

Auxiliary-powered Sailplane Association

July-August 1998 Newsletter

Stan Nelson-President • Bruce Templeton, Vice President

Issue # 63 Vol. X

ASA, Inc. is a Division of the Soaring Society of America

BiMonthly

President's Message....

At the request of Paul Schweizer, Chairman of the National Soaring Museum, ASA's Brian Utley attended the 1998 Symposium of the Eastern Sailplane Homebuilders Workshop in Elmira, NY on July 16th. The theme was Motorgliders and Self-Launching Sailplanes. Talks were given on subjects from pre WW 2 motorgliding to the present including the Hummingbird, Scheibe Falke, Schweizer 2-37 USAF Academy motorglider and ultra light Self-Launching Sailplanes. Brian spoke on ASA's role in motorgliding. This included the U.S. Motorglider Assn. of the early 80s, the Self-Launching Sailplane Pilot's Assn. of the late 80s from which evolved the ASA of today. Brian also spoke of the joint efforts of ASA and SSA in the rewrite of FAR Part 61 and the revision of motorglider handicaps. The talk was well received and helped to educate the attendees about ASA.

On behalf of ASA, I would like to wish David Noyes and Hannes Linke a speedy recovery. May they both be back to the joys of soaring at the earliest possible time. *Stan Nelson*

IN THIS ISSUE

1998 AUX-POWERED NATIONALS
PILOT REPORTS
BAILOUT PROCEDURES
DG-800B PILOT'S BRIEF
FLYING THE STEMME S-10V
DG-USA SHOP TALK
HISTORY OF THE HI 20 "MoSe"

DG-USA SHOP TALK

by Eric Striedieck

DON'T LOOSE YOUR BEARINGS

A few dozen small rollers, less than one-half inch long, carry the whole fiberglass or metal enchilada down the highway. Less than one c.c. of grease is required to keep all the rollers gliding smoothly on the four races. However, with mileage the grease can get displaced to the edges of the bearings, ultimately causing metal to metal contact heat, friction and failure. Guess which part of the country it will always fail? It will be on that stretch of highway between Eureka and Austin Nevada. Because the axle is so far from the driver, the early warning signs aren't heard. Then, due to the fact that Highway 50 is so lightly traveled, no other drivers alert the eager sailplane pilot that a

small contrail is following the right trailer wheel. In a small tow vehicle, the added drag at the axle may be noticed. In a motor home on cruise control, the outcome may not be noticed until the intrepid pilot reaches Minden. He will think that the raised eyebrows on the flight line is simply Nevada hospitality, not realizing that the others are interested to see a Cobra trailer listing hard to starboard and traveling with only one wheel. Only a few minutes and Neanderthal level skills are required to inspect this very important item on the check list. At minimum, the wheels can be jacked up (one-at a time) and spun. A smooth, quiet sound will superficially indicate a functional status. A rumbling, gravelly sound trumpets impending trouble. However, to be sure of the status of the bearings, the wheels and hubs should be removed and a visual inspection performed. Given the small cost of the bearings (usually under twenty bucks apiece, four required) it is wise to replace any bearings in question. If one repacks the bearings on an annual basis, they will likely outlast the pilot.



Aux-Pwrd 1998 Nationals contestants and crews lineup for a portrait on the Hobbs ramp. Photo via ASA.

Pilot Reports

PIK-20E/30

Landing Gear Collapse Analysis and Repair; Elevator Push-Pull Tube Guide Bearing Repair

Chuck Rausch has published in-depth instructions applicable to any PIK-20E/30 regarding inspection, adjustment and repair of the landing gear retract mechanism including the landing gear spring attached to the retract arm. He has also recently repaired the elevator push-pull tube guide bearings. Both of these procedures include diagrams and/or photos. Chuck is a licensed Airframe mechanic and his instructions are detailed and specific. To obtain a copy of these procedures, send a SASE with two 32 cent stamps to ASA Publications c/o Pete Williams, 1033 Dresslerville Rd. Gardnerville, NV 89410. Interested pilots can also contact: Chuck Rausch
1236 Greenwood Ave.
San Carlos, CA 94070
805-349-9119

Special Airworthiness Information Bulletin for the DG-400 Available

The Aircraft Certification Service of FAA has recently published a compilation of all technical notes that apply to the DG-400 sailplane. This is a valuable reference that can be used to check against a DG-400's logbook to determine if all TN's have been accomplished. For a copy contact:
FAA AFS-610
P.O. Box 26460
Oklahoma City, OK 73125
Request Bulletin ACE-98-18
dated Dec. 18, 1997.

PIK-20E ELECTRIC FUEL PUMP FAILURE....

Bob Fidler had a loss of power during takeoff in his PIK 20-E. Here is his report. "Power reduced to 4,500 rpms at 500 feet during climbout. My departure procedure of remaining in the airport pattern until an altitude gain of 2,000 feet, allowed me to make an immediate turn to base leg for a final approach with the engine

extended and running, landing on the just departed runway.

Examination revealed the outlet side of the Facet electric fuel pump was partially blocked with an internal rubber diaphragm. The rubber diaphragm looks like about a 3/4 inch long nipple. Also, it had an approx. 1/4 inch tear in the wall. This reduced flow of fuel to about 75% loss of power with engine RPM reduced to approx. 4,500.

The electric fuel pump was the original equipment, Facet # 1908. Upon contacting a Facet distributor, no replacement part model was recommended. The distributor could not offer any information about the failed pump.

The pump was replaced with an Amgauge electric fuel pump, Model EP 12 S. This pump should be available at any auto parts store. The new part looked exactly like the removed part except the mounting flange did not include

attached nuts. However, the new pump mounting flange the holes were on the same center distance. Bolts for the pump are located aft inside wheel well. Replacement took one hour. The replacement of the nuts are on the inside the engine compartment requiring long arms.

I wish to make pilots aware this possibility exists and recommend replacement of the original electric pump due to age. The original pump dated back to late 1979 as date of manufacture for my PIK 20-E, serial No. 20238. Since replacement of pump, the sailplane has been flown four times without incident. "

For more information, contact:
Robert G. Fidler
3540 Salem Road
Troy, Michigan 480841146
Pho: 248-649-3893

Editor's Note: Facet Fuel Pumps are standard equipment on many ships. In the PIK, fuel flows from the fuel tank via the electric pump to the vacuum pump to the carbs.

DG-800B Fuel Line Air Blockage

Pete Williams reported that his engine would not accept throttle increase and finally stopped during a routine ground turnup prior to launch. Investigation revealed air was entering the fuel line at the fuel filter connections in the baggage compartment. In this area the fuel lines must make a sharp turn as they are connected to the filter. Pete noticed a slight weeping of fuel/oil moisture at the clamps on the filter nipples. New fuel lines were installed at the filter and the problem disappeared. His 800B was produced in July 1994. Pete suggests all DG-800B owners inspect all fuel hose clamps, especially those that make sharp turns. Look for fuel/oil residue and if found, replace the hose. This inspection requires removal of the baggage compartment floor to gain access to all fuel lines forward of the engine compartment firewall. Questions? 702-265-3877 Fax: 702-265-6179

DG-800B Elevator Control System Connection Integrity

As many of you know, David Noyes was seriously injured in a crash while launching out of Jean Nevada in his DG-800B. The initial investigation revealed a bolt in the elevator control system came out of the aft bell crank resulting in loss of longitudinal control. The bolt was found in in the tail wheel well area. FAA's Small Airplane Directorate in Kansas City has recently issued a notice to all USA DG-800B owners recommending inspection of this and other connection points of the flight controls per diagrams 1 through 4 of the Maintenance Manual. In the DG-800B, access to the elevator push rod area in the vertical fin is via an inspection plate above the tailwheel.

Questions? Call Mike Kiesov at 816-426-6934

FLIGHT REPORT

Flying The Stemme S 10-VT

I was happy to be given the opportunity to fly the S 10-VT. Stemme USA pilot, Bob Saunders does an excellent job of demonstrating the ship's systems from a pilot's point of view. My impressions of the Stemme during a short flight in February, 1998 from Minden-Tahoe Airport (4,720' msl) are as follows:

1. Excellent takeoff and climb performance. The 115 hp 4-stroke Rotax turbocharged engine provides an adequate reserve of power.

2. Engine idle while seeking to center a thermal is very comfortable as full power is always immediately available if you need it.

3. Elevator trim lever geometry takes a bit of getting used to.

4. Cockpit entry/ exit may be difficult for some pilots/ passengers.

5. Taxi visibility ok. Wing clearance over runway/ taxiway lights is adequate but might become marginal in cross-wind conditions. Differential wheel braking would be a welcome addition.

6. I was surprised when making a close-in approach that full spoilers can be deployed all the way to touchdown. The big bird side-slips nicely with no adverse effects.

7. Lots of lead-in rudder necessary for a rapid roll-in to a steeply banked turn.

8. Thermals very well in light lift. I ran out of back tab (elevator) necessary to hold the nose up in a steeply banked thermal turn.

9. I was impressed with the way the ship holds 80kts in a glide. Very dense with lots of penetration ability. This is a heavy ship with 2 on board and flies like it has water ballast.

10. Learning proper nose position for a perfect 3-point touchdown may take some practice. (I suggest a grease pencil marking the horizon on the canopy as the bird sits on the ground to find the landing attitude).

11. Noise and vibration at full power was very low. Aircraft exceptionally quiet with engine off.

12. The electric motor actuated landing gear takes time to cycle to fully up or completely down and locked. It has a very robust landing gear structure.

My overall assessment of the S 10-VT: It is as much a power plane as it is a high performance sailplane which, in my opinion, is an outstanding aerodynamic design achievement by Dr. Stemme.

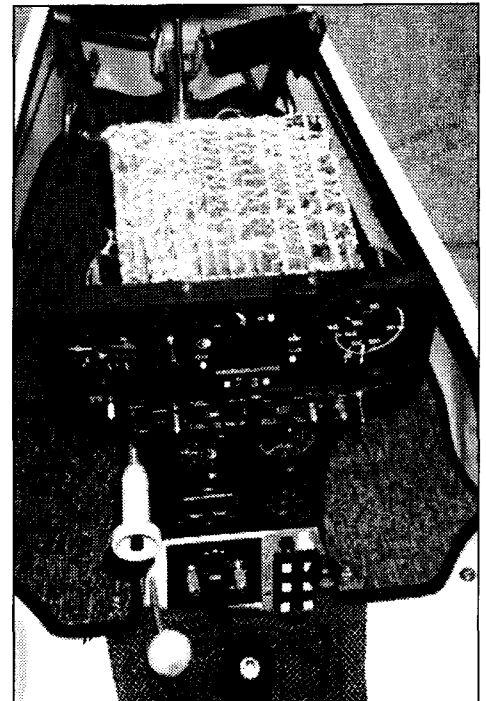
Pete Williams



C.A. Williams

Neville Swan's "Blue Wren"

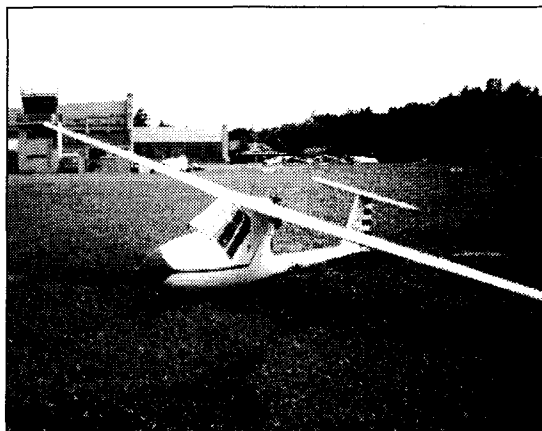
Neville Swan of Auckland, New Zealand is flying the one-of-a-kind proof of concept Blue Wren self-launcher designed and built by Reg Todhunter of Australia in preparation for a kit version. Mr Todhunter passed away in 1992 and the prototype was purchased by Neville. In a letter to Pete Williams, Swan said he replaced the original pusher engine with a 24hp 3-cylinder Konig air cooled radial. He says it climbs at 450 fpm and performs much like a Blanik in soaring capability. Empty weight is 295lbs! Swan was a contributor for Pete Williams new Self-Launch book and was an SLSPA member for several years. He sold his PIK-30 to Bill Willis several years ago. He also owned an SF-27M. For more information on the Blue Wren write: Neville Swan Westharbour Auckland 8 New Zealand



P. Williams

Keeping Your Flight Computer Cool....

In the summertime, the temperature on top of the instrument panel cover can become very high. High enough, in fact, to affect the way the flight computer operates. One pilot uses a section of air conditioning duct insulation covering the top of his S-Nav. This insulation has a silver backing covering and is about 1/4" thick. It is held in place by the panel cover.



The Blue Wren/Swan

1998 Motorglider Nationals, Contest Summary Score Sheet

Region 9 Hobbs New Mexico MotorGlider Class
Hobbs Industrial Airport 6/21/98 thru 6/26/98

Comp Last Pos Nbr Name		Aircraft	6/22/98				6/23/98				6/24/98				6/25/98				6/26/98				
			ASSIGNED TASK				ASSIGNED TASK				ASSIGNED TASK				ASSIGNED TASK				PILOT SEL TA				
			Dist: 155.60				Dist: 225.20				Dist: 222.80				Dist: 221.01				Min Time: 02				
			---- Day 1 ----				---- Day 2 ----				---- Day 3 ----				---- Day 4 ----				---- Day 5 ----				
			Day	Pts	Pos	Pts	Day	Pts	Pos	Pts	Day	Pts	Pos	Pts	Day	Pts	Pos	Pts	Day	Pts	Pos		
1	DRV	Volkmann	DG-800 A	2	629	2	629	1	974	1	1603	1	900	1	2503	3	897	1	3400	3	958	1	4
2	TM	Shilen	DG 800 B	7	518	7	518	2	964	3	1482	2	880	2	2362	4	851	2	3213	1	994	2	4
3	UF	Utle	Ventus CM	5	578	5	578	6	796	7	1374	3	800	3	2174	6	840	4	3014	4	940	3	3
4	6A	Greenwell	ASH 26E	1	644	1	644	7	783	5	1427	4	747	3	2174	5	850	3	3024	5	910	4	3
5	FD	Howell	Ventus bt	4	611	4	611	5	859	4	1470	5	430	6	1900	1	919	6	2819	2	974	5	3
6	PAP	Petmecky\Robert	ASH25M	6	567	6	567	3	930	2	1497	6	419	5	1916	2	905	5	2821	6	907	6	3
7	QK	Schurmeier	PIK 30	9	170	9	170	8	732	9	902	7	393	9	1295	7	779	7	2074	7	801	7	2
8	VO	McWhorter	Ventus CM	DNC	10	0	0	10	522	10	522	8	340	10	862	8	658	8	1520	8	679	8	2
9	IC	Parker	Stemme S	8	477	8	477	4	898	6	1375	DNC	7	1375	DNC	9	1375	DNC	9	1375	DNC	9	1
10	BZ	Wynn	S-10	3	617	3	617	9	722	8	1339	DNC	8	1339	DNC	10	1339	DNC	10	1339	DNC	10	1



ASA's Ed Shilen was instrumental in working with SSA and Region 9 for scheduling the 1998 Auxiliary-powered Sailplane Championships at Hobbs.



Above: Brian Utle and his Ventus cM on the launch line at Hobbs. Brian is an ASA board member and membership chairman. He is also a Director-at-Large for SSA.



Left: Flight line activity at Hobbs. 1998 was the first time there were 2 Stemme sailplanes entered. The scoring handicap system was designed by ASA president Stan Nelson to provide a more equitable measure of performance comparison. Bud Schurmeier developed the scoring formulas based on this revised handicap system. All photos via ASA.

THE 1998 AUXILIARY-POWERED SAILPLANE NATIONALS

This year the contest was held at the Hobbs Industrial Airpark in Hobbs, NM in conjunction with the Region 9 Championships. The weather was superb and a great time was had by all. Twelve pilots showed up with a wide variety of aux-powered sailplanes: 2 ASH 26Es, 3 Ventus CMs, 2 DG 800s, 2 Stemme S-10s (one a turbo), 1 Ventus BT, 1 ASH 25M, and 1 PIK 30. Several showed up early for the fun fly before the contest. One ASH 26E had engine problems and didn't fly and one Ventus CM elected to fly in the 15 meter class so there were 10 entries in the aux-powered class. Rick Howell was a task advisor to the Contest Director and did an excellent job representing the views of the auxiliary-powered pilots. Charlie Spratt did his usual outstanding job as Contest Director.

The first day was a 156 mile task to Crossroads-Hobbs-Denver City-Hobbs, Eric Greenwell in his ASH 26E smoked the course at 81 mph with a handicap speed of 76 mph to win the day. Dave Volkmann in his DG 800A was second and Tom Wynn flying the Air Force Stemme S-10 took third.

Day 2 was another assigned task of 225 miles to Portales-Kenna-Maljammar-Hobbs. David Volkmann won the day with a speed of 72 mph and moved into first place with Ed Shilen close on his heels at just under 72 mph in his DG 800B moving him to 3rd place overall. Phil Petmecky/Robe took third in their ASH 25M and moved up to 2nd place overall.

Day 3 saw the field reduced to 8 as the Stemmes were grounded because of a factory mandatory service bulletin. The task for the day was Littlefield-Seagaves-Plains-Hobbs for distance of 223 miles. David Volkmann again won the day with a speed of 70 mph solidifying his lead in the contest. Ed Shilen took second moving him up to 2nd place. Brian Utley flying his Ventus CM took 3rd and moved into a tie with Eric Greenwell for 3rd place, Smoke from a fire and a thunderstorm north of the field caused problems for many of the contestants in all the classes. Four aux-powered pilots had to use their engines to complete the task. However they all made it back in time for cocktails and a great barbecue hosted by the National Soaring Foundation, the sponsors of the contest. There were land outs by pilots in the other classes and some missed the barbecue.

Day 4 was another assigned task to Morton-Crossroads-Railroad Crossing-Hobbs for a distance of 221 miles. Phil Petmecky/Robe had the highest raw speed of 88 mph but his handicap speed of 80 mph was less than Rick Howell's 81 mph in his Ventus BT to win the day. David Volkmann was third but maintained his first place position with a 187 point lead over second place Ed Shilen.

The final day was a Pilot Selected Task that was to have a 3:15 minimum, time. However the wind didn't cooperate and after most of the 15 meter class was launched the launch was halted and everyone had to "elephant walk" from the North end of the ramp to the South end (that is a long ramp!). This resulted in a late launch and start for the aux-powered class causing the minimum time to be reduced to 2:45. Ed Shilen really smoked the course flying over 246 miles at a raw speed of better than 89 mph to win the day but could not catch David Volkmann who took 3rd for the day and won the contest. Rick Howell was second for the day.

The final standings were:

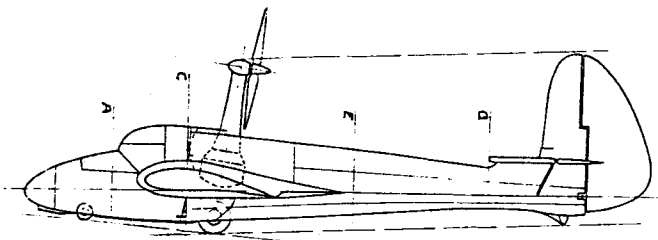
1 DRV	Volkmann	DG 800A	4358
2 TM	Shilen	DG 800B	4207
3 UF	Utley	Ventus CM	3954
4 6A	Greenwell	ASH 26E	3934
5 FD	Howell	Ventus BT	3793
6 PAP	Petmecky/Robe	ASH 25M	3728
7 QK	Schurmeier	PIK 30	2875
8 VO	Mc Whorter	Ventus CM	2199
9 IC	Parker	Stemme S-10T	1375
10 BZ	Wynn	Stemme S-10	1339



DG-800B prototype Serial No. 8-8B-1 in flight over Germany during 1994 test flight. This is the first of five Mid-West powered 800Bs produced with the Mid-West 50hp engine. All subsequent 800Bs have the SOLO 55hp engine. Pete Williams now flies this ship with USA registration No. N885N out of Minden-Tahoe airport at Minden, NV. The pilot during this flight is believed to be either Wilhelm Dirks or Axel Lange. This ship was used as the factory demonstrator and Dirks flew it in the 1995 German Nationals at Paderborn. Its last flight in Germany was on November 6, 1996. It came to the states via Port of Houston and was picked up by Williams on 7 April, 1997. As of July 1998, it has a total of 375 airframe hrs after Pete flew it for 132 hours in since April 1997. Photo by Jochen Ewald

The Hirth Hi 20 "MoSe"

This is an article by Peter Selinger covering the development of the Hi-20, a self-launching sailplane of the 40s that had a strikingly similar engine-airframe interface much the same as today's retractable engine self-launchers.



History and Design Philosophy

Design and construction by Wolf Hirth started in 1937 in Göppingen. At the beginning of the WWII most was done, but had to be stopped immediately. Finally in 1941 Hirth was able to 'save' some work and materials in his "Wolf Hirth Versuchsbau Nabern/Teck" to complete the plane. This aircraft, the Hirth Hi 20 MoSe, was the poc (prove of concept) prototype that in many ways is similar to the engine system installed in today's high performance sailplane. The name MoSe is short for the German word Motor-Segler (motorglider).

To reduce work and to save time and money they used the wing and tail of the side-by-side two-seater Göppingen Gö 4, developed by Wolfgang Hütter and currently in series production for more than 100 units at the Schempp-Hirth factory at Kirchheim/Teck. The fuselage was a single-piece fabric covered steel-tube construction and very easy to adapt for the engine mount. Ulrich Hütter did most of the integration work, including, engine, prop and all interface parts necessary. He also completed the aerodynamic design, performance calculations, engine and prop performance tests including the fuselage construction and stress calculations plus all the work for a patent which they later obtained. Hütter later became the father of modern wind energy props and contributed a great part in the development of fiber-composite materials in aviation and wind turbines. Wolfgang Hütter used these fiber-composites experiences of his brother Ulrich to develop the Glasflugel H 301 Libelle together with Eugen Hanle later in the sixties.

Dipl.-Ing. W. Krautter (living in Stuttgart in these years) developed the special purpose air-cooled 4-cyl-2-stroke engine for the Hi-20 which produced 25 hp at 5500 rpm. The prop had a diameter of 4.6ft with a gearing ratio of 2.3:1. The propeller slipstream moved cooling air to the engine through the shaft bearing pylon. The motor and the prop are one unit, fixed together and moving together as a lever, so the prop and engine move as one unit. Today this principle is modern again, as you can see in some of the latest motorglider designs of the nineties.

Hubert Clompe made the first aero tow flight in October 1941. More flights continued into 1942. But war production had a higher priority, so the development had to be canceled at the end of 1942. Only parts of the engine system survived the decades after, not the right honor for this remarkable design to help sailplane pilots to fly in a greater independence from lift to fulfill Wolf Hirth's dream of 'Wandersegelflug', (to wander) by soaring in a powered sailplane from airfield to airfield, just for fun-flying, using the engine in the early morning and late evening only and not as a motor plane. Today this dream is fulfilled in soaring "safaris" where the motorized sailplane has a destination using the engine only when needed.

MoSe Technical Data:

Span.....	48.5ft
Wing Area.....	201 sq ft.
Aspect Ratio.....	11.7
Fus. Length.....	22.6ft
Empty Wt.....	617lb
Max Wt.....	837lb
Glide Ratio.....	20:1
Min. Sink.....	177fpm
Powered Max Speed....	68mph
Cruise Speed.....	53mph
Landing Speed.....	34mph
Climb Rate.....	220fpm

Submitted and Edited by Pete Williams



Hirth's MoSe Hi 20 in powered flight over Germany Circa 1940's.
Selinger

FOR SALE

PIK-20E MOTORGLIDER. FRESH OVERHAUL .FULLY EQUIPPED. ONLY \$45K. BOB MOORE 509-967-3733

DG-500M FULLY LOADED IN EXCELLENT CONDITION. 400-TTAF/75-TTE. \$159,500. DAN MATZKE
PHO/FAX: 805-270-0788. E-MAIL: DanMatzke@aol.com

DG-800B Pilot's Brief Booklet Available

This illustrated booklet covers both the Mid-West and SOLO engine versions. It is a guide to flying and maintaining the 800B series and is especially useful for the prospective owner . Send \$3 to ASA Publications c/o Pete Williams 1033 Dresslerville Rd. Gardnerville, NV 89410 USA Tel: 702-265-3877 Fax: 702-265-6179

Emergency Bailout-Are You Prepared?

Several weeks ago, I attended a very thorough briefing on emergency bailout procedures conducted by Allen Silver, a Master Rigger from Hayward, California. Over the years, Allen has packed a lot of parachutes for sailplane pilots. No one likes to think about leaving his sailplane in flight. Many pilots feel as long as the chute has a current repack and is worn properly, they can manage somehow should this unwanted event occur. Since a parachute costs as much as a high quality variometer, it behooves us to know as much as we can about this life saving device. Here are some of the highlights of Allen's presentation.

A Positive Attitude: Know that you can and will bailout if necessary by believing your parachute can save your life. In the bailout process, do not give up. Keep trying to exit the glider and once clear of the glider, keep trying to pull the rip cord. Once the rip cord is successfully pulled, remember that the canopy will deploy fully in about 2-3 seconds.

Know Your Parachute: Have it packed and serviced by a qualified rigger. Provide the rigger with the packing instructions that came with the parachute. The rigger must have an FAA license and experience packing your type of parachute. Packing methods vary according to the container. Ask your rigger. Store your parachute by laying it flat in its carry bag in a cool dry place. Never leave it in the cockpit, in direct sunlight or near liquids. If the container gets wet for whatever reason, have the parachute repacked. Make sure the speed and descent ratings of the canopy fit your weight. If unsure, ask your rigger.

Know how to don the parachute. Stand erect and secure the chest strap first, then bend over and secure leg straps. If you have quick disconnect fittings, make sure they are locked (snapped) down and the spring is not missing or broken. Know how to adjust the shoulder straps so they are of equal length. If unsure, ask your rigger. Check also if your canopy has a steering system and learn how to use it. To more adequately learn all you can about your parachute, it is a good idea to be present while your rigger repacks it and ask questions during the process. You will be surprised at how much you will learn.

Pre-flight Inspection: Open the flap to expose the rip cord cables ends. The cable ends should extend well through the grommet openings and be safetied. Check the rip cord handle. It should be securely fitted all the way into its pocket. Some pilots put a piece of colored tape on the handle for rapid visual identification. Check for general integrity of the container. The canopy should not be visible. If a round external spring loaded pilot chute is installed, make sure it is secure around its circumference.

Have a Plan: There are many reasons for leaving a sailplane such as structural failure, mid-air collision, severe control problems, fire (motor gliders), loss of control, etc. Know and practice the exit procedures for your sailplane every time you fly. Do not remove the parachute to exit your sailplane after a flight. Leave it on and practice a simulated bailout exit.

Executing the Plan: DO NOT DELAY YOUR DEPARTURE ONCE YOU DECIDE TO BAILOUT. The basic exit procedure is CANOPY-BELTS and BUTT. In that order! Once the glider canopy is clear of the sailplane (shield your face if possible when using the emergency canopy opening system), unfasten your seat belt/shoulder harness. To do this-LOOK at the release. Then go over the side by whatever means possible by crawling, clawing and pushing clear of the cockpit.

Once clear of the cockpit, LOOK at the rip cord handle and pull it straight out from your body by grasping it firmly with BOTH HANDS. If only one hand is used, pull using a fully extended arm with an outward and circular motion. High altitude bailouts will consume more distance for full canopy deployment but the 2-3 seconds elapsed time for full canopy deployment will remain the same. Be prepared for a swift but welcome jolt as the canopy opens.

Under an Open Canopy: Once the canopy is fully deployed, take a deep breath and survey the situation by noting your height and drift. If you are still grasping the rip cord handle, drop it. Many canopies have a steering system consisting of handles attached to the rear risers. Pull the steering handle on your right to turn right and visa versa. Remember to release the pull to stop the turn. Remember also that descent velocity increases when the steering handle is pulled. Under a full canopy it may appear you are suspended and not coming down at all. A closer look at objects on the ground will confirm you are indeed descending and the closer you get to the ground, the faster your descent will appear to be. In calm air, you are moving forward at about 5mph.

Preparing for Landing: Look down to determine if you are drifting forward or backward. Try to land facing the wind. Your landing spot will be somewhere between a 45° to 60° angle as you look forward and down. The landing spot should appear to remain stationary as you descend. If electric power lines, trees or other obstacles are in the line of landing, steer the parachute and select a new landing spot. Do this early to avoid steering turns at a low altitude.

The Landing: Extend your arms and grasp the risers above you. Keep your eyes on the horizon! Place your feet and knees firmly together with knees slightly bent. Do not raise your legs as you touch down. As your feet

touch, turn your head to one side, tuck in chin and elbows and roll in the direction you are moving.

If you land in a high wind, roll onto your back and collapse the canopy by reaching over your head and pulling as many lines as you can get your hands on over your head, hand over hand into your lap. Keep pulling until the canopy collapses. Remove harness and place over canopy to keep it from reinflating. If landing in water, face downwind and, after landing, detach chest and leg straps and swim away from the canopy.

Safely Back on Earth: Use the canopy to help others locate you and carry a small signal mirror and whistle if possible. A metal signal mirror can fit into the packing record pocket of the container. Some parachutes have an emergency kit. A cell phone is a smart addition. If you wear glasses, they will most likely be lost unless tightly secured with a headband like "Croakies". Good luck and may you never have to step out of your beautiful sailplane!

But if you have to-KNOW THE PROCEDURES!!

Submitted by Pete Williams

