. Partaking in these meetings is a very interesting experience, you make new friends, exchange drawings and take a great number of photos of the many gliders present.

The VGC was founded in 1973 on the initiative of Chris Wills (son of the famous British World Gliding Champion) and other enthusiastic pilots of older sailplanes with the aim of preserving these old and popular gliders from the era of wooden aircraft construction, so that

they should neither be forgotten nor left to decay.

In the early Seventies, interest in these old gliders was still scarce and they were thus given limited space in museums. Therefore, the idea was borne that their preservation would best succeed if they remained in the hands of enthusiastic pilots who would maintain them in an airworthy condition. With time, a worldwide association came to be formed and presently boasts more than 5000 members.

The members of the club keep in contact via a quarterly newspaper, the *VGC News*, and national meetings held in each country. These meetings culminate in the annual International Vintage Glider Rally held in a different country every year, preceded by a rendezvous, a pre-meeting before the actual VGC Rally.

To date, a considerable number of vintage aircraft from the pre-war period and the Fifties has been saved from decay. Many of these once famous gliders can now be admired again in flight in the sky. These vintage wooden gliders are now being rebuilt for the pleasure of those who are keen on having these types of aircraft in airworthy condition again. For this purpose, it has been necessary to retrieve the old structural drawings, which has proved to be a mammoth task.

Membership in the VGC is not limited to pilots and owners of real gliders, but also open to model builders, offering them a valuable source of information. In many cases, scale models are the only means to further historical evidence. This also allows us to build and fly vintage aircraft, the full-scale originals of which no longer exist or are no longer airworthy.

The *VGC News* regularly publishes articles and drawings dedicated to model building. Moreover, the meetings offer participants the opportunity to see and photograph very beautiful vintage gliders.

As already mentioned, the Club encourages restoration and construction of replicas by its members, awarding yearly prizes to the best works.

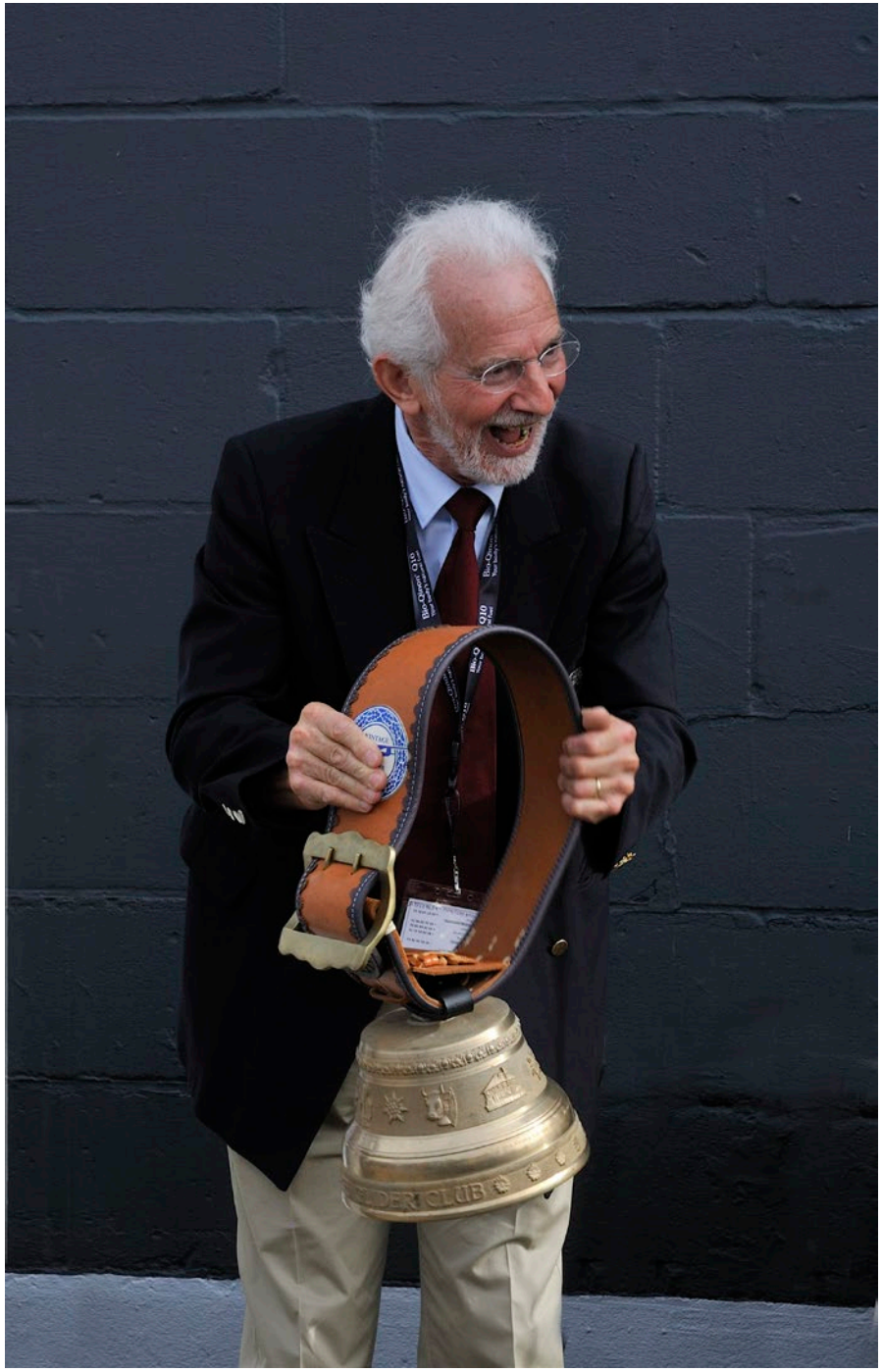
Even the Rubik R-11b Cimbora HA – 5035 is a 1984 replica. I have attached in a separate section some photos of this glider.

In 1941, with this two-seater glider entirely made from wood, designer Ernö Rubik made the history of sailplane flying in Hungary. It features an unusual 7.5 degree swept-back wing with diagonal ribs between the two spars and double lift struts, which produce no wing torsion. The ailerons are very big. There are no airbrakes. The fuselage is made with frames and longerons and covered with plywood. The sides and bottom are flat, while the upper part is rounded.

Many of these once famous gliders can now be admired again in flight in the sky.

At meetings this glider is much admired for its design and much photographed. It is preferred by many who wish to fly as nothing obstructs the ground view from the cockpit. Nonetheless, this glider is not widely reproduced by model builders.

There are so many gliders to describe and talk about for their conservation or reconstruction based on original documents and drawings by the hand of their owners, who I would define as full-scale model builders.



Some more photos, again in a separate section, feature another beautiful glider, the Rhönsperber. The gulled mid-wing of the research sailplane “Fafnir” built in the early Thirties fascinated the soaring world. As it looks prettier and seems to have no drawbacks, in 1934 Hans Jacobs built the Rhönsperber as successor of the Rhönbussard.

From the first idea to series production by Schweyer, Ludwigshafen, Jacobs had to do a lot of in-detail construction and tests for the Rhönsperber to gain the respect it earned. For two years, in 1935 and 1936, the Rhönsperber dominated Germany’s cross-country competitions and then became famous in other European countries as well.

The shape of the Rhönsperber influenced other designs, as shown by the Minimoa, originally a shoulder wing sailplane which was redesigned with a mid-wing. Only one Rhönsperber in Great Britain has survived the passing of time, and is back in airworthy condition since 1980.

Therefore, Otto Grau from Ludwigsburg, Germany, put all his knowledge and experience into an old glider design, and built a full-scale, airworthy Rhönsperber replica, spending thousands of hours of work on it.

The transparency of the 15.2-metre-span wings and tail, and the paint in the original colours on the contours of the varnished plywood of the fuselage create an especially charming effect.

I hope that all of the photos presented, of both the gliders and the meeting, may well represent what the VGC is all about.

Nick Newton, President of the Vintage Glider Club, opens the meeting at the sound of the traditional bell.

Left: Flight of the Cumulus IIIf (1952)

Right: Relaxing in the shade of a wing

Kaiser Ka 7 Rhönadler (1957)

Above: Kaiser Ka 7 Rhönadler (1957)

Right: SDZ -24 – 4 (Foka 4) (1960)

Flight of the Cumulus IIIf (1952)

Slingsby Prefect T-30A (1948)

Above: Hol's der Teufel (1928 – 1929), 2004 replica
Left: Geier II B (1951)

Hol's der Teufel (1928 – 1929), 2004 replica

Pik 5C (1951)

Left: *SB 5e (1960)*

Above: Flight of the Cumulus IIIf (1952)

Right: Flight instruments of the Cumulus IIIf (1952)

Moswey III (1942)

Moswey III (1942)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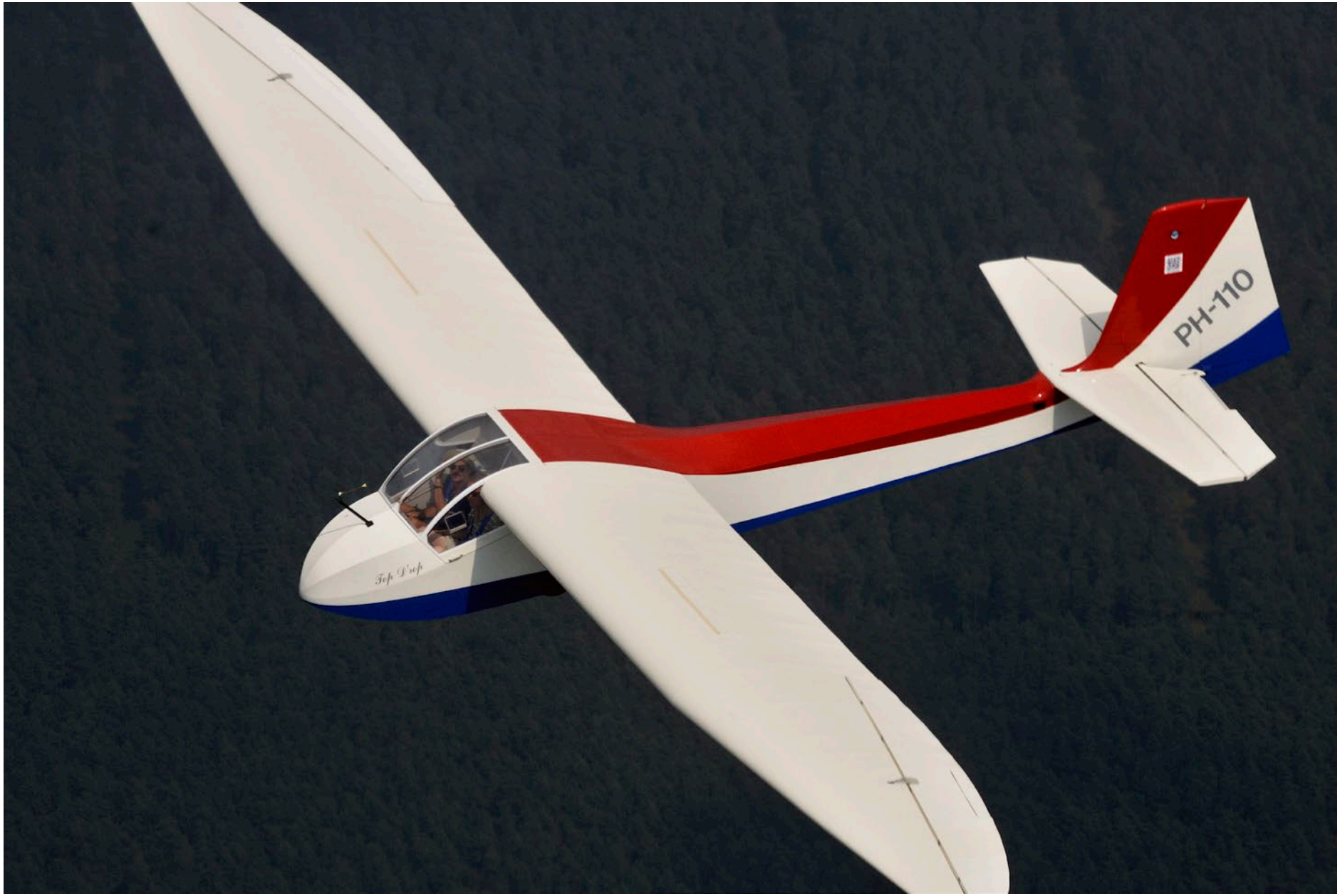
PH-1413



Opposite page

Top: BR-905 Fauvette (1957) *Bottom: SDZ 9 bis 1E Bocian (1952)*

Slingsby T 21c (1957)

SDZ 9 bis 1E Bocian (1952)

Kranic 3 (1950)

Moswey III (1942)

Kaiser Ka 2 Rhönschwalbe (1953)

DFS Meise (Olimpia) (1939)

Kaiser Ka 2 Rhönschwalbe (1953)

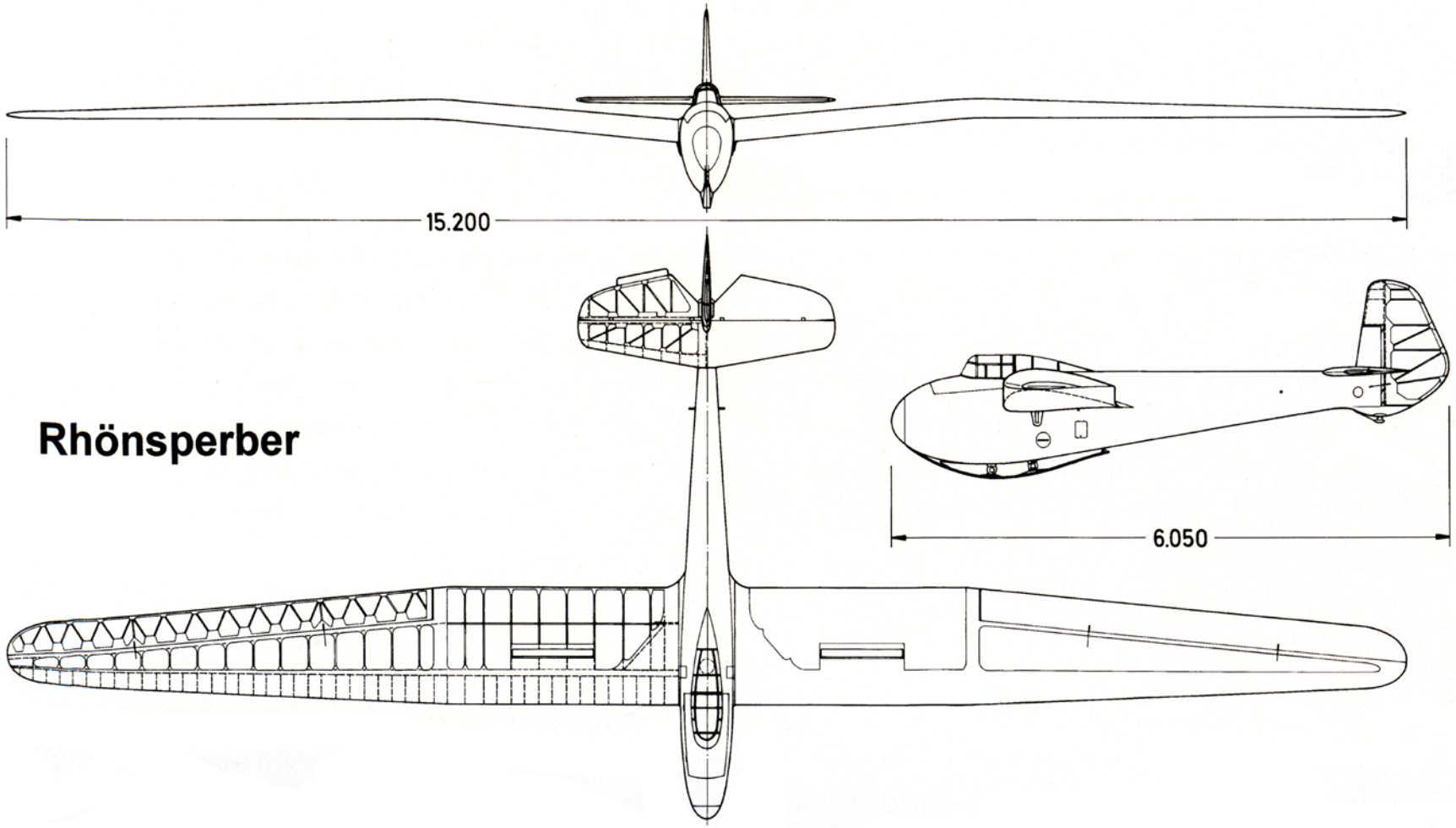
Slingsby T 31 (1950)

Høgslund/ Traugott-Olsen 2G (1947)

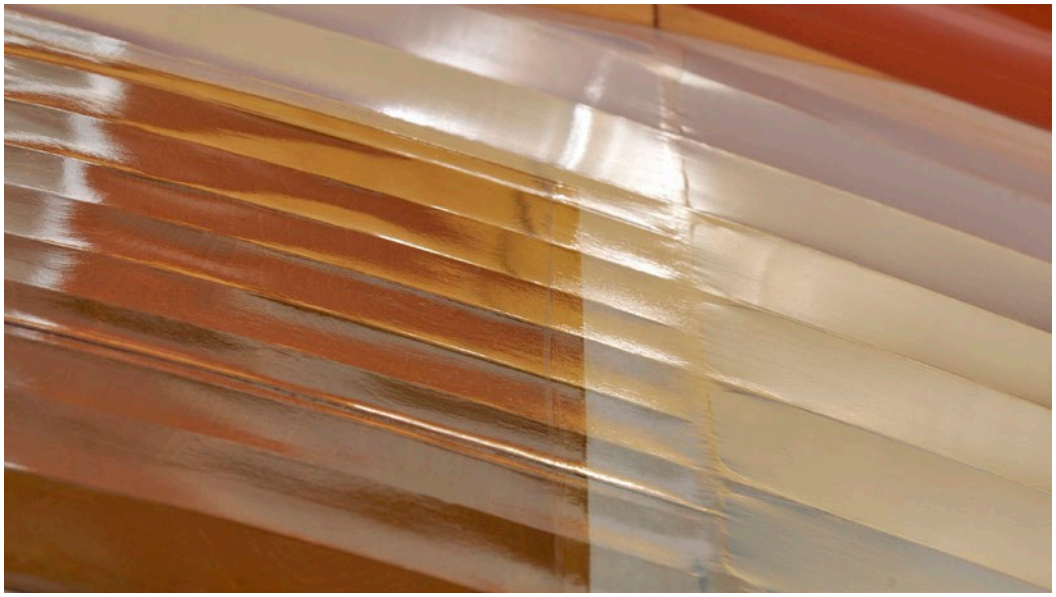
Above: Instrument panel of the Moswey III (1942)

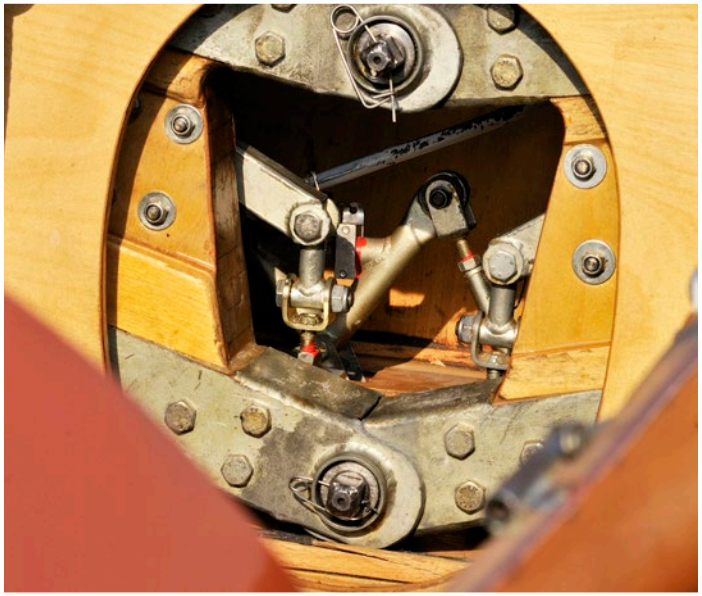
Right: Sunset at the airport


D-9025


15.200
Rhönsperber
6.050


Rhönsperber





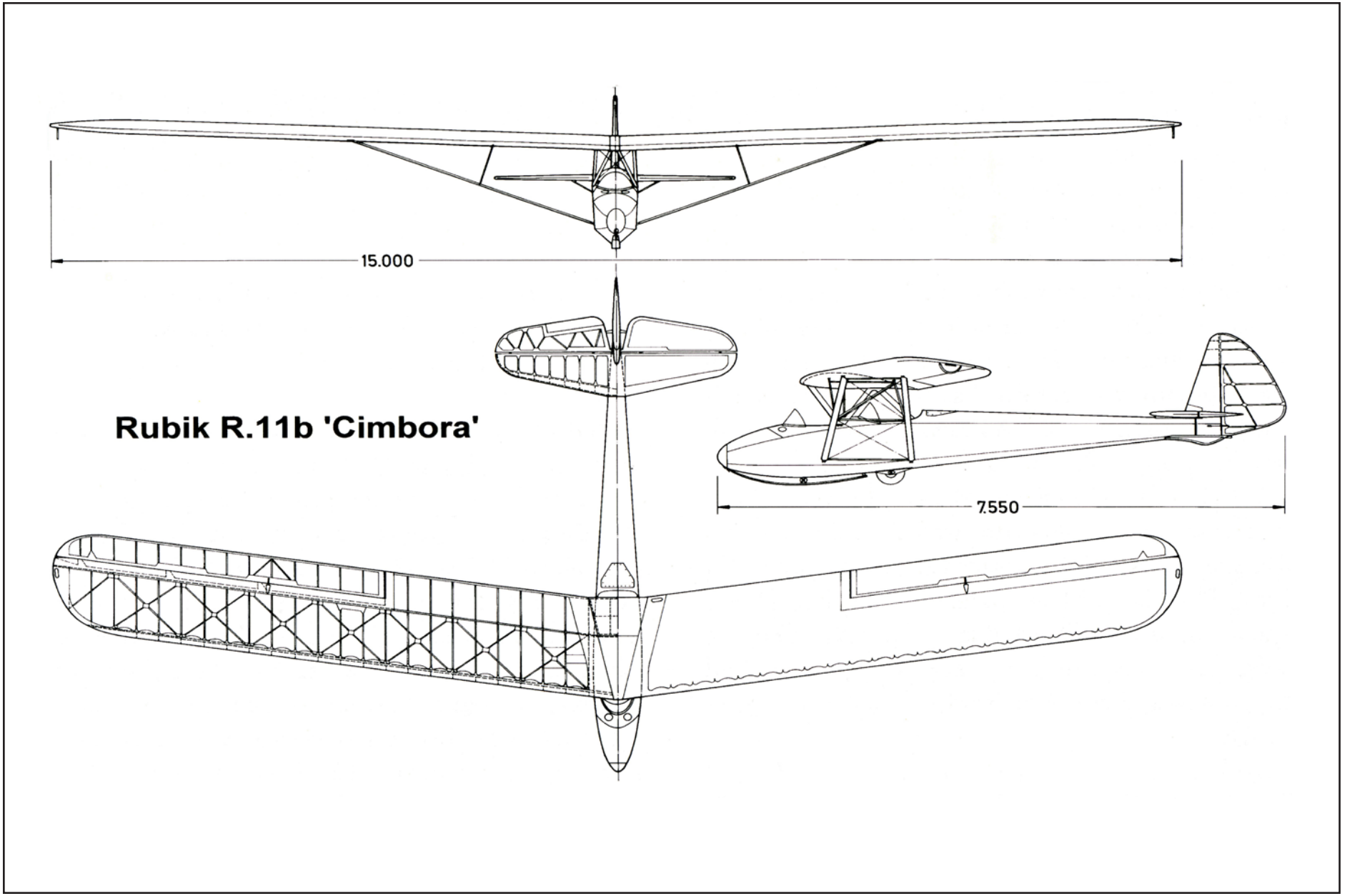

D-9025


Rhönsperber


Rhönsperber


D-9025

Rubik R-11b Cimbora


Rubik R.11b 'Cimbora'
15.000
7.550


HA-5035


HA-5035


Cimbora
HA-5035


HORTHY MIKLÓS
HA-5035


HA-5035

Retrieving a Free Flight Model at 1200m

Fernando Zito, fzito@hotmail.com

Between April 30th and May 3rd the 68° Free Flight National Championship was held in Angaco, San Juan, Argentina. It was also the F1A, F1B and F1C team trials for the 2015 World Championship in Mongolia. During the F1C competition I had to do a Fly Off for the first place with my father Mauricio. The flight was scheduled at 5:00pm and 7 minutes duration.

At that moment there was still some thermal activity and the wind rotated to the east, in direction to the Pie de Palo Mountains, it is a big stone of 70 x 30 km. The two models were launched at almost the same moment, but they flew in different directions.

Mauricio's model flew to the northeast and it was seen until it landed. The timer was set to 5 minutes flight in order not to put in risk the model. But my model flew southeast and glided below the mountains peaks, so it was difficult to see it even with binoculars.

Two of Fernando's F1C models. The beacon mentioned in the test is shown in the inset. Powered by an 70mAh LiPo battery, it will transmit a signal for 15 days. The model in the background is the one which was temporarily lost.

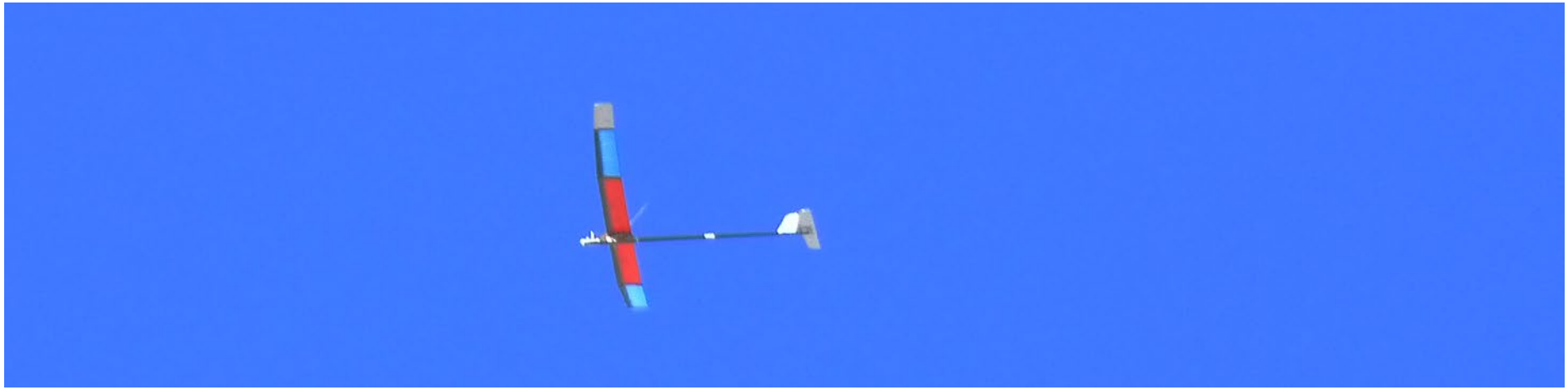
Readying the model for flying. Note the stabilizer tilt, the position it takes when dethermalizing.

The timekeepers lost it at four minutes and a half.

The model has a radio beacon that transmits a signal on VHF frequencies and it helps the competitor to find the model with a hand-held radio direction finder (“handy”).

I went walking to the most probable area of landing, but the radio signal was weak and it was difficult to know where it came from. I thought that the model was still flying, helped by the thermals and wind dynamics against the Pie de Palo.

Typical launch of an F1C machine.



Power off and gliding for duration.

Finally I lost the signal after 80 minutes; it was when the model descended behind the mountains.

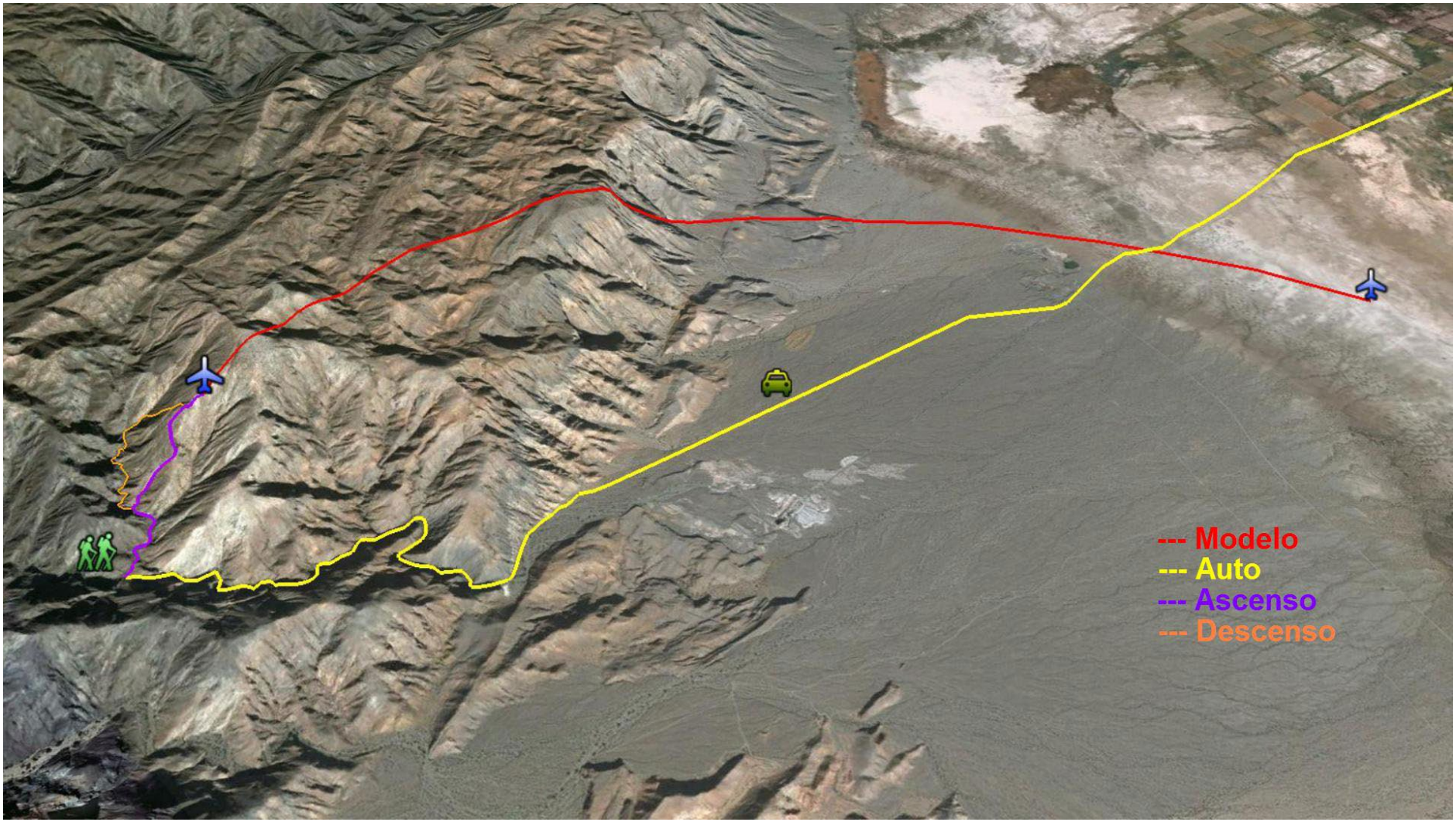
My friend Juan went close to the mountains with an ATV and saw the model flying with big birds at the mountain peaks, so my thoughts were right.

I used high sensitivity radios and different kinds of antennas but I couldn't hear the beacon signal again.

Four days later, at the end of the competition, I went to the Aero Club Pocito and rented the service of a Cessna 172 to fly over the mountains. After one hour of flying I heard the beacon signal, but it was to the North of the last known position of the model. I recorded the ground coordinates in a GPS and was able to determine a searching zone of many square kilometers. Luckily that area was crossed by a precarious road that leads to a mine in the heart of the mountains.

That afternoon, together with Mauricio and the Blanchero family, we took the road to the mine in two cars, but after some kilometers driving the road was closed with a barrier.

Searching for the model with a Cessna 172.



The path of the errant model over the ground is shown in red with the flight starting at the right and ending in the hills on the left. After flying over the mountains in the Cessna 172, the general location of the model was known, so Fernando and a search party drove into the mountains (yellow trace) and then walked up the ravine but did not find the model as its actual location was unclear.

Fortunately I began to hear the beacon signal and we continued walking.

The signal was stronger when we crossed to the ravine parallel to the road. But the signal bouncing against the mountains didn't let me know the origin of it with a short antenna. We walked many kilometers in the ravine and climbed some mountains trying to find the model. It was time to come back when the sun was falling.

The following day I went to the same place with Mauricio. With the help of a Yagi antenna and an attenuator I could know exactly the direction to the beacon signal origin, but we couldn't walk in a straight line. We walked in the ravine until a fork and then climbed by another way full of stones and thorns. To climb 70% of the mountain took us three hours; again it was time to come back when the sun was falling.

The beacon has a 70mAh LiPo battery that can last for 15 days in ambient temperatures. So I decided to come back to Buenos Aires in order to plan a new retrieval with the help of more people and with better equipment.

The following weekend it was raining in San Juan and it was dangerous to walk in the mountains. Finally we continued the search of the model two weeks after the Fly Off.

That time my great collaborator was José Debanne, he developed many multicopters of three, four and six propellers. These machines have auto stabilization and are capable of recording video in high definition, also they transmit video and flight parameters to the base and can make autonomous flights.

Our plan was to climb as high as possible in the mountain and set up a camp there. Then from the base fly the hexacopter in the direction to the radio signal that probably was behind the mountain. It could be possible to search for the model in places that were impossible for us to reach.

We had a few hours to climb, make the flight and come back. The equipment was bulky - some food, water, binoculars, GPS, compass, handies, Yagi antenna, quadcopter, hexacopter, RC transmitter, LCD screen, notebook, 2 kg of batteries, tools, etc. Also, our objective was

Picture from the camp site.

Hexacopter.

Picture from the Hexacopter.

Fernando's F1C resting peacefully at its landing spot.

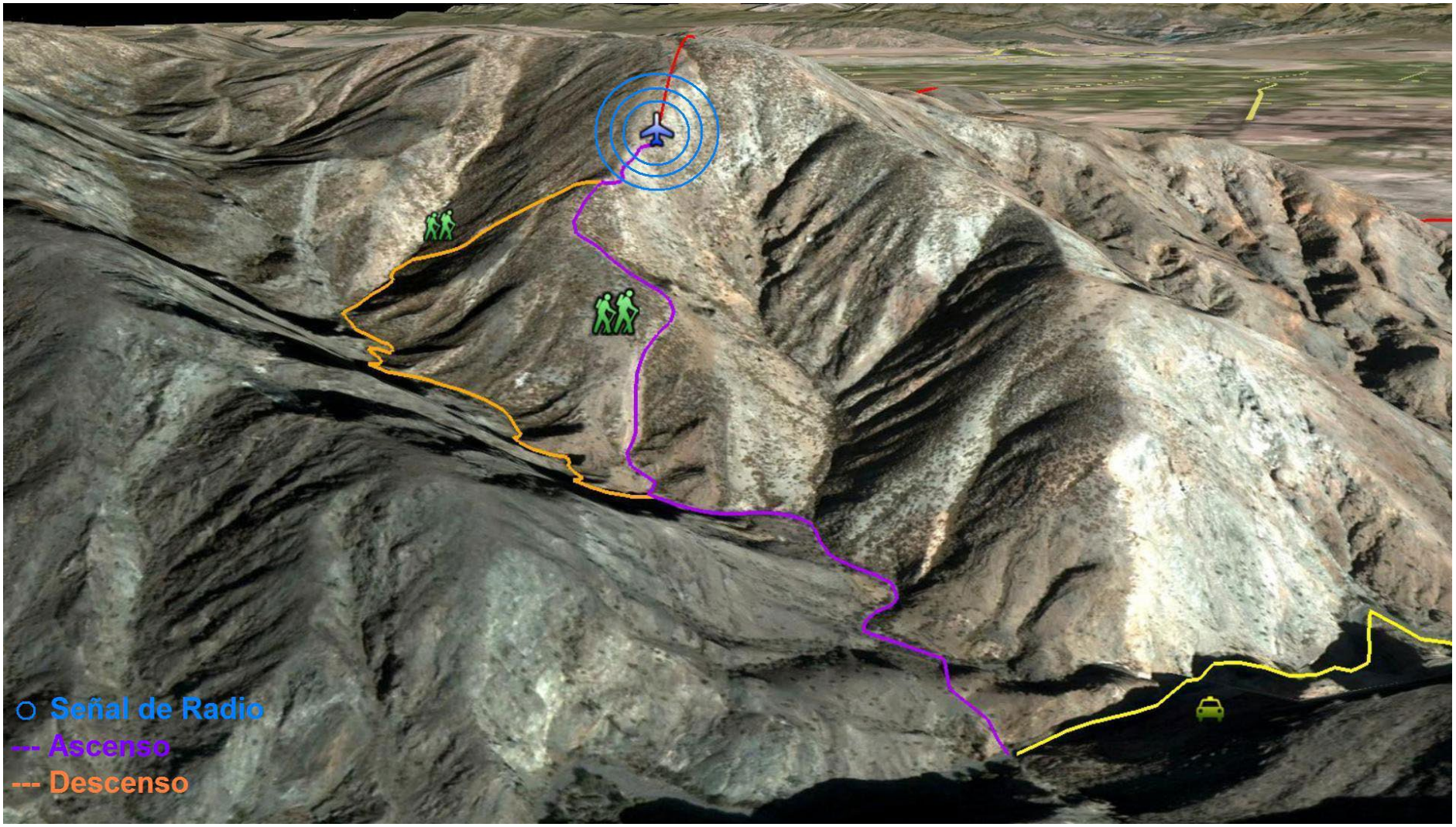
to retrieve the model of 2.7 meters wingspan without any damage.

José and I climbed by a longer trail but with fewer slopes because we didn't want to damage the equipment. That time we searched the model without the help of the beacon because the low temperatures at night dropped the battery voltage. Every 30 minutes we stopped to rest and plan the following part of the trail.

Suddenly we didn't have any safe trail to continue climbing to the peak of the mountain. We had to come back, but José looked around the precipice and noticed a red object 200 meters towards the top of the mountain; it was the wing central panel of my model!

The location was 1200m above sea level, or 600m above the

Model protected for the trip down the mountain.



The final assault. The ascent to the model is shown by purple trace, the descent is shown in orange.

starting line, the flight distance was only 6km in straight line. We had found the model but still didn't retrieve it. While I tried to find a safe way to the model, José was ready to take off the hexacopter and record the last part of our adventure.

The model had dethermalized and landed on a small plant, surrounded by hundreds of stones. I found the model there without any damage and 20 meters close to a wall of stones.

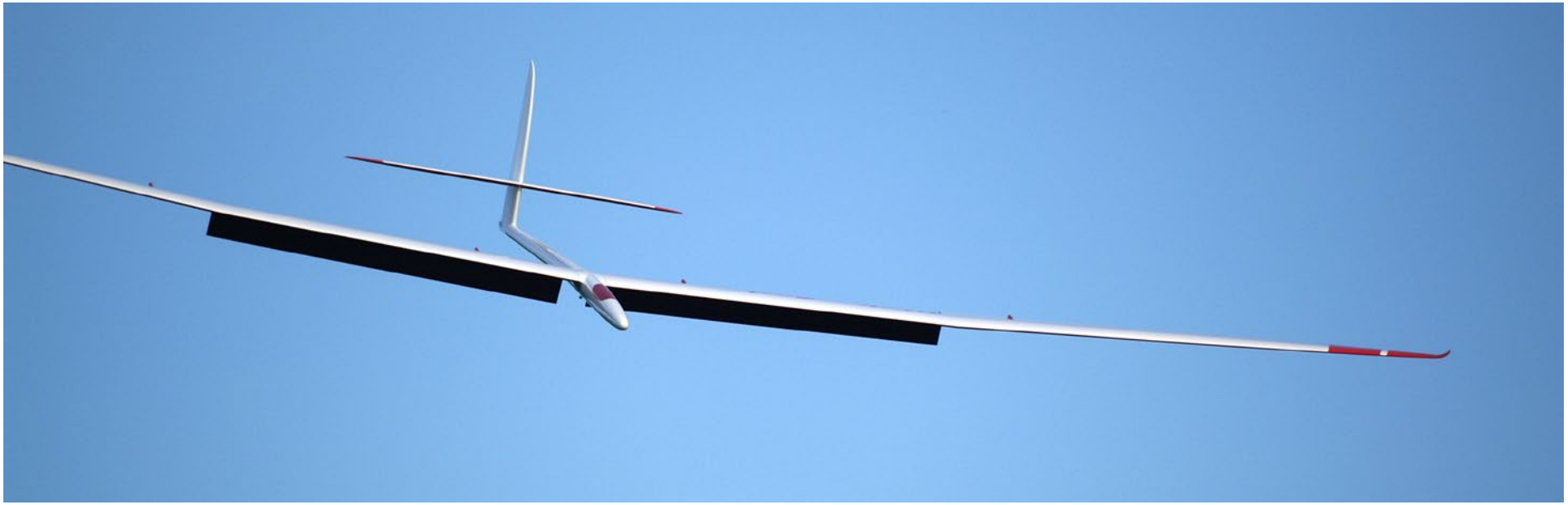
The descent was much harder than the climb because we didn't have a good perspective to find a good trail and because

Success!

Video QR code.

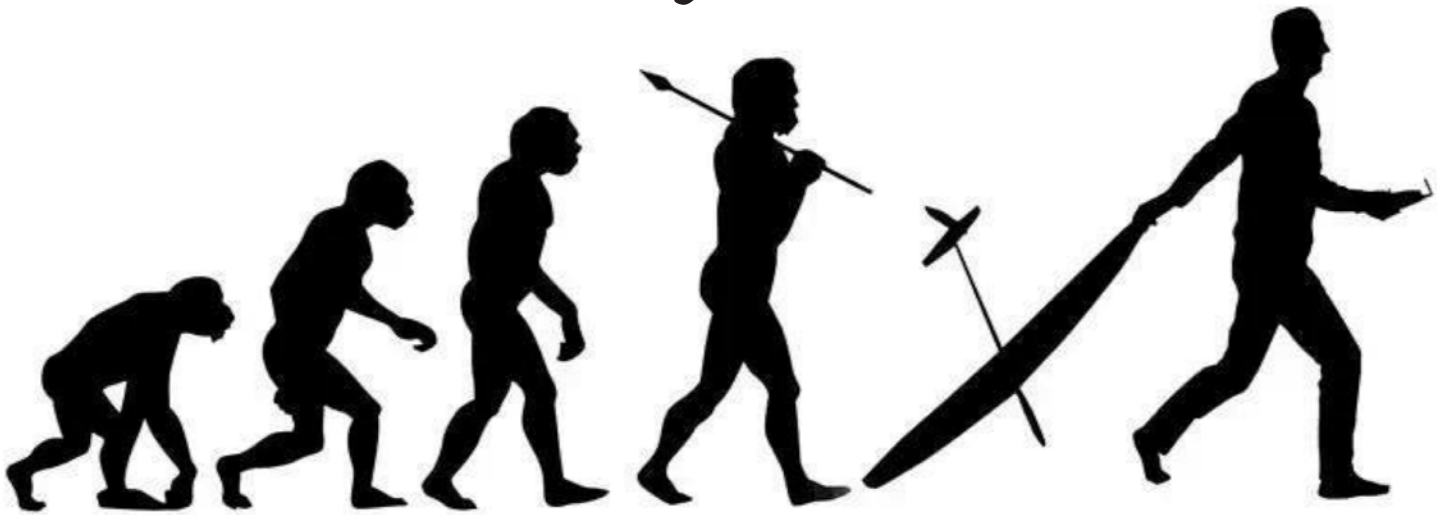
we had the model, part in a backpack and part in our hands. Luckily everything was fine. Flor and David Blanchero made a strong cardboard box to protect the model as it still had to travel 1200km back home.

You can enjoy a 14 minute film of the competition and model retrieval in the following link: <http://youtu.be/u08ECavkhPE>. Or use the QR code above.



Dave Beardsley's High End. Photo by Bill Kuhlman. Konica Minolta Maxxum 7D, ISO 100, 1/640 sec., f8.0, 500 mm

The evolution of aeromodelling...



Courtesy of Simon Nelson

Adaptive Compliant Trailing Edge Flight Experiment

<http://www.nasa.gov/press/2014/november/nasa-tests-revolutionary-shape-changing-aircraft-flap-for-the-first-time/>

FlexSys ACTE flap technology bridges gaps in wing for a seamless surface.

The Adaptive Compliant Trailing Edge, or ACTE, experimental flight research project is a joint effort between NASA and the U.S. Air Force Research Laboratory to determine if advanced flexible trailing-edge wing flaps can both improve aircraft aerodynamic efficiency and reduce airport-area noise generated during takeoffs and landings.

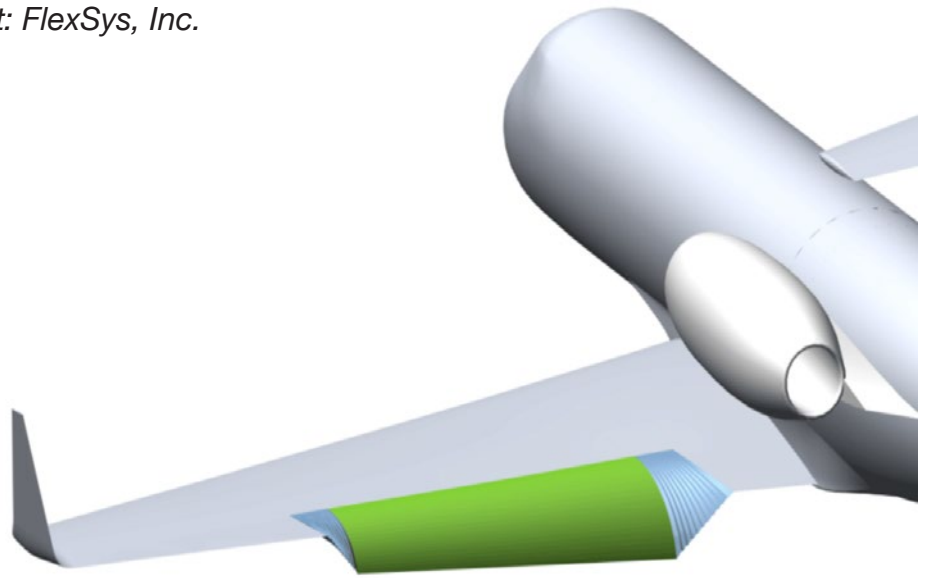
The experiment is being carried out on a modified Gulfstream III (G-III) business aircraft that has been converted into an aerodynamics research test bed at NASA's Armstrong Flight Research Center.

The ACTE project involves replacement of both of the G-III's conventional 19-foot-long aluminum flaps with advanced, shape-changing flaps that form continuous bendable surfaces. The flexible flaps are made of composite materials to a patented design from FlexSys, Inc.

This modified Gulfstream III is the test bed aircraft for the ACTE flexible-flap research project. When conventional flaps are lowered, gaps exist between the forward edge and sides of the flaps and the wing surface. The ACTE flaps will be gapless, forming a seamless transition region with the wing while remaining attached at the forward edge and sides. The improved flap should eliminate a major source of airframe noise generation.

If successful, this experiment will enable aircraft using such flaps to be significantly quieter during takeoff, approach and landing. The ACTE project is in line with the goals of the Environmentally Responsible Aviation, or ERA, project under the Integrated Systems Research Program of NASA's Aeronautics Research Mission Directorate. The directorate and the Air Force Research Laboratory are jointly funding the effort.

Image Credit: FlexSys, Inc.



UPDATE
Successful Flight Test of Shape Changing Wing Surface

Image Credit: NASA/Ken Ulbrich

NASA's green aviation project is one step closer to developing technology that could make future airliners quieter and more fuel-efficient with the successful flight test of a wing surface that can change shape in flight.

This past summer, researchers replaced an airplane's conventional aluminum flaps with advanced, shape-changing assemblies that form seamless bendable and twistable surfaces. Flight testing will determine whether flexible trailing-edge wing flaps are a viable approach to improve aerodynamic efficiency and reduce noise generated during takeoffs and landings.

For the initial Adaptive Compliant Trailing Edge (ACTE) flight, shown in this image, the experimental control surfaces were locked at a specified setting. Varied flap settings on subsequent tests will demonstrate the capability of the flexible surfaces under actual flight conditions.

ACTE technology is expected to have far-reaching effects on future aviation. Advanced lightweight materials will reduce wing structural weight and give engineers the ability to aerodynamically tailor the wings to promote improved fuel economy and more efficient operations, while reducing environmental impacts.

Image Credit: NASA/Ken Ulbrich

Towed Twin-Fuselage Glider Launch System First Test Flight Successful

Jay Levine, X-Press editor
NASA Armstrong Flight Research Center
Public Affairs Specialist Peter Merlin contributed to this report.
NASA Armstrong photos by Tom Tschida

<http://www.nasa.gov/centers/armstrong/Features/TGALS_first_flight.html>

NASA has successfully flight-tested a prototype twin-fuselage towed glider that could lead to rockets being launched from pilotless aircraft at high altitudes – a technology application that could significantly reduce the cost and improve the efficiency of sending small satellites into space. The first flights of the one-third-scale twin fuselage towed glider took place Oct. 21 from NASA's Armstrong Flight Research Center in California.

The towed glider is an element of the novel rocket-launching concept of the Towed Glider Air-Launch System, or TGALS. NASA Armstrong researchers are developing the project, which is funded as a part of the Space Technology Mission Directorate's Game Changing Development program.

The 27-foot-wingspan towed glider was towed behind the Dryden Remotely Operated Integrated Drone, or DROID, unmanned aircraft into the blue skies above Edwards Air Force Base. Minutes later the towline was released and the twin fuselage aircraft glided to a perfect landing on the dry lakebed.

After reviewing wind conditions and checking the systems of both aircraft, mission managers decided to go for a second flight. As with the first, the glider was towed behind the DROID, leveled out

Robert "Red"Jensen, who piloted the towed glider, and Gerald Budd, who flew the DROID small UAV that towed the unmanned aircraft skyward, discuss flight procedures prior to takeoff.

Small unmanned aircraft technician Derek Abramson and glider pilot Red Jensen, hold back the DROID tow plane while pilot Gerald Budd runs through some last minute checks.

in flight and the glider was released for another free flight to the dry lakebed.

“We had a really good first flight,” said John Kelly, TGALS project manager. “Both aircraft performed well.”

“It flies fantastic,” said Robert “Red” Jensen, who piloted the dual-fuselage glider. “There were no squawks.”

The goal is to build confidence with the aircraft and with tow operations before the final element – an experimental rocket payload – is mated with the glider and ultimately launched from the glider after its release from the DROID.

Gerald Budd, who for about three years has conceptualized and sought funding for the concept, piloted the DROID during the test flight and was pleased that the project had a successful first test flight.

“It was surreal to watch it fly after all work it took to get here,” Budd said.

If the project continues to succeed, Budd believes the ultimate goal would be to build a relatively inexpensive remotely or optionally piloted glider that will be towed aloft by a transport aircraft. Following release at about 40,000 feet, the glider would launch a booster rocket into an optimal trajectory to place its payload into low Earth orbit.

The glider was built primarily with commercial-off-the-shelf components, but some parts were manufactured at NASA Armstrong’s Fabrication Branch. Assembly was accomplished in NASA Armstrong’s Small Unmanned Aircraft

One of NASA Armstrong's DROID small unmanned research aircraft tows the twin-fuselage towed glider into the blue sky on its first test flight.

Systems Research Lab, or model shop. In January, flights confirmed that towing and releasing a single-fuselage version of the aircraft by the DROID tow plane functioned as expected. The recent flights confirmed the dual-fuselage version also is airworthy.

TGALS chief engineer Ryan Dibley said using two commercial-off-the-shelf glider halves and joining them together with a center wing structure created challenges. While the center wing section was built in-house and was designed specifically for this mission, the outer wing sections were built for the standard single-fuselage glider without the additional weight.

"One of the concerns was we didn't know what the outer wing sections were made of, how they were constructed, or what kind of loads they could take," Dibley said. "We performed a loads test in NASA Armstrong's Flight Loads Lab where we cleared the structure up to 2 gs to ensure that the wings could handle the loads of the glider itself and then with a partial mass payload. In the near future, we will put a wing back in the loads lab and test it to the loads required to carry the full payload."

The system will eventually carry the scale-model Mini Sprite rocket, designed and built by Whittinghill Aerospace of Camarillo, California, under NASA's Small Business Innovation Research program.

Initial research and development was internally funded at NASA Armstrong through the Center Innovation Fund. Potential U.S. Department of Defense and industry partners are sought for future phases.

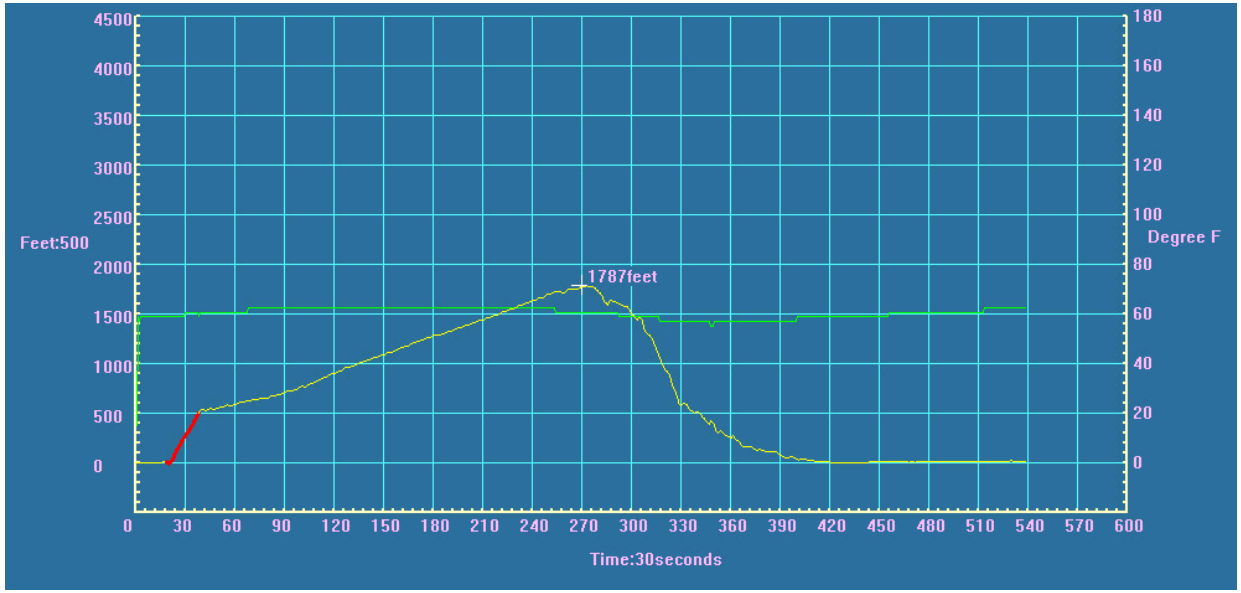
The one-third-scale twin fuselage towed glider rests of the cracked bed of Rogers Dry Lake at Edwards Air Force Base prior to its first flight Oct. 21, 2014 in this photo shot with a 16-mm. fisheye lens.

The one-third scale twin-fuselage towed glider glides in for landing on Rogers Dry Lake after its successful first test flight.

David Voracek, NASA Armstrong chief technologist, said he is pleased to see a project that was in the Center Innovation Fund sprout wings and fly in another NASA program.

"I am happy to see that STMD is funding this for the next year under the Game Changing Development Program," Voracek said. "We need to keep developing innovative technologies here at Armstrong that can be picked up by the NASA mission directorates or industry. I am looking forward to seeing this project continue to fly, especially when we put a rocket on the glider and get a launch off in the next year or so.

The whole team came together and made the flight happen. It has been a long time in coming."



Last flight of the day

After a recent LASS contest I launched my new Radian for one more flight. Got up into the bottom of a somewhat energetic thermal right as the motor hit cutoff.

Nice steady climb!

— Allen Burnham
Louisville Area Soaring Society (LASS)
<http://louisvillesoaring.org/>

FAI announces new Mission and Vision statements

After extensive consultation with the Federation's stakeholders, FAI adopted new Mission and Vision statements to help prioritise strategies and move steadily towards its objectives and goals.

Mission: "FAI - the global organisation for the promotion of air sports and recreational flying"

Vision: "A world where safe participation in air sports and recreational flying is available to everyone at reasonable cost."

The FAI essential activities to fulfill our mission:

1. Arrange international competitions and championships
2. Support NACs and regional organizations, mainly through information sharing and provision of expertise
3. Represent air sports and recreational flying at international organizations, especially ICAO
4. Recognize and reward significant achievements by individuals or groups
5. Develop and support programs to attract people to the wide field of aeronautics generally and air sports and recreational flying specifically
6. Conserve and protect the aeronautical and air sports history
7. Utilize the FAI brand and intellectual property to promote air sports and recreational flying to the public and produce revenue for the FAI

from Hacker Model

Vagabond ARF

Pierre Rondel, pierre.rondel@gmail.com

Introduction

After a long long wait the Vagabond finally landed, and the wait was worth it.

What is the Vagabond?

It is the first widely commercially available VTPR glider (Voltige très près du relief, which means “aerobatic maneuvers very near the ground”), made from EPP foam and printed with a nice color design. It exists in two versions: uncovered, and covered with a laminate film (wings, tails and fin/rudder, not the fuselage). It features a SB96V section (9.35% of thickness), nearly 90° monobloc tail rotation and weighs around 500g and 600g depending on the version.

Kit Overview

Unlike other EPP foam-cut planes, the Vagabond assembly is well advanced. Wings are almost finished, just needing the servos, control horn and linkage

installation. The fuselage, however, needs some work, like inserting the carbon rods for stiffness, the sleeves for the rudder and elevator control rods, the servo tray, the root section in the middle of the fuselage, the fin and the tailplanes.

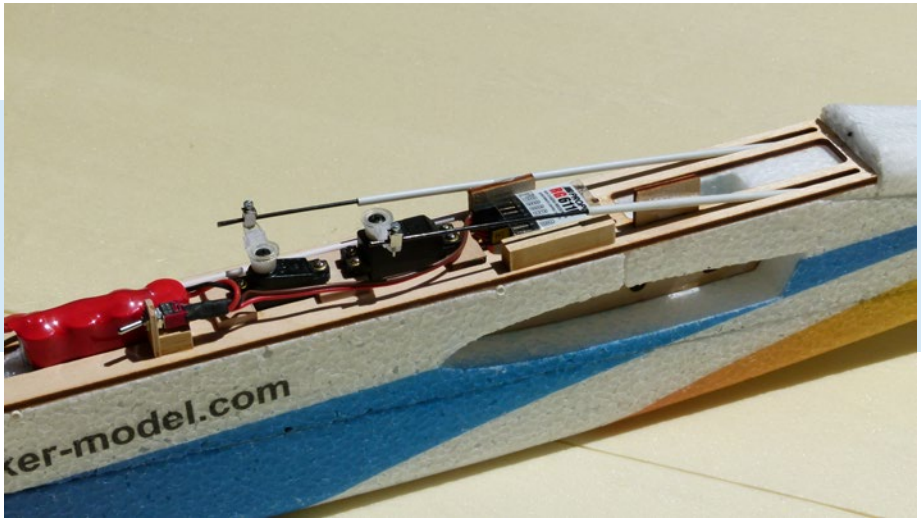
Overall, the design is well thought out, except the tail plane which is not removable. This is a shame because the wings are removable. Now this is perfectly understandable as the easiest way to make the tail to rotate up to 90° is to articulate it around the joiner, and then, the only way to secure the first half tail with the second is to glue definitively the joiner in place. I will propose below a modification that allows easy removal of the tail.

For the rest, quality of the kit is very good like this large canopy in thin black plastic that give a wide access to the radio and gives a nice finish to the plane.

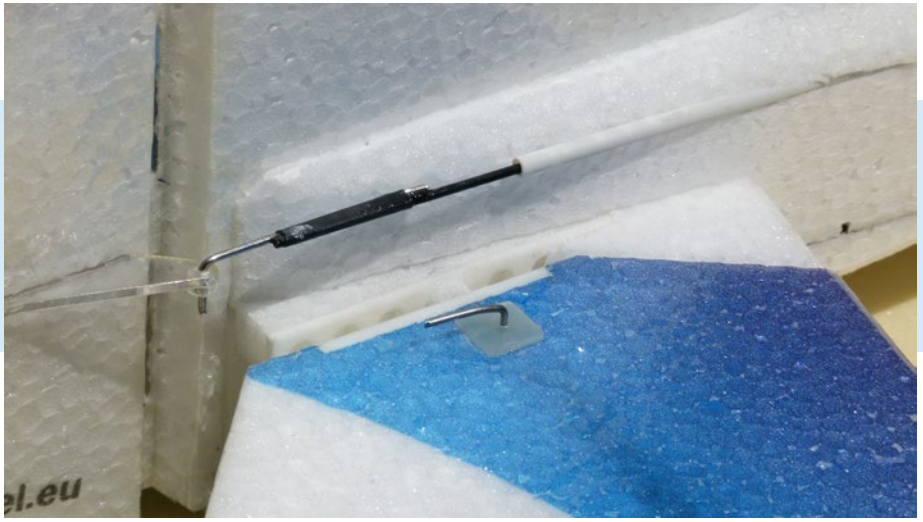
A quick assembly ...

In brief, the assembly went well, the design of this EPP glider is pretty good.

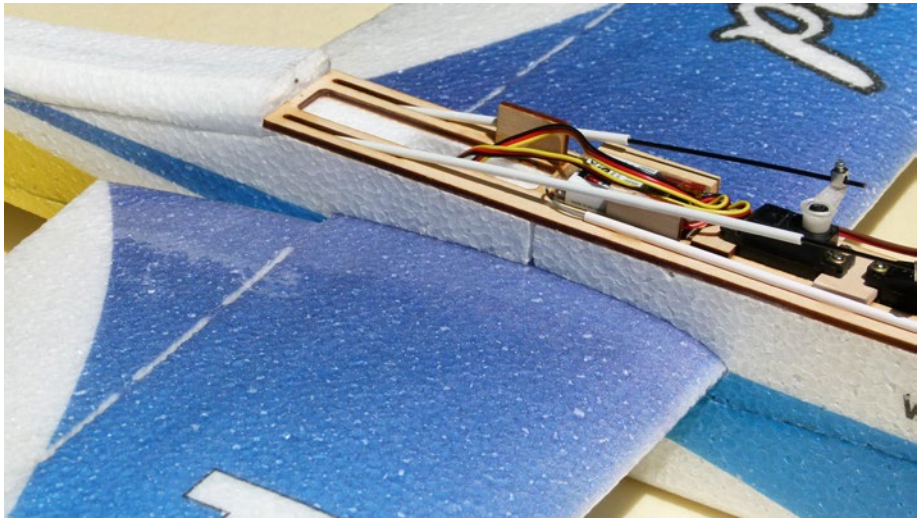
I started with the fuselage and carbon rods to stiffen the boom. Then, I also installed the elevator and rudder control rod sleeves. Be careful to not bend them while installing into the foam because, when bent, they can make



There is lots of place on the servo tray. Metal gear servos are recommended.

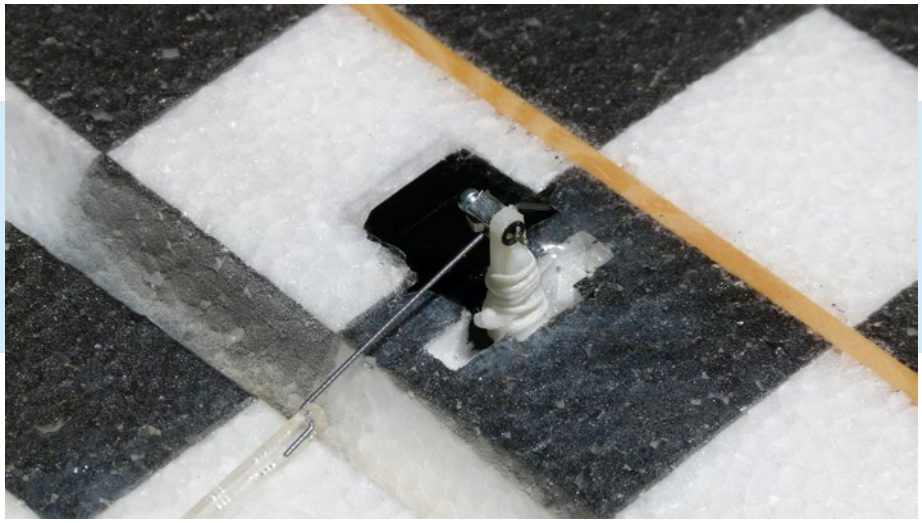


The rudder linkage end, and the lock L shape clip added to the tailplane to make it removable.



The very clean wing mounting on the fuselage with wire routing in the fuselage.

The canopy is locked with four plastics clips. These clips are glued on the canopy to not loose them.



Ailerons servos arms are extended using a longer arm glued with cyano and secured with string + cyano.

The wing lock system is brilliant. This is an inverted U-shape piano wire that passes behind the root of each wing. Simple and efficient.

the movement of the rod less smooth, resulting in a bad neutral position return. The servo tray is glued on the EPP using fluid cyano.

Once done, I focused on the tailplane, which I wanted absolutely to make removable.

My first idea was to modify the joiner extremity (4mm carbon rod) to lock it in rotation with a corresponding point. Problem was that I still could twist the tail because of the rod torsion.

My clubmate Joël Marin, who built a Vagabond too, found a clever and simple solution for the tail: use a small aluminium tube glued at the root, and drill a small hole in the tube and the carbon rod to install a stop pin. The pin has an “L” shape to secure it with some tape to not loose it.

As a final solution, in addition to the aluminium tube, I added on both sides of the tail a small epoxy plate to improve guidance. As a result, the tail is perfectly secured in rotation and translation.

Here is the video of the full moving tail: <https://www.youtube.com/watch?v=Zh-3oXk9JC8>

Remaining tasks mainly consist of the radio installation.

I used 9g metal gears in the wings, a 13mm old analog but strong servo for elevator, and a tiny plastic geared 9g servo for the rudder, which was a bad idea as I quickly broke the gear. To use metal gear servos everywhere is therefore my recommendation.

Initially I wanted to use a 4-cell 2000mAh Eneloop battery, but it is clearly too heavy, even if there is plenty of space in the nose front. I finally installed a 4-cell 800mA Eneloop battery. I didn’t need any lead to achieve the 100mm CoG. Flying weight is 620g. For comparison, the uncovered version of the Vagabond is 500g, so 120g less.

Let's go to the slope !

I programmed several flight modes with different amounts of elevator. Normal flying with normal (but still agile) elevator, full elevator position with lots of exponential to keep the Vagabond controllable, and a thermal position with some camber and little elevator movement.

Despite this, the Vagabond needs an adaptation time. It remains a very agile plane, without inertia, and very neutral which needs always some attention to pilot. It is possible to fly the Vagabond in light conditions and thermals with it. Now don't expect to do a long transition to catch the thermal. If you go through sinking air, the plane will show it clearly and loose altitude quickly.

At the opposite, I flew the Vagabond in strong and turbulent wind. The structure is flexing in all directions, but the plane remains controllable. Now this is not fun and there is no means to ballast it. No, the best conditions for the Vagabond are a gentle breeze creating a stable lift at the edge. Here everything becomes possible and you enter in a new dimension of the flight. Roll, reversal, looping, flip, inverted flight, knife edge flight, stall roll, all combination of them, plus new maneuvers that you can create.

We haven't noticed much differences in flight between the light version (not covered and about 500g) and the heavy version (610g). This is why I recommend the covered version that will improve the lifetime greatly.

Have an eye on the battery consumption because the four servos and big control surfaces drain the battery quickly, and as the plane is addictive and you cannot stop flying, you could easily drain all the battery power.

Last point: The transparent plastic horn on the elevator broke after a while so


HACKER
Vagabond


Vagabond
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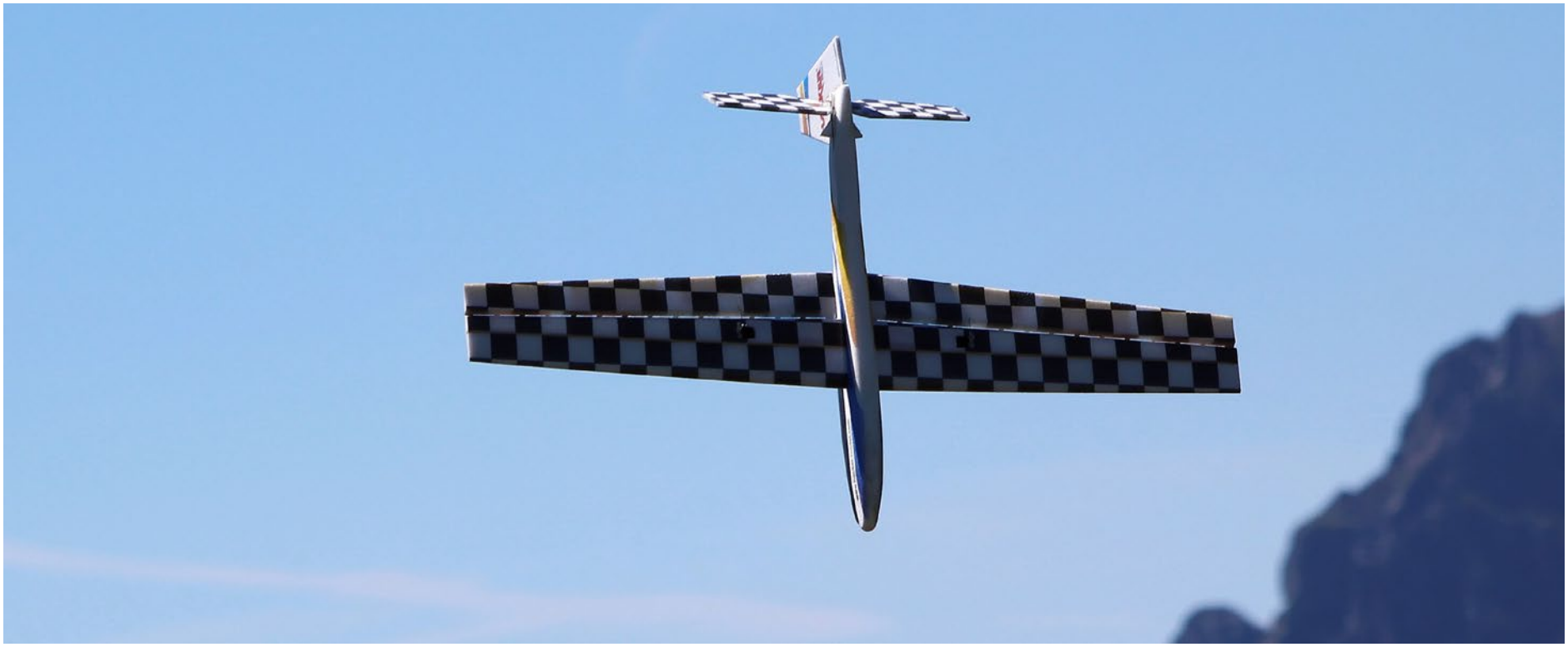


I finally replaced it with a home-made epoxy board horn.

In conclusion

Finally, Hacker has succeeded in producing a VTPR plane that requires a short assembly time, which is nice looking and that has the main characteristics of a VTPR plane, bringing lots of fun and joy to its pilot. For me, the goal is perfectly achieved even if some “purists” will find some negative points. To finish, I recommend two videos of the Vagabond made this summer: the first one is at le col du Glandon in a strong and turbulent wind. The second one is at le col de Tende in ideal conditions.
- <http://vimeo.com/99613949>
- <http://vimeo.com/101379892>

Characteristics:
Wingspan: 1510mm
Length: 975mm,
Weight: ~600g (covered version)
CG: 92 to 100mm
Manufacturer: Hacker Model
Price: Starting from 115 euros

Tom's Tips

Fuselages on a Pegboard

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

You can get a lot of fuses in a very small space if you are like me and use pegboard to hang stuff.

I used to hang each one individually, but found that this newer way will let you hang a lot more in a lot less space.

Use a long straight hook to put the tow hooks on. Use another straight hook lower down to hold the fuses straight.

You can use a double hook, but a single straight one will do just fine.

The Fall 2014 Edition of the Cumberland Soar-For-Fun

Pete Carr WW3O, pscarr@juno.com

Jim Dolly hosted the fall event at Old Knobbly hill just south of Cumberland Maryland on the weekend of November 8/9th. Actually, the event begins on the proceeding Thursday and continued through the following Monday hoping for good weather somewhere in the period.

I was told that the Thursday and Friday action was 30+ knots of wind into the hill with very cool temperatures. Pilots were forced to lean into the wind to keep their feet!

I arrived on Saturday as the wind dropped and shifted around to the southeast. Aerotow action was very busy while the winch launched and electric people thermaled out on the backside of the ridge.

When Jim and I talked he mentioned that his email address is jdolly@atlanticbb.net. He said that if any of us wanted to fly the site throughout the year we could email him and arrange for access.

Scheduled activities are listed on the www.highpoint-aviation.org web site. There will be another event in the spring of 2015 so you can check the web page for specific details.

We also discussed the state of the old wood building on the hill which has been attacked by termites recently. That building has been the scene of many a pleasant chat over the years and I hope it can be repaired.

As in past years the quality of the sailplanes and pilot skills have continued to improve. The entire day was accident-free.

Tow tugs were all gas powered where in past years there were some electric tugs sharing the duty. Among them was the Carbon Cub from Horizon Hobbies which can handle all but the very largest, heaviest sailplanes. Jim Dolly had his Pilatus Porter tug doing the majority of tows and it's great fun to watch him get from release altitude back onto the field in under a minute.

One of the thermal pilots, a young guy named Dan, is just beginning work on the LSF tasks. He flew a 2-meter Spirit sailplane off the winch and made his 30 minute task. As the air was cool he brought an enclosure sold by Hobby King that covered his hands while working the transmitter. Dan also worked on some spot landings as there were several LSF members in the area to act as witnesses. It was great to see that the LSF is still attracting new pilots to the hobby.

There were several ALES sailplanes on the field that shared the air with the winch launched types. These ships are nearly identical to pure sailplanes except for the props. Since they contain a motor, battery and altitude limiter along with the radio, that's a lot of gear in a very small fuselage space.

After lunch the high cloud layer increased and the temperature dropped noticeably. While thermal activity remained good the frozen-fingers-factor got uncomfortable so I headed home.

Thanks to Jim and all the great people who assisted in making the day an memorable one.

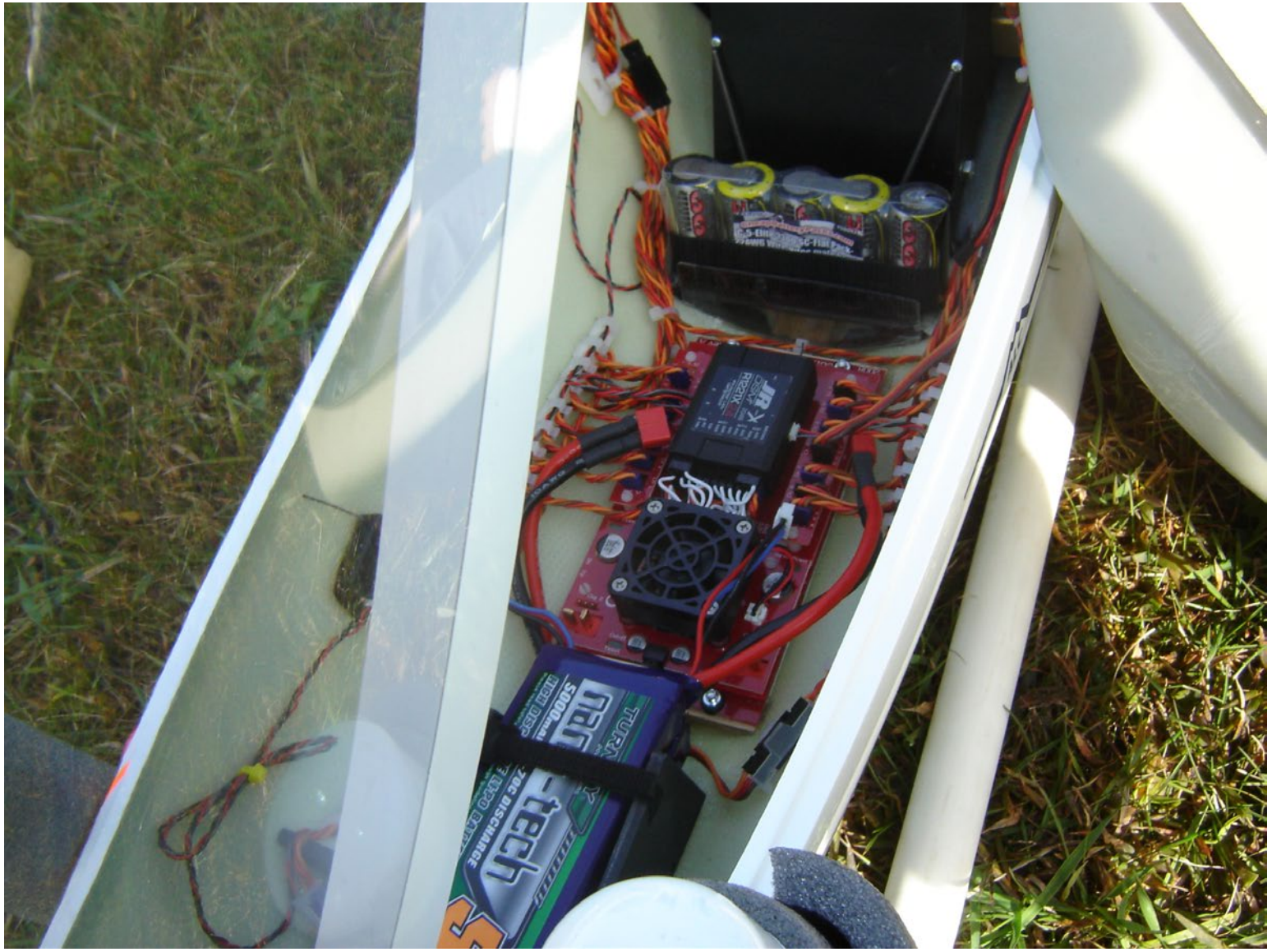
Title page photo: In past Soar-ins there were several electric tow planes on the field. This time there were only gas powered tugs so I wondered if the electric ones are less popular now. Anyway, the sailplane on tow is just breaking ground with the beautiful foliage of the slope in the background.

Left: Jim Dolly, owner of the site and very nice guy holds a brief chat with the attendees. While much activity centers around aero tow Jim is very helpful in working with the winch-launch people so that safe operations can proceed for both crowds.

Left lower: Carl Luft, who always attends the event is pictured here keeping an eye on the activity. Carl used to run the computerized scoring section of the AMA Nats sailplane event and knows his stuff.

Above: This is the fully equipped cockpit of a 4 meter sailplane. The challenge is to install the radio in such a way that it doesn't 'goose" the pilot at launch!

This is Steve Pasierb with is beautiful 4 meter sailplane. He has a large trailer that was stuffed with aircraft including a 3 meter Fox. Unfortunately the wind was too light for aerobatic ships like the Fox.



This is the radio room of Steves sailplane. The radio is JR with satellite receivers installed to assure rock solid reception. The radio and servos are powered by the enormous LiPo batteries (2) that are mounted just behind the releasable tow hook and servo. The NiCads at the rear are to power the retractable belly wheel. The regulator for the LiPo batteries is cooled by an onboard fan.

The cockpit and pilot of Steve's sailplane are detailed here. The on-off switch for the radio is located just under the left armpit of the pilot. I particularly like the sneakers!

Above: The attention to detail of the pilot in another of Steve's sailplanes is amazing. The pilot's cap has actual wear makes at the visor wear he takes it off and puts it on! The red button on the steering column may be for tow release or the 30-cal. machine gun that is optional equipment. The *sunglasses are perfectly proportioned. This also applies to the buckles of the parachute straps and the seat belt.*

Left: Dan had an enclosure for his transmitter that I hadn't seen before. His Spirit sailplane did the 30-minute task and also got a spot landing so he was quite pleased. The transmitter cover seemed to be a big help at this "Frozen Fingers Festival."

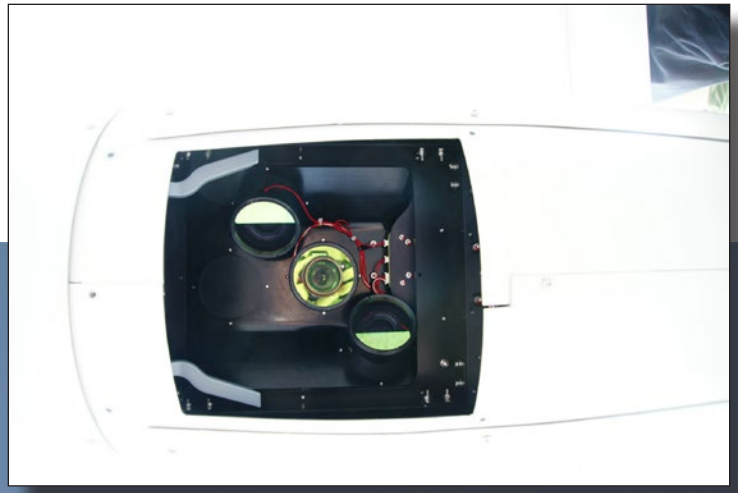
Motorised glider takes 3D camera for first flight around Everest

http://www.dlr.de/dlr/presse/en/desktopdefault.aspx/tabid-10307/470_read-9415/year-all/#/gallery/13541

A team of German pilots from the Mountain Wave Project (MWP) and researchers from the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) have achieved a groundbreaking feat around the highest mountain on Earth. For the first time, they flew to the summit of Mount Everest, 8848 metres above sea level, in a motorised glider – taking with them a special 3D camera, the Modular Airborne Camera System, or MACS. This innovative camera system, developed as part of DLR's focus on technology for security, has been designed to provide the data required to produce a remarkably precise 3D model of the Nepalese Everest region with a resolution of down to 15 centimetres. These images will help improve forecasts of landslides and floods resulting from the outbursting of glacial lakes.

Record-breaking MWP pilot Klaus Ohlmann and co-pilot Jona Keimer needed one and ahalf hours to reach their destination. They took off from the expedition base camp at Pokhara airport in Nepal on 28 January 2014 and flew along the Himalayas en route to Mount Everest. There, they used mountain waves to gradually gain altitude: "The conditions were ideal, despite the wind speeds at the summit of Everest, which neared 100 kilometres per hour," commented Ohlmann. "The almost turbulence-free slope updrafts helped us ascend quickly." While they were focused on flying, DLR's MACS went about its scientific business from inside a pod on the underside of the starboard wing.

DLR project manager Jörg Brauchle was thrilled at the flawless performance of the 3D camera system at altitudes exceeding 8000 metres: "The pilots did a fantastic job. We were able to fly over all the planned areas in the Nepalese Everest region – including the famous escape route between Lukla and Mount Everest – in 90 minutes." Brauchle and his colleagues from the DLR Institute of Optical Sensor Systems can now, step by step, create computer models of the Khumbu Valley and the adjacent glaciers. "The Khumbu Valley is of particular scientific interest to us because this is where our international partners from the International Centre for Integrated Mountain Development (ICIMOD) operate their test areas and where they have been, for many years now, analysing the slopes and glaciers." They provide valuable comparative measurements for the recently acquired 3D images. Glacier researchers can now draw on the highly accurate 3D data to produce comprehensive and accurate analyses for civil protection.



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self-launch DG303 elan acro

Henryk Kobylanski, henryk@rctrader.com

MORE ABOUT THE SAILPLANE ON THE COVER

This is Henryk Kobylanski's Paritech DG303 Elan Acro. It features a Jet Extender 10 retractable ducted fan unit powered by a 6s 5000mah x 2 (12s) battery pack which provides 4.5 minutes of running time.

The model utilizes a Futaba Sbus receiver with telemetry. Under power, this is a very fast sailplane - it has a recorded maximum speed to date of 219 km/h (136 mph).

All of the photos were taken at the recent Australian "I Soar Cobram 2014" event held over the Melbourne Cup weekend, from Saturday 01 November 2014 through Tuesday 04 November 2014.

<http://www.rctrader.com>

<http://www.lf-technik.de/shop/Extendable-EDFs-Self-Launch-Systems/Jet-Extender-10-Glider-Extendable-EDF-Self-Launch-System::4891.html>

<https://www.youtube.com/watch?v=zpluCYve9qw#t=317>

<http://www.icare-icarus.com/EDF-Jet-Extender-10-Glider_p_919.html>


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Photo by Elia Passerini. Nikon D300, ISO 200, 1/1250 sec., f11, 220mm, Adobe Photoshop CS4 Macintosh