

# Auxiliary-Powered Sailplane NEWS

The Official Publication of the Auxiliary-powered Sailplane Association, Inc.  
Dean Carswell-President

ASA is a Division of the Soaring Society of America

Issue # 79 Vol.XIII

March-April 2001

## President's Column



### Report from Indianapolis

The SSA Convention at Indianapolis in February 2001 had a number of interesting things for powered sailplane pilots, and one major appointment. The appointment was the absence of the keenly anticipated debut of the production model Maistroitel AC-5 Russia self-launching sailplane. Apparently the US importer and dealer, Russia Sailplanes, was more than busy occupied making preliminary preparations for the first flight awaiting customer pickup.

The exhibition hall had 3 self-launching sailplanes on the floor - Stemme S 10VT, a tricycle-landed Diamond Katana Xtreme, and a Schleicher ASH-26E, the latter with a new, improved propeller. Attendees at the ASA Convention were entertained by keynote speaker Martin Heide, chief designer of the Schleicher H-25 and ASH-26E.

Summarizing, the new propeller on the -26E driven by the UK Itan Midwest engine is more efficient, and delivers a few extra horsepower at take-off. Schleicher plans to stay with rotary (Wankel) engines so long as suitable models are available; a smaller number of moving parts and low vibration levels make them preferable to radial 2 or 4 cycle motors. Finally, the ASH-25 has likely completed its full development potential with its latest span stretch to 26 meters (85.3 feet). That Schleicher plans to replace it with was not disclosed.

Continued on Page 5.....



The Lange Flugzeugbau ANTARES electric motorglider climbs and climbs and climbs using a new lithium-ion-battery system. In December 2000 the factory announced a powered flight climb altitude of 3,000 meters (9,480ft) using new light weight lithium batteries. More information including specifications are on page 4.

## An Update from "The Neophyte"! November, 2000

By Jim Herd

This is by way of a brief update to my previous writing in the summer - chronicling my early experiences with my pretty & new DG800B. Well, I'm still a neophyte, but a little more accomplished and a little wiser.

I attended the "Ely Camp" - ten days of wonderful flying led by Tom Stowers of High Country Soaring, Minden, NV. Ely is in East Central Nevada and has incredible soaring. This was to be yet another dose of humility for me - 28 classy sailplanes (including 4 Stemme's and a clutch of self-launchers!), a bunch of world class pilots from around the world, and some really powerful air! 500 km to 1000 km flights occurred virtually every day.

These guys were up and gone while I was still eating breakfast. Nonetheless, I had excellent flights - flying hundreds of miles in all directions. Including a day in the back seat of Carl Herold's mighty Nimbus 4DM - there is no better way to build your soaring and XC techniques! An unexpected benefit was a new mental attitude regarding the scale of what can be accomplished in The Great Basin. Apart from great flying and camaraderie, I had another important learning opportunity at Ely. On my first flight, during take off, I was greeted with a very stiff control stick - in pitch. I knew I had done a firm positive control check, so I was a bit too worried. I was at 200 feet AGL after take off before I really concluded things were not normal. I decided to continue the flight until high enough to safely sort things out. Well, after stowing the engine and soaring to 3000 AGL, it was clear that the problem would not go away until I completed a speedy and safe return to terra firma.

My "resident expert" that day was Ed Perrin - one of the founders of the self-launch mover. Ed took a look and confirmed the stick was way too stiff in pitch. We removed and carefully replaced the horizontal stabilizer - magically all was then well! We theorized that the elevator control linkage had not properly located in its L-shaped slot. It was probably "torquing" against the guide bearings causing high friction. I had thought "automatic hook-ups" were idiot-proof - apparently not so.

So what did I learn from this? And what should I do differently?

1. Always insist on a positive control check - with the pilot at the stick and the helper at the control surfaces. (I had done it the other way around and thus could not personally "feel" the stick action.)
2. Right before the positive control check, and probably right before take-off also, the pilot should check for full stick deflection and freedom of motion.
3. In a DG800B the trim should be fully forward to properly assemble the tail. If the airplane doesn't feel right, it ain't right!
4. When in the air, if something feels "different", land when safe and check it out with an expert.

Continued on page 6



is information was submitted to ASA by Robert Broadwell about the Czech public Lambada motorglider.

engines for the U.S. and Canada will be Rotax 912TJL. Later when there to re testing the Jabiru engine may be used. The aircraft has been in production for 5 years and most have been delivered to Spain, Brazil, Germany, France and North Africa. Current production levels are at 24 per year and they plan to increase to 36 per year in 2001. There are about 30 flying and they have a good maintenance and repair record. The plan is for a young engineer to fly around the world in 2001 and stop at Oshkosh for the next EAA fly in.

I have had an opportunity to fly several models while there and I was pleasantly surprised by the handling. Because of the time of year the soaring was not great but it did well in small weak thermals and turbulent ridge lift. I was also happy with takeoff and landing in gusty winds. The first one arrives in the U.S. in March 2001. The full feathering prop is easy to control with a simple two position detent requiring little effort.

operate Badges Unlimited in Fountain Valley, CA teaching cross country flying. Flight instruction has been my hobby and something to do when I am not in my clinic practicing alternative medicine."

For more information contact Robert Broadwell at 18837 Brookhurst Street, Suite 100, Fountain Valley, CA 92708 - (714) 965-9266 or Fax (714) 965-9268

The LAMBADA UFM 13 is a single engine motor glider with side by side seating. Optional tricycle landing gear, with steerable nose wheel or tail dragger with steerable wheel. Composite construction, fiberglass, carbon fiber and special foam. Tested to 2000 lbs VLA.

Wing Span: 13M with winglets 15M Length: 27.7 ft.  
 Hydraulic brakes (Tricycle gear or tail dragger)  
 Takeoff run 465ft Takeoff Distance over 50' obstacle 852ft  
 Best rate of climb 64.6 kts (1000 fpm) Max. cross wind 9.8 kts  
 Land distance over 50ft obstacle 883ft  
 Economy cruise 80kts, 482 nm range Cruise 98kts 278 nm  
 Stall 42 kts Stall-flaps down 37 kts  
 Vne 124 kts Va 84 kts  
 Vfe 68 kn positive  
 Max. rec. head wind 23.5 kts  
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### **Grob 109B Motorglider For Sale**

1984, 900hrsTT, 26:1 glide, 100kts cruise, folding wings Std CofA. Comm, Transponder, encoder, lights, oxygen, barograph. Fresh Annual at time of sale. Beautiful machine. \$58,000. Contact Mike Shade, Grob Systems. Bluffton, OH Tel: 419-369-1210. Fax: 419-369-3328



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### **FOR SALE GROB 103C Twin III SL**

S/N 35041 N103JM 1993 Single Owner TTAF-167hrs, TTE 45hrs. Current Annual Excellent Condition. All Maint by Grob Systems. Cobra Trailer. Polyurethane paint. New control seals. Dittel Radio. Cambrian L-Nav and GPS, Becker Mode C Transp Solar Battery Charging System. Asking \$98,000. Will discuss any serious offer. Contact Bruce McGhie at 860-873-8446 Email: [bmcghie@snet.net](mailto:bmcghie@snet.net) CT





Here are some photos taken while soaring out of Sedona, AZ. As you can see from the ground shot, we just beat the front. They were taken with a Nikon Coolpix 990 digital. Processing and printing was on my computer. The plane is a Katana Xtreme owned by Sky King Soaring. The co-pilot was Russ Hustead, owner/operator of Sky King Soaring. The landing was engine off, as we are always trying to practice for contests. Neal Olshan

***Around the World Westbound Speed Record Set by Steve Fossett Flying a Cessna Citation X with Stan Nelson Onboard as NAA Directing Official.***



Crew L to R: Co-Pilot Pierre F. D'Avenas, Captain Steve Fossett, Co-Pilot Alex M. Tai and NAA Directing Official Stanley Nelson.



Steve Fossett and Stan Nelson looking over the courses to be flown.

speed record is now official....500.56mph covering 25,822.88sm in 51 hrs 35 min and 13 sec. This beat existing record by 3 minutes. There were a total of nine refueling stops after leaving Los Cabos, Mexico at 00:03 on 22 Nov. and touching down again at Los Cabos at 2235:16 on 24 Nov. Stops were a team effort to get fuel, get clearance for the next flight and pass Customs and ranged from 23-35 minutes. Strong headwinds and urgency to turn around as fast as possible. Stan Nelson is former president of ASA and now serves as chairman of NAA's GPS Committee.



Two images taken on the SSA 2001 Convention Floor at Indianapolis. Left a Diamond Aircraft Katana and Right a Schleicher ASH 26E

## ***Lange Flugzeugbau ANTARES Electric-Powered High Performance Motorglider-Part II***

The ANTARES electric motor system with very few moving parts there is a significant reduction in failure risk when compared to an internal combustion engine. There is almost complete silence during motor operation and little vibration which avoids wear and tear on the propulsion system as well as the fuselage airframe. TBO of the motor is 1000hrs.

The aerodynamic design of the fuselage, wing and tail structures is as advanced as the propulsion system and is the result of an ongoing research project. ANTARES is a completely new motorglider design from the drawing board up with all possibilities for gliding and climbing optimization having been considered. This includes the "super ellipse" profile of the wing that provides a minimum induced drag. Nine different airfoils are tuned to each other. The winglets allow for further induced drag reduction by 5%. Laminar flow extends to 95% of the chord on the lower wing surface resulting in high speed gliding performance previously unachieved. The usual fuselage juncture aerodynamic losses are minimized by using specially designed wing fairings close to the fuselage.

Pilot comfort has also been considered. There is an adjustable sitting position for every pilot. A special ease of rigging aid is provided for quick attachment. An optional portable battery charger is integrated inside the fuselage. Landing is easy taxiing on the ground at a low speed possible with wing tip wheels and a single skid wheel. The 18M and 20M spans are suitable for just for fun flights, record seeking and competition in the 18-meter or Open classes.

For more information contact: Lange Flugzeugbau  
Brüsseler Strasse, D-66482, Zwillbrücken,  
Germany. Tel: 011-49-6332-96270 Fax: 6332-962719  
info@Lange-Flugzeugbau.com  
Lange-Flugzeugbau.com



Each propeller blade is attached directly to the rotating brushless electric motor making unnecessary a belt drive.



The cockpit instrumentation is simplicity personified thereby reducing pilot distractions required for power plant monitoring and management.



The electric propulsion system is operated entirely by one lever with a single move of the left hand. This includes motor extraction/retraction, starting and stopping.





**ine Failure or Loss of Power During Takeoff.  
Are You Prepared?**

ral ASA pilots have been through this  
rience and landed safely. We all need to make it  
it to be prepared to do the right thing during  
ype of emergency. There are essentially  
asic situations: Complete engine failure or  
of power.

er Lost During Takeoff Run:

e engine stops or is not developing full takeoff  
while still on the ground during the takeoff  
place the throttle in the idle position and apply  
akes. You should begin the takeoff run with  
uate runway ahead. A good rule of thumb is to  
at least 3 times the expected ground roll  
red to rotate and become airborne ahead of the  
aft before full power is applied. This distance  
vary with wind direction, density altitude,  
emperature and wing loading. The best policy is to  
n a takeoff with as much runway as possible  
d of you. Runway intersection takeoffs should  
oided whenever possible. Make it a habit to  
ALL of the runway available.

er Lost Immediately After Rotation:

e engine stops or is not developing full takeoff  
immediately close the throttle, lower the nose  
aintain flying speed, land straight ahead and  
/ brakes. Lowering the nose will require a  
ite “push” on the stick as the rotation airspeed  
out 10 kts slower than the recommended  
ng approach speed. Caution: The high drag of  
xtended engine will cause the aircraft to drop  
only if spoilers are fully extended. Use the  
ers with care.

er Lost During Climb Out While Under 500ft

is the most dangerous part of a self-launch  
ld the engine fail of lose power. It is a good  
after lift off to make a shallow turn left or right  
rding to the wind direction and distance the  
aft from the runway so that if there is a power  
lem you are in a better position to return to the  
ay departed from or an adjacent runway. Wind  
tion plays a big part in which way to turn after  
off. Plan ahead and fly the aircraft so as to be in  
est position for an engine problem. Keep the  
aft within the traffic pattern of the departure  
ld during this initial climb. While there can be  
ard fast rules for every situation, the basic  
onse to a failed engine or loss of power is to  
IT lower the nose and maintain flying speed.

er Lost Between 100 & 400 ft.agl:

er the nose, maintain flying speed-at least 55 kts,  
the wings, reduce throttle to idle, turn off the  
ion and fuel and select a landing spot. Do not  
pt to retract the engine.

THE AIRCRAFT!

er Lost at or above 500 ft.agl:

ly be possible to return  
and at the departure field.  
n, lower the nose, maintain flying speed, secure  
re, ignition and fuel systems. Leave the engine  
ided and land.  
rol the airplane in a normal  
er remembering a stall at low altitude is what  
are trying to avoid. This means no steep turns  
ny turn should be made with the nose well down  
u are already in a high drag condition with an  
ided engine. FLY THE AIRCRAFT!

nitted by Pete Williams

**New Format for ASA Newsletter**

**I have received mostly pro comments regarding the new tabloid size  
newsletter format. To find out what the majority of the readers de  
I have attached at random 50 postcards to sample the recipients vi  
Please respond with your views pro or con if you find a postcard in  
your Mar-Apr newsletter. Those not receiving a postcard are asked  
NOT respond to keep the random sample valid** Thanks, Pete  
Williams/Editor

**Pilot Profile-  
Brian Utley**



Brian first soloed a glider in June 194  
His first solo in a powered sailplane v  
ctober 1993 in a Ventus CM at  
Winterhaven, Florida. He has been an  
active member of SSA for many years  
serving as VP and President and has m  
SSA awards including the Warren E.  
Eaton Memorial Trophy, SSA's high  
award. Brian has 5,000 total flight ho  
of which are in self-launchers. He is an  
accomplished competition pilot and has been ASA's Membership  
Chairman for many years. He is currently an ASA Board Member an  
also a Director-at-Large for SSA. According to Brian, his most  
memorable flight was a cross-counrty in May 1975 when he soared fi  
Sleepy Eye, MN to St. Louis, MO a distance of 433 mi. He currentl  
flies a DG-800B and is a computer executive residing in Boca Raton  
Florida with his wife, Sharon.

**THE 2001 MOTORGLIDER NATIONALS WILL BE HELD AT  
HOBBS NEW MEXICO 19-24 AUGUST 2001**

For more details contact Rick Howell at  
<PatRickHowell2@compuserve.com>

**ATTENTION ALL  
VALENTIN TAI FUN OWNERS**

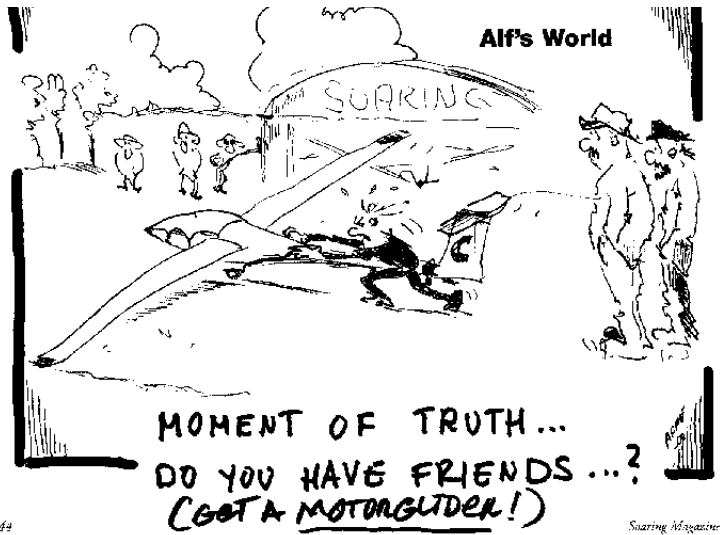
There are 18 North American Taifun owners participating in our  
newsgroup. Five or six owners out there have not responded to my  
invitations to exchange valuable information about our motorgliders.  
I have just E-mailed some important Service Bulletins issued by the  
Company in Germany (they are the official “model custodians” of th  
aircraft), it will be in your interest to join our group. Please call Joe  
Volmar at 734-529-5406 or E-Mail [joevol@dundee.net](mailto:joevol@dundee.net) to receive the  
bulletins at no charge. We would also appreciate your participation in  
sharing experiences as well as questions and answers with other Taif  
owners in North America. We have recently expanded our mailing li  
include pilots in Monaco and Spain. Joe Volmar

**President's Report from Indianapolis SSA Convention...**

ASA held its annual members meeting, and a meeting of its  
~~Board of Directors, during the Convention.~~ Thanks and  
gratitude were expressed for longtime Director and Secretar  
Bruce Templeton, who was retiring. Treasurer Eric Greenwe  
was elected to the Board of Directors to fill that vacancy, an  
other 2 retiring Directors, Brian Utley and Stan Nelson, were  
elected. An interim report was given on ASA's project to  
identify 2-place motor gliders available for rent, and motor  
glider qualified CFGs. The survey had had a good initial  
response, but there appeared to be precious few 2-place mot  
gliders available for instruction, and only a very limited nur  
of qualified instructors. ASA finances were reviewed and,  
despite increased Newsletter production and distribution cos  
decision was made to keep membership dues at the present l  
The following were elected to be the officers of ASA for the  
upcoming year:

President	Dean Carswell
Treasurer	Eric Greenwe
Safety Officer	Rick Howell
[Secretary	Vacant]

Dean Carswell



## A Very Fruitful Trip to Uvalde, TX

By Jim Mosher

ellow ASA members. I felt compelled to submit a short note to the letter based on my memories that have been rekindled from those "algalic" pictures and text pertaining to the formation of the ASA in 1988. At that time, I had been thinking seriously about buying a launching sailplane, and in the current SSA magazine, there was a article about the first "Self-Launching Sailplane Nationals" to be held in Uvalde, Tx.. I feverishly searched for a suitable Self-launcher, and decided that I should make the short trip from Dallas to Uvalde to view the owners of "self-launchers" for data on their ships, so that I could make an educated decision on my future decision to purchase a self-launcher. At a whim, I gassed up my BMW K100RS motorcycle, headed out for Uvalde at 6:00 AM at maximum legal Hiway speeds hoping to get to Uvalde in time to meet some of the competitors, and to fully tap them of some of their impressions of their flying experiences in their respective ships. I was on a mission to determine which ship would be right for me. I arrived at the starting line about 30 minutes prior to launch, and had just enough time to interrogate several of the pilots about their ships. I remember having informative long conversations with the likes of Karl Abhau, Dave Stevenson, Pete (and mom) Williams, Don Pollard, Bud Schurmeier, and the rest. It was a very fruitful trip. Each competitor was convinced that their ship was the most capable ship, and I took all of their data home with me so that I could make an educated decision on my upcoming purchase of a "self-launcher". When I got home, I looked in the "Sailplane" magazine, and found a PIK-30 for sale (SN-716). I called the person that evening, made a deal over the phone. I was the newest member in the "self-launcher" ranks. I still have my Pik-30, and it has delivered around 400 hours of pure fun flying for me ever since. I bought a T-shirt from that Motorglider Nationals, and I break it out every once in awhile to commemorate that day back in 1988 when I became a "self-launcher". I felt compelled to write this letter to you, because the Nov.-Dec., 2001 letter was so well prepared, and it made me proud to be associated with such a large group of people for such a long time. I have collected a wealth of information on the "PIK" self-launchers", and if anybody is interested in contacting me for info, feel free to call me at 1-505-466-7870.

*Sincerely, Jim Mosher.*

## DG-USA Shop Talk

### BATTERIES Part II

#### A Good Look

In the last shop talk we discussed the importance of batteries for starting your self-launch engine. Today let's look a little more into this very important part of your sailplane, that is often overlooked until the engine fails to start. Most self-launching sailplanes use a rechargeable lead acid battery called a gell-cell. This battery type has some important features:

1. The gell-cell is the same basic system as your car battery.
2. Electrolyte is gelled to prevent sloshing to allow operation in any position.
3. Gell-cells are subject to damage if allowed to remain discharged for extended periods of time.
4. A gell-cell battery will lose 50% of normal capacity in 18 months when stored at 68 degrees.
5. Gell-cells should not be allowed to remain in a discharged state and should be recharged as soon as possible after each use.
6. One can expect 250 to 500 life cycle charges per battery.
7. Continuous float charging, sometimes called PWM, for long term periods will not hurt the battery, as long as the charger has the ability to completely switch off automatically when the battery is in a full charge state. However non regulated float charging, without an off/on regulator, will create a free radical, oxygen/hydrogen situation that will accelerate the oxidation of the metallic lead grid structure in the battery and shorten battery life.

Gell-cells lose their ability to produce cranking amps (CCA's), as the temperature drops. Tests in the DG-USA shop show that a battery that produces 195 CCA's at 65 degrees F., will drop to 140 CCA's at 20 degrees F., an almost 30% loss of battery power. This means that when it's cold outside the battery (the heart of your starting system), will have less power to start your self launching engine.

If you regularly fly in a cold climate perhaps an outside battery booster system, be it solar or A/C, could be just the ticket to guarantee a fast start for those chilly mornings or cold in flight situations.

*Submitted by Oliver Dyer-Bennet DG-USA*

**byte:** Continued from page 1

Let's face it this is all obvious to you pros, but I bet there is at least one more neophyte reading this, who might benefit from the above! Since summer I have ventured out around the San Francisco Bay Area – Williams, Hollister, and Byron. The new site presents its own learning opportunities, and I appreciate the freedom to fly when and where I want. My DG-800B is an absolute joy to fly, and has performed flawlessly – except for a failed exhaust gas temperature sensor (which is no big deal). I am also closely following the engine main bearing issue – rumored to require a rebuild of some kind, though I have had no symptoms as yet. Not sure if I can take my name off the "neophyte list" yet! In any case, I will continue with a heavy dose of curiosity, an eagerness to learn, and strong reliance on my noble army of "resident experts". It is an incredible privilege to have many genuine "self-launch experts" at my

## SAFETY ALERT

### Screw jack Attachment Integrity

#### DG-800B & DG-505MB

There have been reports of the screw jack attachment to the fuselage breaking loose in two 800Bs. If this attachment is not secure, it is possible that over time it could fail. Indication of a possible failure is the necessity to use the manual switch to raise or lower the engine. Pilots should inspect this attachment area during a test raise and lower sequence by looking at the attachment area and feeling the mount during engine movement. Should movement be noted or if cracks be seen in the portions of fiberglass are breaking away from the mount area, contact DG USA.

ASA Mission

Auxiliary-powered Sailplane Association, Inc. founded in 1988 as a non-profit organization to advance the design, development and safe use of sailplanes, self-launching and sustainer engine sailplanes.

ASA Membership

Membership in ASA is open to anyone interested in sailplanes. Write or call: Brian Utley, ASA Membership Chairman, 1930 S.W. 8th St., Boca Raton, FL 33486-5205 Tel: 561-750-6876 Fax: 561-750-5858 Annual Dues: \$20 USA, International

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Newsletter published Jan/Feb;  
Mar/Apr; May/June;  
July/Aug; Sept/Oct; Nov/Dec  
2001 Auxiliary-powered Sailplane  
Association, Inc.  
PRINTED IN THE U.S.A.

Newsletter Publication

Pete Williams.....Editor  
Optimum Offset.....Printing and Fulfillment  
Contributors please submit copy and materials to:  
  
Pete Williams  
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Pete Williams, ASA Publications Manager, is the Editor, and Print Production Manager for the newsletter. As such, he supervises and coordinates with a printer located in Minden, Nevada. The Newsletter is mailed from Minden.

Contributors are requested to submit hardcopy typewritten or keyboarded text .12pt font size is for accurate scanning. If submitting text on a floppy disk, please advise the word processing program used. Text may be edited as required to fit the newsletter. The newsletter is produced on a Macintosh G-3 using AppleWorks word processing software. Photos are always welcome and will be returned promptly.

The newsletter is delivered to the printer the last day of the month in Jan; Mar; May; July; Sept & Nov. ASA desires to know what the members want in this newsletter and are doing all we can to keep it informative and interesting. *It's your newsletter, so please let us hear from you!*

CLASSIFIED ADVERTISING RATE: \$1.00 per word, 50 cents/word, prepaid for 2 insertions. Contact Pete Williams for Display Ad sizes and rates.



Lange ANTARES electric-powered sailplane  
climbs out after takeoff. See page 4  
One USA order has been placed.



Auxiliary-powered Sailplane  
NEWS

Peter A. Williams, Editor/Publisher  
1033 Dresslerville Rd.  
Gardnerville, NV 89410-8951 USA



March-April 2001  
Auxiliary-powered Sailplane Association, Inc.

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# A Visit to Technoflug - Flying the Carat

By Oliver Dyer-Bennet DG-USA

In the middle of October, 2000 I was able to spend three days at the Technoflug factory in Germany and to arrange for seven flights in Technoflugs new single place self-launching sailplane, the Carat. Technoflug GmbH is the manufacturer of the propellers for most of the single place and two place, self-launching sailplanes built in Germany, including DG Flugzeugbau, Schempp-Hirth, Schleicher, LS, etc.

I met at Technoflug by Berthold Karrais, Dipl.-Ing for Technoflug. Berthold was trained as an aeronautical engineer at the University and worked on the Dimona wing as a student at the DLR. Berthold also worked at the DLR, on the Grob high speed project and at Gyro-Flug before starting Technoflug with his partner, Rolf Schmid, in 1987. Technoflug builds about 200 sailplanes a year including propellers for the DG-800B, DG-1000, B, Ventus 2 CM, ASH 26E and the LS9. Their latest offering, the Carat self-launching sailplane, uses the proven Discus wing planform, Discus horizontal stabilizer and elevator, Discus aileron control hook ups and Discus adjustable rudder pedals.

In addition to this is a unique Technoflug front folding propeller system which uses a fibre that folds the blades forward against the air stream and is held in place by two damping gas springs when the engine is shut off and the blades fold back to the normal position, thus minimizing drag. The blades float to the normal position at all times which results in a particularly smooth flight and quite engine measured at 62.7 dB. When the engine is shut off, centrifugal forces open the propeller at once and it is immediately operational.

The Carat is powered by a reliable, low noise, four stroke engine, the Rotax S1800, which produces 54 hp and has altitude compensating carburetion. This engine/propeller combination gives a sea level climb rate of over 700 fpm and a climb rate at 10,000 ft of approximately 300 fpm. Also featured is a retractable landing gear using an electro-hydraulic system controlled by a 3-position switch. The landing gear folds up into the fuselage thus giving the Discus wings aerodynamically clean. Disc brakes, a landing gear warning horn, and a back up manual extension are part of the landing gear package as is a steerable, shock absorbing wheel.

On a tour of the Technoflug factory we drove out to the Winzeln-Schramberg Flugplatz for some flying. Assembly was done in less than 5 minutes from a Komet glider trailer using a clever one-man wing assembly, the self aligning wing spar receivers and the aileron control hook ups. The cockpit was large and spacious, the arm rests on both sides a Discus control stick, rudder pedal and throttle configuration, multi adjustable seat back, leather floor and two large baggage storage areas.

The Rotax engine started instantly and ran very smoothly and quietly, the quietest powered aircraft that I have heard yet. I taxied and took off. The steerable tail wheel and disc brakes allowed very precise taxiing and you could do a 180 turn inside the 450 ft wide runway. Lined up for take off the power application was smooth and normal and quickly the Carat lifted off the runway. Initial climb speed is 68 kts and we were quickly at 3,000 ft above the airport. Throttle back to idle, turn off the ignition switch and bring the Carat down to 48 kts. and the propeller automatically folds away.

Handling was quite delightful, it felt like a Discus with its finger tip controls and smooth balance of aileron, elevator and rudder inputs. Thermalling was no problem with the Carat giving nice 45 to 60 degree banks in the thermals with hands off control. The full flight envelope of the Carat was quite large, like the Discus with light water ballast. The Carat has been built by the German Akaflieg at 35/1 with a sink rate of 150 fpm. This was on the unsealed Carat prototype and with some contest sealing one should be able to increase the performance to about 135 fpm. The Schempp-Hirth ailerons were smoothly effective for glide path control. The retractable landing gear worked perfectly and retracted or extended in about 22 seconds. For landing you normally leave the engine idling, at idle, and land using the spoilers for glide path control. If you decide to go around just add power. The disc brakes give a smooth even stop and allow for a quick turnaround back to your own area.

After seven flights in two days, I couldn't get enough of this. This ship was a lot of fun to fly but now it was time to put the Carat back in the trailer. 15 minutes later the trailer top was closed and Berthold and I went off to a nice local German dinner.

Oliver Dyer-Bennet of DG-USA is now representing the Technoflug in the USA and expects the first 3 by late spring 2001. The Technoflug web site can be found at <[www.Technoflug.de](http://www.Technoflug.de)>



Oliver Taxies out for Takeoff



Visibility is good over the nose and brakes are effective



A powered high speed pass by the factory pilot



Above: A simple factory supplied wing dolly makes wing attachment easy and quick. Below: Ready to raise the landing gear and enter the trailer.

