Auxiliary-Powered Sailplane *NEWS*

The Official Publication of the Auxiliary-powered Sailplane Association, Inc.
Dean Carswell-President • Bruce Templeton-Vice-President
ASA is a Division of the Soaring Society of America

Issue # 71 Vol. XI November-December1999

Thanks Stan!

Stan Nelson has been an advocate of powered sailplanes for many years and as you know, has passed the reins of ASA leadership to Dean Carswell.

Stan is a retired Air Force pilot with over 16,000 hrs in all types of aircraft including jets and helicopters, he first soloed a glider in 1982 and made his first self-launch in a Ventus Cm in 1988. He flew on the U.S. Team at the first Motorglider World Contest in France. He has always been active in USA motorglider competitions having won the Florida Senior Championships in addition to establishing three Florida State Records. Stan is a CFIG and has logged over 1,800 glider hours and is checked out in 15 different types of sailplanes including five motorized ships.

During his tenure as ASA president Stan's leadership was instrumental in providing critical input to FAA during the revision of FAR Part 61 to assure a glider with an engine remained classified as a glider and that a separate rating for motorgliders was not necessary.

Stan's coordination with Piero Morelli, the ICG Motorglider Chairman has done much to establish the 18-Meter Class now being held in the U.S.A. His efforts in coordination with Billy Singleton regarding motorglider flight safety are also of mention.

Stan's enthusiasm and energy has led ASA in a positive direction for the past 4 years. And it shows as our membership is at an all time high. Thanks Stan for your contribution to the U.S. motorglider cause!

The ASA Board of Directors, Officers and Membership

About ASA's New President - R. Dean Carswell

Effective September 2, 1999 Dean Carswell accepted the presidency of ASA which was confirmed by 'Unanimous Written Consent' of all ASA Board Members as of October 6, 1999. Dean follows in the footsteps of Stan Nelson, our retiring president, who has served since 1995. Dean is a retired international lawyer who has been an active sailplane pilot since 1962 with first solo in a Slingsby T30. His first self-launch was in a Scheibe/Slingsby SF-25 Falke in 1972. He has over 3,185 pilot hours (2,025-glider; 325-self-launcher and 835-power) and currently owns and fly a Stemme S10 and Slingsby T21B. His logbook contains flights in 118 different sailplane models. He holds an FAI Gold Badge with two diamonds. As a CFIG, Dean is qualified as an instructor for self-launch endorsement. He is also an instructor for Stemme USA and is the Chief Flight Instructor for the Texas Soaring Association. Dean's active participation in the soaring scene includes SSA Region 10 Director-Elect; Editor of 1997 Sailplane Directory and Soaring Safety Foundation FAA CFIG Recertification Clinic Instructor. Welcome aboard Dean! ASA is indeed fortunate to have you as its third president.

Newsletter Contributors Wanted!

First I would like to thank all of the ASA members who have sent in articles and photos for the newsletter. This publication cannot go forward without continued input from the membership. So, whatever your involvement is (motorglider or retractable engine ship), we need to hear from you including photographs. Subjects can include memorable flights, maintenance and upkeep, soaring techniques, new aircraft just flown, record attempts, competition, training, safaris and touring flights.
Send by snail mail, fax or email to Pete Williams. See back of this newsletter for the numbers. Thanks! Ed.

MYLAR GAP SEALS - A POTENTIAL DEADLY HAZARD?

Submitted by Bob Moore

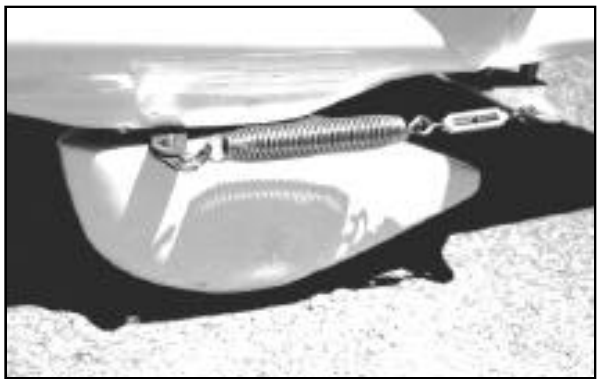
Curved strips of Mylar plastic are now used on many new sailplanes to seal or cover the control surface gaps, and have been retrofitted on many older gliders. Pilots should be aware that these may present a potentially lethal safety problem. To explain my concern, the PIK20E self-launching sailplane which I purchased new some 20 years ago was equipped with internal fabric seals between the wing and the ailerons and flaps (really full-span flaperons). After a period of years, these airtight seals deteriorated. Replacing them looked like a challenging job - one I wasn't willing to undertake myself - so I flew sans seals. The aircraft seemed to fly and handle fine and Roger Frank - who wasn't eager to replace them for me - said that he had flown PIKs both with and without seals and couldn't tell the difference. Maybe they don't matter. But, two years ago I had the aircraft in Bill Stowers shop at High Country Soaring for a complete engine overhaul, so I had Bill also install a Mylar seal kit that 1 had purchased from Wings & Wheels. Bill cleaned the wing very thoroughly (much I better than I would have) and did his usual meticulous job.

The aircraft looked nice and flew fine for two seasons. Till recently. On a recent soaring flight I found the controls surprisingly heavy and also had to hold lots of right aileron and right rudder - to keep the left wing from going down. It was difficult to thermal in but one direction. the control surfaces cannot be seen in flight, but after landing I found that 10 or 12 feet of seal on the top of the left wing was standing up), and acting as a spoiler! The additional seal was hanging down beneath the wing. The right wing looked OK (though 4 feet of detachment was subsequently found on its under side). No wonder the left wing wanted to go down! What would have happened if we had stalled or spun? I am glad I didn't find out! The Mylar strip is held to the wing with a narrow strip of double sided sticky tape, and the bump caused by these two thicknesses of material is then covered with a strip of plastic tape. The Mylar had come loose from the sticky tape (which was still firmly attached to the wing Bill had cleaned so thoroughly) and was held from blowing off by the white plastic tape. but could hinge up into the air stream and act like a spoiler. I have removed all of the seals and tape (about a hundred linear feet of each) and have again flown, The aircraft handles fine and the controls are much lighter than they were, even right alter the seals were first installed. Flying is more pleasant. A hundred feet of curved MyIar pressing against the control surfaces apparently causes substantial friction.

I discussed my experience with Tim Mara (Wings & Wheels) who said that it was not unusual, and that two pilots have had to bail out! (This could be injurious to one's health). He also said that pilots should inspect their seals before every flight to insure that they are securely attached. I am going to fly seal-free till I have time to install replacement internal seals! (Our new DG505MB20 uses Mylar seals only on the rudder and the engine doors; the ailerons and flaps are hinged at the bottom and sealed with a strip of fabric tape which should give a good seal and present no problems). One wonder whether Mylar seals - if they are the only seal - really prevent air from flowing from the bottom of the wing to the top? Air can get through very small openings, and the Mylar is not sealed to the control surface itself - only to the wing It would be interesting if someone would do some definitive wind tunnel or flight tests and let us know. A good research project for some budding Dick Johnson type?

Nimbus 3DM Steerable Tail Wheel

Carl Herold's self-launching Nimbus is fitted with steerable tail wheel that provides an increased measure of directional control for ground operations. Designed and fabricated by Carl, a tiller is attached to the bottom rudder post and is linked with adjustable tension springs to steering arms attached to the tail wheel which is mounted on a steerable post. According to Carl, this setup assists in directional control during takeoffs and landings and the streamlined wheel cover reduces drag. Taxiing into takeoff position requires someone to hold the wing but the pilot has more directional control during takeoff and landing. *Complete contruction details in the next newsletter.*



Images by Pete Williams

Maiden Flight of the Schempp-Hirth Duo Discus Turbo

Below is a report submitted to ASA by Peter Selinger.

"This is to inform you of an important event in Germany: The first flight of the Duo Discus Turbo, powered with a completely new engine and propeller.

On Friday July 30, 1999 Helmut Treiber and Joachim Krautter took off for the first test flight of the new Turbo power plant, installed in Schempp-Hirth's new Duo Discus two-seater . Brigitte and Tilo Holighaus proudly observed the start, flight, and finally, the rising noise of the new 2-stroke Solo engine. And what a small noise it was, more quiet and convenient then ever before for a Turbo. The efforts put into the development of a completely new prop and an improved engine seem to be worthwhile.

Professor Claus Oehler (Berlin), the original inventor of the Turbo-concept, designed a new 5 bladed propeller with enlarged diameter (1.1 m) with all prop blades at different lengths and placed in dissymmetrical order around the hub. This has reduced the noise quite well and also avoided specific sound frequencies. The well-proved SOLO-engine 2350 (now 22 kW) has a new carburetor. Throttle control is either On or Off with no intermediate settings. In addition, the prop reduction ratio is 1:1.57 which also lowers the noise level.

Since the fuselage of the Duo Discus Turbo is constructed with carbon-fibers, most of the additional weight of the power plant had been saved. The max. TOW is fixed at 700 kg, the empty mass 440 kg and the max. mass of non-load-carrying parts 490 kg. Monday August 2nd Tilo proved the concept in flight conditions when he declared a 850 km triangle and at the end he missed 50 m height for the final. So he had to extract the new Turbo engine to get his final lift for coming home.

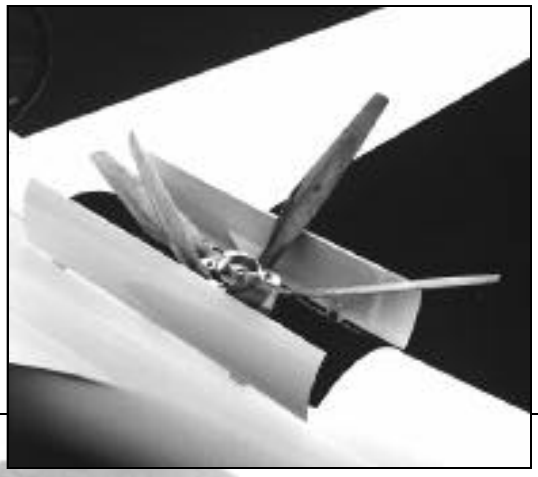
Additional test flights are in progress to accurately measure noise output and the rate of climb under various conditions. "

Peter F. Selinger/Stuttgart, Germany

Image by Pete Williams

Pilot Profile

Al Whitesell first soloed in a sailplane at Estrella Sailport, Arizona. He has over 1,000 hours flying hang gliders, 300 hrs in powered aircraft and 200 hrs in sailplanes which includes 50 hrs in self-launchers. He is checked out in the 2-33, 1-26, PIK-20D, Blanik, Grob 103 and 102, DG-500/22M and the DG-400. He soars for fun and his most memorable flight was a 366 mi. straight out distance flight from Minden to Twin Falls, Idaho. He made it in 5.3 hrs for a speed of about 69mph in spite of poor lift conditions for the first third of the flight and overdevelopment during the last 100 miles. His reasons for flying a self-launcher: "I have more hours in the DG-400 since May 1999 than I had in the previous 5 years because of problems getting a tow. And I have flown at more new sites (Parowan, Durango, Sun Valley and Minden) just this year. A powered sailplane provides more opportunities to soar". *Al is a 39 year old Anesthesiologist who lives in Idaho Falls with his wife Lorie and son Connor.*



Images by Peter Selinger

!2000 Motorglider Nationals!

19-26 July (Practice 17 & 18)
The 11th U.S. Motorglider Nationals will be held at Midlothian, Texas (near Dallas) in conjunction with the 1-26 Nationals. The contest will use GPS scoring using national FAI Rules with minor additions for auxiliary-powered sailplanes. Handicaps will be used. Please contact Rick Howell for more information and rul suggestions. Call 972-245-0830 or you can Email Rick at:

PatRick HOWELL2@compuserve.com

MotorGliding International Ceases Publication

We regret to inform you that the Sept/Oct 1999 Issue of MGI is the last issue in the current format. MGI was a joint venture between BGA and SSA set up for a 12 month (6 Issues) trial period. Much to everyones, regret the number of subscribers did not reach a level at which the magazine was financially self supporting. It is hoped that the title and magazine can continue in a new modern way through the internet. SSA is working on plans to that effect. We would like to thank all of you who have become readers and hope you enjoyed the six issues produced. For those of you who have a subscription yet to expire, we offer to send you issues of Sailplane & Gliding until your subscription expires. For those of you who already subscribe to Sailplane & Gliding, we will extend your subscription by the number of issues you would receive of MGI.

Submitted by Mr.Barry Rolfe, Secretary
British Gliding Association. 17 September, 1999

The Carat TFK-2 Motorglider landing gear folds up and forward into the under belly just aft of the engine. Note propeller folded forward for soaring flight. Photo by Jochen Ewald courtesy Airworks Magazine.

MAKING A PERFECT LANDING

There is such a thing! As the old saying goes , takeoffs are optional, landings are mandatory. Pilots are always working to get the landing down pat as there are different conditions that affect each landing like wind, turbulence, speed, altitude and angle of decent on final, etc. Some pilots prefer a constant turning approach from the pattern's base leg with the turn beginning just opposite the end of the runway to a wings level rollout and a short final. However, a short final is not the way landing patterns are taught by CFIGs and for safetys sake should not be flown unless absolutely necessary during a forced short field landing. The following procedures use a DG-800B as an example and,with the exception of slight speed variations, are generally applicable to most gliders.

1. The wing loading in an unballasted 18-meter 800B is about 8.4lb/sq ft at approximately 1000lbs flying weight. In the 800B at 57kts approach speed and L flap setting with no spoilers, the stalling speed is 39 kts. With full spoilers deployed the stall speed is 43kts. This is in wings level flight, not in a turn.This means if you are on final at 60kts with 1/2 spoilers extended, the stall speed is about 41kts. This gives you a 19kt safety cushion between approach speed and stall.

2.The aircraft must be rotated to an increased angle of attack as you "round out" by increasing the pitch angle to the landing attitude. This "round out" causes the airspeed to bleed off some but not significantly. During this change of attitude the airspeed will be reduced 5-6 kts from the approach speed of 60 to about 55kts which is still 14 kts above stall speed!!

3. Ground effect (when within one wing span of the ground) always takes over and further reduces the stalling speed. All of this results in a "float" or "ballooning", which is to be anticipated. As the aircraft continues to gently descend, keep slight back pressure on the stick increasing it slowly to attain the 2-point touchdown attitude. The object is to keep delaying the touchdown for as long as possible by allowing the glider settle gently to the runway. A soft, (sometimes with the tail wheel rolling first) landing will finally occur. Ah, the sweet spot has been found! Now place the flaps lever in a negative dent and the bird will remain firmly on the ground. Keep the stick back and apply rudder corrections and brakes cautiously. Be prepared for nose swings due to a cross wind and correct with the rudder. The steerable tail wheel is sensitive so apply rudder gently.

4. The point of the above is you will have an adequate airspeed cushion to work with. If it is gusty-add a few knots on final but be prepared to land a little longer. Once you have extended your spoilers to a certain height, leave them there all the way to touchdown. What if a bounce occurs? All pilots will touch on the main gear now and then resulting in a bounce. Some pilots have developed the ability to make a main wheel landing which still requires the tail to be lowered to complete the landing. In cross winds this can cause weather cocking and off runway excursions. Therefore, 2-point touchdown landings are preferred and safer.

BOUNCE RECOVERY

A porpoise, skip or bounce is the result of not attaining the 2-point attitude just before touchdown. When this happens the aircraft is again free of the ground and flying an arc that will result in another main wheel ground contact if corrective action is not taken. After a bounce, most pilots will tend to relax all back stick pressure or even introduce forward stick. Both of these reactions are almost automatic and a discipline must be learned to recover from a bounce without continuing to bounce with increasing intensity.

1. As the first bounce occurs, very slightly relax some of the back pressure on the stick. As the bird reaches the top of the bounce arc and begins to descend, start rounding out again using gentle increasing back pressure to assume the 2-point attitude just prior to touchdown. Pushing the stick forward or releasing all back pressure will only result in another bounce. Remember, the stick movements and the resulting elevator movements are small. Timing is everything as recovering from a series of bounces becomes increasingly difficult because the pilot tends to be one step behind the proper stick applications. Strive to never get into an aggravated bouncing situation by using the proper level off round out and touchdown techniques. Recovery from a bouncing situation is possible, if corrective actions are taken, especially after the initial bounce.

Pete Williams

Bob Moore and Jim Leedy taxi towards the takeoff runway at Richland, WA airport in their new DG-505MB.
Photo by Eric Greenwell.

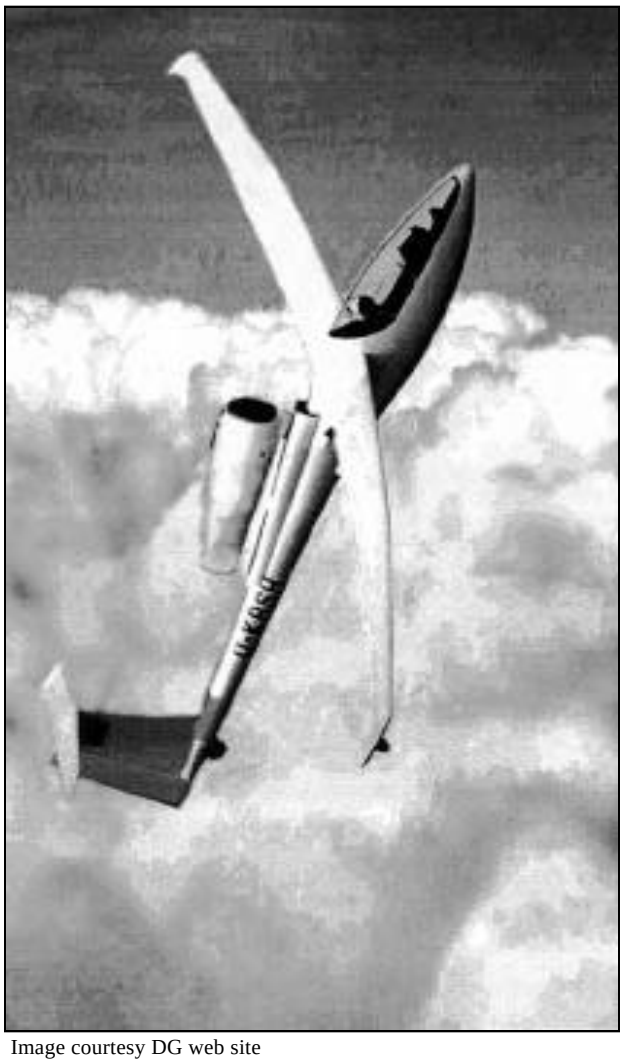


Image courtesy DG web site

Aeromot's AMT-200 Super Ximango. This 17.5M span Rotax-powered ship has become a very popular touring motorglider. In addition to a soaring L/D of 31, the Ximango is capable of 600nm cross-country flights at speeds of up to 110 kts. With the wings folded the 33.3ft span fits most hangars.

Images courtesy Aeromot

Left: Late breaking news via DG's web site: DG's new experimental prototype Turbo-Jet powered DG-800TB makes its maiden flight with Wilhelm Dirks at the controls. Due to high acceleration, Wilhelm was unable to reach the throttle after self-launch. When fuel was exhausted, Dirks managed to make a safe (turbine pod extended) landing at the Bruchsal airport. For more details see: www.dg-flugzeug.de/dg-800tb-e.html

GONE BUT NOT FORGOTTEN

A Classic DG-400

Al Whitesell recently purchased Jerrol Gate's DG-400, s/n 4-32 produced in 1983. The airframe had 790 hrs and the engine 160. Al and his family visited Minden in late August where I had the opportunity to meet him and and look over his new (to him) DG-400. I have seen a lot of 400s but nothing to compare with the pristine condition of this ship. The finish is as near to perfect as it can be. The wing's surfaces were absolutely clear of any profile imperfections and the 17 meter tips sported unique winglets. Al said Jerrol had all surfaces completely stripped of the original gel coat down to the bare fiberglass, smoothed and refinished with Prestec. The work was performed by M&H Soaring at Elmira, NY including the winglets which were engineered for the 400's 17-meter wing by Dr. Mark Maughmer of Penn State University. Maughmer also designed special winglets for the 15-meter ASW-27 wings which are approved by Schleicher. I had a chance to fly my 800B with Al on a short cross country and can attest that his 400 is a challenge to out climb and also cruises very well.

In Al's words " Jerry was the original owner. The fact that the ship is so clean and well maintained is all thanks to Jerry. It was his baby for many years and I feel lucky to have such a nice ship to fly. He has a DG-800B on order but at times I think he was having second thoughts especially when I told him I was having great flights while he is still waiting on delivery"

Al left Minden in his 400 and completed a 366 mi cross country landing at Twin Falls Idaho. The next day he soared to his home field at Idaho Falls. See Pilot's Profile for more information about Al.

While going through some soaring paraphernalia, I came upon a metal tow link still attached to a worn piece of rope. It reminded me of days gone by when I was towed airborne in a 1-26, a Std Libelle, an ASW-19 and a DG-202. A tow can be necessary now and then in a powered sailplane (unacceptable cross-wind, sustainer engine sailplane launch, BFR, power plant problems, practice etc.) but the ability to self-launch has, for the most part, replaced the tow and all of the attendant procedures that go with it. To keep your hand in, its a good idea to take a tow at least once a season. It will give you a new appreciation of the freedom of a powered launch. Ed.

New Edition FAI Sporting Code Section 3 Published.....

This is a major rewrite by Ross McIntyre and his team..a 2-year effort. As such, it is a significant simplification not a quantum change in how the rules work. Yet to come is Annex 3, a handy guide to the rewrite. Pilots interested in seeking badges or records can download the code at: http:ww.fai.org/sporting_code/sc3.html. This download must be unzipped using appropriate software.

Flying The SF-27M, The World's First 15-Meter Production Self-Launcher

Egon Scheibe's retractable engine SF-27M was years ahead of its time when it was first introduced in 1967. For the first time, a high performance (for its day) 15-meter sailplane with an L/D of 34:1 was modified to accept a retractable power plant that permitted self-launch. ASA is indebted to member Richard Strawn, for this article and the research he has conducted. He is the owner of an SF-27M produced in 1967 which he purchased from Art Burch, the 7th owner, in 1997. The only other 27M known to be in the USA is owned by John Mathias, location unknown. If any of our readers know of others, please contact Richard. One of the first 27Ms in the USA was ordered by Bill Mouton of New Orleans from Graham Thomson, the U.S. Scheibe dealer. Bill wrote an article about flying his SF-27M which appeared in December 1991 Soaring.
continued on page 7

Above: Al's 400 on the Minden-Tahoe flight line. Below Right: Just prior to self-launching for Idaho.

Maughmer designed winglet

All photos above by Pete Williams

Peter F. Selinger/Stuttgart, Germany

SF-27M continued from page 6.....

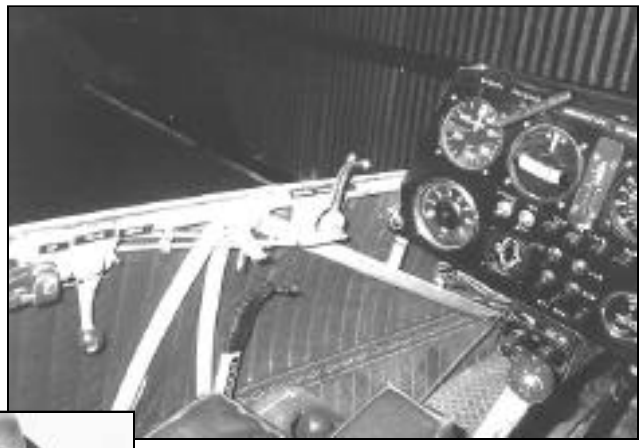
Being one of the first soaring pilots to fly a retractable engine self-launcher in the USA, Bill received the usual terse statements from, in his words, "the pundits who feel threatened by the new breed of humming birds" His reply was "..the fact that the winch, auto or aero tow is nothing but (a), a long extension of a reciprocating engine crankshaft, (b) somewhat hairy and, (c) not very "pure" after all, what with being lead around by the nose" On his first flight, Bill continues " During climb out, he vario settled down to a little over 400 fpm and in less than 5 minutes I was at 2,000 ft with the engine purring nicely, so I continued up to 3,500 ft. shutoff the ignition, braked and centered the propeller then lowered the engine into its bay" Twenty eight years later, this sequence of events is exactly the same in today's modern retractable engine ships. The only exception is more horsepower, all fiberglass ships with glide ratios from 40-60 and automatic retraction systems. Richard Strawn's 27M was previously owned by Albert Fisher. Co-Owners Jim Goebel and John McNally, Skip Heinbecher, John P. Murphy, Leland Engel, Mike Kiss, and Art Burch. At the time of purchase by Strawn the airframe of N6301 had a total time of 400 hrs.

Here are some details of Richard's 27M. Span-15 meters, Wing area-129.3 sq ft, Aspect Ration-18.7/1, Airfoil-Wortmann FX 60-184 (root) 60-126 (tip), Empty Weight-574lbs, Gross Weight-850lbs, Wing Loading-6.4 lbs/sq/ft L/D Max-34@51 mph, Min Sink-2.3fps@41 mph, 6-fps @ 95mph.

Power Plant-26hp 4-cylinder, 2-stroke Hirth aircraft engine with built-in reduction gearing. Converted from pull start system to electric starter. 5 gal fuel tank. Non-steerable tail wheel. Wheel brake lever mounted on the control stick. Schempp-Hirth upper and lower spoilers. To stop and stow engine in flight, slow to 40-45 mph, reduce power to cool engine then ignition off. To position prop after it stops, hold friction brake and bump the starter. When prop is vertical, depress pylon latch lever and crank 3.5 turns on the retract wheel. The engine quickly disappears and a thunk is heard as the sequencing doors shut.

The elevator is all flying, fabric covered and of wood construction. The fuselage is steel tubing with a fiberglass nose section forward and fabric covered elsewhere. Scheibe's wooden wings are famous for close rib spacing (less than 4" apart), are plywood covered and very smooth. The overall surfaces are very clean giving an appearance of a finely finished glass ship. Some speeds (mph) are: Stall-39, Best Glide-55, Min. Sink-43, Climb-50-55, Engine Retract 44-50, Vne-125, Green Line-44-103, Landing 60.

Richard flies N6301 out of Ontario, Oregon Airport at 2200'msl and has had no problems with takeoff distance or climb rate.
Egon Scheibe's design and production expertise using a combination of wood, welded steel tubing and fiberglass has resulted in a long line of inexpensive, strong, easily repaired



Richard Strawn's sleek SF-27M. The cockpit is trimmed in red leatherette. With the engine extended, the doors cover the complete engine bay with only the metal engine pylon exposed. Note smoothness of the finish and rugged steel tube construction.

Dick Strawn is an active EAA Member and owns several other aircraft. He can be contacted at:
1900 SW 1st Ave.
Fruitland, ID 83619
Pho: 208-452-3149

Photos courtesy
Richard Strawn

ASA Mission

The **A**uxiliary-powered **S**ailplane **A**ssociation, Inc. was founded as SLSPA in 1988 as a non-profit organization to encourage the design, development and safe use of motorgliders, self-launching and sustainer engine sailplanes.

ASA Membership

Membership in ASA is open to anyone interested in powered sailplanes. Write or call:
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Publishing Information…..

Pete Williams, ASA Publications Manager, is the Editor, and Print Production Manager for the newsletter. The Newsletter printed and mailed from Minden, Nevada.

Contributors are requested to submit hardcopy typewritten or keyboarded text . 12pt font size is best 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 week in Jan; Mar; May; July; Sept & Nov. ASA desires input on what the members want in this newsletter and we are doing all we can to keep it informative and interesting. **It's your newsletter, so please let us hear from you!**

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Contact Pete Williams for Display Ad sizes and rates.

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November-December 1999 NEWSLETTER

INSIDE.....

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