Radio Controlled
Soaring Digest
May 2017
Vol. 34, No. 5

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Front cover: Peppe Panzieri lands his 4 meter span SZD 59 at Fossato di Vico, Italy. Photo by Jiri Hladky.
Canon EOS 7D Mark II, ISO 160, 1/6400 sec., f2.8, 200 mm

Back cover: Jiri Hladky launches his Wings and More Stingray at Monte Vettore (Castelluccio di Norcia), Italy. Photo by Raffaella Hladky.
Canon EOS 7D Mark II, ISO 160, 1/8000 sec., f2.8, 75 mm

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In the Air

While many of us think of our involvement in RC soaring to be a passion, for most it is simply a hobby. Out of curiosity, we looked up the word "hobby" in the English Oxford Living Dictionary.

Here's what we found:

> hobby², noun
> A migratory Old World falcon with long, narrow wings, catching dragonflies and birds on the wing.
> *Origin* Late Middle English: from Old French hobet, diminutive of hobe 'falcon.'

Interesting, eh?

Thanks to Simine Short, co-editor with husband Jim of *Bungee Cord*, "the voice of the Vintage Sailplane Association," for the article about the Akaflieg Darmstadt D-17 / "Chanute" sailplane. Simine had previously written two articles on this aircraft for *Bungee Cord*, "The Chanute Soaring Plane" in the Summer 2016 edition (Vol. 42, No. 2, pp. 13-14), and "The Chaunte Soaring Plane, a Follow-up" in the Fall edition (Vol. 42, No 3, p. 19). Simine has added a large number of photos and additional information to the original *Bungee Cord* presentations; the result is a comprehensive history of the airframe. The color 3-view is published with permission of Martin Simons.

Thanks also to Jiri Hladky who supplied both the front and back cover photos for this edition. These photos were captured as CR2 (RAW) images and then run through Windows Photo Editor to produce the TIFF and JPG versions used in publication.

Time to build another sailplane!

F3K Team Fundraiser Clinic and Competition April 1-2, 2017

Kevin “Rowdy” Botherway, rowdy01@xtra.co.nz

Levin, New Zealand (North Island)

This had been planned by the F3K (Discus Handlaunch) team for some time and Jonathan Shorer, our Team manager, suggested his place for team accommodation and Levin Club field as a venue.

Joe Wurts and Kevin Botherway headed there for Friday night fish and chips with Neal Moss flying down early Saturday morning.

We already had some exciting news as the pre-entry list was growing and with over 20 entries the numbers looked good. If the weather played ball we would all have some fun. A BIG thanks to Len Drabble and Peter Williams who had already held an appetizer the previous week with their club members on thermal skills and soaring tips.

On Saturday we all met at the Levin Club with a dedicated DLG field and Len briefed us. We broke into two basic groups for starters, one for radio and plane setups run by Joe and one for launch technique and setup run by Kev and Neal. We all had helpers that had quite a bit of experience to spread the workload.

After this, and moving into a little all up last down Len ran some small tasks so everyone could get the feel of very light competition with the ladder task being used as an example.

Lunch was then served in the clubrooms organised by Jonathan and Gill Shorer – this was all part of the event and everyone spent time catching up.

After lunch the regular fliers and F3K team spent some time with all up last down incorporating turnarounds, this was awesome. The team needed to have other planes in the air around them which highlighted improvements that could be made in techniques for avoiding other models.

Back to the Jonathan’s place for Joe and Kev to have a UMX radian competition (with beer) before Gill and Len kindly served a lovely meal then time for the team catch up and spa pool to wind the body down...

Another great day for Day 2, and as previously advised the night before, we held an impromptu competition and managed six or seven full rounds with 15 competitors entered. We had the big timer clock running and programmed and Joe and Kev briefed everyone before each task on the dos and don’ts.

It was absolutely fantastic to have so many new enthusiastic people and the F3K Team really thanks you for supporting us.

At around three o’clock it all came to a stop with light misting rain moving in. It was time for all of to head for home. We sold quite few raffle tickets and everyone paid a donation entry which will go towards to the 2017 team.


ZN

Special thanks to: Gill Shorer, Jonathan Shorer and Len Drabble.

Next F3K competition is 13th May Hawkes Bay, we'd love to see ya there!

Closing note: You still have time to support the team Raffles don't finish till 7th July! A new Snipe for a $10? Ticket, Bargain.

Soaring rocks!!!!!!!!!!!!!!

Australian International RC Glider Event

Milang, South Australia, March 10-12 2017

Kevin “Rowdy” Botherway, rowdy01@xtra.co.nz

The kiwi team consisted of four pilots Len Drabble, Peter Williams, Joe Wurts and Kevin Botherway. Both Joe and Kev had been there before so they had some idea of requirements and details.

We all entered both competitions, F5J thermal electric soaring and F3J thermal soaring, over a total of three days.

We all got together in snake land and big biting bugs on the Thursday for a full day of thermal practice - mostly bungee launching and landing practice.

This was an awesome day with light winds and a real nice temperature to work with and get used to the action at the field.

We were the first to arrive for the whole weekend and unlock the place and the last to leave and lockup so we did a fair few hours of great flying.

Our teams we made up with four Aussie mates allowing us to have a spread of winches for the J event – Dave Pratley,

Gerry Carpenter, Marcus Stent and Hugh Blackburn.

We went out for a meal at a local restaurant with a few friends that had arrived during the day. A great night and we were all well done after a long practice day and a change of daylight hours.

Friday, March 10, was another great day. We had planned sorting our electric gear in the morning and into the F5J comp for the afternoon.

This was great fun with some fun motor runs had, as it's a competition of launch (motor runs and height comes off your points).

A total of 16 competitors flew in this one and Joe Wurts led all the way through to come out 1st place with Theo Arvanitakis 2nd and Kevin Botherway 3rd. Len flying his Maxa setup well, and Pete had a homebuilt garage job that flew well and had power to burn on climb out. Kev did the lowest launch for the day of 18 metres after bumping his motor switch off but still got a 10 minute flight.

That evening was a night for take-a–ways, quick beer and then start preparing for the next comp, two days of F3J with fly-offs to happen Sunday arvo.

The weather wasn't looking great for Sunday, March 12, so a big push was for as many rounds as possible on the Saturday, March 11. This made for a long day with some good results and all of us scattered in the top 15 placings for the day out of 32 pilots!

It was fairly light wind although after many downwind launches we did change winch direction during the afternoon.

At the days end we had an on-field barbecue at the SSL soaring club's great field shed setup, complete with shower toilet and separate tractor shed. An awesome finish to the day and, with kiwis in 1st and 2nd, time for air conditioners and sleep.

Sunday we got the winch direction correct and the wind started. A selection of ballast and possible model change was the order of the day.

We managed another few rounds and the last couple of rounds there were some big points lost due to declining lift and wind building.

We had occasional drizzle breaks along with two downpours. At the final bell of the prelims Joe 1st, Kev 2nd, Pete 9th, Len 17th. This was a great result for team kiwi and we had a 3 round fly off for Joe and Kev coming on.

Fly offs were 15 minute flights in very challenging conditions with final result Joe Wurts 1st, Nickolas Chabrel 2nd, Kevin Botherway 3rd.

Joe flew the comp on rails and Kev had a very small land out (about 15 to 20 rugby fields away) in round two. Rain and drizzle happening during the 15 minutes made things a little wet.

A great time and no snake bites, we started packing and had prize giving.

A big thanks to the SSL club. Organization was fantastic, great to meet new and old friends again.

Special thanks to David and Mandy Pratley (part time kiwis). Hope to catch up with you all at Jerilderie soon.

We decided to spend the night in Adelaide city on the way home to make airport departure easy, and Marcus Stent meet us for a meal and great catch up.

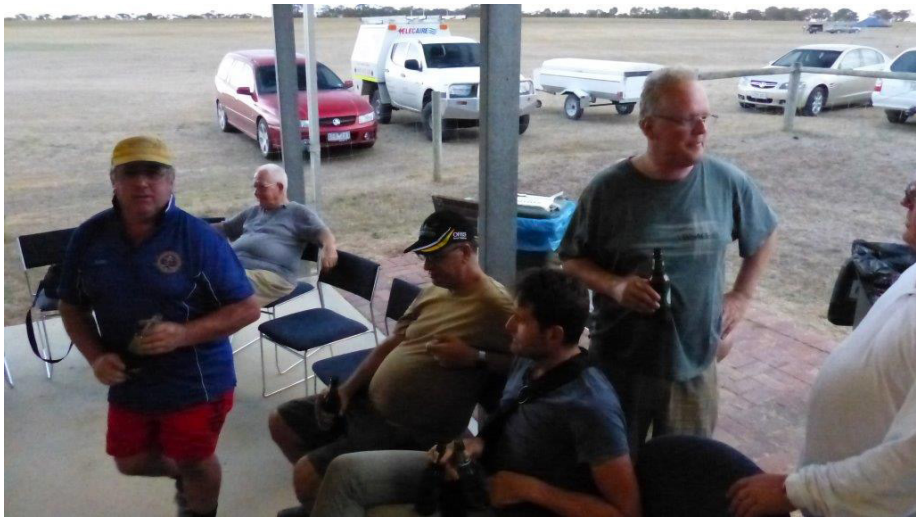
Cheers, Team Kiwi

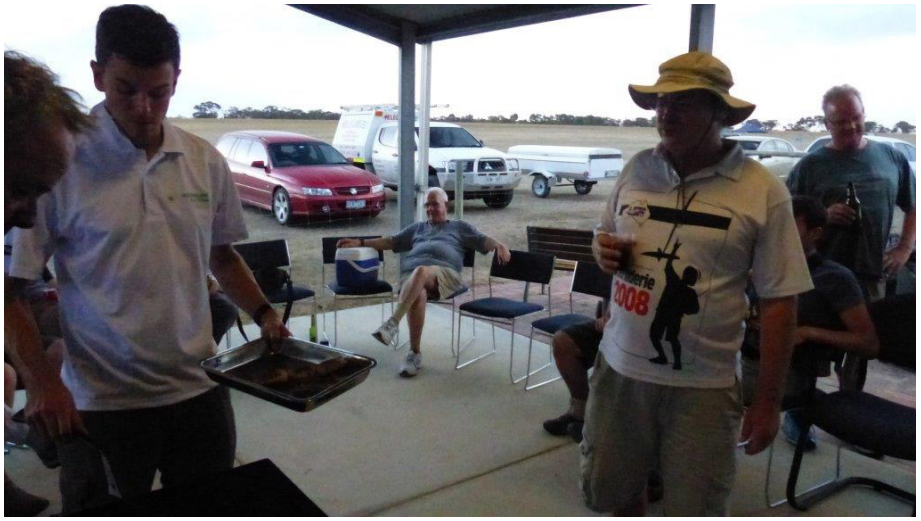
Soaring Rocks!!!!!!

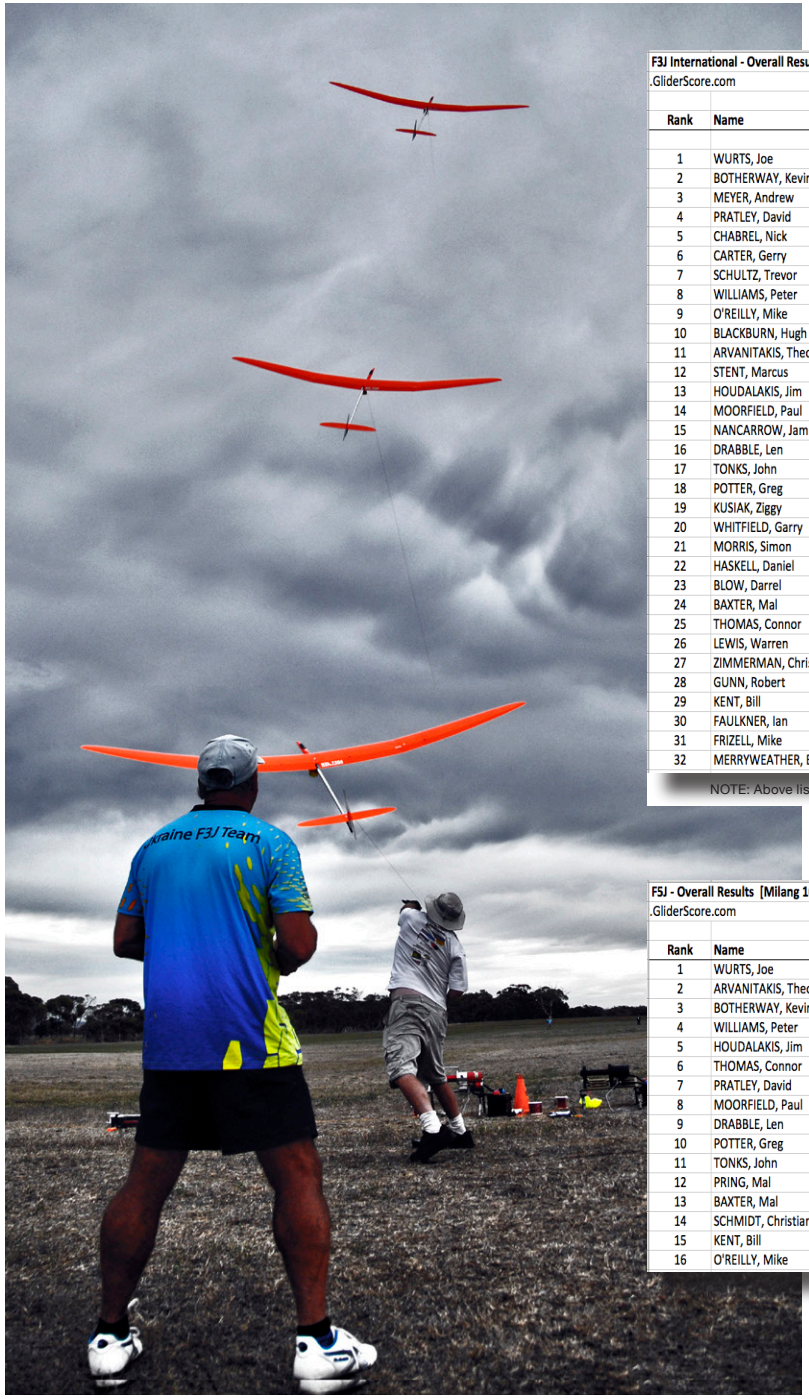

NEW ZEALAND


KIPOR


EXTREME







F3J International - Overall Results [Milang 12-Mar-17]

.GliderScore.com

Rank	Name	Score	Pcnt	Raw Score	Rnd1	Rnd2	Rnd3	Rnd4	Rnd5	Rnd6	Rnd7	Rnd8	Rnd9	Rnd10	Rnd11	Drop1	Plty
1	WURTS, Joe	10000	100	11000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	0
2	BOTHERWAY, Kevin	9958.6	99.59	10887.3	1000	979.1	1000	1000	985.4	995.4	1000	998.7	928.7	1000	1000	928.7	0
3	MEYER, Andrew	9803.5	98.04	10611.1	807.6	917.4	989.7	958.8	998.7	993.1	993.6	993.3	975.9	999	984	807.6	0
4	PRATLEY, David	9747.9	97.48	10247	959.7	883.2	992.9	1000	997	990.2	1000	1000	499.1	931.7	993.2	499.1	0
5	CHABREL, Nick	9745.6	97.46	9745.6	0	1000	1000	997.1	1000	988.4	997.2	991.6	934.8	994.6	841.9	0	0
6	CARTER, Gerry	9634.3	96.34	10435.4	933.2	984	990.2	861.8	1000	801.1	1000	1000	893.8	971.3	1000	801.1	0
7	SCHULTZ, Trevor	9516.1	95.16	10321	1000	954.9	960.2	999.9	816.4	968.2	804.9	952.9	963.8	957.5	942.3	804.9	0
8	WILLIAMS, Peter	9510.5	95.11	10175.6	1000	989.9	815.7	866.3	994.6	1000	902.2	991.9	1000	949.9	665.1	665.1	0
9	O'REILLY, Mike	9406.5	94.07	9406.5	987.7	1000	986.7	990.9	803.8	990.6	651.1	999.9	1000	0	995.8	0	0
10	BLACKBURN, Hugh	9402	94.02	9402	858.2	908.9	999.4	993.4	978.5	980.5	998.4	997.3	0	730.6	956.8	0	0
11	ARVANITAKIS, Theo	9250.8	92.51	9250.8	945.7	994.4	1000	929.5	1000	1000	945.3	1000	993.8	0	442.1	0	0
12	STENT, Marcus	9215.2	92.15	9215.2	999.8	1000	840.5	747.4	993.5	992.5	991.9	996.1	1000	0	653.5	0	0
13	HOUDALAKIS, Jim	9111.6	91.12	9609.9	884.3	738.8	985	981.9	988.6	985.2	891.6	998.1	658.1	498.3	1000	498.3	0
14	MOORFIELD, Paul	8852.9	88.53	9506.5	931.8	807.7	993.2	980	989.1	653.6	710	831.5	978.3	951.5	679.8	653.6	0
15	NANCARROW, Jamie	8827.5	88.28	9404.2	583.6	888.6	926.3	995	722.8	988	997.8	751	981.6	992.8	576.7	576.7	0
16	DRABBLE, Len	8776.8	87.77	8776.8	923.6	874.3	983.2	0	878.5	983.1	799.7	921.8	870	597.3	945.3	0	0
17	TONKS, John	8613.3	86.13	9157.5	862.1	923.8	869.1	836.7	979.8	984.4	998.6	748.8	710	1000	544.2	544.2	300
18	POTTER, Greg	8559.8	85.6	8559.8	978.9	853.7	994.4	856.4	766.1	742.2	823.2	856	897.5	0	791.4	0	0
19	KUSIAK, Ziggy	8479.2	84.79	9093.2	717.2	758.3	855	681.9	843	936.3	938.8	938.2	921.6	614	888.9	614	0
20	WHITFIELD, Garry	8369.5	83.7	8959.1	795.1	830.2	972.6	770.5	898.7	970.9	981.7	724.1	686.3	739.4	589.6	589.6	0
21	MORRIS, Simon	8364.8	83.65	8921.8	695	659.5	800.6	806.6	846	1000	807.8	928.5	820.8	1000	557	557	0
22	HASKELL, Daniel	8364.1	83.64	8364.1	893.8	617.5	776.1	889	767	984.4	997.3	994.4	759.1	0	685.5	0	0
23	BLOW, Darrel	8057.1	80.57	8057.1	591.9	916.2	853.7	1000	986.5	751.6	818.5	784	590.1	764.6	0	0	0
24	BAXTER, Mal	7937.7	79.38	7937.7	830.7	826	782.9	788.9	982	849.7	950.8	739.4	547.5	0	639.8	0	0
25	THOMAS, Connor	7441.9	74.42	7845.2	752.3	848.6	754.7	991.2	526.2	508.5	853.4	967.3	660	579.7	403.3	403.3	0
26	LEWIS, Warren	7320.9	73.21	7842.4	551.5	600.3	773.6	728.9	544.7	982.4	780.3	734.9	729.5	894.8	521.5	521.5	0
27	ZIMMERMAN, Christian	7291.1	72.91	7291.1	720.4	819.2	934.6	671.5	698.9	0	617.5	973.3	778.3	422.9	654.5	0	0
28	GUNN, Robert	6903.7	69.04	7339.9	583.3	641.5	769.5	521.5	913.4	589.9	732.1	749.4	436.2	491.5	911.6	436.2	0
29	KENT, Bill	6681.5	66.82	7075.6	695.9	972.9	394.1	569.3	813.2	837.7	777.5	663.7	456.6	447.9	446.8	394.1	0
30	FAULKNER, Ian	6076.4	60.76	6374.8	539.9	710.2	618.5	786.3	701.3	399.7	440.5	754.3	298.4	565.9	559.8	298.4	0
31	FRIZELL, Mike	6033.2	60.33	6033.2	470.4	574	632.8	403.6	780.3	829.6	691.5	966.9	410.3	273.8	0	0	0
32	MERRYWEATHER, Brad	5884.3	58.84	5884.3	874.2	630.3	589.9	0	760.4	746.7	709.2	597.9	0	0	975.7	0	0

NOTE: Above listed standings are "qualifying"

F5J - Overall Results [Milang 10-Mar-17]

.GliderScore.com

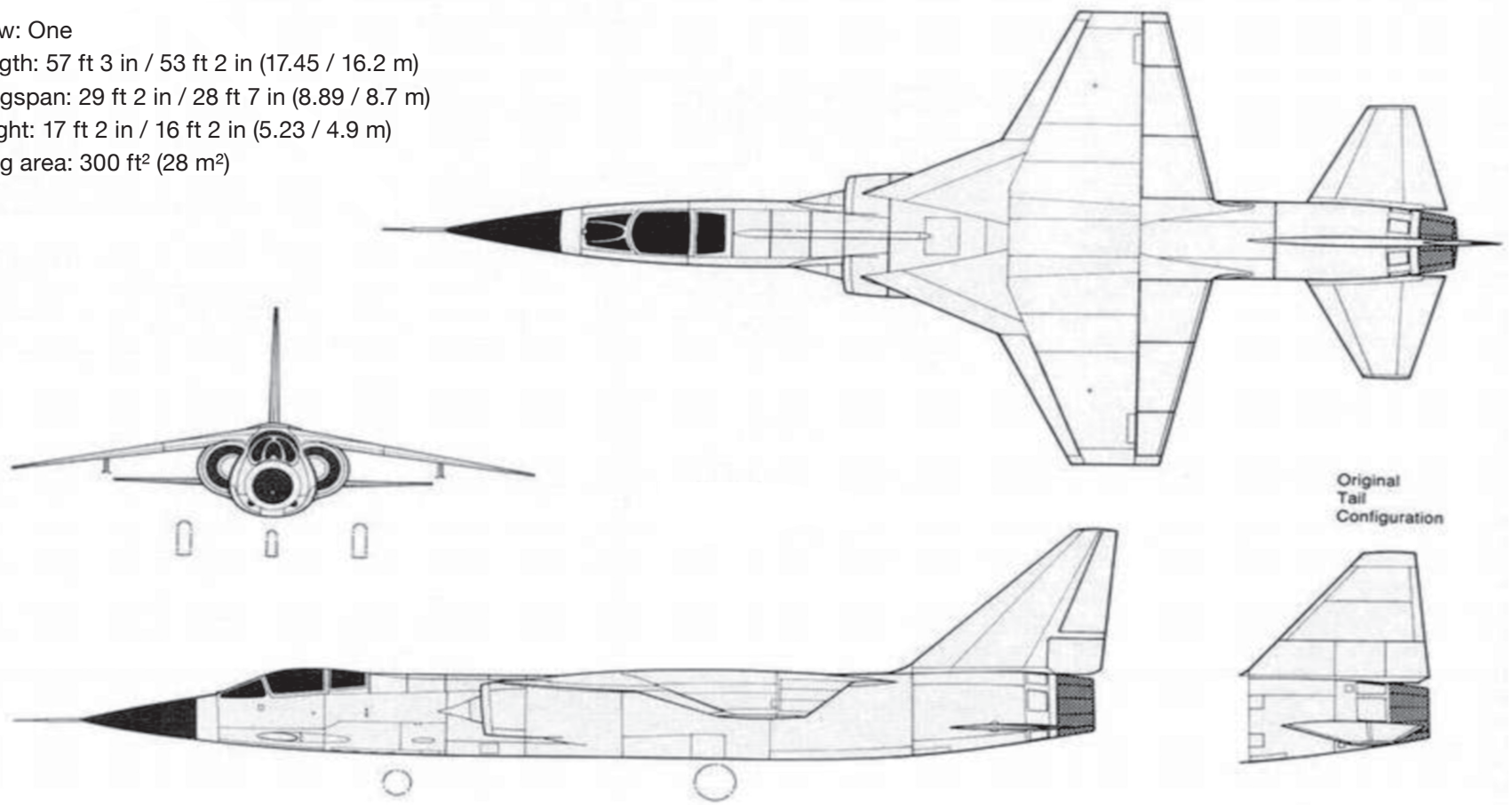
Rank	Name	Score	Pcnt	Raw Score	Rnd1	Rnd2	Rnd3	Rnd4	Rnd5	Rnd6	Rnd7	Rnd8	Drop1
1	WURTS, Joe	6985.2	100	7965.6	1000	999.2	1000	1000	1000	980.4	986	1000	980.4
2	ARVANITAKIS, Theo	6916	99.01	7875.9	1000	994.2	959.9	973.4	977.8	970.6	1000	1000	959.9
3	BOTHERWAY, Kevin	6901.5	98.8	6901.5	968.5	1000	979.7	953.3	1000	1000	1000	0	0
4	WILLIAMS, Peter	6783.3	97.11	6783.3	925.7	1000	968.1	963	965.5	993.2	0	967.8	0
5	HOUDALAKIS, Jim	6765.6	96.86	7689.7	924.1	950.5	979.7	970.1	974.6	984.6	960.6	945.5	924.1
6	THOMAS, Connor	6261.6	89.64	6869.3	904	942.8	895.9	931	918.6	607.7	740.3	929	607.7
7	PRATLEY, David	5902.6	84.5	5902.6	999.2	984.3	1000	971.8	977.2	970.1	0	0	0
8	MOORFIELD, Paul	5758.4	82.44	6326.4	845.1	641.8	864.2	748.8	568	1000	708.9	949.6	568
9	DRABBLE, Len	5514.2	78.94	5514.2	764.1	958.7	813.8	724.9	945.7	0	359.1	947.9	0
10	POTTER, Greg	5022.2	71.9	5022.2	22.7	967.8	973	0	901.3	953.5	250.2	953.7	0
11	TONKS, John	4648.6	66.55	4648.6	781.1	440.6	0	1000	960.1	300.2	974.5	192.1	0
12	PRING, Mal	4256.4	60.93	4256.4	601.8	341.7	203.6	924.3	704.7	0	545.6	934.7	0
13	BAXTER, Mal	3758.4	53.81	3758.4	431	575	274.8	449.3	836.3	0	853.7	338.3	0
14	SCHMIDT, Christian	3725.8	53.34	3929.6	778.7	366	449.7	220.3	708.1	757.9	445.1	203.8	203.8
15	KENT, Bill	3646.2	52.2	3923.5	903.2	595	396.7	357.4	345.9	277.3	516.6	531.4	277.3
16	O'REILLY, Mike	0	0	0	0	0	0	0	0	0	0	0	0

Slope Soaring Candidate

Lockheed X-27/CL-1200 “Lancer”

The Lockheed CL-1200 *Lancer* was a late 1960s company-funded proposal for an improved Lockheed F-104 *Starfighter*.
The *Lancer* was another product from Lockheed’s Skunk Works and Clarence L “Kelly” Johnson. Cancelled at mock-up stage.

Crew: One
Length: 57 ft 3 in / 53 ft 2 in (17.45 / 16.2 m)
Wingspan: 29 ft 2 in / 28 ft 7 in (8.89 / 8.7 m)
Height: 17 ft 2 in / 16 ft 2 in (5.23 / 4.9 m)
Wing area: 300 ft² (28 m²)



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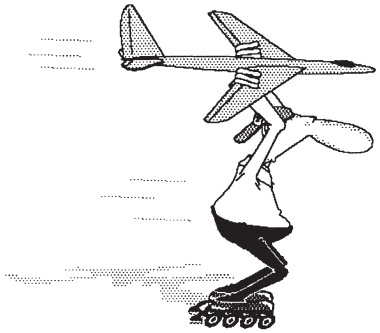


Gordy's Travels

The Elegance of Contest Landings

Gordy Stahl, GordySoar@aol.com

Often spot landings are referred to (with a sneer) as "dork" landings, or even "crash" landings.

So for years I have heard this lament over and over and, well… over. Frankly I never understood what the claimants were talking about. Their claim was that "sailplanes" should be landed gracefully, sliding to a stop, the pilot so skillful that he maintained such amazing energy and approach altitude control that his model would slide to the 100 point mark on the landing tapes.

Yet in all the years of my flying hundreds of various thermal duration classes and contests, I had never seen anyone actually do that kind of a landing… on purpose, as in able to do it twice!

Who could possibly call a slide landing a "piloted" precision landing? One landing zone has a clump of weeds that the model bumps against or another zone has a hard bump of dirt with causes the model to launch itself up and past the tape into the pilot, etc.

Now I won't argue that some pilots simply smash their models into the landing tape with hopes of no damage and big points. That's the patented world renowned, "Gordy's Sound of a Screen Door Slamming Landing," when the model makes a loud "Clack!" sound as it makes hard contact with *terra firma*!

Not the sort of spot landing you want. Photo from the HobbyKing FaceBook page, courtesy of Aspectivity*, Victorian Association of Radio Model Soaring, #488 June 2015.*

Often that is the result of newer pilots who decide to learn the art of spot landing. Key word "learn." It takes a lot of practice to learn how to manage the model's airspeed and altitude to insure it can be gently nosed to the spot; it doesn't happen without practice, a LOT of practice.

The trend by the masses to devalue the importance of pilot precision control is seen in rants about how RC sailplane contests should be about the soaring! Those rants are always heard from participants who don't want to put in the effort to gain that kind of control of their models. It takes a very skilled RC sailplane pilot to execute a 100 point landing, dead on the second.

The perfect spot landing starts with the perfect landing pattern set up and there have been articles in *RCSD* by me and videos by multitime RC soaring World Champ Daryl Perkins on the 20 second pattern which, once ingrained into the pilot's habit, produces automatic set up for very accurate, high point spot landings.

Thermal Duration contests are fun because they force pilots to not only float around for 10 or 15 minutes, but also measure the end of the flight, the part that is NOT optional… the landing.

BUT FULL SIZE SAILPLANE PILOTS DON'T DO SPOT LANDINGS!!!

Okay here's a for instance: You are in your sailplane, heading home from a long flight. You realize that without a bump, you will end up short of the airport! So you start scanning for a landing option.

You spy a farm field, but in front of your approach are high voltage power lines. On either side of the field are cows, spaced just far enough apart so that you'd have about 15" on either wing tip if you shoot dead up the middle of the field. At the end of the field the farmer is having a family picnic.

So you'll need to figure your altitude and airspeed to just clear the powerlines, guide your sailplane dead up the middle of the field and have the nose stopped before you hit the farmer's picnic.

That scenario is not fantasy, it was an actual landing a full size sailplane friend actually had to execute! I had told him about our spot landing task and he mentioned that it's normal for full scale sailplane pilots to have to have that kind of precision control of their sailplanes in order to avoid chaos.

I marvel at the landing zone when the top dogs all come in at the end of the flight tasks, watching to see which

will be the most precise. Elegant is a perfect way to describe the scene.

If the dirt is soft, then the models end up sticking tail up like lawn darts - it's part of their design.

Again, if you think you can do it for high points, prove it before you start to criticize.

I love the landing task because I see it as an opportunity to have an edge over the other pilots. I work hard at honing my skills in order to pick up as many of those 100 or 50 points just laying on the field. Hitting a 90+ point landing can make a pilot's day even when he has missed some flight time. Its satisfying because the reward is totally controlled by the pilot, not the fates as can happen in flight.

What are your average landing scores?

Want to improve your average?

Set up a landing tape, same as you'll be seeing at contests that season. Shoot a point landing with every landing, regardless of your flight time. RECORD every landing score, even the zeros… Why? Because at a contest they keep the zeros with the 100's! Check your average at the end of every day of practice, you'll start to see your scores rise automatically, or you'll start looking for improvements in your approaches.

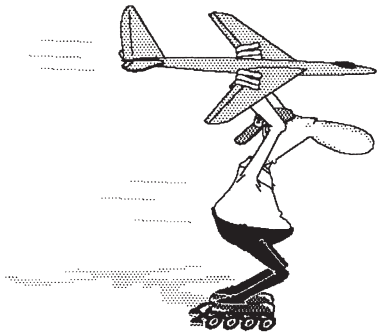
RC task landings are fun and very satisfying when achieved. Change your attitude toward precision landings and you'll find that RC soaring will be a lot more fun and you'll likely become one of those pilots the non-precision landers talk about! ☺.

See you on my next trip!

Got comments or just want to chat about the article? Email me at GordySoar@aol.com.

NEW DYNAMIC SOARING SPEED RECORD

Date:	April 13, 2017
Pilot:	Spencer Lisenby
Model:	Kinetic Transonic DP
Speed:	519 mph/835 kph
Location:	Bird Springs Pass, California
Wind:	Gusts to 100+ mph/160+ kph
Video:	<https://vimeo.com/213265400>



Gordy's Travels

Hey, F3RES'rs! Rubber Milk Is back!

The new F3RES sailplane class has brought back the use of High Starts, so taking care of the rubber is very important, especially since you'll find sourcing the specific F3RES rubber is only available from Europe!

Years ago, when High Starts were very much in use, there was a product called Rubber Milk, but as the use of High Starts faded so did the supplier.

I recently found and purchased a product that IS the same as Rubber Milk, but likely in its original packaging. Available from Amazon, its called 303 Aerospace Rubber Latex Protectant.

Its pricey, $23, but it goes a long way and is easy to use. I soak a thick paper towel and pull the tubing through the wet cloth so that the rubber is somewhat stretched during application.

Here's a link: <https://www.amazon.com/303-Aerospace-Rubber-Latex-Protectant/dp/B01LVV5HBC>.

This IS the real thing. You just wipe it on each season or maybe twice a season depending on use and dust. It is white in color and dries fast.

You don't know nuth'n 'bout using High Starts!

Okay or maybe you have just forgotten about the care of your launch system.

NEVER wind the rubber with tension, WALK forward and wind slowly to insure there is zero tension on the rubber.

Keep it out of the sun, and keep it dry.

While it's convenient to stretch it back and anchor it ready to launch, that's hard on the rubber and affects its ability to retract with good energy. And it opens the rubber's surface to the sun.

Got questions? Contact me at <GordySoar@aol.com>.

See you on my next trip!

— Gordy

THE DARMSTADT D-17 AND "CHANUTE" SAILPLANES

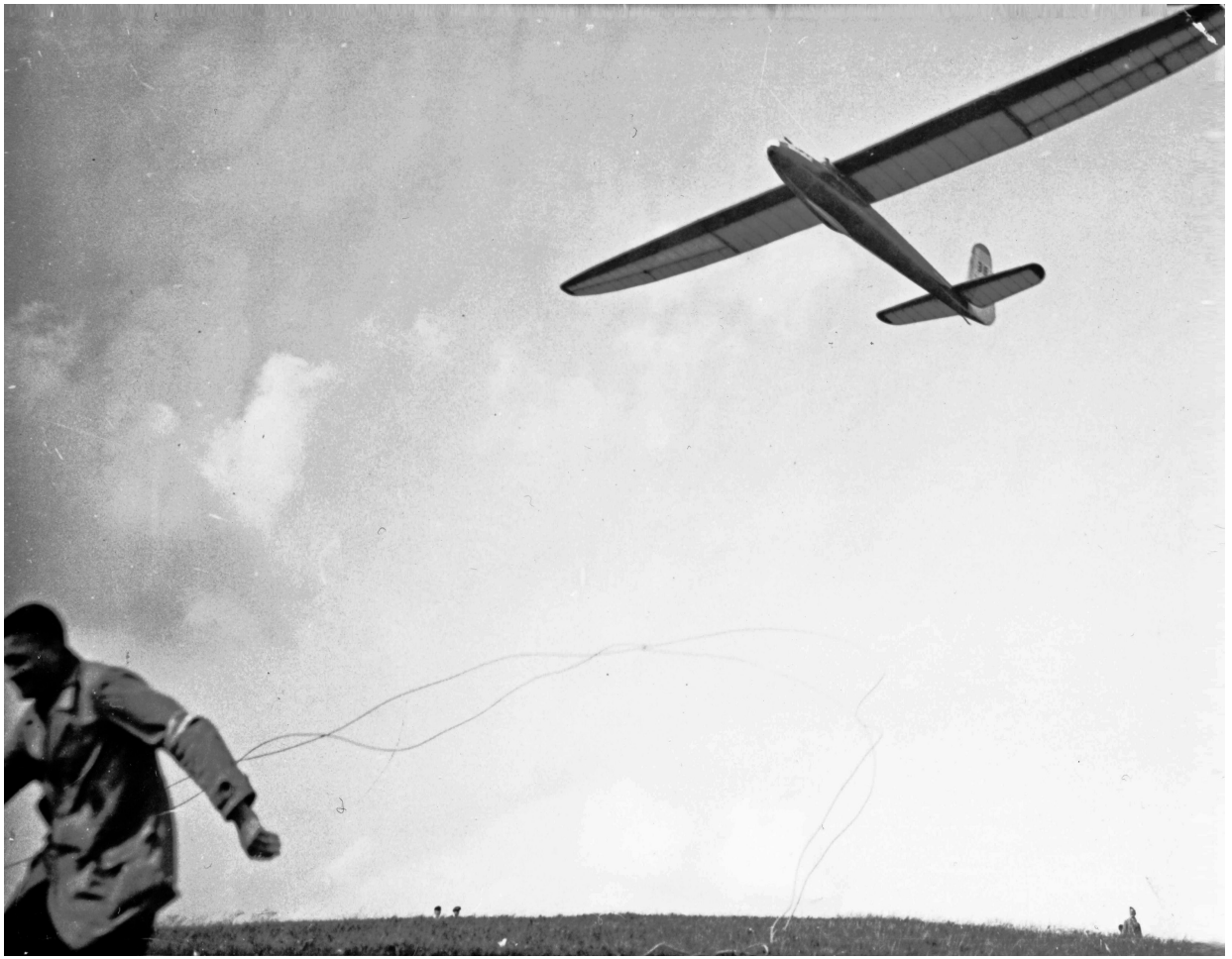
Simine Short, simines@gmail.com

Johannes "Bubi" Nehring, returning from his 51.8 kilometers flight to Heidelstein in 1927. Oscar Ursinus, the originator of the Rhön gliding meets, sits on the wing, Johannes Nehring, the successful pilot, is sitting in the glider, and Hans Völker, the designer and builder of the Darmstadt D-17 is proudly standing beside the glider holding the canopy cover. Franz Gross is standing to his right; he designed the next glider using the money the group had received from selling the glider to J. C. Penny Jr. in the USA a year later. Ludwig Völker photo.

The Akaflieg Darmstadt is probably the oldest and arguably the most innovative of all the university sponsored Akafliegs in Germany. In 1927 the city of Darmstadt provided the financial help to design a brand-new, innovative sailplane design. Hans Völker accepted the challenge as the theme for his engineering degree thesis. The Darmstadt 1-17 was the result. Johannes "Bubi" Nehring flew this sailplane at the 1927 Rhön competition, winning all the major prizes. The most remarkable flight was one along the various ridges in the Rhön mountains covering a distance of 51.8 kilometers. The accompanying photo shows the participating students after Nehring landed.

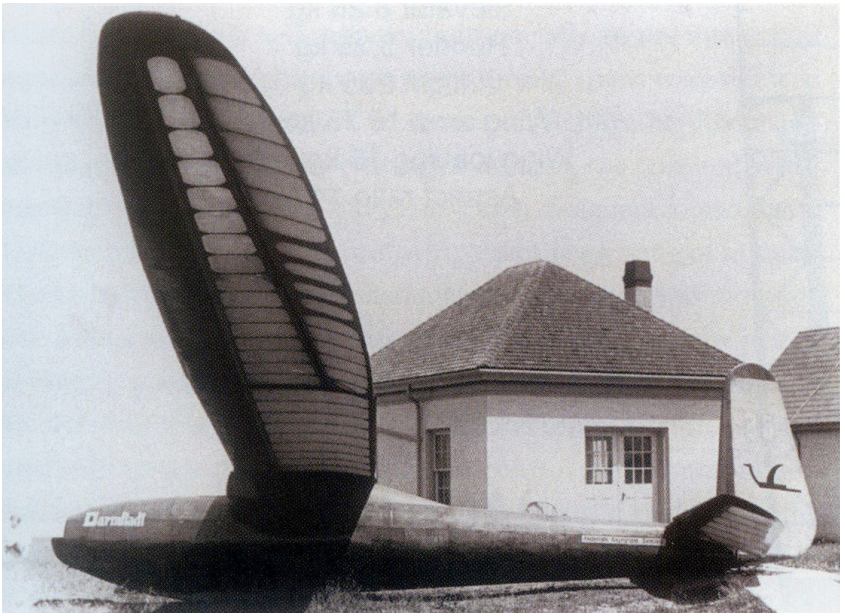
J. C. Penney Jr., son of the chain store operator, wanted to make the sport of soaring as popular in the United States as it was in Germany. The only way to do so, he thought, was to establish a glider school, the first of its kind in this country. He signed a contract with the Rhön-Rossitten-Gesellschaft to bring three well-known German pilots (Peter Hesselbach, Captain Paul Franz Roehre and Dr. Paul Lauben) to the US, bringing along

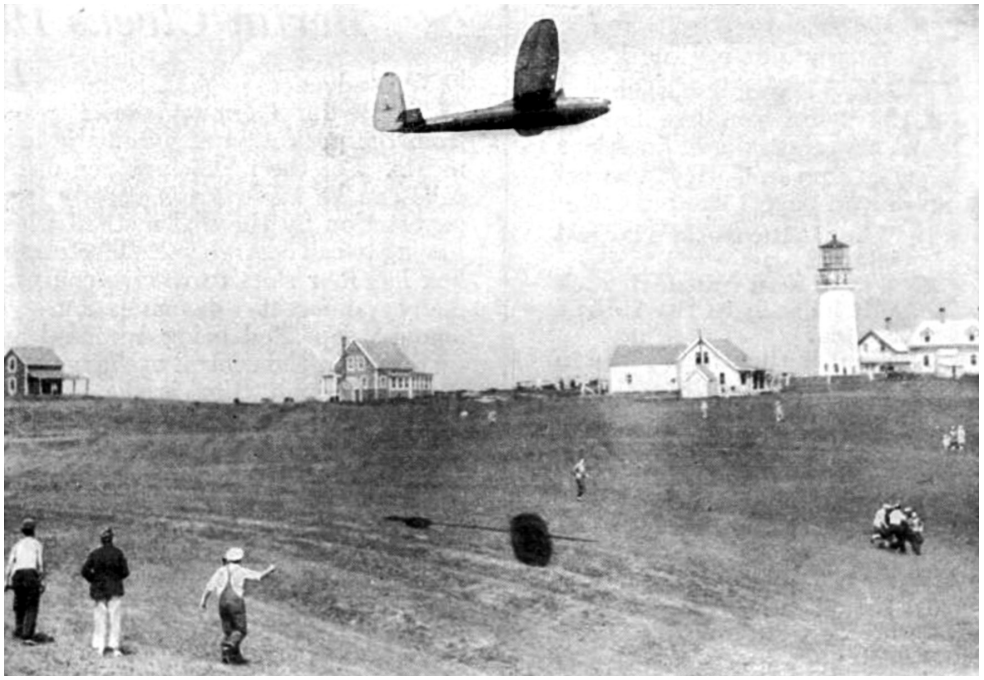
1927



Left: Johannes “Bubi” Nehring stands next to the Akaflieg Darmstadt D-17. Collection of Simine Short.

Above: The Akaflieg Darmstadt D-17 is launched via bungee. Notice the venturi mounted near the nose and to the left of the fuselage centerline. The D-17 cockpit was enclosed and the landing skid modified with the addition of a wheel for the “Chanute.” Collection of Simine Short.





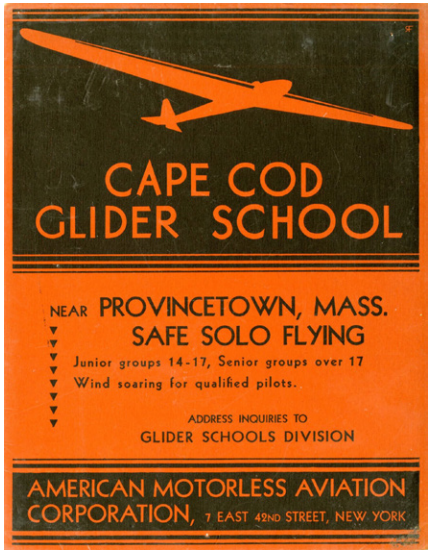
1928

Upper left: The D-17 was sold to raise money for the next design at the Akaflieg Darmstadt. Here the sailplane is being ready for shipping to the United States. National Soaring Museum.

Above: The D-17 "Darmstadt," showing the structure of the wing and ailerons, large vertical all-moving rudder carrying the Darmstadt school emblem. Martin Simons.

Left: Photo from the November 1928 Popular Science*, page 70, showing the D-17 flying at Cape Cod. Martin Simons.*

1928-1929, 1932



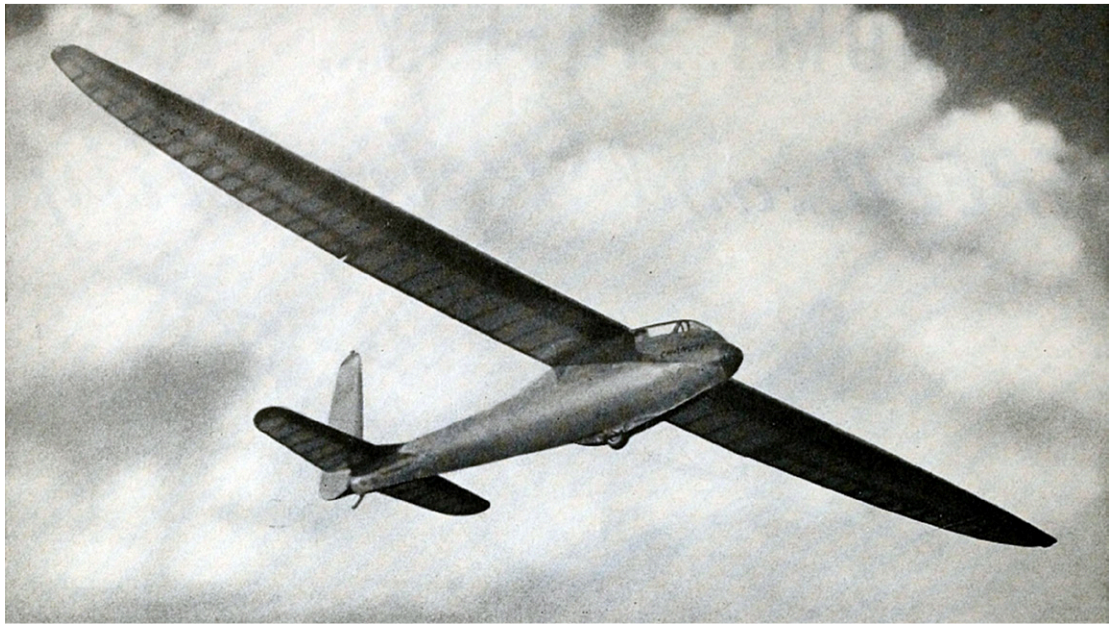
Left: (1928) The three German pilots hired for the Cape Cod school: Laubenthal, Röhre and Hesselbach. Collection of Simine Short.

Above and right: (1929?) American Motorless Aviation Corporation pin along with a poster advertising the Cape Cod glider school. Collection of Simine Short.

Below left: (Spring 1932) The new Chanute with Frank Gross, John K. (Jack) *O'Meara in the cockpit, and Horace Wild. Collection of Simine Short.*

Below right: (1932) Note the change of the forward fuselage contour compared with the D-17. The Chanute sported an enclosed cockpit. Loomis, NSM.

1932



Above: The Chanute in flight. Photo from July 1932 Aero Digest*, page 56. Note the enclosed cockpit in evidence.*

Right: The Chanute gets a launch via bungee at the 1932 contest. Fred Loomis Collection, National Soaring Museum.

1932 - 1933

Photos showing the “boxcar” trailer used to move the Chanute from site to site.

Left: (1932) Fred Loomis Collection, National Soaring Museum.

Below left: (1933) Collection of Simine Short.

Below: (1933) Collection of Simine Short.

a beautiful high-performance soaring plane, which was designed by members of the Akaflieg Darmstadt, but also two training gliders. The school was set up at Cape Cod, a sandy dune area similar to the Rossitten in East Prussia.

On 30 July 1928, Peter Hesselbach established what would be the first endurance record in the US, soaring for four hours five minutes along the Cape Cod dunes. Orville Wright had made an almost 10 minute soaring flight in 1911, but at that time no one thought of using barographs or have the required observers. Taking off again a couple weeks later Hesselbach encountered problems with his launch and the Darmstadt was damaged beyond repair. The report in the New York Times of 12 August 1928 provides details:

Hesselbach was taking off on a demonstration flight, specially arranged for J. C. Penney. The pilot was catapulted off with a rubber slingshot rope against a stout twenty-five-mile wind, but he suddenly lost control at the brink of a 100-foot bluff overlooking the beach. The Darmstadt was swept back and sent crashing against a flagpole. It struck with such force that a piece of the sixty-foot wings hurdled through the air and struck Mrs. Coderington, but she was not seriously hurt.

The remains of the Darmstadt sailplane were sold to a piano manufacturer in New York City who stored the crates in the factory warehouse for almost three years. They saw the light of day again when they were presented for sale at a bankruptcy auction.

Captain Horace B. Wild purchased the damaged glider, intending to restore the sailplane to its original beauty. He formed the “American Soaring Association” and looked for partners to help pay for the project. John K. (Jack) O’Meara joined Wild; they labored for a year at repairing the famous record setting soaring machine. Using the broken wing and fuselage as patterns, they carefully made drawings, and those parts of the old Darmstadt that could be used were embodied in the rebuilt plane.

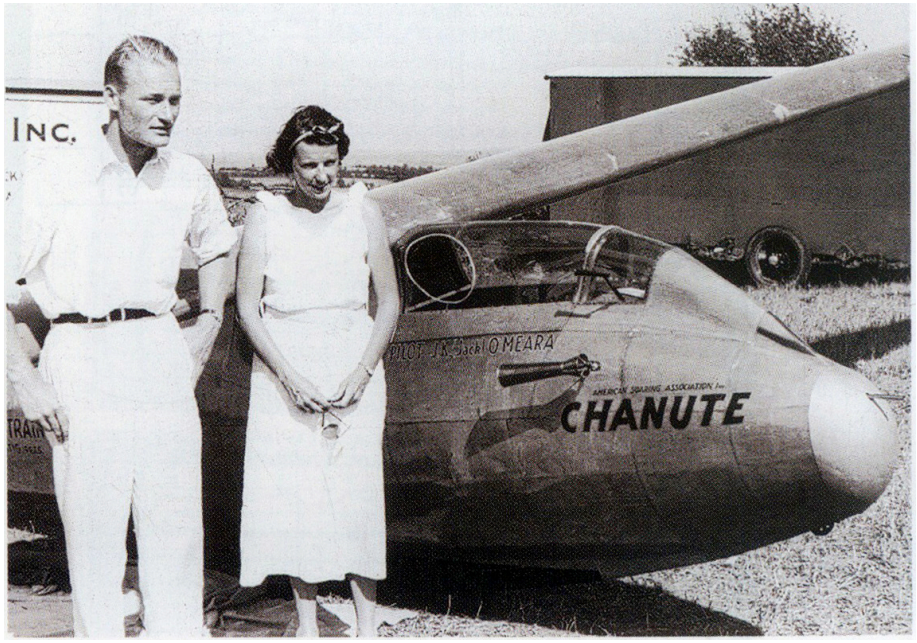
Horace Wild, who claimed to have been a good friend of Octave Chanute, now suggested to rename the plane “Chanute” in honor of the great glider pioneer who had successfully experimented on the shores of Lake Michigan near Chicago in 1896.

The new wings were of full cantilever construction, made in three panels so that they could be easily assembled and disassembled for transportation. The center section of the wing was 22 feet 4.5 inches in span with a constant chord. Ailerons with a total area of 40 square feet ran the full length of the wing tip sections. The rudder and elevator were quickly and easily attached to the tail. The leading edge of the wing center section was covered with 1/8-inch birch plywood, wing tip panels were covered with 3/32-inch plywood and the rest of the wing was fabric covered.

The monocoque fuselage covered with 1/16-inch and 3/32-inch birch plywood. A single landing wheel, equipped with a brake, replaced the skid that was originally attached to the fuselage. The streamlined fairing behind the cockpit was built up and extended so that its upper edge conformed closely to the shape of the lower camber of the wing. The pilot’s cockpit was completely enclosed with a quickly removable cowling of celluloid, which was provided on each side with a sliding window.

The “Chanute” was equipped with a standard set of navigation lights and flight instruments (altimeter, turn and bank indicator, airspeed and rate-of-climb indicators and an RCA short-wave radio to transmit and receive on a 5-meter wavelength). Provision was made for the pilot to wear a back-type parachute. This 24-foot diameter chute, made by the Switlik Company, was of light silk with a specially fitted nonadjustable harness of the latest type webbing. A quick-release Rusco safety belt was also used.

The trailer to move the sailplane quickly from one field of operation to another was designed and built last. Its external



1932 - 1934

Above left: (1932) Warren Eaton, President of the new Soaring Society of America (SSA), checks the barograph after John K. (Jack) O'Meara's record flight during the 1932 contest. Fred Loomis Collection, National Soaring Museum.

Above: (1933) The Chanute at Roosevelt Field. McCord Museum photo.

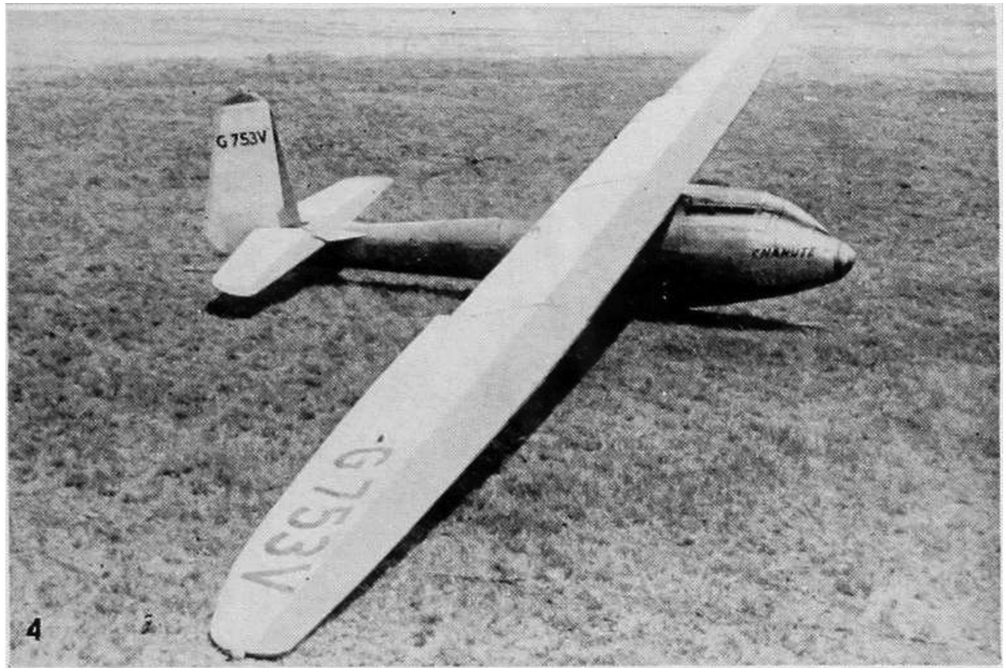
Left: (1934) The Chanute sailplane with Dick duPont and Ruth Holdermann at the 1934 contest. Martin Simons photo.

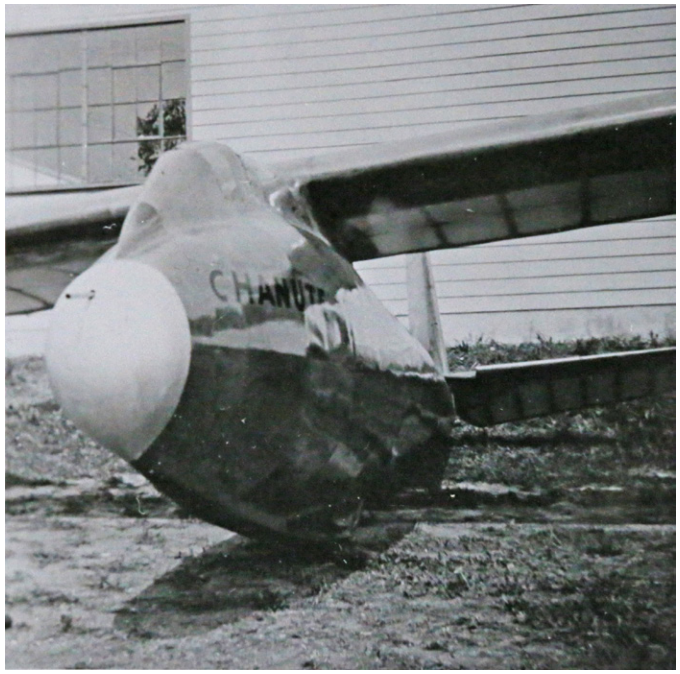
1933

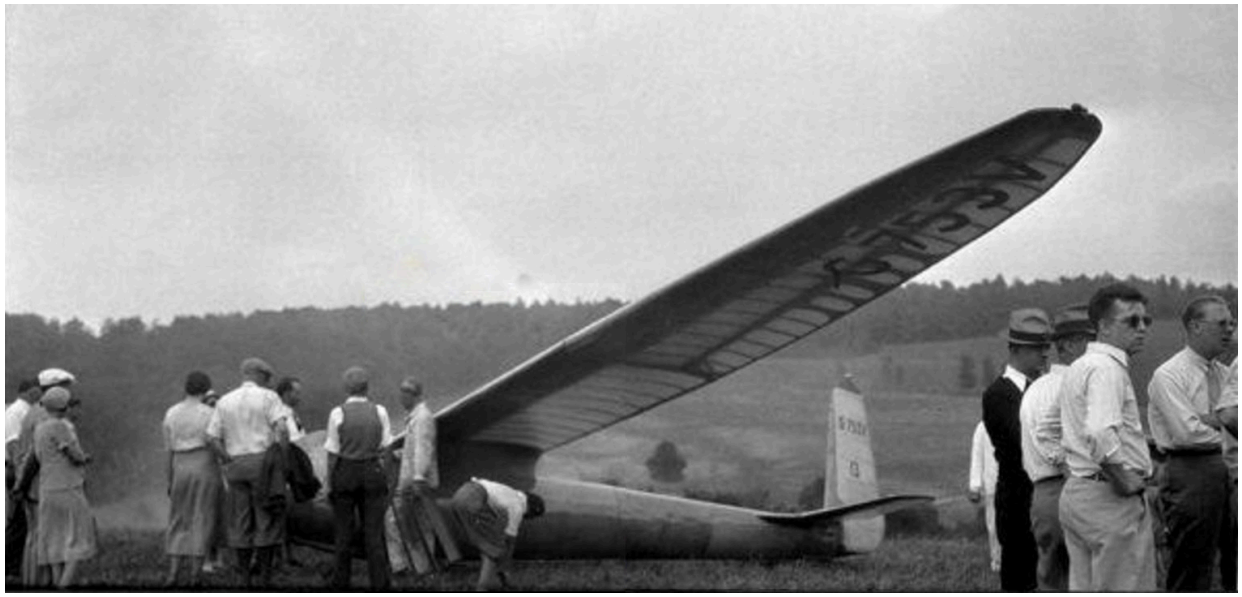
John K. (Jack) O'Meara advertises his latest enterprise during the August 1934 contest in Elmira New York, the Lustig Sky Train. Fred Loomis Collection, National Soaring Museum.

1934

The Chanute at Wings Field near Philadelphia in 1936. Martin Schempp photo supplied by Peter Selinger.





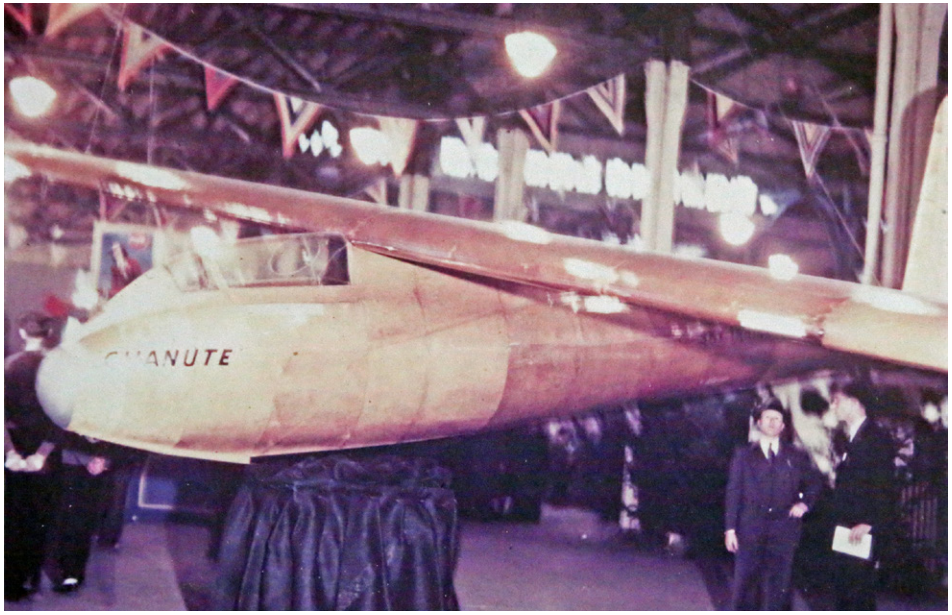


1935

Above left: "High performance soaring plane. 1935." Aero Digest, July 1935. Note both horizontal and vertical stabilizers are all-moving.

Above: A good view of the front of the fuselage showing the revised contour for the enclosed cockpit. Lew Hull donation to the National Soaring Museum.

Left: The Chanute at Wings Field near Philadelphia in 1935. Martin Schempp photo supplied by Peter Selinger.



The Chanute on display in 1942.

The Chanute being flown by members of the Philadelphia Glider Council. Photo circa 1942.

1942-1944

Wing fitting at a 1944 event. Photo donated to the National Soaring Museum by Lew Hull.

appearance resembled a miniature box car, the sides were painted with a silver tint, and black and gold letters advertised its contents.

At about the same time, in early 1932, another group of soaring enthusiasts formed an association to hold the next national contest after the National Glider Association went defunct. They called themselves "American Soaring Association"; however Jack O'Meara made it clear that this name was taken. So the other group changed their name to the "Soaring Society of America."

O'Meara participated in the 1932 soaring contest at Elmira, NY, and, as expected, broke several soaring records: He established an American distance record of 66 miles on a flight from Elmira to Wyalusing, PA, as well as an altitude record of 4,950 feet, which Martin Schempp bettered only three hours later. Arguably this sailplane was the highest performance soaring plane in the United States in the early 1930s. for several years, O'Meara took the "Chanute" on tours throughout the eastern and central parts of the US and Canada to acquaint people with the merits of the sailplane and continued to promote the sport of soaring.

Ralph Barnaby, President of the SSA and editor of the Gliding and Soaring Bulletin, lamented that at the 1935 Elmira meet only two gliders could be considered high-performance soarers, Jack O'Meara's "Chanute" and Dick du Pont's "Albatross." Receiving the newsletter, his friend Wolf Hirth wrote from Japan: "You need real good performance sailplanes of modern design like my Minimoa and not those old buzzards like 'Chanute' of 1927 construction."

Richard C. du Pont had opened a gliding school at Wings Field, near Ambler, west of Philadelphia; Jack O'Meara joined him in the fall of 1935, bringing along his recently overhauled seven-year old "Chanute." O'Meara then moved to California, but the glider stayed at du Pont's "Wings Soaring Club." In 1941 the 32-year old O'Meara was killed testing an airplane for the Harlow Aircraft Company of Alhambra, CA.

The Philadelphia Glider Council (PGC) was formed in late 1941. At that time Ross Christman and Al Krauss owned the "Chanute". In early March 1942, PGC members participated at the Philadelphia Sportsman Exhibit, showing their Franklin, the "Chanute" and an uncovered du Pont Utility. This display was well received and helped members share their enthusiasm for gliding in the Philadelphia community.

Two years later, PGC members purchased an airport for their operation. At their Open House in the fall of 1944 attendance was excellent; visitors came from many parts of the eastern U.S., even though there were difficulties due to wartime travel. The Philadelphia Gliderport had been freshly seeded, but had no turf yet. Auto tow was impossible, so a winch was used to launch the utility gliders and the "Chanute", but retrieving on the muddy runway presented major problems.

The "Chanute" was much admired, caressed and inspected. Although there was much concern about the condition of the glue joints on the wooden wing, the urge to fly it overcame the anxiety. Roscoe Christman, Ed Krauss and Ed Fox each made one flight, but decided to do some rather extensive reworking. The glider was taken to Christman's home in Trumbauersville, PA (near Quakertown) to do the rework. After a very thorough inspection, the rework plans were reconsidered, as it would still be too unsafe to fly.

In considering the disposition of this significant ship, they decided to donate it to the Franklin Institute in Philadelphia. Fox recalled that they requested ten dollars in cash to accompany the ship and required the ship to be delivered. The fact that it would cost real money to donate the equipment did not sit well with the owners, so they decided to cremate the sailplane. It was taken to an open field near Roscoe's home and it went up, not as in soaring, but in flames!

All that remains of the “Chanute” today is an exhibit frame at the National Soaring Museum, which was donated by Lew Hull a decade ago. This exhibit includes various photos but also an outer wing rib section with tapered connection bolts for rigging the main wing spar.

Acknowledgments: Thanks to Rusty Lowry for pointing out the display at the NSM, to Peter Smith for allowing me to open the frame for better photographing, to Peter Selinger for taking excellent photos of the originals and to Gerry Wild for inquiring among Philadelphia Glider Council members. Thanks also to Martin Simons for permission to reproduce the D-17 / Chanute 3-view from Sailplanes 1920-1945.

General specifications of the Darmstadt D-17 and the “Chanute” sailplanes:

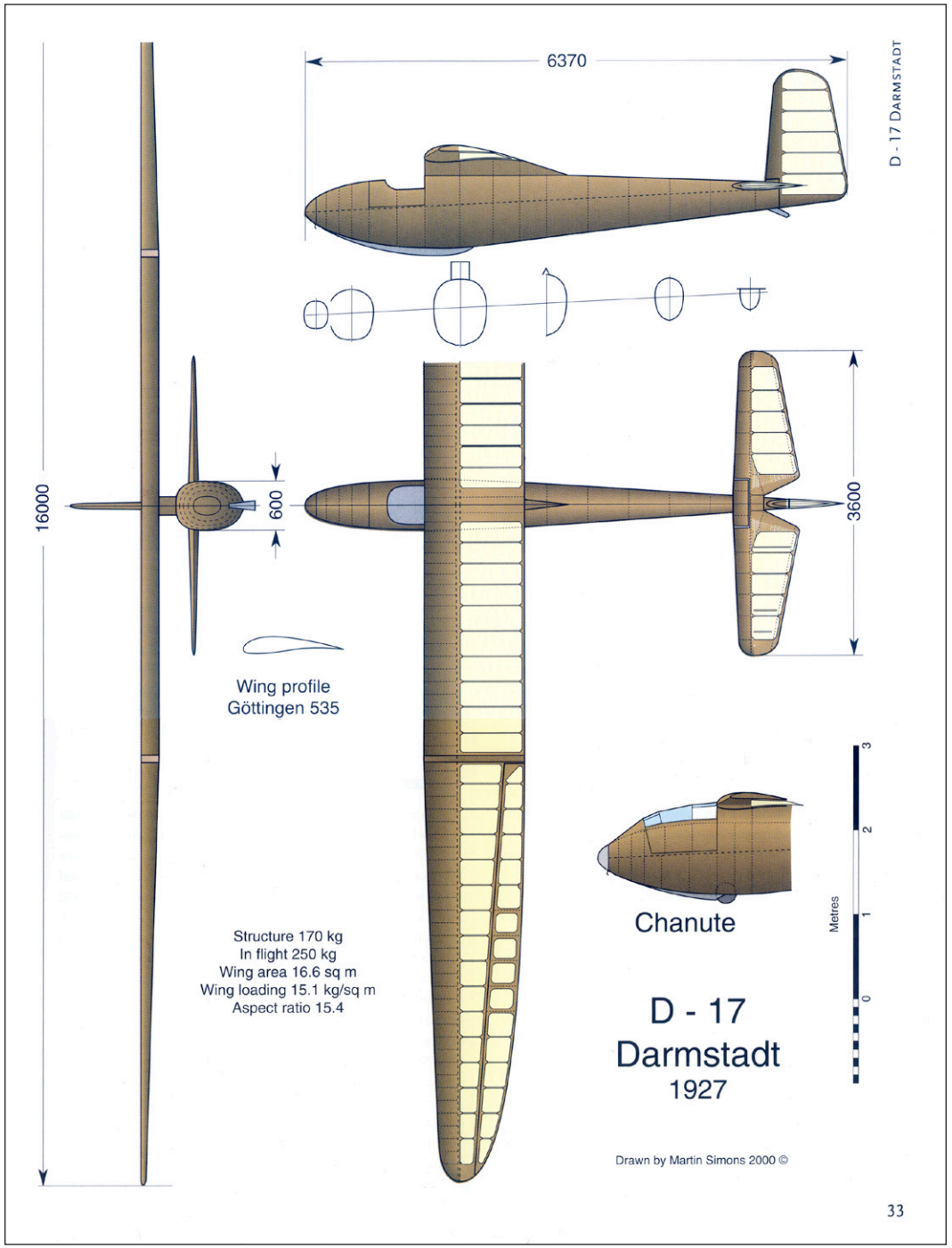
	Darmstadt D-17(1)	Chanute Soaring Plane(2)
Wing span	16 m / 52 ft. 6 in	53 ft. 4.5 in
Chord at root	?	47.5 inches
Wing area, total	16.6 sq. m / 179 sq. ft.	184 sq. ft.
Overall length	6.37 m / 20 ft. 11 in	21 ft. 5.5 in
Width of fuselage at cockpit	?	2 ft.
Height of rudder	?	5 ft. 11 in
Rudder area, total	2.3 sq. m	?
Span of elevator	3.6 m / 11 ft. 10 in	11 ft. 10 in
Weight empty	155 kg / 342 pounds	375 pounds

(1) Data extracted from Hans Zacher (1981). *Studenten forschen, bauen und fliegen*. Page 125.

(2) Data extracted from The “Chanute” Soaring Plane. *Aero Digest*, July 1932.

The Chanute at a 1944 event. Lew Hull donation to the National Soaring Museum.

The complete Chanute display at the National Soaring Museum.



COLORFUL TORNADO

<https://theaviationist.com/2016/10/27/the-italian-air-force-has-rolled-out-a-brand-new-tornado-in-awesome-special-livery/>

Italian Air Force photo.

By David Cenciotti

The Italian Air Force has rolled out a Panavia Tornado in brand new, awesome special livery, an eye-catching special colored Tornado IDS for the 60th anniversary of 311° Gruppo.

On Oct. 27, the Italian Air Force officially rolled out a Tornado IDS in a special livery at Pratica di Mare airbase, near Rome, Italy.

The aircraft, serialled CSX 7041, celebrates the 60th anniversary of the 311° Gruppo (Squadron) of the RSV (Reparto Sperimentale Volo), the Italian Air Force Test Wing responsible for the development, testing and validation of all the flying "hardware": aircraft, sensors, weapons, etc.

The new "special color" was the highlight of a ceremony that also included the flying display of the C-27J Spartan and the Eurofighter Typhoon: the unit is indeed responsible of the aerial displays of all the ItAF aircraft.

Photos on this page by Alessandro Borsetti while attending the small airshow at Pratica di Mare, Lazio, Italy.

(Pratica di Mare Air Base (ICAO: LIRE) is a military airport for the Italian Air Force. It was installed in Pomezia, Lazio, Italy; southwest of Rome, Italy. It was created around 1937. Later, in 1957, it was named after Colonnello Mario de Bernardi. It is the biggest Italian air base there. A particular detail is that the base is located 2.5 km (1.6 mi) from the village of Pratica di Mare, a small Middle Aged-styled town, which is built on the old acropolis of Lavinium.)

Akaflieg Karlsruhe presents AK-X at the AERO Expo Friedrichshafen, April 5-8, 2017

<https://akaflieg-karlsruhe.de/project/ak-x/>

Akaflieg Karlsruhe completed all non-flying test setups up to this date. The result was available for viewing in Hall B5 at stand 319 of Idaflieg e.V. The exhibit consisted of two parts: the fractured wing and a fuselage mock-up.

The structure of a specially made wing was stressed beyond the nominal load. In this case until breaking at a safety factor of j = 2.8. In the course of the follow-up of this test, a detailed damage analysis was carried out, on the basis of which the details of the structure of the airfoil structure could be further optimized. Visitors to the booth were given the opportunity to look closely at the fractured wing and to understand the propagation of the fault.

The fuselage mock-up serves various investigations, especially in the direction of ergonomics, visual conditions and space management. The construction has already proved to be of great value since we were able to test the processes in the production of the fuselage under realistic conditions. From this, we've already refined planned processes and introduced new processes.

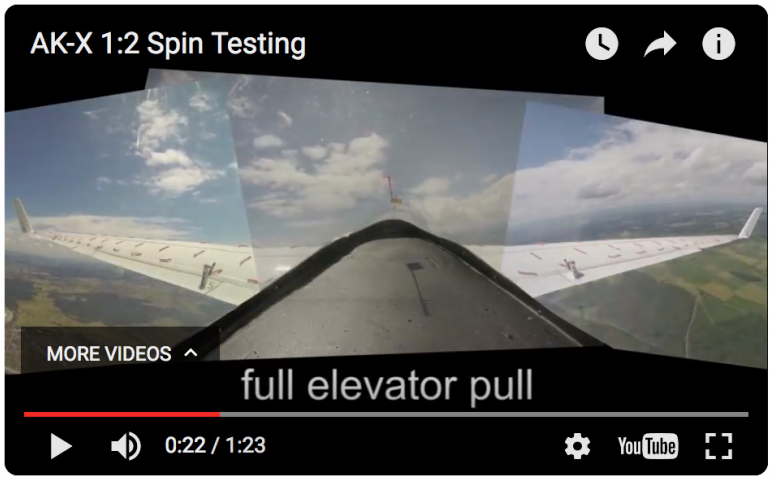
This milestone marks the completion of the penultimate phase of the project. Through the fracture wing and the fuselage mock-up, the last steps in the development could be verified and validated. Now we are completely concentrating on the construction of flying parts in order to let the AK-X stand out in reality and in the foreseeable future.

We would like to thank all our sponsors! Such a performance, which we are enormously proud of, can only be provided in conjunction with people, companies and institutions who actively support the project. In this sense: THANK YOU!

_____

The 1:2 AK-X model has now had more than 100 flights, including spin testing. For more information see page 43.

1:2 AK-X Spin Testing



<https://www.youtube.com/watch?v=Cx98yJDTM9Y>

The first flight of the 1: 2 model of the AK-X is nearly a year and a half in the past. Since then, the model has accumulated over 100 test flights. Most points in the flight test have now been successfully completed, including spins.

The effects of the twirling of conventional airplanes are now well understood; the whole problem is less researched for tailless aircraft like the AK-X. Therefore, it was clear to us that this behavior should be tested with models of our prototype before a test pilot is put at risk.

The testing of our model has largely confirmed the idea of how a favorable spin behavior can be achieved.

A South African Gem – The JS1 Revelation

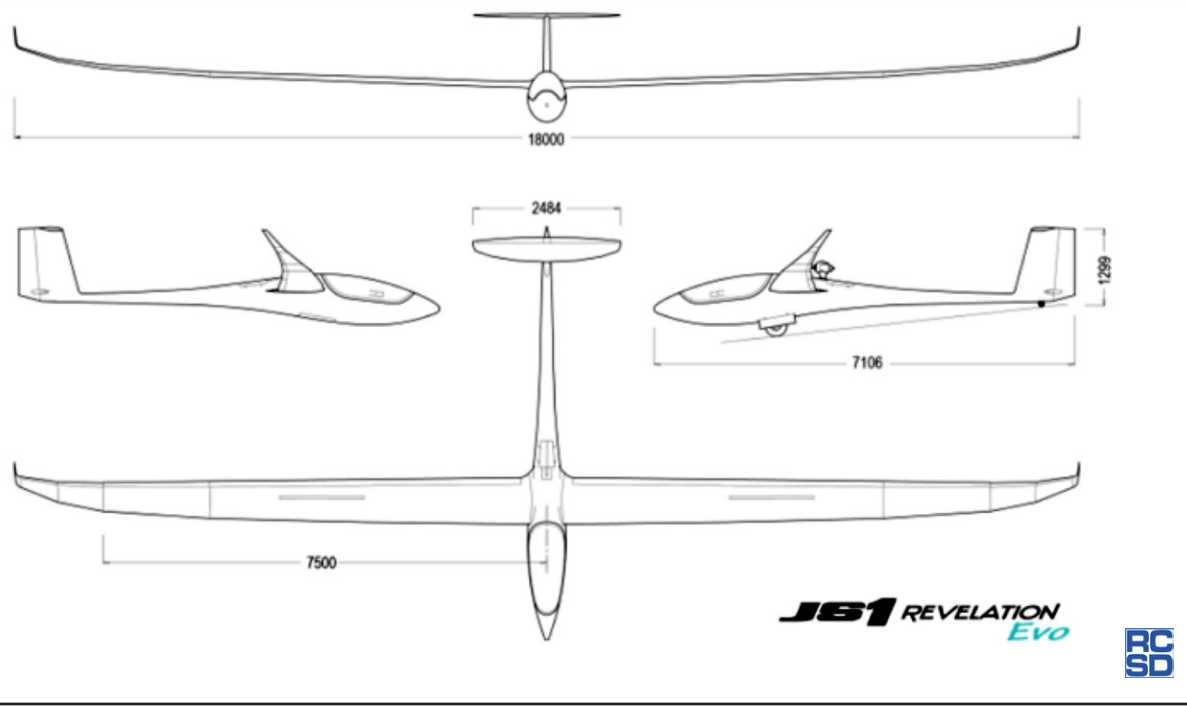
Leo Benetti-Longhini, http://www.postfrontal.com/PDF/prove_alianti/JS1.pdf

The JS1 Revelation, is a racer built by Jonker Sailplanes <http://www.jonkersailplanes.co.za> of Potchefstroom, South Africa, about an hour's drive southwest of Johannesburg.

The FAI 18-meter sailplane has a wing area of 11.25 m2 (121 ft2), aspect ratio of 28.7, VNE of 290 km/h (157 kts), and published L/D of 53:1.

Leo Benetti-Longhini resides in the wind-tunnel capitol of Tullahoma, Tennessee. He holds an advanced engineering degree, has extensive machine-design, composites, mechanisms, & wind-tunnel engineering experience. He is a world record holder, towpilot, and CFIG.

Dimensions and Weight		
Wing Span	18 m	59.1 ft
Wing Area	11.1 m^2	120 ft^2
Aspect Ratio	29	
Fuselage Length	7.16 m	23.5 ft
Fuselage Height	1.32 m	4.3 ft
Maximum Weight	600 kg	1323 lbs
Wing Loading (max)	54 kg/m^2	11.1 lb/ft^2
Wing Loading (min, 70kg pilot)	35.3 kg/m^2	7.2 lb/ft^2
Performance		
Best Glide Ratio	1:53	
Minimum Sink Rate	0.5 m/s	100 ft/mir
Best Glide Speed at max. weight	120 km/h	65 kts
Best Glide Speed at 450 kg	100 km/h	54 kts
V_{NE} Never Exceed Speed	290 km/h	157 kts
V_{RA} Rough Air Speed	203 km/h	110 kts



Performance Increase Possibilities of Gliders

<http://www.dg-flugzeugbau.de/en/library/performance-increase-possibilities>

At the symposium on aerodynamics and glider manufacture at the DLR in Stuttgart there were extensive theoretical opinions presented about the future of Sailplane manufacture. The main considerations were new materials and their methods of use and also questions of performance increases in the future. The papers by the director and his colleagues, that mostly had to do with aerodynamics and new airfoils, were particularly interesting. The current situation is characterized by the fact that the performance of modern gliders has become very similar. A significant increase in glide ratio and reduction in minimum sink is not guaranteed even in brand new machines. That means that the manufacturer of very expensive newly developed aircraft models is saddled with a very high risk. He cannot be sure that he will succeed and surpass the models already on the market. Because of this, the "performance contest" of the glider manufacturers has increasingly moved to themes such as comfort, safety, and motorization etc. The kind of quantum leap in innovation that occurred with the advent of fiberglass technology is not seen at present. What can we expect in the long term and what is already possible today?

Boundary layer suction:

Boundary layer suction is a revolutionary concept which has been under development for some time by Loek Boermans at the Technical University of Delft. Mr. Boermans is one of today's most active developers of new airfoils for gliders. He is making use of his new concept of boundary layer suction by putting a 1.5 mm wide slit along the entire length of the wing about 30 cm forward of the trailing edge. During flight, a pump in the fuselage sucks air evenly through this slit at the point where the boundary layer begins to become turbulent. That's it! No flaps are needed on this airfoil because totally laminar flow exists at all speeds. Glide ratios of 100:1 should theoretically be attainable with large spans; glide ratios of 80:1 should be reached without any further problems. Such a glider would not need to circle, rather it would fly almost entirely in dolphin mode with the expected effect on the over-all speed.

But there are a couple of small problems that have to be solved first: The long slit destroys the box construction of the wing. And on the inside of the wing, a continuous connection between the top and bottom surfaces of the wing is no longer possible because the pumped air needs to flow into the fuselage with no turbulence. The last third of the wing is attached only by the skin of the lower wing surface and at the same time has to be strong enough that the wing can be carried by the trailing edge.

A turbine pump must operate in the center of the fuselage like a vacuum cleaner. Two turbines, one in each wing, are not an option. If one turbine should fail, one wing would revert to a glide ratio of 25:1 and quickly put the glider on its back! The turbines for a 25 meter glider would use about 500 watts

continuously! The electric power can only come from having a large part of the glider covered with solar cells.

Technically that is possible but very, very expensive and delicate. What would happen to a flight in the waning hours of daylight or under heavy cloud? A buffer battery can not last long at the required power consumption! Finally, would such a glider still be considered a glider under the rules of competition? In any case, it requires a continuous energy source, namely the sun.

Boundary layer suction is without a doubt a fascinating concept. Perhaps in a few years a prototype might be built, which would be of huge benefit in advancing the technology. It will certainly be a long time before a sailplane manufacturer brings such a glider onto the market!

Winglets:

On the other hand, there is another possibility that is used for all modern gliders and can markedly improve the flight capabilities: Winglets!

Loek Boermans at the University of Delft, whom we have already mentioned, says that winglets are a relatively inexpensive method for improving performance of even older gliders.

A significant portion of the total drag of a sailplane is induced drag. The airflow around the airfoil creates significant drag (as calculated from the polar) only with an airfoil of infinite span. Span-wise flow increases towards the tip due to higher pressure on the bottom of the wing and lower pressure on the top of the wing. The tip vortex decreases the lift contribution near the tip to nothing. Large spans and high speeds reduce this effect markedly. This has led to the development of winglets for the standard class in which a significant portion of the drag is induced drag. Winglets reduce the drag to the same degree as an increase in span equivalent to the height of the winglets. Since practically no lift is generated at the tip, the winglets can be vertical. Therefore the glider does not fall outside of its competition class and the handling on the ground is no more difficult.

The winglet must be bigger as the span becomes smaller because with smaller spans the percentage of induced drag becomes larger. There is a limit to this, of course, because at high speeds the winglet is no longer necessary since the percentage of drag which is induced drag becomes smaller. In high speed flight the winglet itself produces undesirable drag when it is too big. Therefore there is an optimum compromise in size for the winglet depending on the span and airfoil.

Conclusion: if winglets are available for your glider from the manufacturer, you should make use of them. There is no more effective a way to increase performance at a reasonable cost. If you don’t have winglets, check and see if you can get some

made for your glider. In contests, winglets are a “must”. And circling in thermals goes better with winglets……as if you were on rails!

By the way, winglets are available for all new DG sailplanes including the DG-800 in the 18 meter configuration.

Unfortunately it is not possible to build winglets for DG-400: The additional weight at the wing tips may cause fluttering and that is dangerous!

Flaps:

There is not much new to say about flaps and they can’t be added, anyway. In general, the special airfoil required for use with flaps gives a worse performance than a non-flapped design when the flaps are set at zero angle. When one tries to use one airfoil for both types of wings, one has to carry out very careful wind tunnel studies. Otherwise one gets a more or less bad compromise.

A pure flapped glider is, of course, better than an unflapped ship in high speed flight (using negative flap settings) as well as in low speed circling (with positive flap settings).

– W. Dirks –

Newer developments on this subject:

While at the world’s competition, I had the opportunity to have a long talk with Loek Boermans. We talked an entire evening about many aspects of aerodynamics.

Boundary layer suction:

At that time a new concept was worked out in which it wasn’t necessary to cut a continuous slit in the top of the wing. Instead of that, a laser would cut a line of many tiny holes; 4 per square millimeter. The air would be pulled through these holes. One would also use in this case more “normal” profile which, if the suction were lost, would give reasonable performance. This would allow the use of 2 blowers in the wings that would prevent an immediate roll in the case of a loss on one side. The exhaust air exits at the wing tip slower than the airspeed of the glider. In no way would there be any thrust as from an engine-driven propeller.

The whole concept is just in the talking stage and not yet feasible even for the most innovative glider manufacturer.

Too bad; that would be a challenge for us…….

Winglets:

Loek Boermans repeated the importance of the commonly-held opinion that a standard class glider without winglets is for him unimaginable. However, there are several examples of winglets on the market that he thinks are not right. It’s not enough to simply lengthen the wing and then bend it upward. A special winglet profile has to be developed.

A positive advantage should certainly be noticeable with winglets for an 18 m wingspan and he is happy about our apparent success with the DG-800.

Winglets for a 20 m span wing should also be possible. However, the chord would be smaller. That would just look like a filigree at the end. Winglets for spans greater than 20 m (examples: ASH 25 and Nimbus 4) would be superfluous and probably would do more harm than good according to Boermans. The only possible advantage would be that the effectiveness of the wing dihedral would be increased which would help the thermalling characteristics. At the same time the drag would increase because of the longer leading edge without an increase in lifting area.

He had an interesting opinion about the doubly bent up wing (Ventus): such a glider flies very well. But when the wing touches the ground during a landing, the whole outer wing lies flat on the ground which could more easily lead to a ground loop.

(That is the reason, why the bend of the DG-1000 outer wing is so great that this wing will not lie on the ground. Furthermore the wheel under the bend gives another ground distance.)

I offer these opinions of one of the best known glider aerodynamicists without comment.

By the way, the richly-enjoyed Bordeaux wine was very good!

– friedel weber –

(translated by David Noyes and edited by Beth Langstaff, Ohio, U.S.A.)

Measurement of the Airfoil-Drag of a DG-800B

Fuselage-Wing Interference

We currently use laminar profiles for the wings. The relative wind and the air surrounding the airfoil have to enable a laminar airflow. It is easy to see the opposing effects when someone looks at parasite drag.

Well, the airflow is nowhere close to be smooth within the first 3 feet of the wings measured from the fuselage.

It's more or less turbulent. Therefore the wing profile that is being used in that area is simply wrong. It is useful to set up the wing with a different angle of attack within the first few feet and use a profile that is designed for turbulent airflow. Then, after about 2 or 3 feet the profile should be changed to a laminar profile.

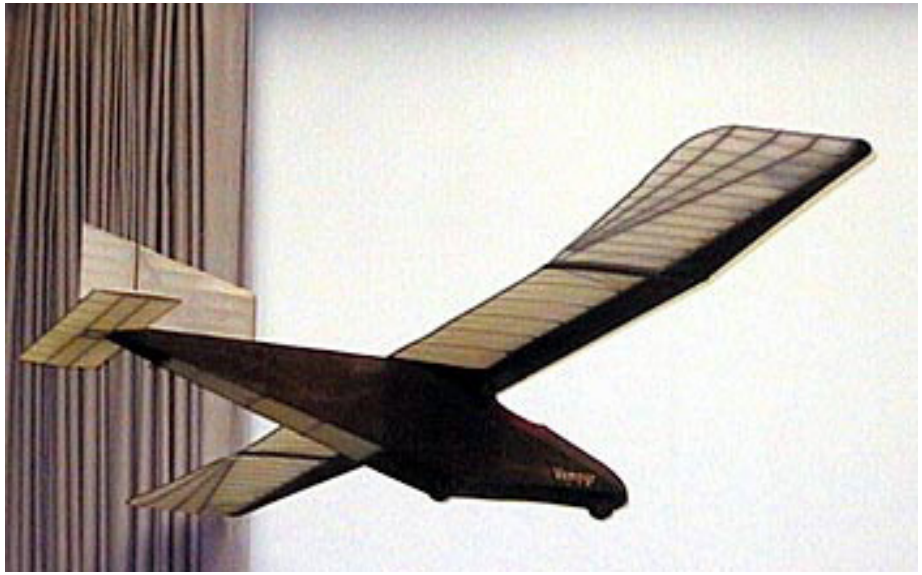
It has to be mentioned that almost everything that deals with aerodynamics does come with a bad side effect and one has to live a live of compromises:

A modified airfoil for example does not warn the pilot ahead of stalls. The warning results out of a disrupted or separated airflow alongside the inner part of the wing that moves on to the elevator and shakes it – making it known to the pilot.

A warning of that kind is very weak with modern airfoils. It will even become less noticeable in case of a modified profile. Such an aircraft will, if flown very slow, be in a stalling situation without the pilot's knowledge.

Therefore it is of great importance to have a very "gentle" airfoil in case of modifications.

There are no extra costs for such a modification, but the original mould has to be different. Therefore it is close to being impossible to change the current models to the newly learned settings.



“Vampyr,” Wasserkuppe 1922

“The Beauty and the Beast” Aerodynamics today and yesterday: DG-800B in front of Antonov AN 2.

The results of that change are not too drastically. Although it’s hard to prove that, because measurements can only be made by calculations and not in real flight testing.

To our knowledge the ASW 27, ASW 28, DG-1000 and the Discus 2 are already equipped with wings corresponding to the new data, but it was too late for the new aircraft of the 18m class.

L/D ratios in gliders

It is almost impossible to describe the performance of a glider using just the maximum glide or L/D ratio. For this reason one of the glider manufacturers stopped quoting L/D ratios several years ago.

We agree that a single number says very little about the actual overall performance of a glider and prefer analyzing the differences in performance of different gliders by comparing them in flight. After all, with this method you can test the glider through the range of the complete polar curve. You might not get any absolute values but a good comparison to the other glider used for reference.

However, our customers would like to see a maximum L/D ratio figure, so the following might explain that.

In general we publish a calculated polar curve and a maximum L/D ratio. This calculation is based on the profile polars which have been measured in the wind tunnel. The induced drag, the form drag of the fuselage, and the interference drag are added to the profile drag values of wings and elevator. Unfortunately not all these drag values are known, and the wind tunnel measurements might not fully reflect reality either.

Therefore the engineer will compare calculations and measurements on previous gliders and estimate a correction drag value.

It is also important to interpret the L/D ratio figures correctly. Based on the assumption that the correction factor wasn't "reduced for marketing purposes" the glider will reach the quoted value in optimal conditions – i.e.:

- taped correctly
- max. wing loading
- optimal c of g position
- polished and totally bug-free
- in absolutely calm air, i.e. no turbulences (which means nowhere near clouds)
- with closed and locked undercarriage and engine doors and airbrakes (all flush)
- without corrective control movements
- in ISA standard atmosphere conditions

Calculating polar curves in a test flight is very difficult and prone to errors. There are for instance polar curves for the same glider but from different years which are not identical. Particularly the best L/D ratio changes significantly due to minute measuring errors. For example a difference of only 1 cm per second in the sinking speed causes an L/D ratio difference of 1 point. Measuring errors in a comparative flight can however be much bigger.

So you see that the quoted L/D ratio is normally merely a theoretical value that you shouldn't use for your final glide calculations. In real life you should use a value of roughly 4 - 8 percent below the theoretical best L/D ratio.

– friedel weber & w-dirks –
translation by Claudia B

Introducing MotCam

Álvaro Silgado, <https://www.facebook.com/profile.php?id=100011675437816> / <http://tinyurl.com/mwfpl84>

I'm proud to present MotCam, my development for planes motion detection. I've been working in this project for a whole year, trying several different approaches to find the most consistent and fastest detection system as possible. After rebuilding it from scratch two times, I think I have a very reliable and flexible detection algorithm that can run fast enough for the most exigent disciplines (I hope so!).

MotCam is a complete software for crossing-base objects detection based on optical analysis. Images comes from one or more cameras connected to PCs or laptops that analyse frame by frame all the appearing objects and their trajectories, and detects when one of them crosses the base (vertical line in the middle of the screen) from one side to the other in the correct direction.

A complete description of the system can be found on FaceBook page: <https://www.facebook.com/permalink.php?story_fbid=388588464873665&id=100011675437816> / <http://tinyurl.com/kuw5t65>

Videos: <https://youtu.be/DP1GsWdLykM> and <https://youtu.be/xODM-AGWl6k>

Manual: <https://www.dropbox.com/s/eqny4gj3y3gu566/MotCam%20User%20Manual%20v1.0.pdf?dl=0> / <http://tinyurl.com/l4t2ze7>

FINEWORX AN-66
1:3 SCALE GPS-TRIANGLE

Philip Kolb with Vladimir Gavrilko
on the Fineworx FaceBook page

Happy to announce the rebirth of our "Fineworx AN-66," the GPS-Triangle World Championship winner.

Vladimir Gavrilko took over the responsibility to produce this model in the finest full carbon (+ prepreg!!!) technology.

It is available again from now on and you can order your model at:

<http://www.klapptriebwerk.de>

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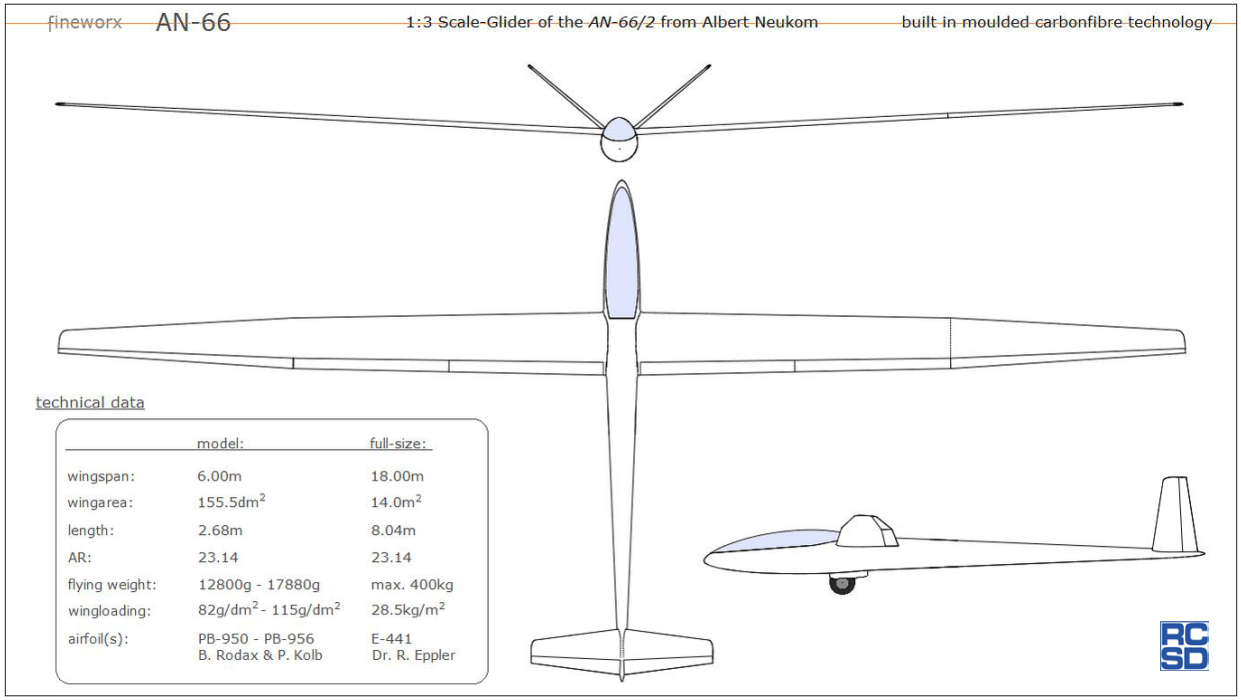


Let's Fly Baby..