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Soaring
and MOTORGLIDING MAGAZINE
The Journal of The Soaring Society of America, Inc.
Published Continuously Since 1937

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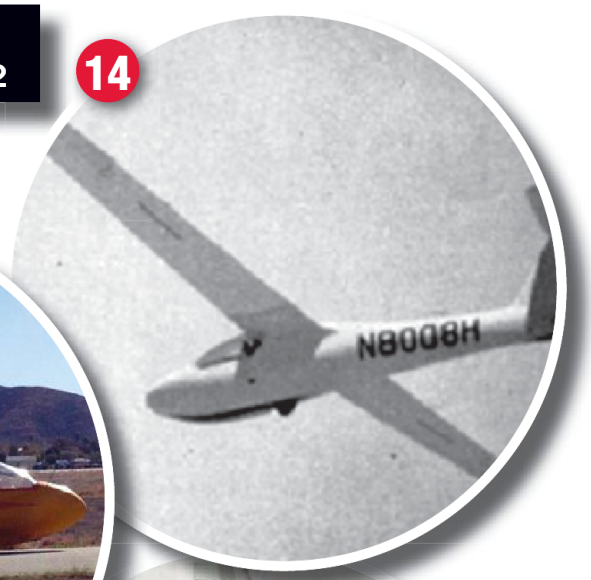

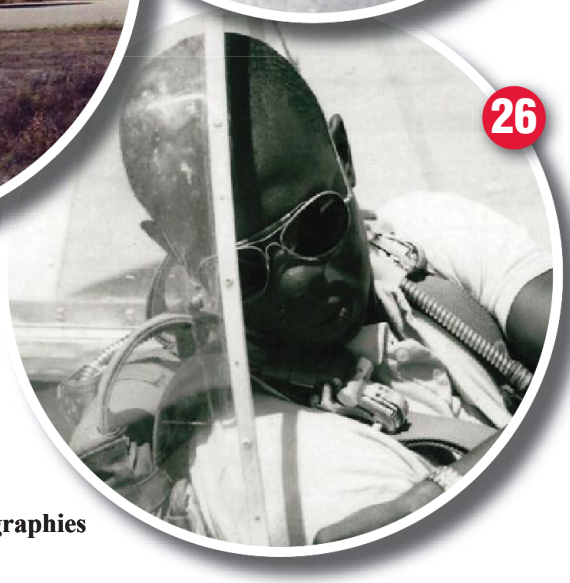

Features

Departments

Front Cover: *Cascade Soaring Society's LS3a "VH" soaring in the Enchantments area of the Alpine Lakes Wilderness, 28 miles west of Wenatchee, WA. (Photo by Mark Adams.)*

Centerfold: *Two of Dan Pierson's FFA Diamants at Sailplane Enterprises in Hemet, CA. A first generation glass ship, the HBV (L) was one of 10 manufactured in Switzerland between 1964 and 1971; this one was built in 1966 and is now 50 years old. On the right is Pierson's highly modified and often photographed Diamant 18, with 19 meter wings. (Photo by Dan Pierson.)*

Soaring
and MOTORGLIDING MAGAZINE

Soaring Magazine is the official journal of the Soaring Society of America. The Soaring Society of America (SSA) is a nonprofit organization. The purpose of the Society is to foster and promote all phases of soaring. The SSA is a division of the National Aeronautic Association (NAA), the U.S. National Aero Club, which represents the U.S. in the Federation Aeronautique Internationale (FAI), the world sport aviation body comprised of all national aero clubs. NAA has delegated to the SSA the supervision of FAI related soaring activities, as follows: Record attempts, competitions, FAI Badges, and selection of the United States Team for the World Gliding Championships.

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FLIGHT LINES

BY ERIC BICK
EDITOR

Winter is almost over! My new panel is installed and I've been reading the manuals and practicing use. Since my vario, ASI, and altimeter were all 80 mm size, I ended up doing away with the mechanical vario, going with all-electronic. The new flight computers do take a lot of panel space. With ASI and altimeter still both mechanical/pneumatic, I feel confident that a battery outage will not be an issue. On the other hand, I'll be using a new Nano 3 for backup if the panel does go dead. Along with two 8 Ah batteries, I think I'm pretty solid. Just waiting for those first soarable days – or not.

In Features, I'm extremely pleased that we have an article by Raul Blacksten about a remarkable soaring pilot and individual – Dan Pierson. Many evenings at Krey Field in SoCal, I had the pleasure of conversations with Dan as he worked on one or the other of his Diamants, showing me his tweaks and ingenuity to get the 19 m bird back into the air.

We continue the motorglider article, Part 2, toward sharing a decade's worth of experience by Réal Le Gouëff with these planes. I'm pleased that we've been receiving a growing number of articles on motorgliding – keep it up.

I'm happy to include a report by Cypress Soaring of their initial steps to return soaring to Hemet-Ryan Field in SoCal. Cypress Soaring is the first soaring club I joined, and a great group it is. Kudos to them for perseverance, and for setting a goal to make Hemet-Ryan a viable option for SoCal soaring enthusiasts. If we receive more of this type of article, we can open a new department for "Club News." Good task for club secretaries, perhaps.

In Departments, Walt Rogers has provided the first of what I hope will be a handful of articles in "Soaring Weather" discussing soaring forecast models. There are several out there, and pilots all have their favorite(s). Walt's article will help shed some light on what they do or not. "Teaching Soaring" wraps this month with Part 3 of "Preventing Landing Accidents." My thanks to Tom for his extensive set of quizzes and articles. This won't necessarily be the last input from Tom, but it does conclude the basic set of articles.

On a different note, I am thinking about running a "Photo Showcase" on soaring pets. If you'd like to have a photo considered, please send it in. If the photo is an in-flight shot, remember that safety of flight is a consideration in selection.

Finally, Keith Miller discusses the decline of membership in the SSA. Note that the December 2015 issue of *AOPA Pilot* magazine includes a discussion by Mark Baker, AOPA President, of a substantial decline in general aviation pilots in general – a point Keith also makes in his article. To quote Mark Baker: *"If the downward trend continues, we'll see general aviation continue to shrink until there just aren't enough pilots flying to keep general aviation viable."*

As this issue goes out, we are close to the opening of the 2017 soaring season. Contests to come, cross-country camps, or just going up for a soaring adventure. Hope to see you up there.

CHAIRMAN'S THOUGHTS

BY KEN SORENSON
CHAIRMAN, SSA

It's a Girl!

She was born in a small Texas town of about 3,000 people, centrally located between Dallas, Austin, and Waco. The town boasts an elementary school, junior high school, and high school, with numerous colleges nearby. It hosts a nice municipal airport with a 5,000 ft paved runway, a large vacant hangar, and little air traffic. And soaring conditions are great! Why is all this relevant to the arrival of Hamilton, the newest member of our family?

Because her full name is Hamilton Soaring Club, Inc. (HSC). Born in August 2016 as a Texas non-profit corporation to seven (!) proud founding fathers. All are soaring pilots, and include airline pilots and successful businessmen. One is a local doctor, actually Chief of Staff at the county hospital, who assisted in the delivery.

The visionary who started the HSC ball rolling, and has kept it rolling, is Jim Callaway. A good friend of mine for many years, Jim was instrumental in the development of the Soaring Club of Houston (SCOH) some years ago. He served as president during a critical time and displayed the same visionary leadership that has now created HSC. I mention Jim not just to give him some well-deserved recognition, but to highlight (again) the impact that a single individual (YOU!) can make in growing our great sport.

An impressive aspect of Hamilton's "birth" was its simplicity. The group purchased a nice Schweizer 2-33 and uses auto tows – simple and inexpensive. To supplement the SCOH training curriculum they adopted, a Condor simulation training station was installed in the airport's FBO office. This will improve training, keep costs down, and allow instruction to continue through the winter while the club expands its instructor corps.

Development of support within the local community was also key. Civic leaders recognized that the HSC youth program would benefit the community by offering their kids a rewarding activity and "keeping them out of trouble." This led to support from local school teachers, ministers, business leaders, and city officials. Five local girls and boys are now in the HSC youth program. The shop teacher at the high school had his class build a trailer for the 2-33. The airport manager joined the club so his teenage daughter could learn to fly.

HSC leadership recognized the importance of the social aspects of a soaring club. A catered lunch was provided at the first club meeting in October when the 2-33 was assembled and 26 demo flights were provided. Over 30 people attended and 18 joined on the spot. A large BBQ grill was donated in time for the November meeting, which included a hamburger lunch. A social membership category was created so that local supporters could enjoy the club comradery, even if they weren't yet ready to begin flight training.

With three large metropolitan areas to draw from, and many airline pilots based in the Dallas-Fort Worth area, the future of our newest arrival looks bright.

We can grow our clubs. We can add more clubs. We can grow the sport. Congratulations to Hamilton's proud "parents" for showing us the way!

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SOARING MAIL

LETTERS FROM THE SOARING SOCIETY

IVSM 2016

What a wonderful presentation on IVSM 2016 in the December *Soaring* magazine! You and your staff did an amazing job and you have brought back many wonderful memories for all the people who were there. The visual presentation over so many pages is thrilling!

Presentations like you put together should certainly excite people about older sailplanes, but just as certainly it should attract even more people into the general sport of soaring. Your team at *Soaring* magazine is clearly doing its part!

Many thanks from the IVSM organizers, the NSM, the HHSC, and the VSA.

— Jim Short

Thanks, and glad you liked it. We encourage SSA affiliates and organizations to take advantage of Soaring to publicize their activities in order to reach a broader audience. The vintage gliders provide wonderful photo opportunities, and provide an absorbing avocation.

— Editor

Airspeed!

There is an apparent math error in this (SSF) article (November 2016). In the example, my calculator comes up with an approach speed of 59.5 kts. I checked the math because 65 kts seemed very high and I believe having too much AIRSPEED can also be very dangerous, especially for student pilots.

— Randy Morningstar

Richard Carlson replies: I agree with (rounded) 60 kts. I do agree that coming in way too fast would be a problem; however, coming in 5 kts fast is much better than 5 kts slow.

XC Tips

I'd like to acknowledge and applaud *Soaring* magazine for publishing the new XC Tips column written by Garret Willat. I've been reading Garret's cross country insights in the *Wings & Wheels* e-newsletter for a while, and his years of accumulated experience are a treasure trove of useful help for any aspiring XC glider pilot. After I reread each installment a couple times, I put that knowledge into the "back pocket of my mind" and will retrieve it as needed before or during future XC flights. Great info and a great idea!

— Quest Richlife

Stall Training

In the October 2016 Safety Program article Richard Carlson asked what we can do differently to train students about stalls and stall recovery. As a power pilot I'm very familiar with the way we train in powered aircraft and totally agree that it doesn't teach dealing with the unexpected stall. Most powered stall lessons are more of a familiarization with the stall and how to recover. I hated stalls when I was taking lessons and finally my instructor took me up and said, "We are just going to fly straight and do stalls until you are comfortable." So, that's what we did – climb, slowly pull back the stick until we stall, recover, and then repeat. With flaps, without flaps, slow flight, etc.

I started toward a glider add-on, but moved away from a gliderport before I could complete the rating. I did get through solo and 10 or so flights on my own. The following is what I would have liked to have from an instructor during dual training.

Once off tow:

"See that small cotton ball cloud at 11 o'clock? I want you to head toward that cloud. It looks like it is developing and we should have lift there. If it starts to dissipate then we'll choose another spot."

"We are in sink, add a little speed."

"We're in lift, slow down, you've still got lift, slow some more."

"That cloud is still building and we are almost under it. We probably won't find lift directly under the cloud, so slow down and if we pass under the cloud and don't find lift make a 30 degree bank to circle around the cloud until we find lift. Once we find the lift, increase the bank to 45 degrees so we can center and then increase the bank from 50 to 60 degrees so we can stay centered."

At any time during the requests to slow the instructor can continue to ask for less speed or to raise the nose more. At that point the student should speak up and say, "We are at stall speed." If the student just listens to the instructor, then a stall happens and it is a lesson opportunity. The instructor should be ready to recover if the student is totally surprised and doesn't initiate recovery.

Just taking a student out and saying, "Now we are going to do stalls and recover," has its place early on in training, but I think instructors need to set up stalls that surprise the unwary student.

— Paul Richard

SOARING NEWS

INFORMATION, ANNOUNCEMENTS, and EVENTS

FAA Withdraws Transponder ANPRM for Gliders

Published in the Federal Register on December 23, 2016. Review at this link: https://www.federalregister.gov/documents/2016/12/23/2016-30910/transponder-requirement-for-gliders-withdrawal.

Wright Brothers Master Pilot Award

On December 2, 2016, Mamad Takallu, SSA Instructor since 1981, received the FAA Wright Brothers Master Pilot Award. The award was presented by Jeff Slaughter, Manager and Richmond's FAA FSDO, and Maury Dacey, FAASTeam Manager at the National Institute of Aerospace in Hampton, VA.

Mamad started flying gliders in 1964 as a high school junior at the Doshan Tappeh Airport in Tehran, Iran, in a Blanik L-13 launched by a winch.

In the late '60s/early '70s he obtained his glider, motorglider, and airplane licenses while attending Technical University of Aachen, Germany. He earned his FAI Diamond badge for altitude gain in Issoire, France and Diamond distance at Siegerland Airport, Germany.

In 1977, he founded and became the first president of the NCSU Soaring Club (now called NC Soaring Association) while completing his PhD at the North Carolina State University.

At the award presentation are (L to R) Camelia Ravanbhak (Mamad's wife), Mamad Takallu, Jeff Slaughter, and Maury Dacey. (Photo by Bruce Jackson.)

Now, in retirement, Mamad enjoys flying his Cessna 182 out of Hampton Roads Airport in Chesapeake, VA and his ASW 27 at many SSA sanctioned soaring contests. He is a CFI for Single and Multi-engine Airplane, Instrument, and Glider, with seaplane and helicopter ratings. He is an active member of the Tidewater Soaring Society, Garner Field, VA.

Mamad is an Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA) and a former member of the AIAA General Aviation Technical Committee. He is also a member of the SSA Volunteers Committee, AOPA, and EAA.

Free Online Course – Cross-country and thermal soaring

Learn and maintain your thermal and cross-country soaring knowledge and skills using a free online "course." Whether you're an absolute soaring beginner or a cross-country racer, there's something here for you. The course was developed by Eric Carden, a pilot with 20+ years of soaring experience and a passion for helping others by identifying the most important concepts and expressing them as clearly and simply as possible. The course currently consists of 17 "lectures" (60-90 minutes long each, typically given as live video webinars, and complete with illustrations and animations) and 25 flight exercises (using the Condor simulator). The course is self-paced; you can pick and choose which parts you want, and more experienced participants "coach" the less experienced in the flight exercises. Through word-of-mouth awareness, several glider pilots have participated in the course during its first three years. Only now is it being announced to the SSA mem-

bership as a whole. For more information or to get started, visit http://sites.google.com/site/thermalxc.

Students Building Glider at EAA Chapter 57

A group of 15 middle and high school students in Billings, MT are building a 1929 Northrup Primary Glider under the direction of Pat Kenney, EAA 275132, a science teacher and EAA Chapter 57 member.

"People say kids aren't interested, but they are," Kenney said. "There's a lot of interest, they just don't have the access."

The students, who began this build in June, are working toward an April 2017 completion date and have already finished the horizontal stabilizers, elevators, rudder, and 26 of 30 ribs. All of this is being done from a rough set of plans published in 1930.

"All these skills are all being lost to be quite honest," Kenney said. "You come back and you walk in this hangar, it's like going back in time."

He said the build is being driven by his students' enthusiasm and dedication. Most show up after school two to three times a week of their own accord.

"When they come up they all have a journal and they put the date, the hours, and they write a short paragraph about what they did, and I take some pictures and they paste them in," Kenney said.

Kenney first joined his passions for aviation and teaching in 2002, and this will be the fifth aircraft he's built with students from his school district. The first was a Chanute 1896 biplane.

"I cleared out an area and I moved in some power tools and we just started building in the classroom," he said. "Then the chapter acquired a hangar up at the airport so we moved the airplane up there and we've been there for 15 years now."

The cycle of students has since built a Wright Flyer and Chanute triplane, as well as completing a full restoration of a Pietenpol Air Camper.

EAA Chapter 57 has geared itself toward aviation and science education, and Kenney estimates that at least 1,000 students have walked through the chapter's hangar since it opened its doors to these students.

"We've put about 150 kids through state and local science fairs, and then we have some kids that have won five national titles for the National Science Bowl in D.C. in engineering and design," Kenney said. "They did all of that through the chapter, and now we're back to building airplanes."

Many students who have participated in Kenney's program have gone on to study and start careers as engineers or science teachers, and a few are attending the military academies with plans to fly.

Those currently building with Kenney recently received a special treat for their efforts. Last year Apollo 8 astronaut Col. Frank Borman sold his hangar to Chapter 57 to give them expanded working and learning space. He visited the hangar in late October to talk to the students and their families and share his story.

"I just can't believe how lucky we are to have him in the chapter and have him working with the kids," Kenney said.

The program's success and reputation in the Billings community can be measured by the waitlist of 25 students hoping to join a build.

"I just don't have enough airplane for everybody right now," Kenney said, "but we'll get them on later."

What's New in IACRA – Student pilot temporary certificates

The latest 8.14.2 version of IACRA incorporates a change in student pilot temporary certificates (iacra.faa.gov). Temporary certificates will now be issued for student pilots, and will be available for printing after FAA internal processing is complete and the applicant is at least 14 years old. There are 4 different scenarios:

- Applicant is at least 14 years old and internal processing is complete – The temporary certificate will be issued at final signing.
- Applicant is at least 14 years old but internal processing is not complete – The temporary certificate will be issued once the internal processing is complete.
- Applicant is not yet 14 years old but internal processing is complete – The date of issuance of the temporary certificate will be the applicant's 14th birthday. The temporary will be available on the applicant's console on their 14th birthday.
- Applicant is not yet 14 years of age and internal processing is not complete – The date of issuance on the temporary certificate will be the applicant's 14th birthday. The temporary will then be available on the applicant's console after the applicant reaches their 14th birthday and internal processing is complete.

New Designated Pilot Examiner

Burt Compton in Marfa, TX has been named an FAA Designated Pilot Examiner. His DPE authorization is for the vast Lubbock FSDO area of western TX including Hobbs, NM, so he can travel to give check rides in that FSDO area. If you want him to travel outside of the Lubbock FSDO area you would need to initiate a request to your local FSDO to contact the Lubbock (LBB SW13) FSDO to consider having him travel outside of his area to fulfill the (FAA term) "need" for your check ride at your home soaring site.

Before traveling to Marfa, you must have logged all of the ground training and flight time requirements per FAR part 61.123-129(f) and have passed your written tests for the FAA Fundamentals Of Instruction (F.O.I.) plus the FAA Aeronautical Knowledge Test ("written") for Flight Instructor – Glider with your corrected answers of any missed questions written down for your recommending CFI-G to review

and for your Examiner to review on the oral portion of the check ride.

He can also conduct CFI-G renewals or reinstatements as well as add-on Glider CFI to your current or expired Airplane CFI Certificate, which renews all other ratings on your Flight Instructor Certificate.

Our SSA Chapters need more CFI-Gs! Find the upcoming SSF FIRC schedule and locations at www.soaringsafety.org.

Email: marfagliders@aol.commitment
Website: www.flygliders.com

Electric Flight Record Heralds New Era of Aviation

Walter Extra, the famous aerobatics pilot behind the Extra series of aerobatic planes, has set an FAI world record in the new field of electric-powered planes. Launching from Schwarze Heide Airport near Dinslaken, Germany on November 25, 2016, he flew a unique, battery-powered plane and climbed to 3,000 meters in 4 minutes, 22 seconds.

In doing so, he broke the FAI world record for electric-powered planes that weigh between 500-1,000 kg.

Remarkably, the plane, an Extra 330LE, only made its maiden flight on June 24 this year.

That first flight was called a "technical milestone" by Siemens, the company behind the technology that powers the electric plane.

"This day will change aviation," Frank Anton, head of eAircraft at Siemens, said at the time. "This is the first time that an electric aircraft in the quarter-megawatt performance class has flown."

Siemens developed a new type of electric motor that weighs only 50 kg but delivers a continuous output of 260 kilowatts to power the Extra aerobatic plane. That is five times more than previous comparable systems.

The development, initial flights, and new world record point the way to an electric-powered future for some aircraft. The battery technology behind the Extra 330LE is scalable, and some industry figures expect to see electric-powered passenger aircraft carrying up to 100 people on short-haul routes of up to 1,000 km by 2030.

The world record belongs to the group of Electric records for Powered Aeroplanes with a take-off weight of 500-1,000 kg.

Full FAI record file: http://www.fai.org/fai-record-file/?recordId=18085

Photo courtesy of FAI.

2017 SAFETY PROGRAM

BY RICHARD CARLSON,
SSF CHAIRMAN

The "Remote" SSA Instructor Bronze Badge Process

The Soaring Society of America ABC/Bronze Badge program can be the cornerstone of an advanced glider training program. The badge program provides obtainable goals and challenges for students and newly rated glider pilots. By following this program, pilots can develop the skills and knowledge to start on the path to safe and fun cross-country soaring. The SSA Badge program also helps pilots who fly locally build and maintain the skills and knowledge needed to enjoy those local flights.

The SSA Badge program is run on a grass-roots basis with the SSA setting the overall program direction and the Soaring Safety Foundation (SSF) providing oversight and guidance to the local flight instructors. It is the local flight instructor, specifically the designated SSA Instructor (SSAI), who mentors the local students and pilots, ensuring that they meet the training, written test, and flight requirements of the SSA ABC/Bronze Badge program and awarding the badges as appropriate.

Since the SSAI will be teaching cross-country skills, it has been determined that the SSAI must demonstrate some of these skills. This is accomplished by earning a SSA Bronze Badge or FAI Badge (Silver, Gold, or Diamond.)

The SSA Bronze Badge.

If a current CFI-G wants to become a SSA Instructor but does not meet the Bronze Badge requirements and instructs at a club or commercial operation that does not have a current SSAI to administer the Bronze Badge test and validate the requirements, the SSA/SSF has developed the following procedure for issuing a new Bronze Badge to an applicant for SSA Instructor.

A CFI-G must demonstrate that they have completed all of the equivalent requirements for a Bronze Badge.

Specifically:

1. Complete the equivalent requirements for the SSA C Badge.
   a. A logbook entry demonstrating the solo soaring flight requirement.
   b. A logbook entry demonstrating the accuracy landing requirement.

2. Complete the equivalent requirements for the SSA Bronze Badge.

a. Logbook entries demonstrating the flight time requirements (total time and duration flights).

b. Logbook entries demonstrating the accuracy landing requirements (solo and dual flights).

c. Complete and return via email a Bronze Badge written test administered by a current SSF Trustee.

Once the logbook entries are verified and the written test is successfully passed, the SSF Trustee administering the test will award the applicant a Bronze Badge and then the CFI-G can submit the SSA Instructor (SSAI) application. A list and contact details of the current Soaring Safety Foundation Trustees are on the SSF website, www.soaringsafety.org.

Notes:

• The knowledge requirements for the C Badge are met by passing the FAA CFI-G practical test.

• Scanned copies of the CFI-G's logbook must be submitted to demonstrate compliance with their glider flight time and accuracy landing requirements.

• Glider flight time and accuracy landing requirements for the C Badge may be used to satisfy the Bronze Badge requirements.

• Dual flights may be accomplished with another CFI-G or a Glider Designated Pilot Examiner (DPE).

• There is no time limit regarding the accomplishment of glider flights/landings and the submission of the request for a Bronze Badge.

• The CFI-G must complete the Bronze Badge application within 24 calendar months after passing the remotely administered written test. It is recommended that the applicant update their progress periodically with the SSF Trustee who administered the written test.

• This method may not be used if the club or commercial operator has a current SSAI at the field.

Bronze Badge Application and Resources

SSA Instructor Requirements at www.ssa.org:
http://www.ssa.org/BadgesAndRecords?show=blog&id=2782

SSA Instructor Application at www.ssa.org:
http://www.ssa.org/files/member/2015%20SSA%20Instructor%20Application%20Fillable%20ver%201.pdf

Study Guide for the Bronze Badge written test:
http://soaringsafety.org/learning/bronzebadge.html

Answer Sheet for the Bronze Badge Test (blank):
http://www.ssa.org/files/member/bbans.pdf

BY THOMAS KNAUFF

Preventing Landing Accidents – Part 3

Drawings by Malcolm Morrison

This is the final part of the 3-part article on "Preventing Landing Accidents." Our thanks to Tom Knauff for making this available.

— Editor

Off-Field Landings

There are many hazards to consider during an off-field landing, including slope, obstructions, & wind. (A common off-field landing checklist is **SLOW**: **S**lope, **L**ength, **O**bstructions, **W**ind.)

To help observe these problems, a full 360 landing pattern should be used. A full pattern has some obvious advantages.

- Makes slope easier to discern.
- Makes hazards such as animal holes, fences, utility wires, and ditches easier to observe.
- Makes wind speed and direction easier to determine.
- Makes height easier to verify.
- Provides numerous flight path possibilities.

A glider in no wind, with a 30:1 glide ratio (L/D), will lose 176 ft per mile (5,280 divided by 30 = 176). Rounding this to 200 ft per mile and assuming the upwind leg to be about 1 mile, the crosswind leg to be about ½ mile, and the downwind leg to the midpoint of the landing to be ½ mile – 2 miles times 200 ft = 400 ft. If the intention is to be at the midpoint of the landing area at 800 ft, the 360 pattern should begin no lower than 1,200 ft AGL.

There is a practical part of this exercise. A good thermal is often located on the downwind end of the landing area. Airport runways and farm fields are often good thermal sources.

Intentionally flying past the downwind end of the landing area at a reasonable altitude (typically above 1,000 ft AGL) may allow a pilot to make a safe thermal save. Care must be taken to avoid drifting too far downwind while using a downwind thermal.

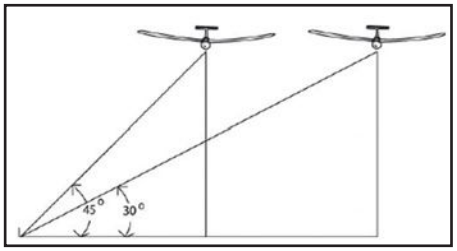
While flying on the upwind leg, the pilot must be alert to altitude lost and be prepared to abandon the full 360 pattern flight path by cutting off corners or turning onto the crosswind leg early.

There is no way to know what the air might be doing as one approaches the I.P. Therefore, a pilot should always plan to arrive at this point with the use of the dive brakes to assure a reasonable altitude based on the day's conditions.

Spacing

In order to have the all-important base leg, the downwind leg must be flown far enough from the landing area. This is done by keeping the angle looking down to the landing surface no closer than a 45 degrees angle.

In reality, a 45 degrees angle is a bit close and will result in a short base leg. A shallower angle, such as 30 degrees, would be better, but is difficult to teach. A 45 degrees angle is easy to teach and recognize. If a pilot is flying closer than a 45 degrees angle, an alarm should go off inside the pilot's head, causing an immediate correction.



Common Teaching Methods

It is common for students to be taught landings using altimeter references and landmarks while flying the landing pattern. Power plane pilots are almost always taught landings in this manner.

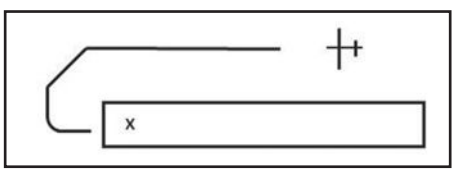
"Be at 1,200 ft at the white house, be at 1,000 ft at the corner of the farm field, be at 800 ft at the I.P., 400 ft at the apple tree, etc."

This works, of course. Almost anyone can be trained to fly this type of landing pattern. They are sometimes called "Monkey Landings" because with a few peanuts and some flashing lights, even a monkey can perform to this minimal standard.

The problem is when the monkey is taken to a new location. With no familiar landmarks, the monkey can no longer perform. Or, if the altimeter is set wrong, or fails, the monkey ("pilot" in this case) is no longer able to fly a safe landing pattern.

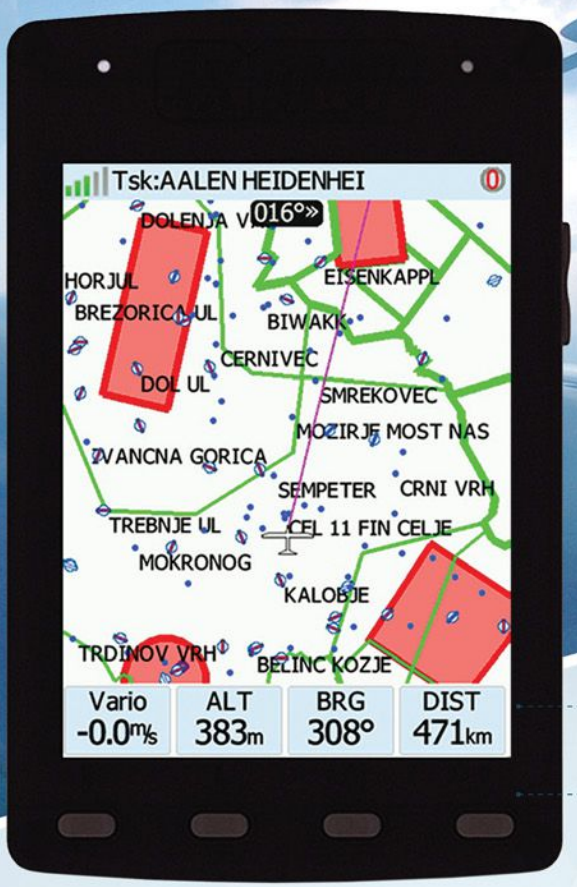
We often see this when a pilot sets the altimeter incorrectly before flight and then steadfastly believes what it says all the way to the ground.

Instructors will allow a student to set an altimeter incorrectly during a dual flight. It is actually fun for the instructor to watch as the student continues to believe the altimeter rather than what can easily be seen outside. There are many stories of pilots observed flying impossibly low altitude landing patterns, believing the errant altimeter all the way to the ground.



The angled approach.

Nano⁴



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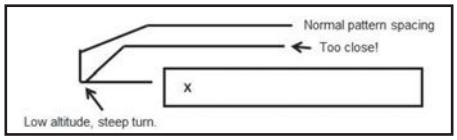
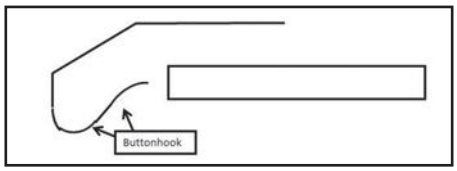
The angled base leg has been tried at some locations. The basic idea is to turn onto a 45 degrees base leg, followed by another 45 degrees turn onto an intended, *very* short leg before turning 90 degrees onto the final approach. The reasoning for this landing pattern is to enable the pilot to keep the landing area more easily in sight at all times.

The theory is fine, but in practice, it has a particular risk for typical pilots. In the high stress situation of a landing pattern gone wrong, or especially an off-field landing, the typical pilot will be too close to the landing area on the downwind leg. Attempting the 45 degrees angled approach, they find themselves unable to make the second 45 degrees turn for the short base leg, and therefore must make a steep 135 degrees turn onto final.



The problem approach.

If this 135 degrees turn is at a lower altitude, there is a high risk of wind gradient upsetting the glider for all the reasons stated above. Another common error is to perform a dangerous button-hook turn onto the final approach.

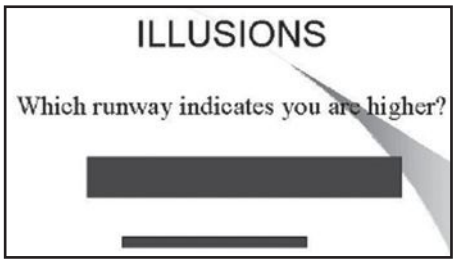


The button-hook approach.

The 45 degrees turn to the base leg is therefore unsafe. Rather, pilots simply need to be taught to keep a respectable distance from the landing area while on the downwind leg, and dip the wing if need be to see back to the landing area during the downwind leg.

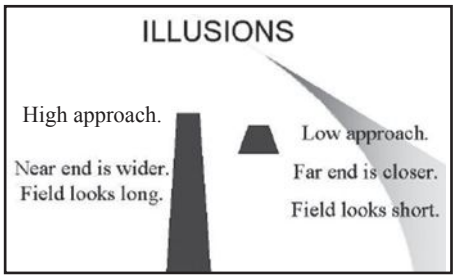
If one were to continue to divide the turns, from base to final, into increasingly smaller angles, the result would be a 180 degrees turn. The 180 degrees turn from downwind to final has been used as the standard by the U.S. Navy. There are several reasons for this method, including the very long nose of the aircraft they fly restricting the pilot's vision, and the fact there is no possible other aircraft trying to land on the aircraft carrier, so they focus on the one important spot on the deck of the aircraft carrier.

In this next figure, runway length and width can be deceptive for indicating your altitude.



Actually, you are the same height, as one runway is much larger than the other.

If you learned to fly at a very large airport/runway, you will tend to be much lower while flying into a small runway or farm field because you will subconsciously try to make the smaller runway appear the same "size" as the familiar, larger runway while flying the landing pattern. If you were trained on a very small airport, you will tend to be too high when approaching a large airport. In this figure, you can see the effect of a high or low approach.

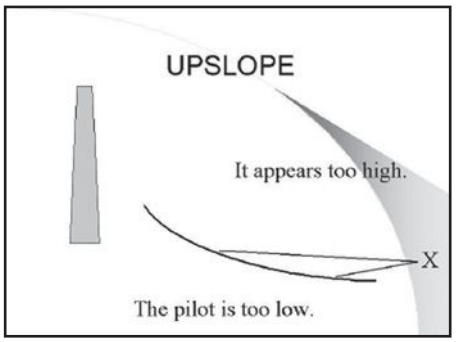


When small cars first came to the USA, there was an increase in rear end collisions. This was attributed to the illusion of the smaller car being farther away.

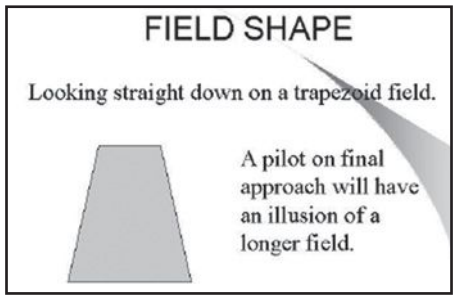
Final Approach

The runway appears longer when we are too high on final approach, and short when low.

When landing on an upslope, the pilot will tend to be much too low as



the "picture" the pilot sees makes it look like they are much too high. Be sure to use extra airspeed when landing upslope. Field shape also plays a role in judging landing pattern height. In this next figure, the far end of the field is narrower than the near end, so a pilot will tend to be higher on final approach.



Many Accidents Are Preventable

Most glider accidents are preventable. Most have one common factor: human failure. Glider pilots who are involved in an accident know what went wrong. Often, pilots are aware of the possible hazards as they choose the "wrong" course of action. In the interest of expediency, cost savings, self-gratification, or other irrelevant factors, an incorrect course of action is taken.

One of the causes is making a decision to fly when a pilot should not have flown.

Weather conditions are mostly predictable. Too hot, too cold, too windy, too turbulent, too much cross wind, planning to intentionally land downwind, are factors a pilot considers before flight. When confronted with questionable weather conditions, pilots will often say to themselves, "Should I fly today?"

When a pilot begins a question with, "Should I?" the answer is almost always no.

The question asked implies an element of doubt in the pilot's mind. This doubt is the result of the pilot's experience, training, knowledge, and judgment. Since gliding is only a sport, choosing the wise, safe response by not flying is often the best and safest decision.

Health

Sometimes a pilot simply does not feel up to normal standards. This can be a health problem or a mental condition. Not feeling well, taking some medications, or being mentally distracted because of stress can be enough of a distraction to prevent a pilot from making good judgmental decisions, and to cause a pilot to fail to fly safely.

Interestingly, other people will take a pilot's decision not to fly because of weather conditions or a physical/mental condition as that of a reasonable, mature individual. A person who knowingly and willingly flies under adverse conditions beyond their experience, skill, or physical condition, and then has an accident or incident, is looked upon as immature or a fool.

People who decide to fly in adverse weather conditions or fly while experiencing health problems exhibit one of the five well-known hazardous thoughts:

1. Macho – "I can do it."
2. Invulnerability – "Nothing is likely to happen."
3. Anti-Authority – "Rules are for others."
4. Resignation – "If it is meant to happen, I have no control."
5. Impulsivity – "Do something quickly, without thinking it through."

Overconfidence, self-assertiveness, intolerance, impatience, need to prove self, being sensitive to criticism, carelessness, frivolousness, irresponsibility, exhibitionism, and lack of self-discipline are all factors causing accidents.

These traits are not uncommon among the soaring community. The sport attracts a certain individual profile. Gliding is just for fun, and requires a certain amount of discretionary income. Soaring attracts the kind of individual who has, or eventually will have, climbed the ladder of success, permitting rather large expenditures of both time and money.

Successful people are often self-centered to some degree. They are highly competitive, self-assertive, and perhaps impatient. They often are resistant to authority, and have a need to prove themselves.

You don't have to be a genius to be a safe pilot. You must realize you do not have all the knowledge or skills for all situations, and be willing to accept logical, intelligent recommendations. Rules and procedures are designed to serve pilots for almost all situations. A mature person will accept this and follow the rules for the benefit of all.

When confronted with a difficult decision, such as continuing a flight into difficult terrain, looking for a saving thermal, or attempting a low altitude save, many pilots will find a way to justify the risk and make themselves believe it is all right to do so. This is called "pushing the limits."

Too often, pilots push too far.

These two presentations were given at the 2003 SSA convention and the 2003 & 2004 FAA Safety Seminars in Lakeland, FL. VHS videos are available. For a copy ($20 each plus shipping), contact Knauff & Grove Soaring Supplies at tknauff@earthlink.net or order on our website, www.eglider.org.

Other books by Thomas Knauff

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US Hall of Fame Biographies

Collected, Compiled, Adapted, or Written by Bertha Ryan

This month we continue the biographical articles, thanks to the efforts of Bertha Ryan. She has compiled, adapted, and written brief biographies of the Soaring Hall of Fame inductees up through 2013. Since there are many, it will take several issues to present them all, so we will be looking at groupings by year – this issue presents the 1964 and 1965 inductees. The full set will be on the National Soaring Museum website.

— Editor

The Early Years – 1964, 1965

RAMON H. PARKER (1964) (1914-1980)

Adapted from an article by Vic Saudek, *Soaring*, July 1980, pg 37.

When most of us who were fascinated by the idea of flight were jumping off roofs, Ray Parker, at age 13 and in the eighth grade, was building and flying a primary glider. After he was helped down (by the truant officer) from a tree in which he had landed, he never did return to school. Most of his talents as a wood worker, painter, and pilot were already far in advance of his years. During the Great Depression, he was in the Civilian Conservation Corps where he built models and dioramas for museums. Some are still on exhibition. About this time, he walked out of his first class in oil painting before it was over. As a self-taught artist, he painted many fine canvases of landscapes (all Western scenes), not to make a living from them, though some sold for good prices, but to satisfy his artistic urge and gratify his friends.

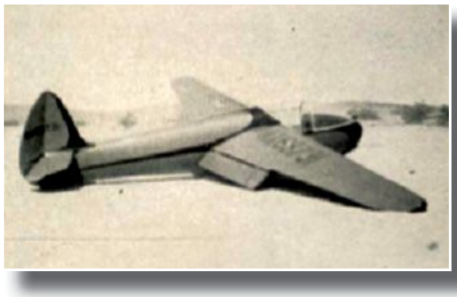
Ray flew gliders in competitions in Southern California during the years before WWII. When this country began training pilots for assault gliders, Ray was quickly recognized as a natural. He instructed initially at Elmira and then at Twentynine Palms Gliding Academy. Ray was selected by the USAAF as an instructor in basic trainers and became a civilian power plane instructor of military cadets until the end of hostilities.

During the summer of 1946, he toured the land with his old friend Johnny Robinson. They entered one soaring contest after another and lived off the considerable prize money they won. The following year he opened a school for soaring at Twentynine Palms, but this effort ended in a violent windstorm after a couple of seasons. At that time, Dr. August Raspet was starting the Department of Aerophysics at Mississippi State University and hired Ray to fly research aircraft for a time.

Ray brought his family to Los Angeles in 1951 and was hired by the Southern California Soaring Association, which was preparing to explore waves in the lee of the high Sierra Nevada mountains. This project was sponsored by the USAF and directed by the University of California's meteorology department. Initially Ray directed the refurbishment of two Pratt-Read sailplanes (war surplus Navy trainers) and equipped them with oxygen and instruments for the explorations into the stratosphere. He then became Director of Field Operations with his old friends, Johnny Robinson and Larry Edgar, serving as project pilots. Much of the success of this complicated and risky endeavor was due to Ray's mature leadership, judgment, and planning.

Following the completion of the Mountain Wave Project, Raspet called him back to Mississippi State for a two-year stint of test flying and aircraft modification. In 1955 Ray hired on as a specialist in instrumentation of jet engines at AiRsearch Company in Los Angeles. There he remained until his retirement.

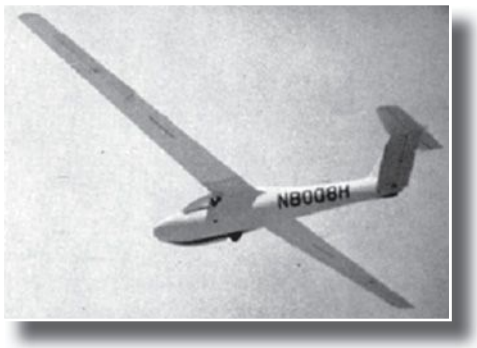
In an effort to improve on his *Screamin' Wiener* design, Ray built much of the *Tiny Mite* (although it turned out very different), which he sold to Dick Johnson while still under construction.



Tiny Mite with original canopy. (Soaring Magazine, May/June 1948, pg 10.)

His devotion to, and involvement with, soaring is evident in the things

he accomplished: Assistant Team Captain of the 1956 U.S. International Team; crewman for other U.S. Team pilots; rebuilding of the Polish *Orlik*, a 1938 gull-winged beauty; modification of the *Tiny Mite* to bring it (with Raspet's assistance) from 25:1 to 31:1 L/D; the design and construction of his *T-Bird*, the Stradivarius of wooden sailplanes; and his service as chief instructor and president of the Southern California Soaring Association.



Ray airborne in his T-Bird on one of its initial flights. (Photo by Kirk Harris, Soaring, August 1962, pg 18.)

Ray earned Silver #36 in 1941, Gold #6 in 1946, and Diamond #4 (Intl # 8) in 1952.

IRVING O. PRUE (1964)
(1915-2001)

Adapted from *Soaring* Magazine sources with photos (many by George Uveges) including "Portrait of Irv Prue" by Floyd Sweet (January 1968, pg 20) and "The Story of the Prues" by Irv Prue (April, 1965, pg 8).

Well-known sailplane designer Stan Hall said about Irv Prue: "Whether other designers of the era were aware of it or not, Irv had a profound effect on how they carried out their designs. To my mind, every sailplane in the world carries his imprint." Irv Prue first became interested in gliders when he read about the Germans' activities in a 1929 issue of the *National Geographic Magazine*. While still in high school, he constructed

three primary gliders in which he learned to fly without instruction. Auto tow was the primary launch method, although a shock cord, devised of automobile tire inner tubes, was used in winter on the frozen Missouri River at Richfield, VT. ☛

Prue 160.

Irv moved west after completing high school to follow a career in aviation. He completed his studies in the Technical and Mechanical School of the Boeing School of Aeronautics and settled down in California. His first design after WWII was the diminutive Prue 160 whose fuselage was derived from a P-38 drop tank. The wing skins, spar webs, and ribs construction was entirely of magnesium and flush riveted, and the design incorporated a V-tail. It weighed 165 lbs.

Prue 215.

Next followed the Prue 215. Again it was all-metal and flush riveted, and included a reclining cockpit, an external airfoil flap, and a retracting landing wheel. Irv chose aluminum as the material for this and his succeeding designs.

Prue Two.

This was followed by the Prue Two in which he incorporated retractable landing wheel and added fiberglass to his structural design. In 1967 Ed Minghelli flew it to a world two-place goal-and-return record of 360 miles.

Prue Standard.

Next came the Prue Standard (for standard class competition) in which Paul Bikle set an unofficial world distance record of 557 miles in 1963 (he did not carry a barograph). It was this same sailplane that Paul invited moon-walker Neil Armstrong to fly at Inyokern, CA in 1963. Alex Aldott flew the Prue Super Standard for a Hungarian distance record of 465 miles in 1964. Irv went the entire route for this design by obtaining an FAA Type Certificate – probably the first (and likely only) individual to accomplish this task.

More words from Stan Hall: "There was genius here and we all knew it. Irv was a man to watch, and watch him we did. In fact, I did more than watch him; some years later I blatantly copied his technique for attaching the wings in my own designs. When I was active in designing aircraft for a living, I often found myself, when running into a design problem, thinking, 'How would Irv handle this one?' Unbeknown to him, he came to my rescue every time."

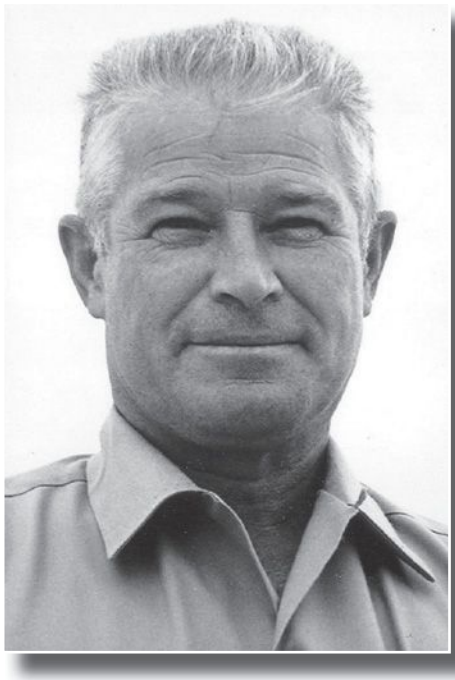
Irv was employed by Lockheed Martin Aeronautic Co. for 41 years. His projects included the Lockheed Electra models 10, 12, 14, 16, and 18; the P-38, F-80, F-94, and F-104; the Hercules cargo and Constellation passenger planes; and the Blackbird reconnaissance craft.

Stan Hall continues, "His self-imposed rule seemed to be: stay focused, never give up, find a way, and never let a little pain get in the way of your dreams. His sailplanes gave ample evidence that he followed this dictum with unrelenting fervor. No doubt, we could all profit from adhering to the example set by this remarkable human being. I know I am. He lives in me. He lives in US."

Irv Prue served as crew chief for U.S. Teams in three world competitions. He received the Eaton Trophy in 1966 and earned Silver #381 in 1960, Gold #98 in 1960, and Diamond #145 (Intl #862) in 1970.

ALVIN H. PARKER (1965) (1919-1980)

by Sandor A. Aldott (with adaptations) *Soaring*, May 1980, pg 37.



Alvin Parker was the first soaring pilot in the world to cross the magic 1,000 km line, which he did in 1963.

The son of a pioneer Texas rancher, Al spent much time alone on the range caring for livestock, doing chores, and carrying out tasks assigned him by his father. These formative years may have built the fierce independence and self-reliance that would later bring success. Following graduation from Texas A&M University in 1941, he joined the Army and fought in WWII with the 1st Armored Division in North Africa and Italy, receiving a Silver Star for gallantry in action.

After the war, he returned to marry a beautiful young Odessa teacher, Mildred "Hoppie" Hopkins. She was of equally strong character and high morals, and it was no surprise to any-

one that they raised three talented and handsome sons – Stephen, Timothy, and Jeffrey. They have made their careers in aviation, the military, and business, respectively, thus mirroring their father's three main loves and endeavors.

As a businessman, Al had interests in ranching, oil, and manufacturing. His Ector Aircraft Company built the Ector Mountaineer, an outstanding towplane with exceptional climb.

Next to his family, Al probably loved soaring more than anything else. He excelled by pioneering world records including history's first 1,000 km soaring flight. He never regarded soaring simply as fun. It was a challenge, a goal to be reached, and you flew to produce results. One goal he set for himself: to set world records from Texas with a Texas-built sailplane. He succeeded soon after he acquired a Sisu by establishing a world goal record of 784.14 km (487.26 miles) in 1963 from Odessa, TX to Great Bend, KS. The following year he exceeded the historic 1,000 km mark by soaring 1,041.52 km (647.2 miles) from Odessa to Kimball, NE. He broke his world goal record in 1969 by flying 922.59 km (573.3 miles) from Odessa to Blanding, UT.

Sandor A. Aldott happened to be in the air with him at the start of the 1,000 km flight and took the picture which appeared on the May 1980 cover of *Soaring* magazine. For Alex and all of us, it has come to symbolize Al's nobility of spirit and his excellence of sportsmanship. To quote Alex Aldott:

And for me, Al projected a Gary Cooper-like image where actions and not words count. He lived by the old proven rules and solved problems in a straightforward manner. A 'yes' or 'no' meant exactly that, not something in between. He treated his family, country, and fellow-men with love, respect, and honor. He believed in hard work and common sense. He used his radio sparingly for landing procedure or emergencies. He was a superb pilot who squeezed the maximum from the weather around him.

He refused help, but he was more than generous to people and institutions: he donated his BS-1 to Texas University and his Sisu to the National Air and Space Museum. Fittingly, it now hangs there along with such immortals as the first Wright aeroplane and the Spirit of St. Louis.

In the high solitude of his cockpit he accepted a basic truth of soaring: no one on earth can help up there; each of us must take the measure of our own limitations; the experience is between God and the pilot.

Alvin Parker was awarded the FAI Lilienthal Medal in 1964. He earned the Barringer Trophy in three consecutive years – 1963, 1964, and 1965. His Silver Badge is #505 (1961), Gold #113 (1962), and Diamond #82 (Intl #559, 1968). He, of course, holds the 1000 K Diploma #1 which is also International #1. His Symons One Lennie Pin is #150.

Note: Al Parker had very strong opinions. One day, as he knew I worked for the U.S. Government, he said to me, "Miss Bertha, someday I may have to shoot you." Meanwhile, he was very good to me. ☛

WALLACE A. SCOTT (1965)
(1926-2003)

(Biography provided by Boots Scott – Mrs. Wallace A. Scott)

Ref: *The Life of Soaring Legend Wally Scott* by Samantha Hilbert Thomas

Wallace A. Scott was born in Van Horn, TX on July 4, 1924. He started flying in 1942 at the age of 18 in Odessa, TX. At 19 he became a civilian instructor for the Army Air Force Training Detachment in Ft. Stockton, TX. He trained six classes of cadets before joining the Ferry Command, later known as the Army Air Transport Command, or ATC. He was stationed for short intervals at Love Field, Dallas, TX; Randolph Field, San Antonio, TX; the Officers Candidate School (OCS) in Nashville, TN; and Palm Springs, CA ATC after receiving his commission on June 3, 1944. He was in Palm Springs until October of 1944, ferrying aircraft and wounded personnel from coast to coast.

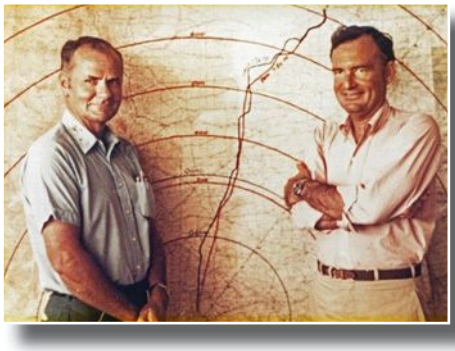
He became proficient in the following aircraft: Piper J2, J3, J4, J5 Cubs; Taylorcraft; Culver Cadet; PT-17, PT-19, BT-13, AT-6, AT-11, C-45, C-46, B-17, B-24, B-25, and A-20. He yearned to fly the P-38 but never did because he was shipped overseas in October of 1944. He then was stationed at Grove, England and in Paris, France at the Le Bourget Airdrome, where Lindbergh landed in 1927. During his stay in Paris, he had many interesting experiences during the Battle of the Bulge, and he built time in the C-47 carrying passengers and supplies and evacuating wounded to England. In February 1945 he transferred to Dum Dum Airfield in Calcutta, India. There he flew C-47s and the venerable C-46, and he became an Air Force airline pilot, instrument check pilot, route check pilot, green card holder, and staff first pilot and garnered many interesting experiences. On one flight he delivered a C-47 load of gold for Chiang Kai-shek into Burma. He flew into the Assam Valley, Burma, Siam, and French Indo China. He came home on December 24, 1945 to New York City. He met his wife Boots in 1946 after the turn of the year.

His first sailplane ride was in 1961, and he was soloed by Alvin Parker. Since that time he logged nearly 6,300 hrs in sailplanes and nearly 300,000 miles of cross-country flying.

His sailplane was on display for three years at the Smithsonian Air and Space Museum in Washington, DC. He has won the Barringer Trophy for the longest non-contest, straight-line flight of the year 20 times in the last 25 years (1967-1971, 1973, 1975-1980, 1982, 1983, 1986-1990, and 1993). He was on two world teams and served as an official in three other world glider meets. He was on five Smirnoff Sailplane coast to coast Derbies, winning twice. In 1986 he was one of five Americans invited to Santiago, Chile, to participate in the inaugural "Exploration de los Andes" by the Club de Planeadores of Santiago. He held four world glider records and numerous National and State records.

He is the only man in the world to have held all recognized world distance records (at the time – straight line distance; straight line distance to a goal and return; and straight line distance to a declared goal) simultaneously. As a matter of interest, he accomplished this feat twice. He won the Barron Hilton Cup in 1982 and 1985. The rules were changed from distance flight only to triangle distance only – so he won again – prompting another rules change. Now if you win, you can win only once, making more room for additional winners. His last long flight was 808 miles out and back in August 1998. The last time he flew.

He holds Silver #481 (1961), Gold #122 (1962), Diamond #42 (Intl #408, 1965), 1000 K Diploma #3 (Intl #4, 1970). He received the Stroukoff Trophy in 1969.



Wally loves to fly – his world records.

Date	Record	Place	Glider
7-23-64	Distance to Goal 837.75 km (520.6 mi)	Odessa to Goodland, KS	Ka-6CR
8-22-69	Distance to Goal 974.04 km (605.2 mi)	Odessa to Gila Bend, AZ	ASW 12
7-26-70	Straight Distance 1,153.82 km (717.1 mi)	Odessa to Columbus, NE	ASW 12
8-3-70	Out & Return Distance 860.00 km (534.4 mi)	Odessa to Pampas, TX & Return	ASW 12

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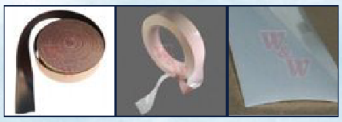

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Motorgliding Twelve Years Later – Part 2

By Réal Le Gouëff, MD

Looking back on 12 years of experience with motorgliders and rounding up most of the presently available motor systems.

This article on motorgliders is being published as a 5 part series:

Part 1 – Introduction & Finding a Motorglider (January 2017)

Part 2 – Turbogliders

Part 3 – Classic Engines & Various Engine Systems

Part 4 – Electric and Other Motorized 2 Seaters & What's New on the Market

Part 5 – Comparing Various Scenarios & Conclusion

Turbogliders

Altogether, I have owned gliders for 15 years, 12 years of which were with turbogliders. It is not possible to cover all aspects of motorgliders in one article. But sharing my experiences may help you decide whether or not and what type of motorization you should get.

Some Problems

I had a few problems with the engine (on my 2 turbogliders) that could have ended up sideways. In fact, all the motorglider pilots I know had some trouble at some point. You need to keep in mind that when you need to use the engine you are basically close to the ground, which is not the ideal situation – even more so when you're using the two-stroke engine compared to a four-stroke, or if you have to dive to windmill-start the engine.

To the low altitude factor, you have to add induced drag. For instance, the Duo Discus-T's glide ratio will change from 44:1 to 19:1 with the engine extended. For the Discus-2T, the glide ratio changes from 43:1 to 18:1. On top of that, according to the operator's manual, you should not attempt extending and starting the engine below 300 m (964 ft). To this you have to add that it takes, in ideal circumstances, about 40 m (131 ft in theory) to start the engine. As if this was not enough, the starting procedure for a turbo engine is pretty complicated and involves diving the glider. Let's look at it in detail.

> **"You have to understand that there is a big gap between theory and reality."**

In theory these are the steps that one has to follow:

1. Open the gas line.
2. Transfer the ASI intake from rear to front.
3. Extension of the engine (this step is a bit too long).
4. Ignition on.
5. Pull on the decompression.
6. Activate the gas pump.
7. Dive and speed up to 54 kts (always stressful).
8. Release the decompression valve (but keep pressing on the pump).
9. Once the engine is running, release the gas pump after a few seconds and climb at 49-51 kts.

You have to understand that there is a big gap between theory and reality. Let's look back at this procedure after operating a turbo system for 12 years:

1. Opening the gas appears to be a simple procedure – if you have not forgotten to close it before. If so you will end up closing the gas instead of opening it. The engine will not start and you will find yourself that much closer to the ground. Not being too familiar with the procedure, I once closed gas instead of the ignition, which in turn emptied the gas line before the engine stopped. Therefore, on the next startup attempt the engine took a lot more time to start because the gas line had to be filled first – and all the while the ground was getting closer. I now always make an engine start right after releasing the towplane. This allows me to make sure that the engine works and that the gas line is filled up. To prevent this mistake some pilots always keep the gas line open.

2. Transferring the ASI intake is very simple. If you forget about it, you will only have an unreliable airspeed indication.

3. Extending the engine is fairly simple, but from then on your gliding ratio changes drastically, and since you are generally close to the ground, it is a stressful situation. On one attempt, I tried to extend the engine and one of the propeller blades got stuck between the engine bay door and the fuselage. This tripped the breaker and the engine jammed in partial extension. Since this was just after releasing from the towplane, I had a lot of time to find the problem. I pushed the breaker back in, got the engine in and out again. This time I was lucky because I was very high, but I wonder how things would have turned out had I been at 1,000 ft above the ground in desperate need of the engine. A solution that I implemented to hopefully prevent this problem is using Vaseline to lubricate all the areas where the tips of the propeller blades are sliding on the fuselage and the engine bay doors.

4. The next step is to switch the ignition on. This appears to be pretty straightforward but once I was distracted by the fact that on the extension of the engine, the propeller blades were not fully extended. I applied the appropriate procedure to get the propeller fully extended but forgot and skipped the ignition, and thus the engine did not start up. All this ended up with an unplanned landing with the engine extended and obviously not running!

5. Look at step number 6.

6. The problem here is that you have to combine two different and opposite actions at the same time with your left hand, and the design is not convenient for that. When you are pulling the decompression, you are going further from the gas pump knob, which implies some contortion with the left hand in order to be able to push the pump's knob. You have to try it to understand what I mean.

7. Now if everything went according to plan, you have to speed up by diving nose down. Don't forget that if you are using the engine, this means that you are now pretty low, and on top of that, due to the extended engine, your gliding ratio is very bad. So losing more altitude to get the engine to start is not something that you are looking forward to. And what if the engine doesn't start? You're now much lower – will you try another time to start the engine and lose more altitude? Of course I went through that. After a long day, I was tired, not too far from home, but I needed a little altitude to make it back. I got the engine out, did everything right, and the engine didn't start. Puzzled, I automatically dived again to try to start it. I checked that the ignition was on and the gas lever open, but the engine would not start. At some point I was forced to conclude that this was going to be an outlanding. I was just about to retract the engine to prepare for the outlanding when the engine finally fired up. It's very hard to convey in words what you feel in this type of situation.

8. One word on this step – once the engine is being windmilled, you have to let go of the decompression but still push on the pump knob long enough to make sure that the gas flow is sufficient or else the engine will stop. If so, you will have to dive again to get the engine to start.

I try to be more conservative than what the operating manual suggests. Generally speaking, I want my engine to be up and running in between 1,100 to 1,300 ft above ground. This implies that around 3,000 ft I have to be in a safe area. At 2,000 ft, I look at possible landing fields, and I mentally go through my start up procedures a few times to make sure that I don't forget anything. Between 1,300 to 1,500 ft, I get the engine out, assuming gliding distance to a landable field with a glide ratio of 19:1. This appears much more reasonable than starting the engine at 960 ft (according to the operating manual).

Retracting the engine is simpler but not without risk. The hot engine with the ignition off keeps on turning. Therefore, it has to be retracted to about 30 degrees to allow the propeller to stop. Once it has stopped, you can store it in the engine bay. But if you are too stressed, you could recline the engine too much and damage the engine bay door and the propellers. I will add that because the exhaust pipe is so close to the engine bay sidewalls, after retracting the engine, I keep the engine bay doors open for

about a minute to allow the exhaust to cool down. The ASH 30 Mi has a similar pause with the engine semi-retracted to allow it to cool down. Let's add that a running engine will expel a good deal of oil on the rear fuselage and the rudder, which has to be cleaned at the end of the day.

Nowadays SH has a simpler engine procedure thanks to a new ILEC TB 05[1] control unit. This unit reduces the number of steps to get the engine out compared to the older system.

One of my fellow pilots also has a turbo and had a few problems of his own – the leaking gas tank and the gas line that was bent enough to partially restrict the gas flow. When he tried to run the engine after release, it ran roughly with no power. He had to land in order to investigate the problem. Had he not done a safety startup after release, he would have gone on a cross-country with a faulty engine. Note that the safety engine start procedure after release that I practice is not mentioned in the owner's manual. On another occasion, after using his engine, he could not retract it. He had the choice of landing in a field with the engine out or to put the ignition back on and come back home on engine power and land with the extended engine. For some unknown reason the engine breaker was tripped. These breakers are not easy to see, but he was able to switch it back on, get the engine in, and complete his flight. According to him the only reason the breaker tripped was the engine vibration!

Two-stroke oil.

Here are some other problems that you might not think about. First, you have to prepare the gas/oil mixture. For this super gas RON 95 or AVGAS 100LL[2] is needed and, of course, the approriate oil. It has been a real nightmare to find the right oil. I phoned and emailed Germany a few times, and the oils suggested were only available in Europe. I finally was able to talk to someone at the SOLO factory that suggested the STIHL[3] organic oil. This oil is available just about everywhere in Canada and the U.S.[4] Prior to finding this solution I had to rely on friends going to Europe and bringing me back one liter of oil at a time.

Let me add that it is not pleasant to prepare the gas/oil mixture because you always end up smelling of gas. On occasion, after running the engine, you can smell gas in the cockpit – which is unpleasant. I need to mention also that once the gas/oil mixture is ready it has to be loaded into the gas tank. This process is … time … consuming. To fill up the tank you have to use a special tube with an adapter at the end to connect to the gas tank. To fill a full tank takes a long, long time, not to mention that in order to fill faster it is better to lift the portable gas tank as high as possible. I usually put it on the wing root on a cloth to make sure it will not slide – another instance in which you have to do it to understand how cumbersome the process is.

Engine Noise

The turbo engine is noisy. The Discus-2T engine is noisier than the Duo Discus-T. In both cases you simply can't hear the radio nor can you hear the copilot in the back seat. I tried using earplugs but when one needs to use the engine, the starting process makes it impossible to put them in because there just isn't enough time.

Climb Rate

When you use the engine it's because you are low. If you have to go over a hostile area to head home, and if you are low on gas (which is the case most of the time), it is difficult to decide what the best decision is. Should you stay over a safe field, maintain some altitude, and risk running out of gas (and land out anyway), or should you

[1] http://www.schempp-hirth.com/file-admin/Pdfs/intern_pdf/TB_05-Flyer_EWeb.pdf

[2] Flight manual for power sailplane Duo Discus-T, section 2.4

[3] List of STIHL dealers in Canada: http://fr.stihl.ca/detaillants.aspx

[4] STIHL dealers located in the U.S.: http://www.stihlusa.com/locator/

head home and take the risk of going straight and low over an unfriendly area with a climb rate of barely 1 kt?

You always have to keep in mind that the engine could stop anytime. The decision would be much easier if the climb rate of the turbo system was better, but at only 1 kt climb (if the air mass is neutral) it takes a long time to gain 1,000 ft. Don't forget that the start-up procedure costs 150-300 ft of altitude, thus the first few minutes of engine power will be used just to make up for the altitude lost during the starting process. On top of that, due to the fact that filling up the gas tank is cumbersome, one rarely has a full gas tank (which, at the most, can only hold 16 L of gas in the Duo Discus-T).

Therefore, if you decide to pick up altitude over the safe field prior to going through a hostile area, you might not have enough gas to reach a safe altitude to go across this hostile area to the next landable field or airport. On the other hand, it would be very uncomfortable to go through 50 km of forest at 1,000 ft above the ground prior to reaching a safe area. This is an interesting paradox. What is the use of an engine if it makes life so complicated!?

On the Discus-2T (15 m), the weight supplement from gas is 50 kg. This weight may be useful to go fast but one pays the price in weak thermals. For the Duo Discus-T (20 m), the weight supplement is 60 kg, but this does not appear to be a problem in weak thermals.

Managing the Gas

Gas management must always be taken into account. With the Discus-2T, I would use the engine once out of every 4 flights and sometimes for a long way back home. With the Duo Discus-T, I would rarely use the engine to get back to my home field. Therefore, the gas would stay in the tank for a long time. In theory the gas should be drained every six weeks. Consequently, you always ask yourself if you should drain the gas, take the risk to stretch what you have left, or add some new gas to the old.

To summarize, if you fill up the gas tank you most likely will not use it all, and if it stays too long in the tank it could lose its properties and the engine might not work normally. If you don't want to lose any gas because you don't use that much, then you should only fill it up halfway, which makes the management of the gas more feasible but makes the flying that much more complicated. This gas limitation is something to think about with the Duo Discus-T, but so much of an ordeal with the Discus 2T because the engine is used much more frequently. Thus a strange paradox – if you have a better glider or are a better pilot, it will be more difficult to manage the gas because you will not use the engine that much. At least, this applies for the turbo engines.

Turbo Engine and 15 m Gliders

The Discus-2T is an excellent glider. It is very high performance in good conditions. I was once in Pennsylvania with four other gliders in front of me in a cloud street. I had to keep the air brakes partially out to avoid being sucked into the cloud. I first caught up with a DG 600-18/M, then with an LS-8, an ASW 20, and I finally passed a Janus. Although the Discus-2T was fabulous in good weather, the weight of the engine was a problem in weak thermals. I also flew the Discus-2 (no engine) in St. Auban, France and it was much better in weak weather than the turbo model. In fact, the standard class champion of the French team told me that the Discus-2 was the best performing glider in 15 m standard class.

Self-Launching Glider

Let's talk about weights and complexity. For instance, the Ventus-2cx empty weight is 310 kg, the Ventus-2cxT is 355 kg, and the Ventus-2cxM is 395 kg. All three of them are 18 m. Compared to the plain glider there is an additional 45 kg for the T model and 85 kg for the M model. The weight is always to be taken into account when you want to buy a motorglider.

I talked a little about the complexity of a turbo engine, but the self-launching gliders are much more complex. You just have to look into the engine bay to realize the complexity of this system. On top of that, with the self-launching glider, you have to think about engine failure on takeoff, which cannot happen with the turbo model.

Motorglider Enthusiast

As you are seeing, motorgliders are different from non-motorized gliders, thus you have to know what you are getting into prior to buying any type of powered glider. You have to understand that if you are flying a motorglider you're not just a glider pilot anymore, and this is a common mistake for many, who still think and act as if they were flying a classic glider. This is because there are lots of decisions that must be made differently. Another common misconception is that if you have an engine, you are flying a safer glider, when in fact accident statistics show the opposite. Despite this unpleasant fact, the trend is in favor of the motorgliding world as more and more motorgliders and newer systems are appearing on the market. There are bound to be a greater proportion of them in the future. Next issue, I'll look at the various types of motor systems on the market.

Next month, Part 3 – Classic Engines & Various Engine Systems.

About the Author: *I am an emergency ward physician and passionate about gliding. I was first interested in flying standard aircraft, but when I first tried gliding I felt like this was the "real stuff." Flying with the power of nature for hours is challenging and also very satisfying. I have flown many different types of single and two-seaters, starting from the Schweizer 2-33 up to the Nimbus-4D and ASW 25. At present, I mainly fly a Duo Discus Turbo. I have flown in St. Auban, France, Minden, NV, on the ridge at Ridge Soaring, PA, in Morrisville, VT, and in Canada.*

Hemet Gliders
Soar Again (Hopefully)

By Gary Timbs, CFI-G Cypress Soaring Gliding Club
Photos by Art Wallace unless otherwise noted

Above: Gary Timbs in Cypress Soaring's new towplane.

Below: Our 2-33 touching down.

Let me tell you a little story –

The annual inspection of our very own Cessna 182 towplane was complete. With no excuse at hand to keep the plane parked at the Chino, CA airport, Chuck Gifford and I held an emergency meeting to decide the most prudent course of action to put that trusty steed to work. And so a monumental plan was conceived and that plan was put into action on November 18, 2016!

I met Chuck and his lovely bride at the C-182 tie-down at 8:00 am and our plan began to turn into reality. We loaded two tow ropes into the baggage compartment of that cute little towplane, performed our last Chino preflight, and climbed into the bird and headed toward Skylark Gliderport, charging southward at a brisk 140 mph. After 15 minutes of doing what we do best (flying, in case you didn't get it), we kissed the tarmac (actually dirt) of runway 11R at Skylark Field, Lake Elsinore, CA. Then we preflighted and washed the 2-33 with the help of Mike Kalina and Tom Orbison.

With the SGS 2-33 and C-182 joined with a new tow rope, we took off from 29L, made a downwind departure from Skylark, and headed east on a cross-country tow (OK, so it was only a 15 minute hop) to our club's original home – Hemet-Ryan airport! Chuck and Barbara got off tow over the west dam of Diamond Valley Lake while I hightailed it over toward the north side of the airport and the glider runway. I landed first and the Giffords followed me shortly afterward. We were officially welcomed to our new/old home by everyone's favorite instructor, Art Wallace.

After being enthusiastically greeted by some of the Hemet locals, and being joined by Tom and Mike as well as Woody Woodall, Jim Neff, and our best of best friends, Richard Ensign, we officially began ACTIVE HEMET GLIDER OPERATIONS! First up: Mike Kalina with Art in the back seat.

I fired up *Old Betsy* (towplane) and

taxied into position. The rope was attached to the glider, and Tom waved me to a taut rope. The wing was raised and I saw the 2-33 rudder wagging. I applied full power and the two machines, coupled through that slender umbilical, began accelerating down the runway. As we gained flying speed, the two aircraft came to life and made the transition into their element. We climbed – 500 fpm, 800 fpm, 1,000 fpm! Higher and higher we climbed, around and over the Three Sisters, toward Reinhardt Canyon, searching for an altitude of 3,000 ft. Finally I felt the tug telling me that the glider had made the transition to sailplane so I began my descent back home …

Checklist: Remove flaps – nose over – reduce manifold pressure – don't forget to re-trim! – move prop to a coarser pitch, look for the glider (don't want to get too close!) – stabilize the descent and set up for diagonal entry – go to high RPM – trim to 80 – add 20 degrees of flaps – better make my radio call – watch out for traffic (is the glider setting up, too?) – call downwind – high? Low? No, just right! – turn to base – call final – adjust descent rate – watch that speed! 75 mph short final – now slow to 65 – over the threshold – hold off – nose up – kiss the runway – brakes! Turn off – head back to the staging area. Yes!

And so, my friends, it continues. The glider makes a smooth landing, kissing runway 22, home again. Next, Tom takes the front seat and the process is repeated. This time Jim is flying copilot with me. And then on the next tow, Woody is in the right seat.

The last tow finds Art in the front seat of the 2-33 flying solo. He releases west of the Three Sisters and enjoys the solitude of the final flight of the day.

As dusk approaches, we taxi the two aircraft to their new tie-downs, the towplane under its own power and the 2-33 towed across the field. And so ends the first day of flying at Hemet, soaring in our Cypress glider, and being towed in our Cypress towplane. What a day!

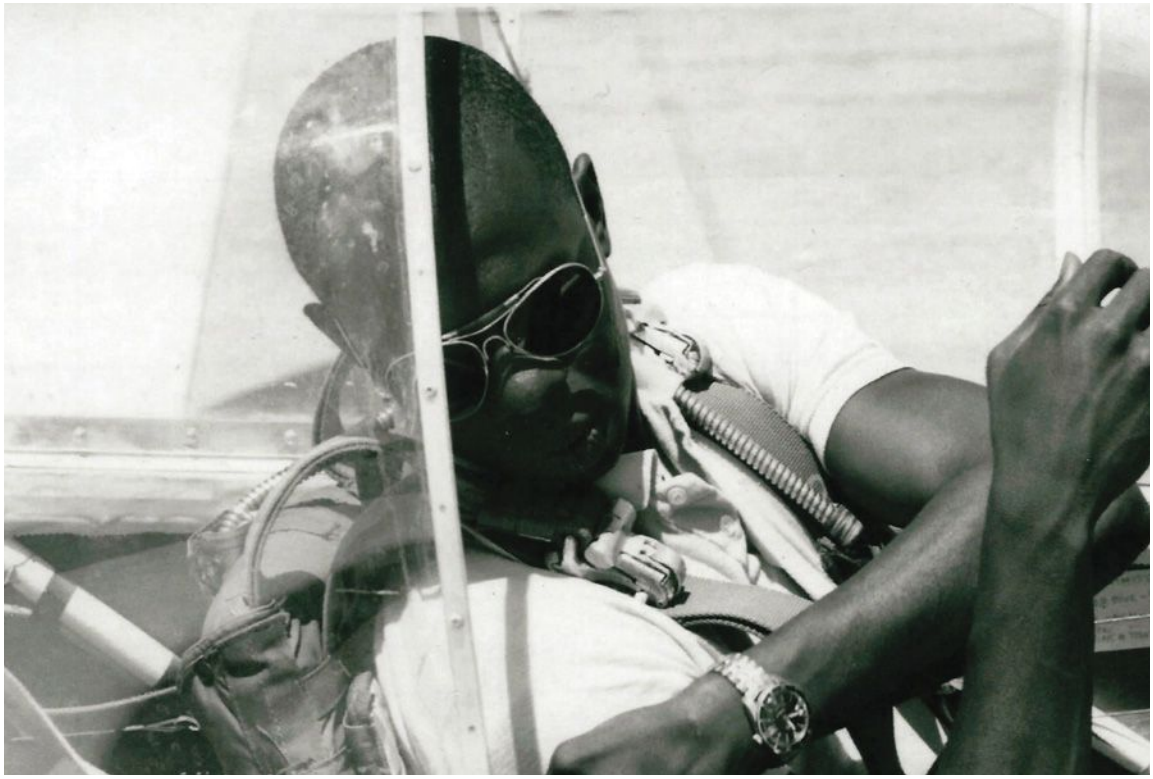
Until the Hemet glider operations were shut down by the county, it was a great soaring spot in SoCal. Operations are underway once again on a limited basis, feeling out the situation. For more on this topic, this link (http://m.pe.com/articles/airport-818914-hemet-city.html) leads to a newspaper article regarding the future of Hemet-Ryan airport vs. development projects in the surrounding area. The implications of what happens reach far beyond Hemet-Ryan airport operations. — Editor

Chuck and Barbara Gifford after landing.

Above: Cypress Soaring's return to Hemet gaggle. (L to R) Art Wallace, Chuck Gifford, Barbara Gifford, Richard Ensign, Gary Timbs, Tom Orbison, "Woody" Woodall, Mike Kalina. (Photo by Jim Neff.)

Dan Pierson, Fifty Years of Soaring
A Black History Month Oral History

Edited by Raul Blacksten • Photos provided by Dan Pierson



Above: Dan straps in for his January 1968 solo, in one of the El Mirage Gliderport's TG-3s.

Below: "Bird!" A young Dan Pierson shows his little sister a bird. His interest in things that fly came early.

Even as a child, his interest in things that fly came early. At about the age of two-and-a-half, young Danny Pierson took great pleasure watching and following the birds as they flew, even pointing them out to his infant sister. A little later while he was growing up, his father frequently took him to the nearby Los Angeles Airport so that Dan could watch the airplanes. He says that he got a particular delight watching the Lockheed Constellations taking off, landing, and taxiing to and from their gates.

Even in the 1950s, when Compton was still mostly white, it could be rough at Enterprise Junior High. Bullies roamed the halls after school. In order to avoid these ruffians, young Pierson would retire to the confines of the local public library after school. Here, he would read science and aviation books until it was safe to walk home.

In addition to the security and other wonders that a library provides, there was something which particularly drew his rapt attention. The library housed several issues of *Jane's All the World's Aircraft* and they filled his imagination, helping it soar beyond Compton. He read and re-read every issue that the library had. What particularly caught his attention were the glider entries. Reading about all of the mysterious gliders, Pierson decided that he just had to discover how they worked and how they were constructed.

Reading about gliders was an activity that continued for many years. When the Darmstadt D-36 Circe made its first flights in 1964, USAF Airman Pierson, an aviation mechanic, took great interest. He was quite intrigued by the Circe's graceful 18 meter wingspan and it awakened in him a love of long wing sailplanes that has never gone away.

By 1965, Dan was stationed at Travis Air Force Base (AFB) in the San Francisco East Bay Area. Just down the road was the glider operation at Vacaville, and it was a great temptation. Although he wanted to take lessons, he resisted. He knew that he was soon going to be sent to Vietnam and did not want to start something that he might not be able to finish before deployment.

Back from the Far East by late 1967, Pierson was now a Staff Sergeant and

requested, for his last military posting, to be stationed at Norton AFB in San Bernardino, CA. Norton was an ideal location for an aspiring glider pilot. The El Mirage Gliderport was just across the mountains to the north, while just down the road in the other direction were the gliderports at Lake Elsinore, another at the Perris Valley Airport (1968), and then a year later another at Hemet-Ryan Airport.

Jack Arkovich holds the TG-3's wing tip for Dan Pierson's January 1968 solo flight at El Mirage Gliderport.

Making his way out to the Mojave Desert, Pierson began taking lessons at Gus Briegleb's El Mirage Gliderport. Every Thursday found Dan taking lessons at and hanging around El Mirage. A few months later, when Pierson soloed, Jack Arkovich held the TG-3's wingtip. One day while he was at El Mirage, Pierson recognized another Airman from Norton, Ron Martin, who had recently soloed himself. A young Jeff Byard also began taking lessons at El Mirage that summer. All three will celebrate their 50th anniversary on Saturday, the 2nd of September, at the 2017 Experimental Sailplane Association (ESA) Workshop, which will be held at the Skylark North Airport in Tehachapi, CA.

In the winter of 1967, an FFA Diamant HBV showed up at El Mirage. Dan thought this HBV (#4) was the most beautiful sailplane that he had ever seen, at least in person. At the time, there were only three other glass ships at El Mirage, all H-301 Libelles, yet here was something different. Little could he have imagined then how his life would become so intertwined with Diamants and other fiberglass sailplanes. He certainly never imagined that someday he would eventually own HBV #5.

The 1968 Region 12 Regional competition at El Mirage was an eye opener for Pierson. Here he first saw Carl Herold's Schleicher ASW 12 (the successor to the D-36). After examining this graceful 18 meter sailplane up close, Pierson determined to have a long wing bird of his own someday; nothing else would do. Dan also had his first opportunity to examine a long winged FFA Diamant 18 for himself when local pilot Ross Briegleb flew one to a first place finish in the 1970 U.S. National Contest at El Mirage.

More inspiration came when Dan, now a civilian, used an airline pass to attend the 1970 World Soaring Championship at Marfa, TX. Here, Pierson remembers being impressed seeing all of the, then, exotic fiberglass sailplanes as well as the world's best pilots. It was watching Helmut Reichmann one day, carefully and patiently making a new instrument panel cover for his brand new Rolladen-Schneider LS-1, which really made an impression on Pierson. The way Reichmann went about his project awakened a comprehension in Pierson to such an extent that he later tried to pattern his own work on Reichmann's focus, patience, and skill.

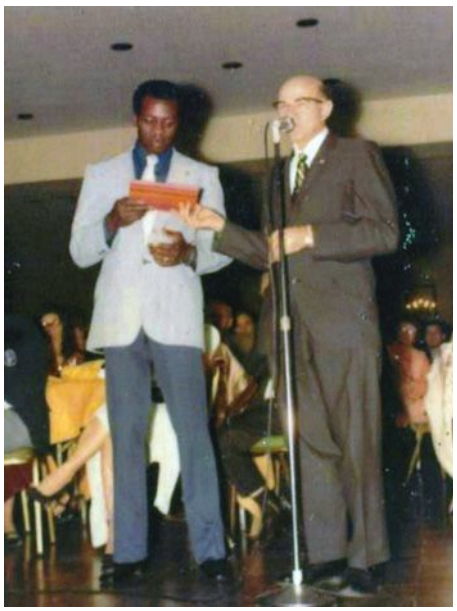
With all of these high-performance fiberglass sailplanes becoming popular, Dan subsequently went on to learn composite sailplane construction and repairs at America's second composite repair facility. Fred Jiran was a very good teacher, and his glider repair station at the Mojave Airport almost became another home for Pierson. Later Dan opened his own consultation and repair business, Inner-City Soaring, in Compton.

While on a 1970 sales campaign, Diamant importer Gordon Wheeler brought a Diamant 16.5 meter out to Hemet. Somewhat surprisingly, Wheeler was very generous with letting people fly the glider. He would even let pilots fly it who had as little as 50 hours in a 1-26! The Diamant, it turned out, was no more difficult to fly than the venerable 1-26. Wheeler's efforts were quite successful as he sold about half of the 36 Diamants that were sold in the country. This 16.5 was the first glass glider that Pierson ever flew, and when he flew it he instantly fell in love.

In the fall of 1970, at Sailplane Enterprises, Dan prepares for the first flight in his first sailplane, a Schempp-Hirth SHK-1 Austria. Serial number 13, this glider had been modified by Larry Gehrlein. Pierson completed all three of his Diamonds in this glider.

Then in October 1970, believing himself not quite able to afford a glass ship, but wanting the highest performance he could get for the buck, Pierson purchased a Schempp-Hirth SHK-1. As with almost everyone who moves up, there were some people who thought the big (17 m) Austria would be too much glider for Pierson. He did not think so, and was subsequently surprised to discover that the SHK-1 Austria actually had higher performance than many of the earlier glass ships. It was in this glider that Pierson earned all three of his Diamonds in 1971 at Hemet. (This SHK is currently part of the collection of the Pima Air Museum, in Tucson, AZ, in its trailer and in need of restoration.)

Beginning in 1968, Danny also chose to fly at Karl Jessop and Don and Lois Slotten's Sailplane Enterprises in Perris during the year they were there. A year later, the partnership was dissolved and the Slottens moved the glider operation to Hemet, opening over Easter weekend, 1969. This was a much better location than Perris. Hemet is at the western foot of 10,800 ft Mt. San Jacinto and the mountain range which runs south to the Mexican border. Pierson frequently flew from there, often joining others sleeping on the floor in the office. A deep affection grew between the pilots and staff that has lasted beyond Don Slotten's death a couple of years ago. Flying from Hemet in his SHK-1 Austria (serial number 13), Pierson was the first pilot to earn all three Diamonds there. More significantly, he became the first known African-American pilot to earn all three Diamonds (US #212).



John Robinson was coaxed from soaring retirement by Elmer Katinsky to present Dan Pierson with his Diamond Badge at the 1971 Region 12 Diamond Badge Banquet. Robinson began soaring again after this.

In a great honor to Pierson, his Diamond Badge was presented to him at the 1971 Region 12 Diamond Awards Banquet by the world's first Diamond pilot, Johnny Robinson, who had been out of the sport since 1952. Knowing that it would be special, Elmer Katinsky had approached and encouraged John to come out of retirement and reclusion for this very event. A great friendship developed between Robinson and Pierson. With Pierson's encouragement, Robinson began soaring again, often flying Dan's SHK as well as other high performance gliders at Hemet, such as Katinsky's BS-1.

During the spring of 1974, Dan was invited to participate in the third Smirnoff Sailplane Derby and decided that he needed to upgrade in order to compete. He therefore sold the Austria and went to Oklahoma to purchase his own Diamant 18, which would become the first of a pair of Diamants that Dan still owns. His goal in this transcontinental glider race (Santa Monica, CA to Washington, DC) was to not finish last, and he did not. He finished 5th out of 7, besting his former flight instructor Ross Briegleb, as well as the famous glider designer Dick Schreder.

Pierson has also had a lasting influence on the SSA, which most of today's members with sailplanes should be able to appreciate:

The issue of group sailplane insurance had been kicking around in the SSA since at least the mid-1960s, and was formally rejected by the SSA Directors in 1973. SSA Executive Director Lloyd Licher wrote at that time that this was because the Directors thought it to be too expensive and that it was not wanted by the membership. Little did he know!

Sitting around the evening camp fires at Sailplane Enterprises in the 1970s, Pierson expressed his concerns to local insurance agent Margery Cosgrove about obtaining affordable sailplane insurance. Pierson wanted to get insurance on his SHK, and later on his Diamant, at a premium that he could afford – and he was not alone. Despite what Licher had said, this was actually a very real concern for a lot of sailplane pilots. For this reason, Pierson wrote a letter to *Soaring* Magazine which expressed his concerns, and this letter appeared in the February 1977 issue. Among other things, Pierson wrote that he believed a SSA sponsored insurance program could actually help decrease the accident rate.

"… he became the first known African-American pilot to earn all three Diamonds."

A pre-publication copy of Pierson's letter was forwarded on to SSA President-emeritus and the soon-to-be SSA Insurance Chairman Bernald Smith. Smith has said that prior to this he had never really considered the issue of a SSA sponsored insurance plan, but Pierson's letter resonated with him. He therefore began to look into the idea, and it was not an easy investigation. Smith started by talking to other aviation organizations about their group insurance plans. Yet it was just finding an underwriter who would take on the risk that was daunting; one willing to take on the risk was finally found in Ron Wyatt, a Canadian who was known to be a maverick in the insurance industry.

Smith subsequently wrote about the idea of a SSA Group Plan, which appeared in the May 1977 issue of *Soaring*. In this piece, Smith laid out the entire issue for the members, including the likelihood that it would increase safety. He also requested comments. The resulting SSA Group Insurance Plan was announced by Smith at the 1978 SSA Convention in Washington, D.C. This is the basis of the plan that we have today, although it has been expanded over the succeeding 40 years. Still, Smith says that had Pierson not written his letter, he would never have looked into group sailplane insurance. Dan considers this and the ultimate success of the SSA Insurance Plan to be his proudest accomplishments.

Much of what Pierson has contributed to the sport of soaring is largely unknown. Certainly the young child who pointed out birds to his little sister could never have known that his life would become so deeply involved with things that fly. Now, after more than 60 years being immersed in aviation, and more specifically, after 50 years of soaring, he looks back proudly. The flights that Dan made that remain etched in his memory and the soaring greats that he was privileged to meet are the highpoints of his lifelong career in aviation. Dan considers all of these, as well as the friends he has collected along the way, to be priceless – they are like "Diamonds," to him.

Acknowledgements:

Ross Briegleb, Dan's first instructor.

Gus Briegleb, owner and operator of the El Mirage Soaring School.

Don and Lois Slotten and family, as well as the support staff at Sailplane Enterprises, in Hemet.

Doug and Lianna LaMont, former editors of *Soaring* magazine, who felt strongly that it was time for *Soaring* to have more "color."

Lastly, Raul Blacksten, a longtime friend and editor of this oral history.

About the editor: *Raul Blacksten began soaring in 1984, has a Master's Degree in History, and has been published in the aviation magazines of at least eight countries. A former editor of the U.S.'s Vintage Sailplane Association's quarterly newsletter/magazine, Bungee Cord (9 years), he also wrote "Clio's Wings," a monthly glider history quiz in Soaring (7 years). Currently, he is a contributing assistant editor for the international Vintage Glider Club's (VGC) triannual magazine, VGC News, and has an article about America's Ross-Stephens Zanonia in the Spring 2017 issue. He is also a member of the VGC's History Group.*

When Blacksten was a fledgling glider pilot, Pierson introduced him to the history of soaring during visits to Inner-City Soaring. This instilled in Blacksten a love of what Vic Saudek called, "our esoteric sport." Yet beyond that, Blacksten considers Pierson to have been his soaring mentor, although they have never actually flown together.

Two of Dan Pierson's FFA Diamants
at Sailplane Enterprises in Hemet, CA.
(Photo by Dan Pierson.)

The Decline of Soaring in the USA

By Keith Miller

If you have been a glider pilot for any length of time you are undoubtedly aware of the decline in membership of the SSA. SSA membership peaked at about 16,000 around 1980 and has declined to about 10,000 in 2016 (Figure 1). The decline trend appears almost linear. If this decline continues in future years the numbers will become insufficient to sustain the sport. How bad is the problem? It's almost certainly worse than you think. What this means to me is this: My children will be able to enjoy the sport of soaring but my grandchildren may not. There simply may be insufficient resources available to sustain the sport as we know it.

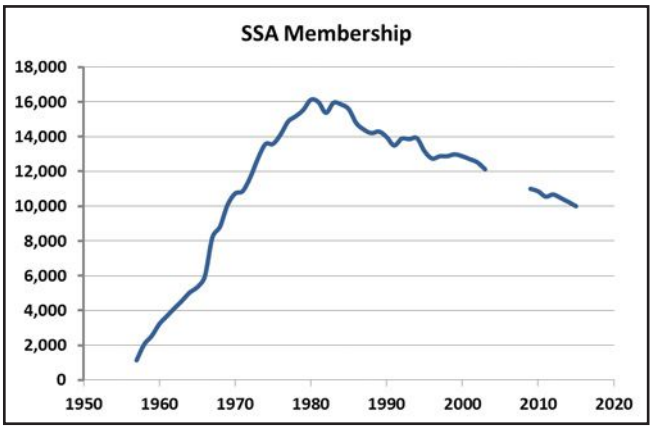


Figure 1 – SSA Membership History.

We need to answer some questions to fully understand the problem.

1. How many glider pilots are there in the U.S.A.?
2. How many new glider pilots are we creating annually?
3. How many pilots with a glider rating actually fly gliders?

The answers to question 1 and 2 may be found on the FAA.gov website. The FAA maintains Civil Airmen statistics and Airmen Knowledge statistics. Let's start our inquiry with question 1. Every year the FAA compiles a spreadsheet called Active Civil Airmen Statistics. You may find the 2011 through 2015 spreadsheets at the following link: https://www.faa.gov/data_research/aviation_data_statistics/civil_airmen_statistics/.

There are 22 tables of data in each spreadsheet. I have composited data from the 2011 and 2015 spreadsheets to obtain Airmen data from 2002-2015. We are primarily interested in three tables:

- Table 8: Estimated Active Glider Pilots by Class of Certificate
- Table 17: Original Airmen Certificates Issued
- Table 18: Additional Airmen Certificates Issued

I added data from Table 17 and 18 to get the Total Glider Airmen Certificates Issued per year.

Data from FAA Table 8 are summarized in the next table and graph. These data show all pilots that held a glider rating, including glider add-on ratings. From 2002 to 2015 there was a loss of 5,395 glider pilots, a decline of over 17% in just 13 years. The average loss is 415 glider ratings per year for the entire 13 year span, but the loss rate accelerated in 2010, averaging 629 per year for the last five years with no sign of bottoming out. If these rates of loss were to continue unabated we would reach zero in 40 to 60 years.

2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
25,751	26,424	27,184	27,950	28,556	28,896	29,131	29,214	29,513	30,137	30,186	30,222	30,125	31,146

FAA Table 8 – Total estimated active glider pilots, 2002-2015.

These data are plotted in Figure 2 for a graphical representation of glider rating loss.

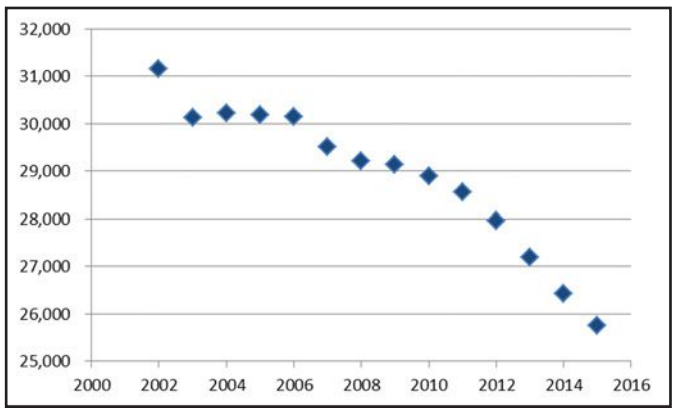


Figure 2 – Total Number of Pilots who hold a Glider Rating, 2002-2015.

Of course, not all pilots with a glider rating are actually active glider pilots. Some are rating collectors who, having obtained their glider rating, might never fly a glider again. In my own club, the Soaring Club of Houston, we have a total membership of about 180 members, but 37% hold an "Inactive" membership and almost never fly. Of the "Active" 115 members there are many do not fly gliders on a regular basis, and some do not fly at all.

So the total number of glider pilots is decreasing, but how well are we doing at replacing them with new glider pilots? The answer is: not well at all. I extracted the Glider data

from FAA Tables 17 and 18 for both Original and Additional Airmen Certificates issued from 2002-2015. The data are summarized in the table below and graphed in Figure 3.

YEAR	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
Glider (original)	188	195	163	180	219	222	249	204	263	298	290	309	312	336
Glider (Addt'l)	3	5	1	0	10	8	10	11	14	42	27	43	47	38
TOTAL	191	200	164	180	229	230	259	215	277	340	317	352	359	374

Summary of FAA Tables 17 and 18 – All glider certificates, calendar years 2002-2015.

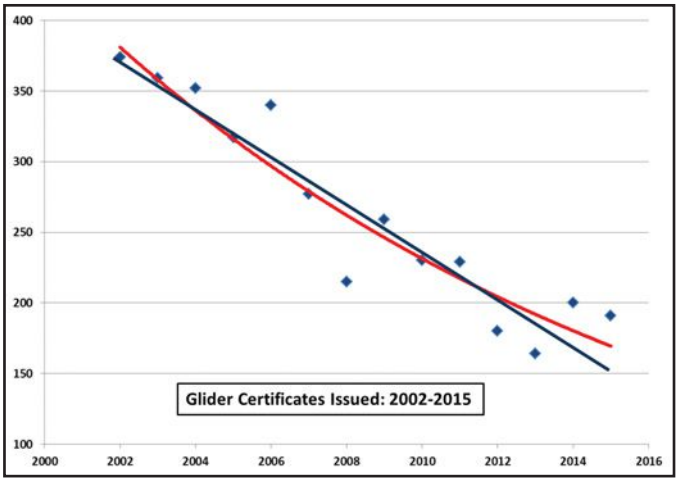


Figure 3 – Glider certificates issued.

Note: The red trend line is an exponential fit to the data. This is the optimistic scenario because it gives hope that the decline trend may be bottoming out. The blue linear trend line is actually a slightly better statistical fit to the data and indicates no bottoming out of the decline trend.

Remember that the average loss of glider ratings was 415/year since 2002, 629/year since 2010. We currently are not replacing even 50% of that loss with newly rated pilots.

We can further explore how many new glider pilots are in the pipeline by looking at the FAA statistics about knowledge tests. These data show how many successful knowledge tests were achieved each year by category. The results are available by year on FAA.gov at the following link:

https://www.faa.gov/data_research/aviation_data_statistics/test_statistics/

I extracted data for Airmen Knowledge Tests for each year 2002-2015 for the following categories of glider knowledge tests:

- Private Pilot Glider
- Commercial Pilot Glider
- Flight Instructor Glider only
- Flight Instructor Glider (Added Rating)
- Sport Pilot Glider
- Flight Instructor Sport Glider

The data are summarized in the following table.

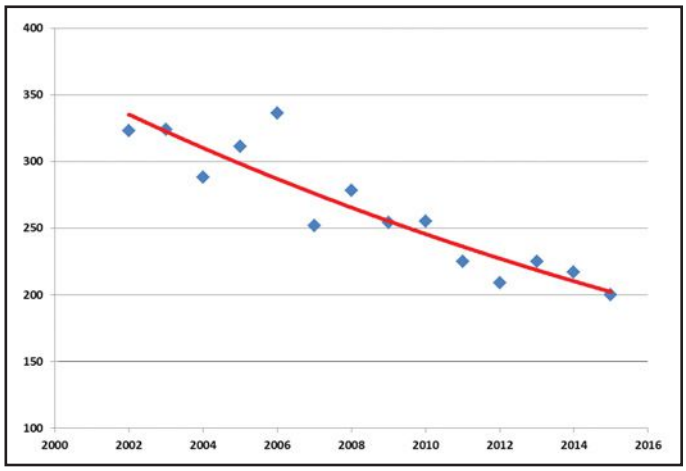
Year	Glider Private	Glider Sport	Glider Commercial	CFIG Glider only	CFIG added rating	Sport Pilot Instructor	Total Instructors Glider
2002	323		106	73	115		188
2003	324		58	46	90		136
2004	288		77	52	87		139
2005	311	1	70	47	97		144
2006	336	3	83	62	62		124
2007	252	1	59	48	57		105
2008	278	5	87	51	75		126
2009	254	3	72	48	77	1	126
2010	255	2	51	35	76	1	112
2011	225	2	60	36	59	4	99
2012	209	2	58	35	53	1	89
2013	225	2	42	28	44		72
2014	217	1	43	43	46		89
2015	200		55	35	55		90

Written FAA Knowledge Tests Passed By Type of Certificate

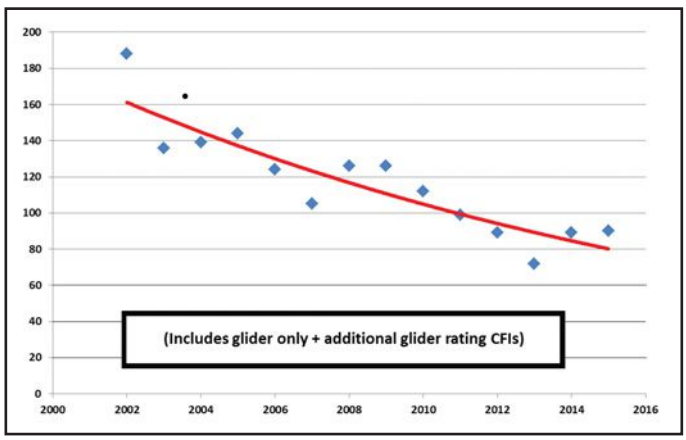
Tests by type of certificate.

Let's examine two important categories from this table: Glider Private and combined CFI-G Glider only/CFI-G added rating. The addition of the Sport Pilot ratings has had negligible effect on increasing the number of glider pilots.

We see familiar decline trends in the graphs following.



Private glider written tests passed by year.



Total of all flight instructor written tests passed by year.

In all categories fewer people are taking a written knowledge test. We have fewer private pilots and fewer instructors coming into the sport. A plot of Commercial Glider Pilot tests would show the same downward trend. ☛

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The *FAST* Program gives you the opportunity to get a taste of what soaring is all about. It is a program that offers you an introductory lesson in flying a glider, during which you will handle the controls of the aircraft under the guidance of an FAA certified glider flight instructor.

The *FAST* Program is geared towards you! To buy a *FAST* Program lesson voucher, visit the SSA web site at www.ssa.org. Then call a participating soaring operation to schedule your lesson. *FAST* packages may be purchased by calling (575) 392-1177 to receive your voucher by fax.

The *FAST* package is a great value for $139. With your purchase you will receive: An introductory lesson, a copy of the *Everybody's First Glider Book,* a glider pilot logbook, and an introductory 3 month membership in the SSA, including one copy of the monthly publication *Soaring.*

To find the nearest participating soaring operation, log onto: http://www.ssa.org/sport/wheretofly.asp, or contact the SSA at the address below. Get involved and fly a sailplane FAST today!

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Web site: www.ssa.org

There is no good news anywhere here. And do not be deceived into thinking that the red trend lines on the plots indicate a bottoming out of the decline trend. There may be no such effect. I deliberately chose a power or exponential function for the red trend lines to give the most optimistic interpretation of the data. The linear trend, with no bottoming out indication, is actually a better statistical fit to the data of Figure 3. For the Private Glider Written Test data the R-squared value for a linear fit equation is 0.8419, barely below the exponential R-squared value of 0.8585.

These trends exist for almost all categories of General Aviation. Even the introduction of the Sport Pilot certificate has not offset the overall decline in the number of private power pilots. The only Pilot certificate categories to show a numerical increase over the last 10 years are the Rotorcraft and Airline Transport Pilot (ATP) categories.

We ask ourselves why this is happening. Perhaps the downturn in the economy in 2008 caused (at least partially) the increase in loss of ratings and perhaps resulted in fewer people learning to fly. This is an optimistic scenario because it means that it may be possible to bring more new pilots into the sport as the economy continues to improve. But clearly there are other long term negative factors at work here.

The Future?

By now you should be convinced that the sport of soaring is approaching an existential crisis. If we cannot find a way to change the current trends the sport will continue to lose pilots at a high rate and in the not-too-distant future perhaps drop below the critical mass necessary to sustain the SSA and the sport in general. We must realize that we, as individuals, need to step up and contribute. Money isn't necessarily the most important thing. We need to strengthen our local clubs and commercial organizations. We need to recruit new club members, become flight instructors ourselves to teach the new members how to fly, and bring active glider pilots back to greater participation.

As mentioned earlier in this article, the FAA data indicate two groups of pilots that are increasing in numbers: helicopter and ATP pilots. Perhaps we can find a way to attract some of these professional pilots to try soaring. The rise of the Sport Pilot license shows that there is still a large group of people who want to fly for fun. How can we tap into this pool of potential glider pilots?

The recent connection with the Experimental Aircraft Association is certainly a positive step for the SSA. The EAA contains a large number of recreational pilots. How do we market soaring to this group and recruit new glider pilots from it? The SSA had a booth at Oshkosh, but local and regional EAA fly-ins probably offer the best opportunities to attract new potential glider pilots. Can your soaring club host a combined EAA/glider fly-in?

There are more glider pilots than members of SSA. It would be helpful if we could convince these pilots to become members of the SSA. Do you know any of these pilots?

How do we make soaring attractive to the younger generations? Does your club have a connection with the Civil Air Patrol, or provide lower cost youth membership or scholarship programs?

Another way of attracting the most prospective new glider pilots is targeted advertising through Facebook. Some clubs appear to have done this with success. We need assistance from knowledgeable people about how to do this and to share the process with all SSA clubs and commercial organizations. Can you help with this?

We need a warm and welcoming attitude toward visitors and interested people. Does your club have a good social atmosphere where people can hang around and talk soaring?

Growth, however, brings new problems with it. If ten new student or

transition power pilots joined your club this week would you have the instructors and aircraft to teach them? Are you willing to become a flight instructor?

We need to do a better job of retaining our current pilots and club members. Cross-country flight training is an excellent way of doing this. The Soaring Club of Houston has had great success with their cross-country training program and confidence-building tasks. These new cross-country pilots are fully committed to soaring, and to the club. They buy gliders and become flight instructors and serve as club officers.

To summarize:

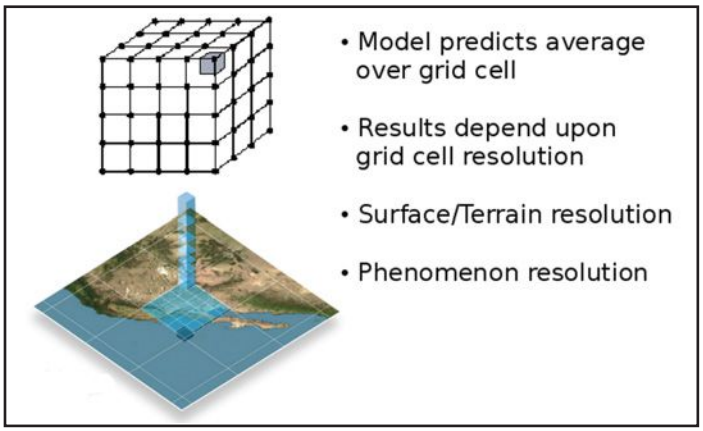
- Healthy clubs and commercial operators are critical. Growth occurs at the local level – clubs (primarily) and commercial operators.
- Marketing is best done at the local level, with an increased emphasis on social media.
- More glider flight instructors are needed.
- More efficient initial training is needed to get students through the training process quickly.
- We need to attract younger members. Youth programs, youth scholarships, and reduced rates can help.
- Retention and growth are fostered by a friendly and welcoming social environment.
- Retention is fostered by cross-country flying. More and better cross-country training is needed.
- Stronger SSA ties to EAA. Pitch recreational soaring to EAA members.

The author in an ASW 20.

Author's notes: *When I began taking flight lessons nine years ago and became a glider pilot I never intended to become an instructor. I simply wanted to fly my own glider and enjoy being in the air, make long cross-country flights, and participate in a few contests. But the realization set in that my club and my sport needed more from me than that. Without my fellow club members I wouldn't be able to fly. Without my assistance some fledgling pilots might not be able to take up the sport. I recognized that I had to give more of myself back to this sport. Are you willing to step up and do more to give back to soaring?*

I almost called this article "The Death of Soaring in the USA." I think the situation is that serious. My children are not glider pilots, but they may yet choose to become pilots in the future. Unless we reverse the downward spiral of participation my grandchildren may not even have that choice. They may only find that soaring was once a vibrant sport that no longer exists for them.

Soaring Forecasting – Models and Websites Overview



Models forecast variables on a 3D grid. (Source: Dr. Jack Glendening slide presentation.)

We've come a long way from the days of plotting temperature soundings, Skew-T (thermodynamic) diagrams, and analyzing for trigger temperature and thermal height in order to forecast soaring conditions. Besides being tedious, it was not very accurate, relied on a balloon radiosonde taken hundreds of kilometers away, and was only available twice per day.

Dr. Jack Glendening changed everything around 2000 with his website that generated **N**umerical **W**eather **P**rediction (NWP) model derived maps of soaring parameters. By 2002 BLIPMAPS were available for the entire U.S., showing thermal heights, strengths, cumulus potential, and a host of other parameters forecasted out to 18 hours (RAP) or 2 days (NAM). Dr. Jack further contributed to the gliding community by offering a framework for running your own NWP model with the introduction of RASP (**R**egional **A**tmospheric **S**oaring **P**redictions). John W. Glendening was honored in the Soaring Hall of Fame in 2014. With the explosion of more and more weather information on the internet, more web services have appeared. XCSkies.com was started in 2006 by Chris Galli (University of Utah) and a group of para-glider pilots. Recently in 2016, a version of the TopMeteo used throughout Europe and Africa was introduced to the U.S. by Dr. Bernd Goretzski.

This article aims to give you the "view from 50,000 feet" of soaring forecast services in the U.S., background on how they are produced, some pros/cons on their usage, and a glimpse of what might happen in the future.

Overview Weather Prediction Models

Numerical weather prediction models basically start with an initial state of the atmosphere at a given time and use the equations of motion (and thermodynamics) on a 3D grid to predict the future state of temperature, density, winds, and moisture. The accuracy of these forecasts depends on many things. Results depend upon the grid cell resolution, surface and terrain resolution, numerical methods to step through solutions, phenomenon physics, and observations that initialize the atmosphere. In the U.S., NOAA/NWS models are produced by the National Center for Environmental Prediction (NCEP).

The primary NCEP operational models that are run every six hours are (as of early) 2017:

- **G**lobal **F**orecast **S**ystem (GFS) – 13 km out 10-16 days.
- **N**orth **A**merican **M**esoscale Model (NAM) – 13 km out 84 hours.
- NAM High Resolution – 3 km out 60 hours.

Rapidly updated models that are run hourly include:

- **H**igh **R**esolution **R**apid **R**efresh (HRRR) – 3 km out 18 hours.
- **Rap**id Refresh (RAP) – 13 km out 24 hours.

Local NWP models on smaller domains can be run by individuals, or small or large organizations using the **W**eather **R**esearch **F**orecast (WRF) system at much higher resolutions – down to around 1 km. That is exactly what Dr. Jack created with his framework called the **R**egional **A**tmospheric **S**oaring **P**rogram (RASP). It uses WRF output post-processed to show soaring parameters. All this can be run on a smaller personal computer or cloud service. Over a limited area, details of the thermal layer, mountain waves, and convergence lines all become available. You might be wondering: Why go to all that complexity and work to run your own model versus using output from one of the NOAA models like the RAP, NAM, or HRRR? Well, the answer is that those NOAA models have output grids that do not always include what's needed to do the soaring related calculations. Running your own WRF or RASP model gives the flexibility to provide the specific output data soaring pilots are looking for. But, there is a downside to running your own weather prediction model. You must be the one to initialize it with data and that's where the NOAA government models have an advantage. NOAA models have a comprehensive analysis and support framework. The legacy

rawinsonde balloon soundings which are at 92 locations in the U.S. are supplemented by radar, satellite, atmospheric motion vectors from clouds (AMVs), aircraft observations, mesonet surface networks, and radar winds, including wind and temperature profiles.

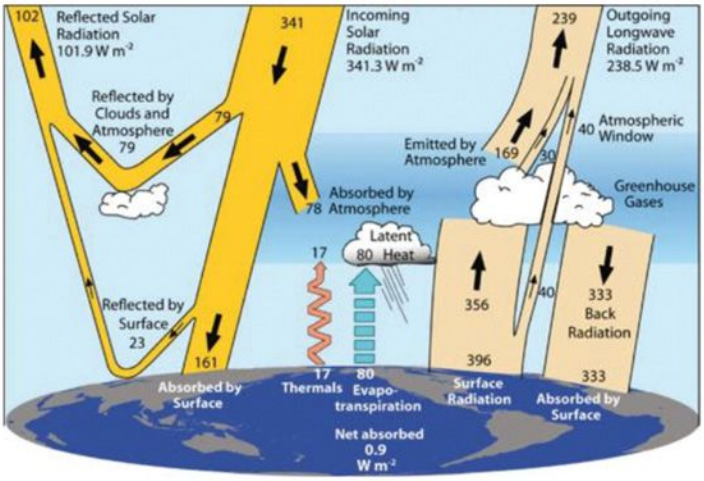
Hourly Observation Type	Variables Observed	Observation Count
Rawinsonde	Temperature, Humidity, Wind, Pressure	120
Profiler – 915 MHz	Wind, Virtual Temperature	20-30
Radar – VAD	Wind	125
Radar	Radial Velocity	125 radars
Radar reflectivity – CONUS	3-d refl ➔Rain, Snow, Graupel	1,500,000
Lightning	(proxy reflectivity)	NLDN
Aircraft	Wind, Temperature	2,000 -15,000
Aircraft - WVSS	Humidity	0 - 800
Surface/METAR	Temperature, Moisture, Wind, Pressure, Clouds, Visibility, Weather	2200 - 2500
Surface/Mesonet	Temperature, Moisture, Wind	~5K-12K
Buoys/ships	Wind, Pressure	200 - 400
GOES AMVs	Wind	2000 - 4000
AMSU/HIRS/MHS (RARS)	Radiances	1K-10K
GOES	Radiances	large
GOES cloud-top press/temp	Cloud Top Height	100,000
GPS – Precipitable water	Humidity	260
WindSat Scatterometer	Winds	2,000 – 10,000

Example observations used to initialize numerical weather prediction models (RAP, HRRR) in 2016. Red font items are new additions in 2016. [Source: NOAA Earth System Research Laboratory (ESRL). (Used in 2016 presentation on improvements to RAP/HRRR model.)]

In NWP science, one of the big uncertainties in forecasts is the accuracy of what's called "sub-grid scale" phenomena. In other words, things like eddies, thermals, turbulence, clouds, radiation, and aerosols (haze, dust, etc.) that cannot be resolved within the grid box. Instead, they have to be parameterized based on a coarser, larger state of the atmosphere. It was only in the mid-1990s that the resolution of NWP models improved enough that it could begin to resolve the thermal layer – or the planetary boundary with useful thermal data charts for glider pilots. Today, big improvements in computer power and computational ability allow operational models with grid resolutions of between 1-3 km over the U.S. But, without vast improvements in understanding the physics of smaller scale phenomena within that grid box cube, there is little point at this state of research to run NWP models for soaring at higher resolution than 1 km.

Thermal Soaring Parameters and NWP Models

Accuracy of soaring forecasts is directly related to how NWP models handle the **P**lanetary **B**oundary **L**ayer (PBL), or – as we know it on fair weather, sunny days – the thermal layer. The PBL is that part of the atmosphere that is directly influenced by interacting with the earth's surface. Solar heating on the ground generates a transfer of energy (heat transfer) into eddies (thermals), absorption into the soil, evaporation, and radiation (reflective sunlight, long wave radiation, etc.). That balance of energy at the surface is a very complicated and delicate process that drives the atmosphere and climate of our planet. Output from these



Energy budget and surface fluxes parameterized processes in numerical weather prediction models. [Source: David A Randall Professor Colorado State (personal slides).]

PBL models within the larger NWP models is what is used in soaring forecasts. Dr. Jack was the first in the U.S. to utilize this process for the gliding community. The main soaring parameters are:

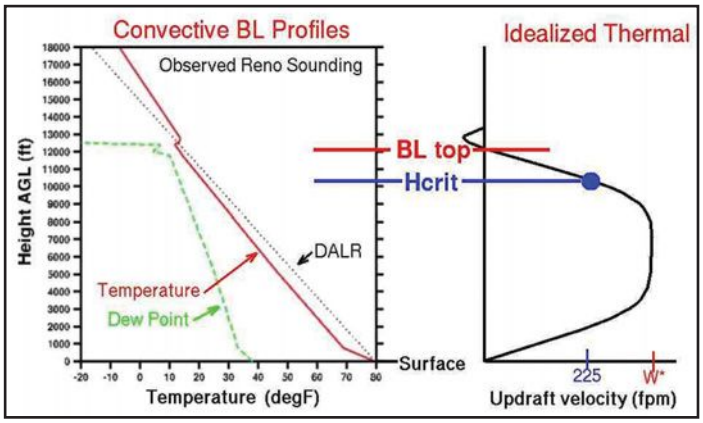
- **B**oundary **L**ayer **T**op (BLTop)
- **H**eight of **Crit**ical Updraft Strength (Hcrit)
- Cumulus Cloud Base
- Cu Potential
- Thermal Updraft Velocity (W-star)
- **O**ver**D**evelopment **Potential** (OD Potential)

As sunshine heats the ground, the thermal layer slowly erodes into the free atmosphere. Calculations are made of the thermal height (BLTop) from the NWP soundings. DrJack.info and XCSkies.com show updates at 3 hour intervals; TopMeteo, RASP, and others give hourly readings; Skysight.io (Australia and South Africa) is experimenting with higher update rates. The next figure shows an example of a sounding and those calculations. BLTop is obtained by computing the height where the **D**ry **A**diabatic **L**apse **R**ate (DALR) through the surface temperature intersects the temperature profile. Hcrit is an estimated lower thermal height over flat terrain and/or where updraft velocity drops below 225 fpm.

Cumulus cloud base is derived from lifting a parcel near the surface to its condensation level. Cu Potential is simply a map showing where the top of the thermal layer exceeds the cumulus cloud base. In other words, it depicts an areal extent of cumuliform cloudiness. OD Potential is an indication of the vertical extent of cumuliform cloudiness. It's the difference between cloud base and a parcel lifted higher into the free atmosphere. If the value is greater than 3,000-5,000 ft, conditions are ripe for overdevelopment with cumulonimbus and thunderstorms.

Thermal strength is based on a long history of atmospheric research and a parameter called W* (W-star), the convec-

tive velocity. W-star is proportional to sensible heating from the surface and the height of the thermal layer. Dr. Jack has a more detailed explanation on his website (Reference 3). W-star is only a fairly crude estimate of thermal strengths. The TopMeteo guys are using their own convection model for cumulus and thermal strengths. XCSkies also uses their own **L**and **S**urface **M**odel (LSM) to enhance thermal strength and horizontal details.



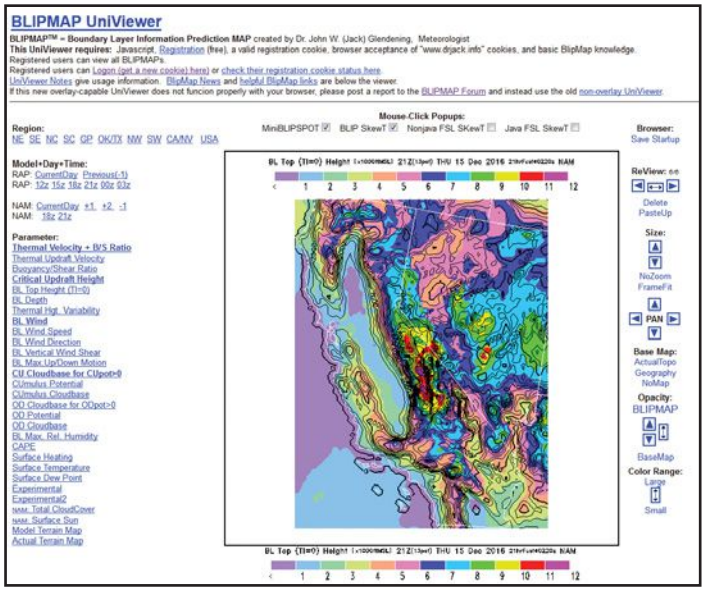
Conditions in a strongly convective boundary layer. (Source: Dr. Jack Glendening BLIPMAP documentation.)

My impression from many flying seasons is that XCSkies' thermal strengths are too strong, TopMeteo's and DrJack's too conservative. There is very little in the way of quantitative verification based on soaring flight data (something for an aspiring researcher to explore given all the OLC flight recorder profiles in the world). Therefore one should not take the absolute value of thermal strengths in any of these models too literally. I'd say plus or minus 30% used as a rule of thumb: one meter per second (2 kts) thermal strength per kilometer (3,300 ft) PBL depth.

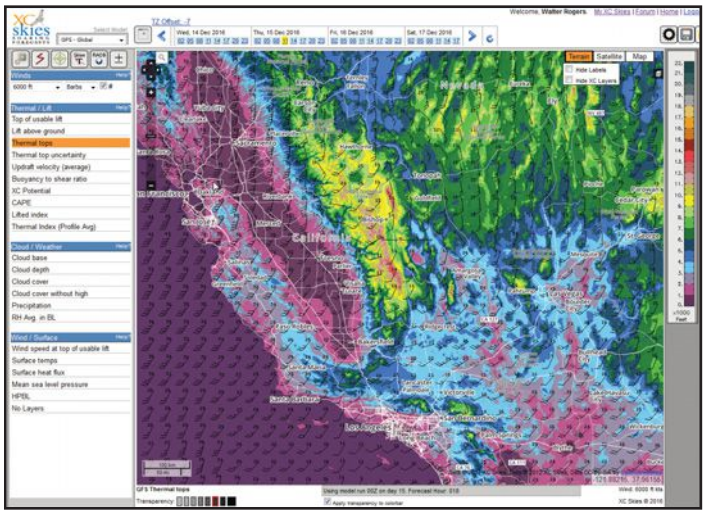
What's my take on using these soaring forecast websites? I use thermal heights and trends from day to day, not taking too seriously calculations of thermal strength. Look for the cu coverage including the NWP model cloud cover at middle and high altitudes. Thunderstorm or overdevelopment from the newer high resolution models such as the HRRR are very important to avoiding flight into regions that will get clobbered by cooler air outflows and reduce sunshine reaching the ground. At the moment, the HRRR model is not represented on any of the operational soaring websites, but other sources are available for reviewing these forecasts.

My favorite soaring service varies between DrJack and XCSkies depending on if I want the easier zoom/pan of XCSkies for geo-referencing. The greater detail of thermal height/cu cloud base information makes both these services favored in the western U.S. over TopMeteo.

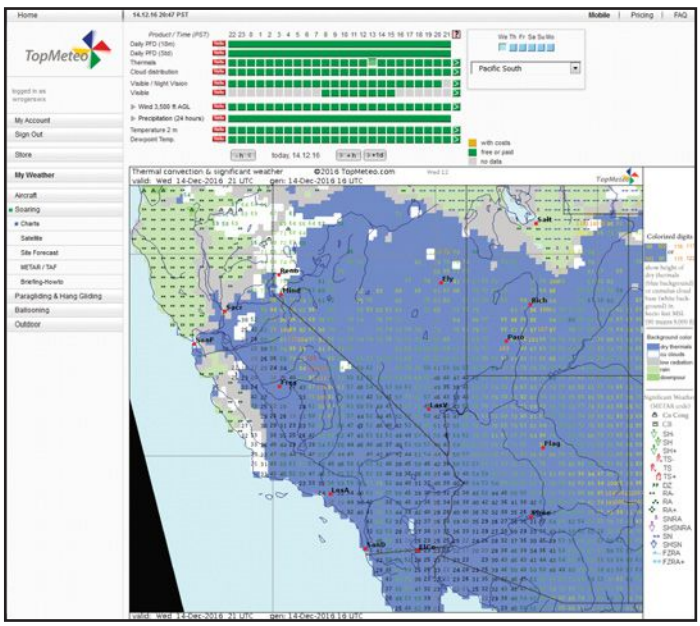
TopMeteo excels at providing an easy to use overview of soaring weather combining thermal height cloud base information (two digits) on a map with cu coverage and other weather types (forecasted out 4-6 days). Poten-



Example from Dr. Jack BLIPMAP Univiewer. (Source: Dr. Jack BLIPMAP website.)



Example from XCSkies.com GFS model thermal tops. (Source: XCSkies.com.)



Example of TopMeteo chart. Thermal heights (two digits in hundreds of ft MSL), cloud cover, and weather. (Source: TopMeteo.com for U.S.)

tial Flight Distance is one of the map overlays providing a really quick overview for planning cross-country flights. With the latest version of SeeYou, TopMeteo can be superimposed on its display allowing easy flight planning and task integration. More detailed hourly soaring data is available at easily configured site locations (latitude/longitude) displayed in a tabular format. TopMeteo is a good choice favoring the flatter parts of the U.S. and for local soaring operations.

Locally produced soaring forecasts using RASP are especially valuable in mountainous areas because they show convergence/shear lines much better. With grid resolutions of 1-2 km, vertical motion from mountain waves is visible. But, RASP models are highly dependent on whether you have a locally motivated volunteer for setup and maintenance.

Table 1 (below), summarizes important features of all available soaring web services in the U.S.

Future of Soaring Web Services

What does the future hold? The atmospheric science community and NOAA are undertaking an intense effort to improve PBL and cloud information in model simulations. Extended range forecasts out 10-20 days and climate model accuracies depend on it. The good news for the soaring community is that we should benefit greatly from this work. Fractional coverage of fair weather cu and cloud amounts and types, along with thunderstorm forecasts, will be far more beneficial to soaring than a simple formulation of thermal height and strength.

With all these model improvements there is a downside. Processing and dis-

U.S. Soaring Forecast Web Services - 2017

	DrJack.info	XCSkies.com	Topmeteo.com	RASP	Skysight.io
Areal Coverage	CONUS; 9 Regions	GLOBAL GFS; NAM, RAP CONUS, Canada, Mexico	CONUS; 10 Regions	Various Small Domains; DrJack.info/RASP	Various regions in U.S. - TBD
NWP Models	RAP 20km; NAM 12km	GFS,RAP, NAM; Uses 1km Land Surface Model to enhance horizontal resolution	GFS, U.S. Regional NWP Model; Custom High Resolution Convective Model	WRF ; 1-4 km grid	WRF; 1-3km grid Derived from RASP
User Interface	Static map graphics 9 regions; Javascript Univiewer; sounding plots	Pan and zoom tiled map interface; Good geo-referencing; mobile version; sounding plots	Static graphics 10 regions; Tabular customized sites show hourly progression of weather (meteogram)	Varies from static graphics to javascript viewers, Pan zoom tiled; sounding plots	Pan and zoom tiled Google interface; modern HTML5 web design; Phone & Tablet friendly; sounding plots
Parameters Forecast	Thermal Height; Thermal Updraft W*; Buoyancy/Shear Ratio;Cu Cloud Base; OD Potential; Various Cloud and Storm parameters; Thermal Layer Winds	Thermal Height; Thermal Updraft W*; Buoyancy/Shear Ratio; Cu Cloud Base; Precipitation; Cloud and Storm parameters; Winds Aloft All Levels; Map, Point & Route forecast	Charts on regional maps; Significant weather and thermal height/cloud bases two digits plotted; Potential Flight Distance; Winds aloft all levels; Temp Dewpoint; Mid and High clouds	Same as DrJack.info with addition of Convergence (BL Up/Down) and Mountain Wave parameters (Winds aloft; vertical velocity) at 850, 700, 500mb	Thermal Height; Thermal Updraft W*, Buoyancy/Shear ratio; Cu Cloud Bases & Tops,CAPE and Storms; Precipitation, Low, Mid and High cloud cover
Forecast Range	RAP 18hrs; NAM 2 days	GFS 5 days; NAM 2 days; RAP 18hrs	5 to 7 days	Typically 1-4 days	5 days out
Maintainer	Dr Jack W. Glendening	Chris Galli	Lead: Dr Bernd Goretzki	Various; Individuals Linux experienced running on PC or cloud service; Various server web sites	Matthew Scutter; Google software engineer; Junior world gliding champion
Subscription Paywall	None; Requires Registration	$40/yr	$99/yr 4 day ; $109/yr 6 day forecast; Available integrated into SeeYou	None	Yearly or Monthly subscriptions TBD
Status	Not Actively Developed; Looking for maintainer	Not actively developed last 6 years; Stable	Actively Developed and Commercially Maintained	Reliability varies; volunteer effort	Actively developed; Available U.S. Spring 2017

Table 1: Important features of available soaring weather web services in the U.S.

playing new soaring information from the gridded data adds complexity. The Global GFS model will be running on 9 km grids or finer with over 100 vertical levels by 2018. Regional models like the NAM and RAP will likely be replaced by one HRRR-like system (resolution 1-3 km) for the U.S. with an ensemble of runs and forecasts out 18 to 36 hours.

Currently NWP models in the U.S. do not output all the PBL parameters and soaring related information from grids. This requires a lot of post-processing to get at soaring forecasts. But, there are some commercial developments that could change that. The **u**npiloted **a**ir **v**ehicle (**UAV**) community will also be operating in the PBL and therefore needs more detailed weather information. With FAA's NextGen program, UAVs will be given increased recognition in the **N**ational **A**irspace **S**ystem (**NAS**). Low level turbulence and parameters for soaring efficiency will directly benefit their efficiency of operation. Therefore, it is hoped that FAA, NASA, and NOAA will recognize this and add these variables to the operational NWP model grids.

The business model or labor required to develop and maintain soaring websites is also becoming an issue. Dr. Jack's website is nearing its end of life unless someone steps forward to take over. Large changes in NWP models, resolutions, and update rates will probably require a complete rewrite of the current web services. So, more subscription services to produce soaring forecasts may be in our future. Volunteer efforts to run full NWP models (RASP) may find that mining existing weather data from the future NWP models is a more productive way of getting results.

I'm hoping that NOAA and the FAA can see the light of using soaring parameters from NWP models to extend range and capabilities of aircraft by extracting energy from the atmosphere. Let's show the rest of the aviation world how glider pilots do it!

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Acronyms

AMV: Atmospheric Motion Vector

BLIPMAP: Boundary Layer Information Prediction MAP

BLTop: Boundary Layer Top

CONUS: Continental United States

DALR: Dry Adiabatic Lapse Rate

GFS: Global Forecast System

HRRR: High Resolution Rapid Refresh

LSM: Land Surface Model

NAM: North American Mesoscale model

NCEP: National Center for Environmental Prediction

NexGen: Next Generation

NOAA: National Oceanographic and Atmospheric Association

NWP: Numerical Weather Prediction

NWS: National Weather Service

PBL: Planetary Boundary Layer

RAP: Rapid refresh model

RASP: Regional Atmospheric Soaring Predictions

WRF: Weather Research Forecast

Glossary

Mesonet: a network of (typically) automated weather stations designed to observe mesoscale meteorological phenomena.

Hidden in Plane Sight

I have such poor vision I can date anybody.

— Gary Shandling

The first time I flew across Banning Pass to San Jacinto, getting there was a snap, but as usual I assumed too much in an unfamiliar area and as the day wore on, it got more "interesting." After two hours massaging rocks on both sides of the pass, the day was shutting down. Getting all the way home looked sketchy but we had to go *some*where soon. There were several airports within easy range in low country, all obscured by haze and too far from home for an aero retrieve that evening. Our best bet was to crawl back up in the desert (less height AGL, but closer to home) hoping for a miracle. Worst case we could land at Yucca Valley, another place I'd never seen from the air.

The whole town was visible ahead, but so far not its airport. With only minutes of gliding time left we could not afford to waste any of it going the wrong direction. Worried it might lie miles beyond, I grabbed for the laminated chart – and couldn't find that either. (It had sneaked under my seat pan, where I could never reach it even if I knew where it was.) Darting search for other landing options revealed nothing but a sea of hazards, and for the first time in twenty years the captain of my ship tasted desperation.

I tried to call home, but we were too low now, with all of Mt. San Gorgonio between us and the base radio.

Thank the gods for Thomas Edison! My student called our office and handed me the phone. Mortified by embarrassment, I asked them to quickly check the wall chart and tell us which direction from Yucca Valley we should look for the airport.

Turns out it's right where we were headed, in town, already in sight but perfectly concealed by the variegated landscape as so many small fields are.

Yada yada. Cue the anticlimax, a retrieve tow 75 miles into the sun.

There was a similar hide 'n' seek my first time over Hesperia. After never bothering to look down while rushing outbound, on the way home I stopped, determined to go no further until identifying that darned airport. Glad it wasn't a snake. I loitered over the wide city, bleeding altitude long enough to grow anxious about moving on, scanned everywhere left and right more than once, and saw nothing even suspicious of being an airport. Then finally I looked *straight down*, and there it was directly below!

For good measure here's one more, also within easy soaring range of Crystal. When you leave here to fly north up the Sierras, Rosamond Airpark is a very useful alternate, but remains quite invisible until you arrive. It's at the very edge of town and appears to be just another street until you're passing by it and sight down the runway itself.

This list is but a sampler, and we've only been talking locally! In each example the strip lies parallel with other linear features while also surrounded by urban camouflage of many kinds. It's been a problem forever all over the map, but now we have an easy solution.

Before soaring somewhere you've never been, why not go on Google Earth and scope out certain important details from different perspectives, in 3D and color, so you'll really know what to look for? Who knows, it might save more than a frantic phone call ….

ON-LINE CONTEST

BY W. G. HILL

Wave Flying in Cordillera del Viento

The Corridor of the Winds

The accompanying photos give you an idea of both the magnitude and majesty of the Argentinean skies.

I briefly met Dennis Tito when he attended the SSA convention in order to see what progress was being made on the installation of TJ-100 turbojet engine in his Arcus M, which will now be known as the Arcus J. In a former life, the TJ-100 was an Auxiliary Power Unit (APU) in a number of Soviet Bloc aircraft. The folks at PBS converted it from a turboshaft into turbojet, which produces 247 lbs of thrust at sea level which does an impressive job of self-launching.

The practicability of a jet-powered motorglider manifested itself in the form of a TST-14 in which said turbo-jet was first installed.

The second time I saw Dennis was when he came to Moriarty to train in the TST-14 jet glider in order to prepare for flying his own jet-powered Arcus, in which I also trained him. This led to further training in Minden after which Dennis offered me the opportunity to become a member of his cross-country team. I contemplated his offer briefly (all of about a nanosecond) and said, "Sign me up!"

Fast forward to November 11, which found me in the right seat of Dennis's Cessna Sovereign as we headed south to the Patagonia area of Argentina and the town of Chos Malal, where Dennis' DG-1001M awaited us, along with a sky full of lennies.

My job as a member of the team was to sit in the backseat of the DG and act as both safety pilot and spiritual advisor, so on November 14, we sallied fourth. On the previous day Dennis, along with safety pilot Morgan Sandercock, flew a 1,130 km cross-country. The 14th would be my turn **to sit and observe**.

We made a climb in the secondary to a bit over 20,000 ft before punching forward to the primary in the Cordillera del Viento, the entrance of which was indicated by a most remarkable and profound sight – a massive rotor cumulus topped by huge lenticular. (During the course of our time in Argentina we were given permission to fly as high as 28,000 ft as well as venture into Chilean airspace.)

After contacting the primary, we ventured north until conditions dictated a turn back to the south. Once at the end of the mountains associated with the Cordillera Del Viento, we climbed to 26,000 ft in order to jump the gap to the next line of rotor/lennies to the north. We repeated our north/south tracks for a total of 1,985 km at a speed of 206 kph (it should be noted that, by virtue of the number of legs flown, OLC tossed out 250 km of our flight.) During the course of one of the southbound legs, we had, for a while, a ground speed of 253 kph.

Our return to *terra firma* brings to mind a mangled Biblical quote: "Many are cold, but few are frozen." Thus ends this installment of "Wave Flying with Dennis," the Argentinean chapter.

XC TIPS

BY GARRET WILLAT

Advanced Thermalling Part 1

In Part 1, we will talk about finding thermals and what I do to make the glider climb quickly.

We need to find thermals and do so consistently. There are some really good books out there that explain why a thermal rises in terrain. G. Dale's book is one of my new favorites.

Start by studying terrain, and think about where the warm air *source* will be. What is going to heat better than the surrounding terrain? If I walk barefoot, where is it going to be hotter? Where is the sun in relation to the slope? You can be as detailed as getting soil maps like the ones we used in Finland at the WGC. After a rain, sand vs. clay will make a difference.

What is the *trigger* for kicking off the envelope of warm air? Something has to break the warm bubble of air off the ground. At the SGP in Ionia the most reliable trigger I found was the windward side of lakes. It could be a tree line on the downwind side of your source or a tractor working the field. I once landed in a field in Slovakia at the JWGC and it kicked off a thermal that allowed two guys to climb out (enter a string of expletives here).

Where is the thermal drifting? Remember, the wind is not constant so the thermal may snake its way up as it drifts. That thermal being triggered from the lake edge might actually be found over the middle of the lake.

On days with clouds, I use the 50/50 rule. In the top 50% of the sky (sometimes working band), I spend more energy looking at the clouds. In the unfortunate event I get in the lower 50%, I spend more energy looking at the terrain to find the next thermal.

At every thermal, determine the source and trigger. You can then use that knowledge to find future thermals. Remember, there are house thermals everywhere.

When entering a thermal, you must stay relaxed, feel the glider. I have a tendency to turn into the wind if I cannot decide which way to turn.

Advanced Thermalling Part 2

In open class I use the motto: "To thermal is to admit defeat."

Regardless, having found a thermal, what about centering?

There are some great books that explain in detail the many techniques used for centering. My general technique is based on the Huth Method where you tighten the bank angle in the surge of the lift. No matter the technique, it is about getting centered quickly and staying there. Stay in the core of the thermal; my bank angle motto is: "If it's not tight, it's not right." Ron Tabery can float along at a shallow bank angle, low drag, and make the glider climb amazingly well. I have tried following and can never keep up.

If I am not centered by the third turn, the swearing will increase to offset the poor pilotage. Generally by the second turn I am centered. If it is taking too long I will seriously consider leaving as it might be un-centerable. However, the un-centerable thermal may still have a good average. I have left many of those that had an average I should not have left and was just being impatient.

Continuing a good scan is important to staying centered; listen to the vario and feel with your body. Many centering corrections are influenced by outside references like traffic, birds, wisps, dust, etc.

Common mistakes I see on task and with students:

- Turning the tight thermalling into a spiral dive.
- Not knowing where the thermal is after a few turns.
- Losing focus once centered.
- Making the initial turn the wrong direction.
- Not leaving early enough.
- Large correction that loses the thermal.

Next month, we'll talk about some other aspects of thermals and thermalling.

XC Tips is excerpted from the Wings & Wheels e-newsletter, published weekly. Subscriptions can be entered at wingsandwheels.com/newsletter.

SKY WRITING

EDITED BY
JAY CAMPBELL "56"

The Best Lift of the Day is on the Base to Final Turn

I jumped off at three thousand into a cloudless sky.
A few bumps on the tow led me to think that we could fly.
I scratched around in zero-sink, but I couldn't make it pay –
Well zero's better than nothing when the airport's far away.

I floated through some tiny bumps but none would fit the bill,
Til I found that little thermal up against that little hill.
I gained a couple hundred feet – but I'm back where I began.
To get back to the glider port I'll need a better plan.

Anxiety's a virtue when you're low and out on track.
Your car's a-hundred miles away and your cellphone's in the shack.
If you have a place to land in sight, your mind can be at peace.
I've been searching for a place to land since I pulled that durn release.

After scratching with intensity, for almost half a day
I finally made the pattern and I know I'll be OK.
But now I'm high on final – I guess I'll never learn
That the best lift of the day is on the base to final turn.

I owe a lot to Marvin who taught me how to soar.
He taught me several simple rules and could have taught me more.
"Rule Number Three" he told me, and he asked me to repeat
"Don't turn your back on a place to land below a thousand feet."

That gaggles should be friendly – you should know where others are.
It's best to land your glider close to where you parked your car.
That clouds are farther than they look and airplanes closer in.
If you knew of all the challenges you never would begin.

He taught me about soaring and he taught me about life.
Of dealing with adversity – of joy as well as strife.
Sometimes the lift is everywhere. Just race right out on track.
And other times it just ain't there. You might not make it back.

The glider's in the trailer and the towplane's put away.
The quiet of the evening's come to end another day.
I'm here with what I've learned today and what I've left to learn.
And the best lift of the day is on the base to final turn.

Send your poetry and acronym submissions directly to campbelljd56@gmail.com with a subject line of "Poem" or "Acronym."

Words & music by King Povenmire

King Povenmire is a glider pilot and flight instructor living in Eugene, OR. He is also a Designated Pilot Examiner for gliders, as well as single and multiengine airplanes from Sport Pilot through CFI and ATP. He financed his flight training by teaching guitar and has written several songs. See and hear this, and more of his aviation songs, on his website, www.kpflight.com. Email: king@kpflight.com

April edition submission deadline is February 15, 2017.

Acronym Challenge

We all know what an acronym is, but many of us do not realize that many commonly used soaring terms and phrases are actually acronyms. For instance, LIFT stands for "**L**ucky **I** **F**ound **T**hat". Can you explain, via acronymic analysis, the derivation of the word **WAVE**? Submit your well-researched decryption to campbelljd56@gmail.com. If found worthy, your answer will be published along with your name and club, so do remember to include your name and club. And for those who would rather issue a challenge than answer one, I am open to suggestions with which to challenge our readership!

FINAL Acronym Challenge

Win: Jim Duea, Oklahoma Soaring Association

Finish **I**t **N**ow **A**nd **L**and

No Place or Show.

OPEN FORUM

BY GREG HUNTER

I just finished taking a 44 year absence from soaring on June 30, 2016 (exact day between solos). Many things have changed (endorsement for auto tows, L/Ds over 45, 2 year check rides, etc.). But the sport in need of more members hasn't.

When I arrived at Hartness Airport in Vermont for the first time this past spring, I helped put together a glass ship and, later on, ran the wing. The next two members I met were also CFI-Gs and tow pilots for the club. I was hooked! I decided to join right then because of the willingness of members to help out. It was what I wanted to be a part of.

I felt a commitment to the cause of soaring (a sense of service to others) from the first group of members I met that day. It brought back fond memories from the '60s of the soaring club in Dansville, NY where I witnessed the three main stalwarts volunteer wherever they could. I witnessed Ed Seymour do countless towing hours and instructing many hundreds (if not a thousand) of gliding students. Kai Gertsen was also one of the nicest pilots I have ever met, and he would do anything to fly gliders and to give back to the sport he loved so dearly. My father consistently instructed for three decades and gave hundreds of demonstration rides (trying to spread the word). This past summer I witnessed a tow pilot, without being asked, end his flight in his own glider at 2:30 pm and start towing, so the original tow pilot could go up in his glider for the last 2.5 hours of the day. I saw another member (CFI-G) delay his own flight by over 2 hours when 2 students showed up for instruction after he put his ASW 20 together. I would speculate that if a survey was taken of the clubs with strong participation, one would find a core group of devoted and self-sacrificing members.

To increase membership, I would like to see:

a) More pilots with their own ship join the local club as a full member to help out financially despite no tangible benefit to the pilot.

b) Pilots with over 150 hours become CFI-Gs and start teaching.

c) Pilots that stay after the day's flying is over and socially share their experiences with liquid refreshments.

d) That a prospective member's initial flight cost be absorbed by the club.

e) More clubs add auto pulley or winch to their operations so to make the cost more affordable.

f) That the year's dues and tows are 50% for the first year club member with no soaring background.

g) That each established soaring pilot look for something that he or she can do to volunteer, or help subsidize financially someone else to fly.

h) What can you do?

For all of you private pilots now enjoying the sport, I do not believe you would have gotten to where you are without many other people volunteering to help you. Or perhaps others gave seed money or *pro bono* work to establish the club, years before you joined. I know I was the happy beneficiary of those before me in the 1960s. Lastly, I have never volunteered without getting more in return.

THE SOARING SOCIETY OF AMERICA, INC.

Eagle Fund

Please continue your generosity in 2017 to help the Society grow and serve you better as the below-listed members have.

Eagle Fund Contributions entered between December 1 and December 31, 2016.

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SOARING MEMORIES

REMEMBERING THE PAST BY BERTHA RYAN

Seventy years ago: January / February 1947

B. S. Shenstone, President of the Soaring Association of Canada (SAC), reports that gliding in Canada is in its infancy but is moving in the right direction with 6,000 flights and 132 certificates earned. Les Baranowski entered the Elmira contest flying an L-K where he achieved 21 hours in 8 flights, reaching 6,000 ft and 71 miles.

Jouko Hirvonen reports that soaring activities in Finland are being rapidly restored with activities in the first postwar summer, 1945, already better than any prewar summer. Club members fly weekends on airfields in the summer and frozen lakes in the winter. Mostly auto or winch tow is utilized. At this time there are 7 Silver C, 220 C, 920 B, and 1,275 A licenses (badges) in Finland.

We recommend the article entitled "Escape Glider" on pg 6 of this issue which was reprinted with permission from the British *Air Review*. Flt. Lt. Finch describes an escape attempt by several British prisoners of war from the Colditz Castle via a glider designed and built under the very noses of German guards.

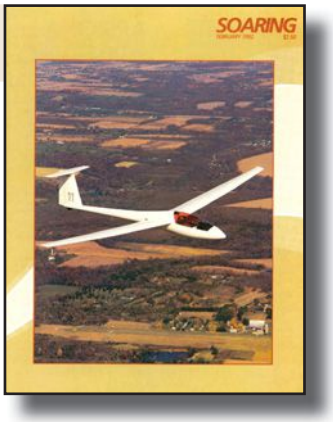
Fifty years ago: February 1967

Richard Miller, *Soaring* magazine editor, says his position provides unique vantage points to view the contributions of those who support SSA management as volunteers. One such person is John Ryan of Phoenix who is stepping down as SSA President. John spent great effort to attend to the many matters that required his attention. All of the SSA owes John (and similar volunteers) a debt of gratitude for his dedication.

Some of you may remember the Disney film, *The Boy Who Flew with the Condors*. Fred Harris, who participated in the filming of this adventure, describes some background on pg 10 of this issue.

George Uveges, premier soaring photographer, has captured a magnificent wave on film near Pearblossom, CA. Alan MacNicol describes how waves can be found in the East – at Mt. Washington in VT. Among the wave seekers one day last October were the Cannon brothers – Laurie was soaring in TX, while Walter completed his Diamond and Woodie his Gold Badge. This left Phillip as the only brother in the family without Gold.

Twenty-five years ago: February 1992



An update about Ridge Soaring Gliderport describes how Doris Grove and Tom Knauff opened the facility in 1975. Since then the gliderport has gained national and international attention due to the many soaring records established there. It was sold in 1987 and then faced bankruptcy in 1991, when Tom and Doris repurchased the assets rather than have a sheriff's sale. With the help of many glider pilots, the site has now reopened as Keystone Gliderport.

Phil Petmecky describes thermaling techniques on pg 30 of this issue. See if they have changed since 1992.

Eric Friend has wanted to fly from age 7 with the goal to be an astronaut. He started by working part-time at Ridge Soaring Gliderport, flying as he could and soloing on his 14th birthday. His goal was to attend the Naval Academy and become a Navy pilot. Hearing about this, a Navy lieutenant flew a T-34 to a nearby airport so Eric could have a hands-on flight of over an hour. Watch the NASA website to see when he becomes an astronaut.

Exploring the Archives

- Do you remember the young female star of the film *The Boy Who Flew with Condors?* If you want to know where she started flying gliders, see the February 1965 issue, pg 18, in the archives.
- How do women soaring pilots today compare with those of 40 years ago? Maybe you can figure it out for yourself by reading an article on pg 31 of the February 1975 Soaring – "A Profile of the American Woman Soaring Pilot."

BADGES & RECORDS

SSA & FAI AWARDS

Approved or Recorded through December 15, 2016 • Rollin Hasness

For badge and record information, contact Rollin Hasness at: badgeandrecords@ssa.org

Questions?:

A, B, C and Bronze Badges – Melinda Hughes (mhughes@ssa.org) 575-392-1177

All other Badges and Records – Rollin Hasness (badgeandrecords@ssa.org)

See Documentation on www.ssa.org – Soaring Achievement > Forms

- Badge and Record information and applications
- FAI Forms Record Flights

Download your own current copy of the Sporting code – at http://www.fai.org/igc-documents > Sporting Code

HOW TO SUBMIT AN APPLICATION FOR BADGES:

Email applications are allowed ***if*** documents are scanned as PDF files.

- Include the .igc Flight Reorder file with the email – do not send separately.
- We cannot accept documents scanned as .jpg – PDF only.
- We cannot accept ZIP files – PDF only.

OR

Mail the application and File (on stick or Disk) to:
SSA
PO Box 2100
Hobbs, NM 88241-2100

HOW TO SUBMINT AN APPLICATION FOR RECORDS

STATE RECORD FLIGHTS – Must notify the State Record Keeper within 10 days of the flight and documentation postmarked within 45 days.

- Mail documentation to State Record Keeper ***and*** if also applying for a Badge or other records, mail another copy to SSA (or email if a badge application)

US NATIONAL, CONTINENTAL, INTERNATIONAL RECORDS – Notification required to SSA, Badgeandrecords@ssa.org within 7 days of the flight to include the following information:
Type of Claim
Class, Subclass, Pilot category
Record Task
Estimated Performance
Takeoff Location
Date of Finish (UTC)
Name of Pilot, and Co-pilot if applicable
Glider make and model

- Mail Original Documentation and Flight Record File to SSA
- Documentation should be mailed within 30 days of the flight
- For those making US NATIONAL, CONTINENTAL or INTERNATIONAL record applications, do not forget your Required Sporting License:
- https://naa.aero/membership/fai-sporting-license
- An FAI Sporting License is required for all record attempts and all FAI sanctioned events and competitions. Sporting License applicants must be a member of NAA and/or a current member of the appropriate NAA Air Sport Organization. NAA members participating in competitions and/or record setting activities can receive a one-year FAI Sporting License at no cost, but must complete and application for the sporting license.
- *Due to FAI policy changes, you must apply for a Sporting License at least 14 days prior to your record attempt or competition. Applications submitted less than 14 days prior to the event may not be processed in time to allow you to participate.*

PENDING US NATIONAL RECORDS

Daniel Sazhin, 5/8/2016 (also North American Continental and World)
Class D, Gliders, 13.5 Meter, General
Distance up to Three Turnpoints; Mifflin County Airport, PA
1-26E; 1,002.6 km

Mitch Polinsky; 8/6/2016
Motorglider Singleplace
300 km Triangle Speed; Ely, NV
EB29/28.3 m; 104.602 mph

Mitch Polinsky; 8/14/2016
Motorglider Singleplace
1,000 km Triangle Speed; Ely, NV
EB29/28.3 m; 152.72 kph

PENDING NORTH AMERICAN CONTINENTAL RECORDS

Mitch Polinsky; 8/6/2016
Open
300 km Triangle Speed; Ely NV
EB29/28.3 m; 168.34 kph

Mitch Polinsky; 8/14/2016
Open
1,000 km Triangle Speed; Ely NV
EB29/28.3m; 152.72 kph

1000 km Diploma

124: Dan Reagan; Ridge Soaring, PA

DIAMOND BADGE

1059; Tony Condon
1060; Randy Teel
1061; Glen Kelley

DIAMOND ALTITUDE

Tony Condon; Silent 2 Electro; Talihina, OK
Randy Teel; HpH 304CZ; Talihina, OK
Glen Kelley; ASW 27; Gorham, NH

SILVER/GOLD DURATION

Dave Scanlon; Grob G103; Ridge Soaring Gliderport, PA

SILVER ALTITUDE

Christopher Carswell; LS4; Front Royal, VA

WORLD DISTANCE AWARD

Quay Snyder; 40,000 km
Stephen Dee; 35,000 km

OREGON STATE RECORDS

7/21/2016
Vanessa Aaron; DG-300 ELAN; Alvord Desert, OR
OPEN / SINGLE PLACE / FEMININE
Absolute Altitude; 16,020 ft msl

OKLAHOMA STATE RECORDS

11/17/2016
Tony Condon; Alisport Silent 2 Electro; Talihina, OK
GENERAL / OPEN
Absolute Altitude; 19,946 ft msl
Altitude Gain; 17,686 ft msl

A BADGES

Omar M. Amiri; Hayward, CA
Robert Michael Estagin; Derby, KS
Derek Kruger; Fort Collins, CO
D. Justin Lundberg-Neff; Fort Collins, CO
Robert S. Mizek; Downers Grove, IL
Chris Moser; Charles Town, WV
Aaron Rapp; Las Vegas, NV
Jason Schiffner; Solana Beach, CA
John A. Smith; La Miranda, CA
Bruce Von Drashek; Prior Lake, MN
William H. Wright; Murrieta, CA

B BADGES

Omar M. Amiri; Hayward, CA
Robert S. Mizek; Downers Grove, IL
Richard L. Poland; Long Beach, CA
John A. Smith; La Miranda, CA
Bruce Von Drashek; Prior Lake, MN

C BADGES

19211. Craig L. Duncan; Calhoun, TN
19213. Richard L. Russell; Santa Monica, CA
19209. Dwight Stein; Lombard, IL
19212. Michael Vaughn; Northbrook, IL
19210. Bruce Von Drashek; Prior Lake, MN

BRONZE BADGES

2315. Michael Vaughn; Northbrook, IL

SOARING CALENDAR

CONTESTS and SPECIAL EVENTS

Event sponsors are requested to submit details of their events for the calendar. The submission deadline is the 15th of the month, at least two months prior to the cover date (e.g. February 15 for the April issue). Email calendar listings to: feedback@ssa.org

February 18-19, 2017, FIRC (Flight Instructor Refresher Course) – Homewood Suites, Lansdale, PA 19776 – Hosted by the Philadelphia Glider Council. Professionally presented by Aviation Seminars, Inc. The PGC hosts a live FIRC every other February. Come join us and get on our schedule every two years. We encourage an interactive classroom with participants sharing the challenges, surprises, and the best practices. The FIRC is open to everyone. It can be used to refresh any CFI rating (glider, airplane, helicopter …). You don't need a CFI rating to attend. This is an excellent review for all licensed pilots, and a great introduction for student pilots. Only $150.00. Onsite processing at no extra cost, saving you the trip to the FSDO. Discount room rates available for those traveling. Contact: Phil Klauder at 215-870-5136 or Phil.klauder@verizon.net.

February 21-March 2, 2017, Carolina Wave Project – Shiflet Field, Marion, NC – Hosted by Chilhowee Soaring Association, Inc. Fly in wave to FL260 (weather permitting) from Shiflet (9A9), a wide grass strip near the base of Mt. Mitchell, highest point east of the Mississippi. Upon registration and payment, your spot is secure and materials and full info will be sent. $245. Includes all oxygen fills in your tank(s) and airport fees. Tows available and additional. Make check payable to CSA and mail to CSA, PO Box 53, Benton, TN 37307. Visit www.wavecamp.chilhowee.com. Contact: Sarah Arnold at info@chilhowee.com or 423-506-9015. Register online at www.surveymonkey.com/r/Y7YSRVG.

February 25, 2017, Annual Meeting of the SSA and Board of Directors' Meeting – Houston, TX.

February 25, 2017, 7th Bi-annual Midwest Soaring and Safety Seminar – 8:00 am–5:00 pm, Seigle Auditorium at the Elgin Community College in Elgic, IL – Hosted by the ChicagoLand Glider Council. Nationally known speakers will cover topics of safety, medicine, racing, competition, gear, and gliders, and gab will be on the agenda. The attendee's cost of this Seminar is being partially underwritten by the ChicagoLand Glider Council's membership to keep the cost reasonable and to allow as many glider pilots as possible to attend. Again this year the CLGC will host a "Flying Flea Market" so bring your aviation stuff to sell! A continental breakfast, full lunch, and afternoon snacks are provided. An optional "Dutch Treat" dinner is planned. See chicagolandglidercouncil.com/seminar for complete details.

March 9-11, 2017, Civil Air Patrol NJ Wing North East Region Conference – Atlantic City, NJ. This is the 75th Anniversary of the first CAP flight to depart Coastal Patrol Base Number One (Bader Field) looking for German submarines off our coast. On the afternoon of March 11, the New Jersey Wing of the CAP will host an afternoon of talks and presentations at the Atlantic City Sheraton Hotel. There are about 25,000 CAP Cadets (age 12-18). As part of their membership, each is entitled to five orientation flights in one of the CAP's Blanik L23 or Schweizer 2-33 sailplanes. Contact: Frank at franklin.porath@njwg.cap.gov.

March 11-17, 2017, Senior Soaring Championships – Clermont, FL – Sponsored by Seminole Flying and Soaring. Practice day March 10. Contact: Jim Price at jimfripp@embarqmail.com or 843-838-2351.

March 21-30, 2017, Sequatchie Badge & Record Camp – Marion County Airport (KAPT), Jasper, TN – Sponsored by Chilhowee Soaring Association, Inc. Fly the famous Sequatchie ridge and learn from the best during the evening seminar. Upon registration and payment, your spot is secure and materials and full info will be sent. $150. Official observer services included. Tows available and additional. Mail check to CSA, PO Box 53, Benton, TN 37307. Contact: Sarah Arnold at info@chilhowee.com or 423-506-9015. Register online at www.surveymonkey.com/r/YLPCG9R.

March 25-April 1, 2017, FAI Sailplane Grand Prix USA Orlando 2017 – Seminole Lake Gliderport, Clermont, FL (Orlando area). Website: http://www.sgp.aero/usa2017.aspx. Event registration info: http://www.sgp.aero/usa2017/news_add_here/sgp-news/sgp-usa-orlando-registration-open.aspx. Pilot registration form: http://www.sgp.aero/usa2017/news_add_here/sgp-news/sgp-usa-orlando-registration-open.aspx.

April 17-22, 2017, Region 5 North Contest – Perry, SC – Hosted by Rhonda and Allison Tyler, Jr. Practice days April 15-16. Contact: Rhonda Tyler at 803-564-5226 or rtylersc@yahoo.com.

April 20-23, 2017, Minden Wave Camp – Minden, NV. All skill levels

welcome. $200 includes t-shirt, seminar materials, and final banquet. Fly the Perlan II simulator. Flying, food, and fun. Contact: 775-782-9595 or info@soaringnv.com.

May 5-7, 2017, Eastern Vintage/Classic Regatta – Chilhowee Gliderport, Benton, TN. Tows and flying operation provided by Chilhowee Soaring Association, Inc. Visit Chilhowee.com. Contact: Sarah Arnold at 423-338-2000 or 423-506-9015. Information: Dennis Barton at 706-587-1318 or denbar@bellsouth.net.

May 15-20, 2017, Region 7 Contest – Albert Lea, MN – Sponsored by Leon Zeug. Practice day May 14. Contact: Leon Zeug at 612-590-7157 or region7sc@gmail.com.

May 19-28, 2017, Sports Class Nationals – Reedsville, PA – Sponsored by Mifflin Soaring Association. Practice day May 18. Contact: Janine Acee at 814-234-0236 or J9Mifflin@gmail.com.

May 26-29, 2017 (Memorial Day Weekend), Western Vintage/Classic Regatta – Mountain Valley Airport (L94) Tehachapi, CA. Tows, flying operations, and camping facility provided by Skylark North 661-822-5267. Contact: Cam Martin at 661-316-5288 or jcmartin@bak.rr.com.

June 5-9, 2017, 23rd Annual Thermal Camp – Air Sailing Gliderport, NV. Spend a 5 day week improving your thermaling skills. Classroom instruction in the morning and soaring in the afternoon. Air Sailing offers excellent classroom accommodations and exceptional soaring conditions. This camp is offered every year and is always very popular. Information and sign up: www.airsailing.org.

June 5-14, 2017, 2017 15 Meter, Open and Standard Class Nationals – Cordele, GA – Hosted by Cordele Racing LLC. Practice days June 3-4. Contact: Andreea Alexandrescu at 352-431-8684 or flycordele@yahoo.com.

June 10, 2017, Glider Saturday – Western Antique Aeroplane and Automobile Museum, Hood River, OR. Contact: Judy Newman at 541-308-1600 or info@waaamuseum.org.

June 11-16, 2017, 31st Annual Cross-Country Camp – Air Sailing Gliderport, NV. Devote a 6 day week to develop and sharpen your cross-country soaring skills. The camp includes comprehensive lectures, practical demonstrations, and daily practice of the basic and intermediate concepts and skills involved in conservative, recreational cross-county flying. You will be supported by experienced cross-country pilot mentors flying the daily tasks with you. See our website for more information and to sign up: www.airsailing.org.

June 12-16, 2017, Region 6 South Contest – Waynesville, OH – Sponsored by Caesar Creek Soaring Club. Practice days June 10-11. Contact: Gary Adams at 859-486-5200 or garrarda@gmail.com.

June 12-17, 2017, 2017 Region 8 Super Regionals – Ephrata, WA – Hosted by SGC Soaring Foundation. Come one, come all. Ephrata has good soaring, a great clubhouse, a short push from tiedown to the launch line, and lots of amenities nearby. In 2017 we're going bigger, with a Super Regional – and we'll support as many FAI classes as possible. Standard, 15 Meter, 18 Meter, Open, Sports. Deposit $100, entry $200, $55 per tow. Information: www.seattleglidercouncil.org. Contact: Noel Wade at 425-749-0515.

June 13-25, 2017, Auxiliary-Powered Sailplane Association Annual

Camp – Parowan, UT. In addition to being a fantastic fun-fly event at famous Parowan, the ASA camp is also the venue for determining the 2017 motorglider champion and awarding of the Stevenson Trophy. 40 entries accepted with up to 10 entries requiring tows. Application: www.motorglider.org. https://sites.google.com/site/motorgliders/competitions-and-camps.

June 15-18, 2017 (Father's Day Weekend), Midwest Vintage/Classic Regatta – Lawrenceville-Vincennes Airport (KLWV), Lawrenceville, IL – Hosted by the Wabash Valley Soaring Association. Camping on field, motels and lodging nearby, hangars available by prior arrangement. Insurance requirements stipulate that tows are available only to members of an SSA chapter (or WVSA) unless prior arrangements have been agreed. Contact: Dave Schuur at 618-584-3328 or dschuur@frtci.net.

June 16, 2017, VSA Annual Meeting – Contact: Jim Short at 708-624-3576 or simajim121@gmail.com.

June 20-29, 2017, Club Class Nationals – Hobbs, NM – Sponsored by Llano Estacado Soaring. Practice days June 18-19. Contact: Edre Maier at edre@fiberpipe.net.

June 22-30, 2017, Region 9 Super Regional – Hobbs, NM – Sponsored by Llano Estacado Soaring. Practice day June 21. FAI handicap class. Contact: Edre Maier at edre@fiberpipe.net.

June 25-July 2, 2017, 2017 Nephi OLC Games – Nephi, UT – Sponsored by Utah Soaring Association, LLC. Contact: Bruno Vassel at 801-652-6631 or brunovassel@gmail.com.

July 2-4, 2017, Vintage/Classic Regatta – Sponsored by Tidewater Soaring Society. Join TSS at Garner Gliderport in southeast Virginia for a 3 day fly-in. Tows, hangar space, camping available. Temporary TSS membership ($25.00) and SSA membership required for tows. Please check out tidewatersoaring.org. Contact: C.B. Umphlette or Marita Rea at 757-925-4945 (evenings) or skysailor282@earthlink.net.

July 2-8, 2017, Region 3 Contest – Elmira, NY – Sponsored by Harris Hill Soaring Corp. Practice day July 1. Information: www.harrishillsoaring.org.

July 3-7, 2017, Annual WSPA Seminar – Chilhowee Gliderport, TN – Information: www.womensoaring.org. Contact: Maja Djurisic at djurisic@stanford.edu.

July 3-8, 2017, US Junior Camp Contest – Elmira, NY – Cohosted with the Region 3 contest at Harris Hill. This event is for any pilot under 26 years old, regardless of experience. If you have a silver badge or equivalent experience, you are eligible to fly in the sports class (handicapped), which is a fully ranked regional contest. If you aren't as experienced, you are able to fly in two-seaters with our experienced mentors and learn a range of soaring techniques that aren't available at any other event in the U.S. $100 deposit to hold place. If this deposit is a hardship or you are looking for transportation to the event, please contact JP Stewart. Information: juniors.ssa.org. Contact: JP Stewart at 540-447-0995.

July 10-15, 2017, Air Sailing Sports Class Contest – Reno, NV – Sponsored by Air Sailing Inc. Practice day July 9. Contact: Robert Stone at 775-240-9461 or rstone118@charter.net.

July 17-22, 2017, Region 11 FAI Class – Truckee, CA – Hosted by Soar Truckee. Practice days July 15-16. $150 deposit, $200 entry. Information: www.soartruckee.com. Contact: Tony Gaechter at 408-621-3140.

July 20-27, 2017, 2017 1-26 Championship – Midlothian, TX – Sponsored by Texas Soaring Association. Practice days July 18-19. Contact: Neal Palmquist at 214-790-3584 or skypilot053@hotmail.com.

July 20-27, 2017, Low Performance Category Contest Region 10 South – Midlothian, TX. Practice days July 18-19. Contact: John Hardy at 503-789-9704 or jhaviation113@comcast.net.

July 24-30, 2017, EAA AirVenture Oshkosh – Whittman Regional Airport, Oshkosh, WI. Daily air shows. Aerobatics and pyrotechnics. Nightly concerts. Feature films at the Fly-In Theater. Forums, workshops, and demonstrations. KidVenture. Special programming at Theater in the Woods. Information: www.eaa.org/en/airventure.

July 24-August 6, 2017, 2017 Mackay, Idaho Regatta – Mackay, ID. Limited space for non-MG. Get your hotel/RV reservations early. Fantastic mountain soaring; look at the OLC flights for the last two years. Contact: Tom Dixon at dixon.18m@gmail.com or 208-867-6953.

August 1-10, 2017, 18 Meter Nationals – Uvalde, TX – Sponsored by Uvalde Soaring Association. Practice days July 30-31. Contact: Kerry Huffstutler at 830-591-4554 or KKHTSC@gmail.com.

August 19-20, 2017, Massey Vintage/Classic Rally – Massey Aerodrome (MD1), 1.5 miles east of Massey, MD Airport. Information: 410-928-5270 or masseyaero.org. Contact: Rusty Lowry at 240-925-5683 or lowry94@verizon.net.

August 28-September 2, 2017, Region 10 Championship – Waller, TX – Hosted by Soaring Club of Houston. Practice days August 25-27. Contact: Michelle Sorenson at 832-492-5501.

September 2-4, 2017 (Labor Day Weekend), Experimental Soaring Association Western Workshop/ Vintage Sailplane Meet – Mountain Valley Airport (L94), Tehachapi, CA. Tows, flying operations, and camping facility provided by Skylark North, 661-822-5267. Contact: Cam Martin at 661-316-5288 or jcmartin@bak.rr.com.

September 21-24, 2017, Great Plains Vintage/ Classic Regatta – Wichita Gliderport, two miles east of Jabara Airport in Wichita, KS. Hotels and restaurants nearby. Saturday features vintage glider topics colloquium. Contact: Neal Pfeiffer at nealpfeiffer@sbcglobal.net or Tony Condon at abcondon@gmail.com.

Soaring Magazine Milestones Guidelines

Milestone entries are welcomed for soaring pilots who have soloed, received their private pilot rating, added-on the glider rating to a current power rating, and any additional ratings added to a current glider certificate. Due to the increasing number of Milestone submissions being generated by the membership, the *Soaring* staff asks that the following guidelines be followed:

Text: Individual entries are limited to a minimum of 50 words and a maximum of 100 words per pilot. Entries with multiple persons being mentioned are allowed the same minimum and maximum per person mentioned. Identify everyone shown in photos. Insure that you the text includes; *Who*, *What*, *When*, and *Where*. Text must be written in the body of the email, no attached text files. Please include a headline.

Photos: Must be digital, high-resolution .JPG image files, submitted in the same email as the text file (as a separate .JPG file, *not* embedded in a page of text). The smallest image file size that we are generally able to reproduce in print is about 150 kb, at 300 dpi. Entries with image files smaller than 100 dpi will be returned for correction and re-submission. Generally, the photo files directly from the camera works best. Do not send links to online services such as Shutterfly, send the image file.

Date Format: September 10, 2016 – not 9/10/15, not Sept. 9, 2016.

Changes or Re-Submissions: Re-submission or changes to an entry for any reason require a new text file and a new photo file to be submitted via email.

The *Soaring* staff makes every effort to run all Milestones entries in as timely a manner as possible. The very soonest to expect a Milestones entry to appear is 90 days after submission. Much longer delays can be expected after the end of the soaring season.

If you have any questions, please contact the editor via email: editor@ssa.org

SOARING MILESTONES

GLIDING ACHIEVEMENTS and FINAL GLIDE

LAKE ELSINORE, CA – The Lake Elsinore Soaring Club would like to congratulate Bill Wright for completing his first solo flight in a glider. Bill soloed in a Schweizer 2-33 on November 13, 2016 at Skylark Field in Southern California. Bill is also a power pilot with about 120 hours flying Cessnas. He has been training with Mike Havener and Dave Bowden. Congratulations, Bill!

CLERMONT, FL – Nick Sillart (L) from Buffalo, NY soloed the L-23 Blanick at Seminole Lake Gliderport on November 26, 2016. His instructor Jan Driessen is congratulating him.

HUTCHINSON, KS – Mike Warbington (L) soloed the Wichita Soaring Association's 2-22 during

Black Friday flying, November 25, 2016. Brian Bird (R) was his instructor. Mike has been flying at Sunflower Gliderport with the Kansas and Wichita Soaring Associations. Congrats, Mike!

LLANO, CA – Inigo Markle-Allen passed his commercial glider check ride on November 21, 2016 at the Southern California Soaring Academy, Inc. Inigo is standing next to his CFI-G Gary Forister (L) and DPE Dan Gudgel (R).

WALLER, TX – Two days after his 14th birthday, Sam Liebbe made his

first solo flight in a glider at Soaring Club of Houston. Sam is shown here with his parents, Rob and Kim Liebbe. Sam is the second glider pilot in the Liebbe family, joining older brother Will. Congratulations, Sam.

BLAIRSTOWN, NJ – Daniel Banas (C) earned his Private Pilot – Glider on November 27, 2016 at Jersey Ridge Soaring with CFI-G Paul Scialabba (R) and examiner Randy Rickert.

CLERMONT, FL – Scott Slay, a captain with Southwest Airlines, soloed the L-23 Blanick at Seminole Lake Gliderport. Scott's instructor Jan Driessen is congratulating him.

CLERMONT, FL – Douglas Sillart completed his glider add-on November 26, 2016 at Seminole Lake Gliderport. On his left is pilot examiner Franklin Burbank. To his right is instructor Steven Gibb.

CLERMONT, FL – Harding Rome (L) is congratulated by examiner Kyle Pack (R) on completing his commercial glider add-on at Seminole Lake Gliderport on December 3, 2016.

BROOKHAVEN, NY – On November 6, 2016, Mike Rudolph (C), pictured with CFI-G Mike Hanson (L) and DPE Randy Rickert (R), successfully completed his Commercial Glider Pilot check ride in Long Island Soaring Association's (LISA) Schweizer 2-33A. Mike holds Commercial SEL; ATP MEL; and CFI, CFII, MEI, and various type ratings. Thanks to LISA CFI-Gs and all LISA club members for their support. Photo by Mike Hanson.

BROOKHAVEN, NY – On November 13, 2016, Kabir Brahmbhatt (C), shown with CFI-G Rudy Suehs (L) and tow pilot Dave Windmiller (R), successfully completed his first solo in Long Island Soaring Association's (LISA) Schweizer 2-33A. Kabir thanks the LISA CFI-Gs and all the LISA membership for their support. Photo by Mike Hanson.

BROOKHAVEN, NY – On November 6, 2016, Andrew Apicos (C), pictured with CFI-G Aidan Apicos (L) and DPE Randy Rickert (R), suc-

cessfully completed his Private Pilot – Glider check ride in Long Island Soaring Association's (LISA) Schweizer 2-33A. Thanks to LISA CFI-Gs, especially his son, Aidan, and all LISA club members for their support. Photo by Mike Hanson.

BROOKHAVEN, NY – On November 5, 2016, Claus Weisemann (C), with CFI-G Mike Hanson (L) and DPE Randy Rickert (R), successfully completed his Commercial Glider Pilot check ride in Long Island Soaring Association's (LISA) Schweizer 2-33A, 39 years after his first glider flight in Germany. Claus holds Commercial SEL; ATP MEL; MEI and CFII ratings. Thanks to LISA CFI-Gs and all LISA club members for their support. Photo by Mike Hanson.

BROOKHAVEN, NY – On November 5, 2016, Jim Young (C), shown with CFI-G Shawn Simms (L) and DPE Randy Rickert (R), successfully completed his Private Pilot – Glider check ride in Long Island Soaring Association's (LISA) Schweizer 2-33A. Jim is the Maintenance Officer at LISA. Thanks to LISA CFI-Gs and all LISA club members for their support. Photo by Mike Hanson.

FRONT ROYAL, VA – Skyline Soaring Club congratulates Michael Bishton on his add-on PPL-G. Michael (R) chose a fabulous day over

the Blue Ridge to take his check ride with DPE Piet Barber (L).

BOULDER, CO – JC Appleton, 14, soloed a 2-33 on December 4, 2016 at Mile High Gliding under the instruction of Ty Gunnlaugsson.

ELMIRA, NY – An ecstatic Robert Whitcomb (C) is being congratulated by his recommending instructor Dave Welles (R) and examiner Jim Martin (L) on successful completion of his Private Pilot – Glider evaluation at Harris Hill.

DANSVILLE, NY – New Private Pilot – Glider John Murtari (R) is

being congratulated for successfully completing his evaluation by examiner Jim Martin (L) and recommending instructor Charles Zabinski (C) at Finger Lakes Soaring Club. John is a former USAF T37 Instructor Pilot and USAF Academy grad.

CLERMONT, FL – Scott Slay (C) earned his commercial glider license today at Seminole Lake Gliderport. Congratulating him are instructor Jan Driessen (R) and FAA pilot examiner, Franklin Burbank (L).

LLANO, CA – Kurt Thom passed his commercial add-on check ride on December 9, 2016 at the Southern California Soaring Academy, Inc. DPE Dan Gudgel (R) is shown congratulating Kurt.

LLANO, CA – Mike Pederson (R) passed his CFI-G check ride on December 9, 2016 at the Southern California Soaring Academy, Inc. Dan Gudgel congratulates Mike just after he passed.

LAKE ELSINORE, CA – The Lake Elsinore Soaring Club would like to congratulate Jason Schiffner for completing his first solo flight in a glider. Jason soloed in a Schweizer 2-33A on November 12, 2016 at Skylark Field in Southern California. Jason has been training with Mike Havener and Dave Bowden. Jason fits his glider training in on the days when he's not towing the rest of us into the air! Congratulations, Jason!

NORTH PLAINS, OR – Stephen "Sky" Smith, 65, passed his flight test on Memorial Day weekend 2016. He is in front seat with DPE King Povenmire in rear.

TEHACHAPI, CA – On October 19, 2017, Maciej Makowiecki (L) passed his private glider add-on check ride at the Mountain Valley Airport. Congratulating Maciej is DPE Dan Gudgel (R). Maciej is an active member of the Antelope Valley Soaring Club in El Mirage, CA where he received his training and where he has been regularly flying since August 2015.

STEAMBOAT SPRINGS, CO – Richard Yager started his training in gliders at the Adirondack Soaring Assoc. in NY and then moved to Colorado and joined the Steamboat Springs Soaring Assoc. Richard soloed for the first time at Eagle Soaring Airfield, in SSSA's Blanik L23 on October 10, 2016. After being wrapped up in the core, Richard is eager to sky out to cloud base. He is pictured (R) being congratulated by his CFI-G, Tom Wood.

SEND US YOUR MILESTONE

Share your wonderful experience with the ever growing soaring community. Send your text and photo to editor@ssa.org.

Final Glide

David Malloy – Merrick, NY

Lee R. Hallerberg – Las Vegas, NV

Terry Bunker – Hondo, TX

C. Robert "Bob" Von Hellens – Phoenix, AZ

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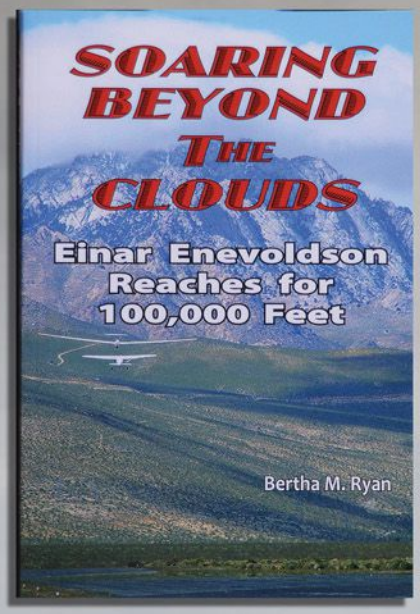

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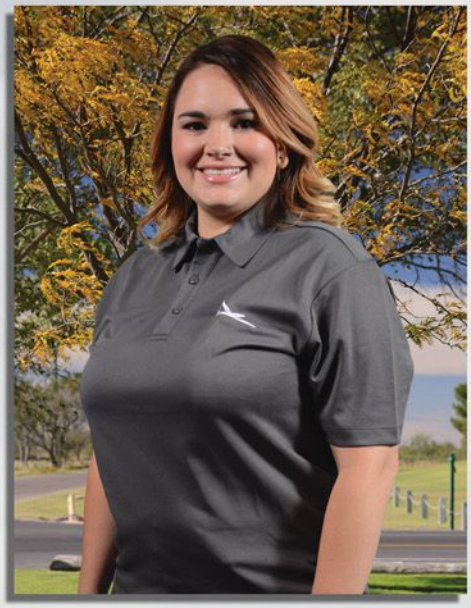

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As the Soaring Society of America's official broker we provide SSA members with a variety of glider related insurance packages. Group discounts and benefits, courteous and efficient service are the trademarks of our organization.

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- A15 rated insurance carrier, AIG Aerospace.
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- Reducing deductibles for being claims free.
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