Berblinger
Jubiläumsjahr
2011 Ulm

# Berblinger Flight Competition 2011 Ulm

## Programme

Stadt Ulm

ulm

**Publishers imprint**

Organiser of the
Berblinger Anniversary Year 2011
and the Berblinger Flight Competition 2011:
Town of Ulm

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Ulm Town Archive and
the contestants

www.berblinger.ulm.de

## Greeting

Ladies and Gentlemen,

Welcome to the Berblinger Flight Competition 2011, which will be held this year in cooperation with the AERO Global Show for General Aviation at the Airport in Friedrichshafen. The venue offers ideal conditions for presenting the innovative ideas of the flight competition to a wide public, including aviation enthusiasts and specialists, and to the international specialist press.

The town of Ulm is hosting the Berblinger Flight Competition 2011 in commemoration of the 200th anniversary of the attempt by Albrecht Berblinger, the "Tailor of Ulm" to fly across the Danube using a hang-glider.

In 1811, this attempt failed, not least owing to the adverse wind conditions at the site, and for many decades afterwards, Berblinger was subjected to much ridicule until he was finally vindicated and recognized as a pioneer of gliding flight, initially owing to theoretical observations. In 1986, on the 175th anniversary of Berblinger's attempt, practical proof was provided when the Danube was traversed with a hang glider during a flight competition held at the historical site.

Since 1988, the town of Ulm has been awarding the Berblinger Prize for innovative, ecological and resource-saving developments in the field of general aviation as a tribute to the work of Albrecht Ludwig Berblinger. It is the highest value prize awarded by any city in Germany for high-end research in the field of general aviation. Flight competitions are held periodically to demonstrate the practicality of the award-winning ideas.

Today, the conditions for new, pioneering developments, not only in aviation, do not depend solely on visions and courage, as they did in Berblinger's day. The chances for individuals are slim. Developments depend on research teams and enormous financial backing. It is therefore all the more remarkable what some competitors for the Berblinger Prize have achieved and it is a pleasure to find that small, amateur teams are competing alongside highly esteemed research institutes and aviation companies in the 2011 competition.

The Town of Ulm has also organised an extensive programme of events around the flight competition, which will be of interest to the general public and to aviation specialists. Details of these can be found at the end of this programme. We look forward to your visit – come and join in the celebration!

Best regards

Ivo Gönner
Senior Mayor of the Town of Ulm

Prof. Dr.-Ing. Otto Künzel
Chairman of the Berblinger Jury

# The Berblinger Prize

**Since 1988, the town of Ulm has been awarding the Berblinger Prize, one of the highest value prizes in the field of general aviation. The Town of Ulm created this prize in honour of its aviation pioneer Albrecht Ludwig Berblinger.**

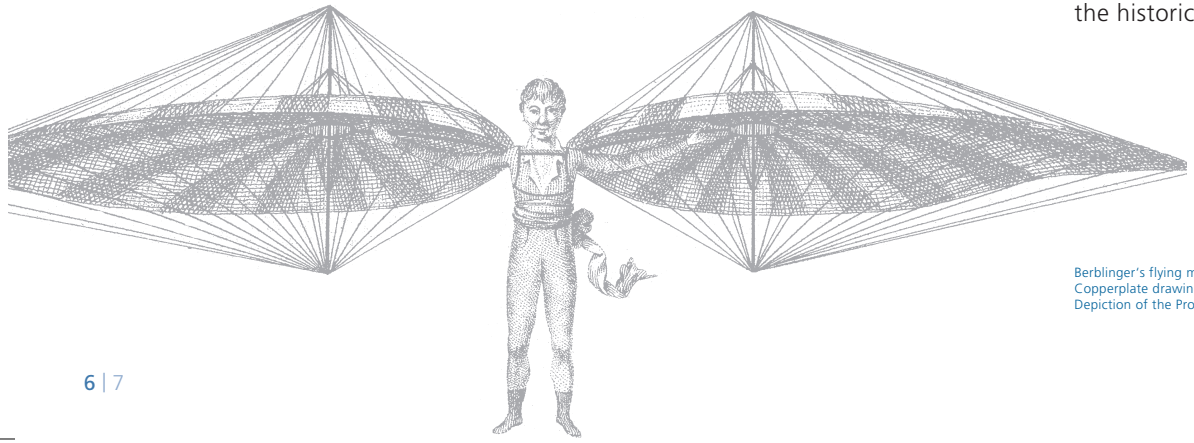
## Albrecht Ludwig Berblinger 1770–1829

Albrecht Ludwig Berblinger was an innovative visionary. After the death of his father he grew up in an orphanage and had to learn tailoring. He became a master tailor but that did not satisfy his creative spirit. He therefore designed a very useful artificial limb to relieve the suffering of crippled soldiers returning from the Napoleonic Wars. When the Bavarian State Minister refused him permission to market the prosthesis commercially, he turned his attention to aviation. In contrast to other aviation visionaries of his day, who were concentrating on beating wings to provide flight, he focused on gliding flight. He managed to make short gliding flights in the hills around Ulm using a simple hang-glider. However, his attempt to cross the Danube was doomed to fail owing to adverse wind conditions.

After this disaster Berblinger was a broken man who never found his way back to an ordered life. That his idea was feasible was not recognized until more than 100 years later – in the meantime, Lilienthal had successfully performed gliding flights – when in 1986 a hang glider similar to the original model successfully traversed the Danube at the historical site.

## Innovation! Vision! Drive for research!

These are the prerequisites for all creations and inventions. Only those who believe in an idea and pursue it despite the doubts of their contemporaries, who are not discouraged by setbacks and are prepared to take risks, have any hope of success. There is no guarantee and many fail, often because the time is not ripe for such a visionary idea.



Berblinger's flying machine
Copperplate drawing by Johannes Hans 1811
Depiction of the Professional

# Exhibition of aircraft participating in the competition

**Wed April 13 to Sat April 16, 2011**
**AERO Global Show for General Aviation,**
**Messe Friedrichshafen, Hall A2**

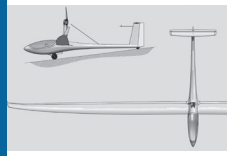
Opening times:
Wed–Fri 09:00–18:00 h, Sat 09:00–17:00 h

## Antares 20 E

Contestant:
Lange Aviation GmbH, Axel Lange (designer), Stefan Senger (pilot), Zweibrücken

The Antares 20E is a one-seater, self-launching, electrically powered motor glider. It is the only one of its type to be granted an EASA (European agency for safe aviation) type certificate. The aircraft not only has an innovative electric motor but also excellent aerodynamics and a pioneering safety cockpit. Sophisticated battery management allows optimum charging of the li-Ion battery, which is constantly equilibrated during normal flying operation without the pilot's involvement. The maximum endurance in powered flight is 90 min.

## Antares 23 E



Contestant:
Lange Aviation GmbH, Axel Lange (designer), Stefan Senger (pilot), Zweibrücken

The Antares 23 E has evolved from the tried and tested Antares 20 E from Lange-Aviation. The increase in wing-span to 23 meters results in a considerable increase in the maximum glide ratio of the motor glider. Like the Antares 20 E, this aircraft is equipped with the proven and EASA type-certified electric motor from Lange-Aviation. The maximum endurance in powered flight is 90 min.

## Antares DLR H2

Contestant:
DLR-Institut für Technische Thermodynamik, Dr. Josef Kallo, Stuttgart; Lange Research Aircraft GmbH, Axel Lange, Zweibrücken

The Antares DLR H2 is based on the serially produced Antares 20 E and is equipped with two external storage tanks to increase the cargo-load/propulsion storage system. The aircraft meets the requirements of EASA and is used as an experimental aircraft for various energy sources (high performance batteries and/or hydrogen fuel cells). The maximum possible endurance in powered flight was stated as three hours or 350 km. In order to demonstrate the economic potential, the applications, the practicability and the wide geographical range of an electrically powered aircraft, DLR and Lange Research GmbH are already working on a successor prototype, the Antares DLR H3.

## ARCUS E

Contestant:
Schempp-Hirth Flugzeugbau (aircrcaft), Tilo Holighaus, Kirchheim; Lange Aviation GmbH (E-motor), Axel Lange, Zweibrücken; Windreich AG (loading technology), Willi Balz, Wolfschlugen

The ARCUS E is a two-seater, self-launching, high-performance motor glider, powered by an electric motor from LANGE Aviation. The ARCUS E is equipped with a high-performance battery system from LANGE Aviation, based on SAFT VL41M lithium-ion cells. The batteries are located entirely in the wings. A small wind turbine from Windreich AG is used to charge the batteries, so that the motor, in addition to being almost silent, also operates without $CO^2$ emission. The maximum possible endurance in powered flight (cruising flight) is given as 45 min.

## ARCUS M

Contestant:
Schempp-Hirth Flugzeugbau, Swen Lehner, Kirchheim; SOLO Motor, Wolfgang Emmerich, Sindelfingen

The ARCUS M is a two-seater, self-launching, high-performance motor glider powered by a twin-cylinder, two-stroke motor of the type SOLO 2625-02i located in the fuselage. The fuel injection and ignition system are electronically controlled, allowing optimum operation in various weather conditions. For greatest possible operational safety, both systems are designed to work redundantly. The maximum possible endurance in powered flight (cruising flight) is given as approx. 120 min.

## ASW 20 CL-J with PSR Jet System

Contestant:
Draline bV (Jet System), Nederweert (NL); Klaus Meitzner (pilot), Weyhe

Inspired by the utility patents for turbo-jets registered as auxiliary motors for gliders, Klaus Meitzner has installed a turbo-jet from AMT, Netherlands into his ASW 20 CL-J aircraft. In order to meet the requirements of EASA for a type certificate, a development group was formed comprising AMT Netherlands, Draline bV, FH Aachen, OUV and experts from the aviation turbine construction industry. After five years development time and submission of all the necessary evidential documentation, EASA certification is expected for 2011.

## ATA All Terrain Aircraft

Contestant:
Christof Hegger, Bad Oeynhausen

The ATA is a a clever cross between a quad bike for cross-country use and a light aircraft for use in the sky. After four years development time and testing, the difficult certification hurdle has now been taken and both road certification and provisional aviation certification have been granted. Powered by a 60 HP one-cylinder, four stroke petrol motor, the ATA achieves approx. 100 km/h on land and approx. 90 km/h in the air. Further development for series production readiness is ongoing, whereby a 10 kW electric motor is used for take-off with two people on board. The maximum possible endurance in hybrid climb is given as 10 min.

## e-Genius

Contestant:
University of Stuttgart, Faculty for Aerospace Technology and Geodesics, Prof. Rudolf Voit-Nitschmann, Len Schumann, Steffen Geinitz. The main sponsor of the project is AIRBUS; project partners are PIPISTREL d.o.o., Slovenia, SCHEMPP-HIRTH Flugzeugbau GmbH and the Steinbeis Flugzeug u. Leichtbau GmbH.

The e-Genius is a two-seater aircraft built of carbon-fibre reinforced plastic, newly developed especially for efficient electric flight and optimized for multidisciplinary use. Equipped with a 60 kW electric motor, it has an endurance of up to 400 km. e-Genius achieves this with a consumption of only 4.75 kWh (corresponding to 0.6 l petrol) per 100 km and per Passenger. In 2006, the team around Prof. Voit-Nitschmann was the winner of the Berblinger Competition with the project Hydrogenius. For the Berblinger Competition this year Hydrogenius will be equipped with a battery system and will be the only project to make a repeat appearance in 2011, this time under the name "e-Genius".

## Electric-Pit-Trike

Contestant:
ICARO 2000 s.r.l., Sangiano (Italy), Manfred Ruhmer

The E-Pit-Trike is a lightweight, one-seater trike of the 120 kg class, equipped with an electric motor. The electric motor and control unit are from Geiger/Eck. With a 2 kW/h lipo rechargeable battery, endurance is approx. ½ hour with very low noise emission. Endurance can be increased to 1 hour using a larger battery. The net operating costs for one flight hour are given as less than Euro 1.00 for electricity. Manfred Ruhmer, several-times world champion in glider flight, is also involved in the participation of a second competition aircraft, the "Swift light E".

## Elektra One

Contestant:
PC-Aero GmbH, Nesselwang (Aircraft), Geiger Engineering, Bamberg (Electric Motor)

Elektra One, designed by Calin Gologan, for min. energy requirement at 160 km/h, is a one-seater Electric Aircraft in the German Ultralight LTF-UL-class. Elektra One is powered by a 13,5 kW- (continuous) brushless electric engine. The high performance, rechargeable battery provides an endurance of more than 3 hours and a range of more than 400 km. Elektra One's empty weight is 100 kg including engine and propeller, and has a maximum weight of 300 kg. For 100 kg battery the payload is still 100 kg. Low noise operation (under 50 dB) is provided by the electric engine in combination with low propeller RPM (less than 1500 in cruise). Elektra One is flying in combination with a Solar-Hangar completely without $CO^2$ emission. The complete system (Aircraft + Solar-Hangar) will come on the market for less than 100.000 EUR. The operation cost per hour is less than 35 EUR or 0.2 EUR/km.

## Exxtacy Schwarze Elektro-Minimum

Contestant:
Michael Kellermann, Nürnberg

The Exxtacy-Elektro-Minimum is an optionally electrically-motorized hang glider operating on the Schwarze-Minimum-Principle. The aircraft takes off and lands on its own landing gear, comprising wheels on the trapeze and at the back end under the motor-drive. The electric motor consists of two brushless model motors with a total capacity of up to 10 kW operating a joint belt and a folding propeller. The climbing altitude is said to be 600 to 1000 meters, depending on take-off mass, type and age of the batteries. Using LiFe-PO4 batteries Kellermann reckons on 1000 charging cycles, i.e. approx. 1000 take-offs. The motor-drive is intended to be used as a take-off aid as part of the DHV-Electro-start-Programme.

## Fascination E

Contestant:
Ekarus UG, Wolfgang Dallach und Albert Seiz, Waldstetten

Wolfgang Dallach wishes to make a contribution towards reducing emissions and to develop and build a practicable, electrically powered, ultralight aircraft prototype to carry 2 people. For ecological and economic reasons, this aircraft will be of particular interest in areas with noise emission restrictions, as well as for clubs, schools and hobby pilots. The "Fascination" VAL aircraft built by Dallach is to be modified and optimized in the UL version to comply with E-KARUS requirements. New materials, 500 kg total weight, spacious cockpit, plenty of cargo room and retractable landing gear are the requirements. The power train (35 kW/85 kW peak) is supplied by the Aradex Company and the batteries (optionally li-ion or li-po with a storage capacity of 25-30 kW/h) should allow for simple and rapid battery change. Alternatively, energy is to be provided by hydrogen fuel cells.

## FES

Contestant:
LZ design, Luka & Matija Znidarsic, Locatec (Slovenia)

FES – stands for front electric sustainer (self-launcher). The front folding propeller for self-launching and as auxiliary motor is an innovative propulsion system developed for installation in high performance sailplanes, also for later installation. In gliding flight, the two propeller blades snugly follow the contour of the fuselage. The brushless motor developed by the team provides up to 25 kW; 27 kg of lithium-polymer batteries, removable from the fuselage, provide a total capacity of 3.6 kW. The maximum endurance in powered flight is almost 1 hour or 100 km. The aim of the father and son Znidarsic team is to offer a simple, user-friendly, reliable and affordable ecological solution capable of giving today's largely conventional gliding activities an impulse towards new horizons.

## Horten H IV

Contestant:
Felix Kracht Stiftung, Prof. Bernd Ewald, Ober-Ramstadt

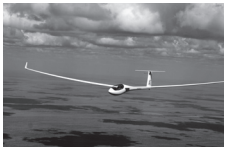
The Felix Kracht Foundation at the Hessen Aviation Institute of the Technical University in Darmstadt will present the historically authentic reconstruction of an airworthy wing-only glider of the Horten IV type. World-wide, only 2 examples of this airworthy type exist in museums. The flight performance of the wing-only Horten IV designed by the brothers Reimar and Walter Horten was superior to that of all contemporary high-performance gliders of its day. With this purely wing-only glider with a span of 20 m, Reimar Horten also gained the first knowledge world wide of the construction and technical flight calculation of wing-only gliders. Pilots at the time all praised it for its pleasant flying characteristics. This reconstruction serves both to honour the achievements of the Horton brothers and to retain the design for posterity and allow comparisons with designs that are common today.

## HYNOV

Contestant:
Gérard Thevenot, Messigny et Vantoux (France)

The first sports aircraft to fly powered 100 % with hydrogen, the mono-seater ultralight aircraft in a trike configuration is transportable in a minibus, storable in any garage longer than 5.8 m, and requires only 15 min assembly time. The 10 kW motor for the propeller is powered by up to 5 fuel cell stacks with 1.5 kW capacity each. It has proved its reliability by crossing the channel between France and England for the 100th anniversary of Blériot's crossing, and by reaching the American continent for the first time from Cozumel island. In constant evolution and improvement for greater performance with a smaller foot print, the next prototypes will be made from bamboo tubes and natural fibre composite junctions in order for this prototype to bring a world flag signed by a child from each country in the world to the North Pole from a city symbolic of peace without using any fossil energy.

## PhoEnix



Contestant:
Phoenix Air, Martin Stepanek, Usti nad Orlici (Czech Republic)

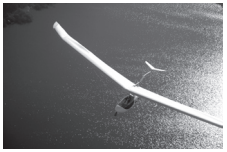
PhoEnix is a universal, ultralight-/LSA motorized glider with an electric motor developed from the U15 Phoenix aircraft. The object is to produce a two-seater aircraft with a wingspan of 16 m for gliding and motorized overland flight. The next stage of development is to make it possible to use as a tow plane for gliders. An electric motor with a capacity of 44 kW and a variable pitch propeller were modified for the electrically powered PhoEnix. The prototype is to make its maiden flight in March 2011.

## Rapid 200 Fuel Cell

Contestant:
Prof. Gulio Romeo, POLITO, Turin (Italy)

The European Union funded this development by Prof. Romeo of the Technical University in Turin for a motorized aircraft fuelled by hydrogen, the one-seater RAPID 200-Fuel Cell, with electricity provided by fuel cells. The all-electrical, zero emission power system was success-fully tested by POLITO during the six experimental flights performed so far. Climbing was obtained at a combined fuel cell and battery power of 35 kW. Level flight was attained up to 160 km/h using only a fuel cell power setting. A new world speed record of 135 km/h and an endurance of 39 min were established for the aeroplane during several flights conducted in the FAI Code Category C for motorized aircraft. The log book documents 2.5 hours of effective flight up to the end of December 2010 and a total path of 237 km. The positive handling qualities and satisfactory engine performances of the flight tests have led the team to consider them as a good starting point for further long endurance, high-speed flight.

## Silent Glider M „E“



Contestant:
Helmut Großklaus, Westerrade

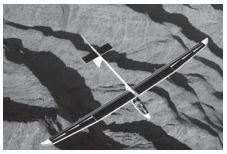
Electrically powered UL, wing-only of the 120 kg-class, based on a correspondingly designed hang-glider wing (ATOS VX) with a fixed pilot cabin with retractable landing gear beneath. This design – wing-only with a „pilot seat“ suspended below, controlled by weight shift – is known both internationally and in Germany as a trike. The Silent Glider M “E” is said to be able to reach an altitude of 1400 m with its 2 kWh battery. The folding propeller is operated by a brushless 10 kW motor.

## Sunlight

Contestant:
Sunair, Dominik Hörburger und
Robert Kolb, Scheidegg

Dominik Hörburger has been head of a flight training school for many years and has been training pilots in electrically propelled ultralight aircraft for 2 years. Robert Kolb has the technical know-how, and the means of design and implementation for a quiet and ecological small aircraft that is said to be simple to handle, assemble and transport. It is to be easy to fly and does not have to rely on airfields. The group will present an integral concept at the Berblinger Flight Competition: electric trike with retractable landing gear and hang-glider wing, with an unladen weight of less than 120 kg. The team want to make it possible for pilots to drive into the countryside in an electric car with solar trailer, and to go flying while the batteries are recharging with the aid of the solar panels. The aim is to make flying an ecological and independent activity.

## Sunseeker II



Contestant:
Irena and Eric Raymond, Radovljica (Slovenia)

The Sunseeker II has been flying since 1989. Eric Raymond designed and constructed it as a self-launching glider with solar cells on the wings and an elevator unit as energy source in order to fly through the air as the mood took him. Sunseeker II is the smallest, fastest, manned solar airplane of its type in the world. It has more flying hours than all other manned solar powered airplanes combined. It made headlines outside the specialized press when it crossed the North American Continent from the US Atlantic Coast to the Pacific in California in one leg. Batteries are used for takeoff and climb to 2000 meters. The highest altitude it has reached so far was 6550 meters when crossing the European Alps. Raymond confirmed the practicality of the Sunseeker II with a flight along the Italian coastline to the Sicilian peninsular.

## Swift-light Electric

Contestant:
Manfred Ruhmer, ICARO 2000 s.r.l.,
Sangiano (Italy)

The Swift-Light from the Belgian manufacturer Aeriane is a class 2 hang glider (= open class in hang-gliding) found all over the world. The electrically powered prototype was developed by Manfred Ruhmer and has been flying since April 2008. The motor is the first (pre-serial-) motor from Werner Eck and the controls are from Joachim Geiger. It uses a LiFe (A123 cell) battery pack with 1 kW/h performance. This type of battery can be quickly recharged in only 12 minutes. The serial version of the Swift-Light with E-motor will be ready in March 2011. The Italian company Icaro 2000 will market the E-Swift-Light world wide. 4 firm orders have already been placed. It will be fitted with a Geiger/Eck motor from Flytec and it will also use a 2 kW/h lipo battery. The overall climbing altitude with this battery is approx. 1500 m above sea level. The unladen weight including rescue system is only 90 kg.

## Swift-E

Contestant:
Josef Klafsky, Marktoberdorf

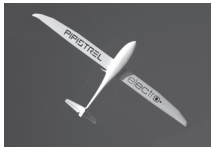
Josef Klafsky has further developed the ultra-light wing-only „Swift" glider, originally from the USA and partially available from serial production, into a self-launcher using an electric motor (folding propeller). The 10 kW electric motor is powered by LiPo-batteries with a capacity of approx. 2 kW/h, which are said to allow a maximum climbing altitude of 2000 m. Owing to its panelled pilot cabin and a wing span of 12.8 meters the Swift-E boasts a very good glide-ratio of 28.

## Tandem Electric Trike

Contestant:
La Mouette, Laurent Thevenot,
Fontaine Les Dijon (France)

This first electrically powered, open, two-seater tandem trike was designed by Laurent Thevenot, the famous French hang-glider manufacturer. The fabric-covered wing-only aircraft can carry a weight of 155 kg (passenger and pilot together); the small fuselage frame with landing gear, the actual trike, has a mass of only 21 kg. A battery set with a mass of 20 kg allows an autonomy of 30 minutes. The electric motor can develop 13 kW power. The Thevenot E-Trike made its first tandem flight in Summer 2010. The wing and trike are manufactured by La Mouette; the motor is supplied by Flytec.

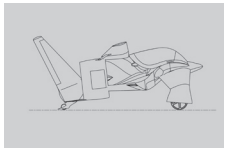
## Taurus E




Contestant:
Pipistrel, Ajdovscina (Slovenia)

At the time of its maiden flight in 2007, the Taurus Electro was the first 2-seat electric UL aircraft in the world. The second generation of this series of UL self-launching glider with fibre-reinforced plastic monoque fuselage and two side-by-side seats is now available, featuring a more powerful, 40 kW motor. Further features are a state-of-the-art hybrid battery management system and a full set of on-board networked avionics and electronics, providing for fly-by-wire power-train management with built-in multi-layer protection logic. The manufacturer of UL aircraft with and without motor has begun serial production, with at least 10 customer deliveries expected in 2011. The price of Taurus E is the same as that of the Taurus M, giving the customers freedom of choice and the chance to experience the glory of electric flight without the premium surcharge.

## U-Fly



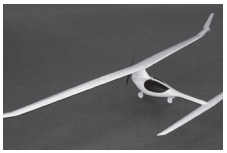
Contestant:
Trinity Aaromotive, Redman Design,
Gary Redman, Sydney (Australia)

U-Fly is a one-seater, electrically powered, ultralight aircraft with two approximately equal size wings arranged in tandem and a wing span of only 4.5 m. In its design, the Australians were greatly influenced by the futuristic designs of the motor-cycle industry. The pilot lies on his stomach, rather like on a fast motor cycle, with the front wing ahead of him –simultaneously the main landing gear–, further back, above him in a slanting position is the somewhat larger main wing and behind him is the jacketed propeller. The electrical system with a power capacity of 10 kW is supplied by Yuneec, China. With U-Fly he would like to make it possible for people to realize the age-old dream of independent flight without damage to the environment. Shortly before going to press, we received the news that Gary Redman will unfortunately be unable to take part owing to the high transport costs.

## Further, exhibited, non-airworthy projects

Of the 36 applications submitted we were only able to approve 24 for the competition. Nevertheless, we would like to present the best ideas here.

### DESiE



Contestant:
Silent Flight e.V, Wolfgang Liehmann, Weingarten

The electric motor glider DESiE project was awarded a prize at the construction competition in 2006 for the Berblinger Flight Competition. Despite the public recognition documented by the prize for the excellent, privately financed preliminary work achieved by the group on this two-seater self-launching, high-performance glider, they were unable complete the project in time for the competition due to a lack of funds and a lack of sponsors. Sadly, they will only be able to watch, but they show highly innovative and original partial solutions. This project highlights again the lack of state funding in Germany for innovative and ecological projects in general aviation.

### Jet eh 301

Contestant:
Ehlers-aircraft GmbH, Uwe Ehlers, Hörselberg-Hainich, Eisenach

The quintessence of this new development of Ehlers aircraft, presented here as a model, is the impeller motor for which a patent has been applied. A combustion engine drives a jacketed propeller „hidden“ in the fuselage. This allows jet-like designs: Jet eh 301 looks very much like the widely used Jet-Trainers with two consecutively arranged pilot seats and is said to feel similar in flight. Uwe Ehlers claims a much higher degree of environmental friendliness and sustainability, citing highly improved safety by means of the jacketed propeller as a particular feature.

### Vertical-take-off aircraft with delta wings

Contestant:
Helmut Richter, Sexau

So far, Richter has developed and tested his concept of a manned, vertical-take-off delta aircraft as a remote-controlled model. The people-carrying model is planned to be able to take off and land both on water and on land with the aid of two swinging propellers at front and rear. For forward flight, the two propellers swing to a horizontal position.

**Note:** All details and other data have been taken from the documentation submitted by the contestants. We can therefore accept no responsibility for the correctness of the data. /Status: February 2011

## Prize winners of the construction competition 2006 for the Berblinger Flight Competition

**Hydrogenius**
Facultiy for Aerospace Technology and Geodesics
Project for a two-seater motor glider with an electric motor powered by hydrogen fuel cells.

**DESiE**
Silent Flight e.V, Wolfgang Liehmann, Weingarten
Project for a two-seater, self-launching, high-performance electrical powered glider in duck design

**B13**
Akaflieg Berlin
Use of a high-performance glider as a cutting edge technology leader for testing alternative propulsion systems

Special awards:

**Berblinger 2**
Dr. Wolfgang Send, Göttingen
Project for an ornithopter with a wing span of 11.2 m

**PEBBLES**
PEBBLES Design Team, Salach/Württemberg
Project for a high performance, ultralight aircraft with pusher configuration, twin tail and laminar fuselage.

# Berblinger Flight Competition 2011

**Fri April 15, 2011 from 12:00 h**
(Alternative day
Sat April 16, 2011 from 12:00h)
**AERO Global Show for General Aviation**
**Friedrichshafen Messe/Airport**
**Access via trade fair entrance**

If the flight competition has to be postponed due to bad weather conditions we shall inform you on our website www.berblinger.ulm.de

At the international Berblinger Flight Competition 2011 the search will be on to find a one or more-seater aircraft (including ultralight aircraft) that demonstrates good flight performance and practicality with the excellent use of innovative, ecological and resource-saving technologies. The prize money amounts to 100,000 Euro.

Of the 36 applications received from 6 nations, 24 aircraft have been approved for participation in the competition (as of Feb 2011). Applications have been received from companies and institutes, but also from private individuals and research facilities. The Berblinger Flight Competition 2011 is therefore an international event demonstrating the versatility that will determine the future of aviation.

## Schedule

On the day of the competition, April 15, 2011 (alternatively April 16), flights will start at the airport from 12.00 h:

Various measurements will be taken before, during and after the flights. The aircraft will be airborne for varying lengths of time. The distances range from a short flight at the airport to flights to Ulm and back. You can observe the competition live in the road zone between Halls A2 and A4 and the airfield. The commentator Jochen Friess will present the aircraft and provide additional information as well as a commentary of the take-offs and landings via the PA system.

On the other AERO exhibition days from April 13–April 16, the teams will present their aircraft and projects in Hall A2 and will be available to answer questions.

## Jury

The jury for the Berblinger Competition comprises experts from the aerospace industry, representatives from universities and research institutes, aviation historians and representatives of the town of Ulm: Prof. Dr. Ing. Otto Künzel (Chairman of the jury), Dr. Peer Frank, Prof. Dr. Andreas Friedrich, Senior Mayor of Ulm Ivo Gönner, Dr. Ing. Gert Hinsenkamp, Prof. Dr. Wolfgang Hüttner, Dipl. Ing. Franz Karl, Mayor Sabine Mayer-Döller, Prof. Dr. Ernst Messerschmid, Dipl. Ing. Josef Prasser, Dr. Ing. Michael Rehmet, Dipl. Ing. Bernd Schmidtler, Prof. Dipl.-Ing. Ernst Schöberl, Dipl. Ing. Peter F. Sellinger, Georg Unseld, Prof. Dr. Jörg F. Wagner

## Admission

The flight competition will take place at the AERO Global Show for General Aviation, so that admission tickets for the AERO are valid for a visit to the flight competition.

| | |
|---|---|
| Day ticket | 15 Euro |
| Day ticket reduced* | 12 Euro |
| 2-Day ticket | 28 Euro |
| Groups (from 20 pers) p. P. | 11 Euro |
| Children up to 14 years | free |

*Reduction for school children, students, pensioners, disabled persons, military service and alternative civilian social service personnel and holders of an SZ subscription card if shown together with a valid ID card.

## Directions to Messe Friedrichshafen

By car:
B30 to Friedrichshafen. In the town centre follow signs to "Messe".

By train:
There is a free shuttle-bus service from Friedrichshafen railway station

By Zeppelin NT:
In cooperation with the Deutsche Zeppelin Reederei, the town of Ulm is offering special airship flights between Ulm/Erbach and Friedrichshafen as part of the Berblinger Anniversary Year 2011. Take this unusual journey to the Berblinger Flight Competition or to the AERO Global Show for General Aviation in Friedrichshafen. Further details overleaf.

## Special flights by Zeppelin NT airship

**Fri April 15, 2011**

| | | | |
|---|---|---|---|
| 1st flight | dep. | 08.30 | in Friedrichshafen |
| | arr. | 10.00 | in Ulm/Erbach |
| 2nd flight | dep. | 10.05 | in Ulm/Erbach |
| | arr. | 11.35 | in Friedrichshafen |

**Sat April 16, 2011**

| | | | |
|---|---|---|---|
| 1st flight | dep. | 08.30 | in Friedrichshafen |
| | arr. | 10.00 | in Ulm/Erbach |
| 2nd flight | dep. | 10.05 | in Ulm/Erbach |
| | arr. | 11.35 | in Friedrichshafen |

Price:
Single flight: 595 Euro

**Contact:**

For flights
From Ulm/Erbach to Friedrichshafen:
Stadt Ulm – Hauptabteilung Kultur,
Frau Dagmar Stark, Mon–Fri, 09:00–12:00 h
Tel. +49 (0)731 161-4701
Fax +49 (0)731 161-1631
E-Mail: d.stark@ulm.de

For flights from
Friedrichshafen to Ulm/Erbach:
Zeppelin-Reederei, Mon–Fri, 08:00–17:00 h
Tel. +49 (0)7541 5900-0

# Guided Tour: The Tailor Of Ulm

**(In German language only)**

**Sat April 16, 2011, 14:30 h**
**Meeting place: in front of Tourist Information Office, Stadthaus Ulm**

A 2-hour guided tour of the historic sites, based on sources found in the literature concerning A. L. Berblinger. Suitable for families.

Bookings: Tourist-Information Ulm/Neu-Ulm,
Tel. 0731 161-2830, info@tourismus.ulm.de

Special tours for groups, on request.
Organiser: Ulm/Neu Ulm Touristik GmbH

**Dates 2011**
Sat April 16, 14:30 h, Wed April 27, 17:00 h
Thu May 05, 16:30 h, Sat May 07, 14:30 h
Wed May 11, 17:00 h, Sat May 21, 14:30 h
Fri May 27, 17:00 h, Wed June 01, 17:00 h
Sat June 04, 14:30 h, Wed June 15, 17:00 h

# Prize-giving ceremony for the Flight Competition 2011

**Sun April 17, 2011, 11:00 h**
**Town Hall, Ulm**

In a special ceremony, the Senior Mayor of Ulm will present the Berblinger Prize to the winning team of the competition. At the same time, many of the competing aircraft will be exhibited in the Market Square. Admission is free.

### Directions to Ulm Town Hall

By car:
A8 to Exit Ulm-Ost or Ulm-West.
A7 to Exit Nersingen or Dreieck-Hittistetten.
In the town centre, follow signs to Ulmer Rathaus. Parking in the multi-storey car parks Am Rathaus, Fischerviertel, Deutschhaus.

By train:
10 min walk from Ulm main station or 3 min by bus to "Rathaus Ulm".

# Programme Preview Berblinger Anniversary Year 2011

**In addition the main events, further events during the Berblinger Anniversary Year can be found on the website at www.berblinger.ulm.de**

### Exhibition: TAKE-OFF – The vision of flying Fri May 06 to Sun Nov 13, 2011. Opening: Thu May 05, 2011, 19:00 h. Stadthaus Ulm

What drives us forward? What keeps us on the ground? Visions and experiments are the common thread through this exhibition, which binds together the dream of flying with questions about its future. It aims to encourage visitors to contemplate our ideas of mobility. What is the connection between take-off, landing and crash? What happens physically when man flies, how did the pioneers of the past shape the history of flight? How can you remain in the air for as long as possible? What happens behind the scenes on a commercial passenger aircraft? What fuels will we use in the future? What technologies are being researched?

And do we meanwhile prefer to remain earth-bound? Numerous media and interactive elements. Admission free. Supporting programme of events. A separate printed programme is available for the exhibition.

Opening times:
Mon–Sat: 10:00–18:00 h,
Thu: 10:00–20:00 h
Sun/public holidays: 11:00–18:00 h,
First Fri/month to 24:00 h

**Celebration weekend:**
**200 years Friedrichsau Park Ulm and Bergblinger's attempt to fly**
**Fri May 27 to Sun May 29, 2011**

Two anniversaries will be celebrated with an extensive programme of events during this weekend in Friedrichsau Park and the Adlerbastei: 200 years ago, King Friedrich 1st gave the Friedrichsau Park to the people of Ulm. In honour of his visit, Berblinger performed his attempt to fly across the Danube.
A separate printed programme will be available for the celebration weekend.

**SWR auf Tour**
An SWR live television programme
Fri May 27, 20:00 h, Adlerbastei, Ulm
**Berblinger 3.0**
A multimedia sound sculpture on the Danube
Fri May 27, after dark, Adlerbastei, Ulm
**Party atmosphere**
With music, illuminations, massed hot-air balloon start
Sat May 28, evening, Friedrichsau Park
**Family Programme**
With games, sports, theatre and tours
Sun May 29, daytime, Friedrichsau Park

## Publications

**Ulmer Flugpioniere 1811 to 1911**
von Wolf-Dieter Hepach und Wolfgang Adler

Albrecht Ludwig Berblinger, frühe Ulmer Ballonfahrer und Ludwig Rüb sind Hauptpersonen dieser Veröffentlichung.
Verlag: Klemm & Oelschläger, Ulm, Umfang: 120 Seiten, Preis: 17,80 Euro. In allen Buchhandlungen und im Haus der Stadtgeschichte erhältlich.

**Fallwind**
**Vom Absturz des**
**Albrecht Ludwig Berblinger**
Von Johannes Schweikle

Albrecht Ludwig Berblinger, der Schneider von Ulm: eine literarische Verteidigung.
Die fiktive Biographie „Fallwind" ergründet und führt vor, was passiert, wenn ein Visionär scheitert. Johannes Schweikle gelingt mit seinem unaufgeregten Debütroman ein faszinierendes Plädoyer für einen Verkannten.
Verlag: Klöpfer & Meyer, Umfang: 188 Seiten, Preis: 19,95 Euro. In allen Buchhandlungen erhältlich.

**Documentation of the**
**Berblinger Flight Competitions**
**2006 and 2011**

The town of Ulm will publish a documentation of the 2006 and 2011 competitions, paying tribute in detail to the work of the prize winners and reflecting the current status of developments.

www.berblinger.ulm.de

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