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Editor: Tony Condon

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DON JONES (2016-2017)

TIM DOUBLE (2016-2017)



2-22 Crew on Feb. 22. David Kennedy, Tony Condon, Paul Sodamann, Jerry Martin, Don Jones

KSA CALENDAR

March 11th - KSA Meeting - Badge Flying - WSU
March 19th - 25th - FAI Sailplane Grand Prix - Orlando, FL
April 1st - Spring Work Day - Sunflower
April 8th - Spring Work Day - Rain Date - Sunflower
April 8th - KSA Meeting - Safety Meeting - WSU
April 15th - Opening day at Sunflower
April 20th-23rd - Wave Camp - Soaring NV, Minden NV
May 14th - 20th - Region 7 - Albert Lea, MN
June 5th - 14th - 15 Meter, Open, Standard Nationals - Cordele, GA
June 21st - 30th - Club Class Nationals - Hobbs, NM
July 2nd - 8th - 2nd Annual Junior Nationals - Harris Hill, Elmira, NY
Jun 29th - July 16th - 2nd FAI World 13.5m Class Gliding Championship - Szatymas, Hungary
July 1st - 8th - US Junior Camp & Contest - Elmira, NY
July 3rd - 7th - Women's Seminar - Chilhowee Gliderport - Benton, TN
July 15th - Kansas Kowbell Klassic - Sunflower
July 18th - 27th - Region 10 Low Performance Contest - Midlothian, TX
August 1st - 10th - 18 Meter Nationals - Uvalde, TX
August 28th - September 2nd - Region 10 Championship - Waller, TX
September 24th - Adventurous Babes Society
October 1st - Adventurous Babes Society Rain Date
October 7th - EAA Fly-In Newton, KS
October 29th - Closing Day at Sunflower
Nov 26th - Dec 8th - 2nd FAI Pan-American Gliding Championships - Santa Rosa de Conlara, Argentina

KSA Merchandise -

<http://yawstring.com/club-pages/kansas-soaring-association>

Contact **Tony Condon** if interested in ordering something.
Group order will be submitted after the March Meeting

Notes from the President

Greetings KSA! I am becoming more and more convinced that there is, in fact, no "off season" in Kansas, as we've seen a lot of soarable days and nice weather so far this year. Several productive work days have already taken place at Sunflower and some good soaring flights as well. There is a lot going on in the club and so I would like to bring you up to speed on a few of the projects.

Work on the T-Hangar continues. Thanks to the leadership of **Bob Holliday** all of the doors have been converted with new wheel assemblies. This has eliminated any issues with the doors rubbing on the bottom tracks. Now we shift our focus to some issues with doors rubbing on the TOP. **Bob Hinson** and I will be taking the charge on that. Let us know if you'd like to help.

Brian Silcott is continuing to collect 2017 dues. If you haven't paid him already you should be getting a letter soon. Bring your money to the March meeting so that he can start our chapter renewal with the SSA. **Brian** will also have some SSA merchandise available at the March meeting, including pilot and aircraft logbooks.

Tim Double is taking charge of setting up the 2017 line duty schedule. He'll have a sign up sheet at the March & April meetings. If you can't make it to the meeting to sign up, don't worry. He'll call you! You can beat the rush by contacting him first. Email him at tjd5185@gmail.com

Steve Leonard will be scheduling tow pilots again this year, so get ahold of him if you are a willing towpilot. He is at zuni228@yahoo.com.

Speaking of towpilots...we are short a few from last year. However, we have a few new ones coming online. **Kevin Riedl** is one of those who needs to get checked out this spring. We also have a new member, **Kirk Bittner** who just completed his Private-Glider checkride at the Wichita Gliderport and already has a tow endorsement and has towed there. We will get him checked out on the Sunflower operation as soon as possible this season. I also have one of my airplane students who is interested. There are a few other club members who have expressed interest. Part 61 requires 100 hrs PIC in ASEL and a towpilot endorsement. You will also need to show proficiency and safety to your checkout pilot while getting the endorsement. If you are not a glider pilot you'll need to get a few training flights in a glider. If you need to build some time towards the 100 hour requirement, we can arrange to get you in the towplane with a qualified towpilot/flight instructor.

The KSA Grob will be available to fly starting April 15th. **Bob Hinson** is coordinating to get the annual completed in early April. Also, the board has decided to commit to refinishing the fuselage on the Grob over the winter of 2017/18. This will involve a lot of club volunteer effort. We will move forward with planning on this project through this season and be ready to get started on it as soon as the regular season ends in October.

Scholarship opportunities are available for the spring for our young members. See the applications in this newsletter and get the applications submitted!

There have been some editorial updates to the KSA Trophy Rules which are published in this newsletter. These were approved at the KSA Board meeting last month. Definitions are aligned with the FAI Sporting code. The goal was to standardize the requirements and help prepare our pilots for FAI Badge claims while working on KSA Trophies. Also, this year we will start online submission of flights for KSA Trophies. Please submit you flights after each flying day for consideration! Link is later on in this newsletter along with the updated rules.

As you've probably seen on the Soar-Kansas Yahoo! Group, there is more flying coming up at Sunflower in March, with an Auto Tow day on March 12th at least planned. Keep in touch via the group to arrange flying whenever you see a nice day coming up. See you at the meeting on the 11th and see you at Sunflower!

Tony

Flying X-C in January

By **Brian Bird**

For me this story starts with the following E-mail from **Tony Condon** on a Thursday afternoon. *“any chance you'll be ready to fly the libelle sunday? I think it will be a downwind dash-able day.”* At the time I read that it was freezing cold outside and soaring cross-country was about the last thing on my mind. Huddling up by my fireplace with a hot cup of coffee was more in line with my weekend plans. But I did recall when **Tony** made his flight to Arkansas last year I said something like “wow, that sounds like fun”. And, I have often talked about flying group cross-countries together. I just hadn't really thought much about doing it in the middle of the winter. I've been flying sailplanes for 45 years now, and I know (as does everyone else except **Tony** apparently) that one simply does not fly gliders cross-country in the winter. I guess **Tony** must have missed that lesson. In a subsequent E-mail, he even said it was looking like it might be a 200 mile day. If anyone else had said that, I'd probably ask them what they'd been smoking, but I'm beginning to think that he might be on to something with these wintertime downwind dashes.

It took some careful diplomacy and a lot of sweet-talking, but I managed to convince my wife to crew for me. I'm still not sure what this is going to cost me. We arrived at the gliderport around 10:30 on Sunday morning to start assembling the ships. I'm not sure we had any plan other than to just head downwind as far as we could go. By this time the weather forecast was not looking as rosy as it did a day or two earlier. There were still indications of lift, I think we had some cu's if I recall correctly, but they were scrappy and I don't recall any streeting. **Jerry Boone** was kind enough to come out and give us a tow. He had some car trouble on the way to the airport so we were a little later getting off than we had planned. I was the first to launch, we hit some good lift on tow, but of course by the time I got off tow the lift was weak and very scrappy. Occasionally the vario would pop up to 5 kts, but only for a second. On one side of the thermal the vario showed lift while on the other side of the thermal it showed down. This started out to be one of those flights where if you work the lift real carefully it might just slow your sink rate. After working the thermal for 5 or 10 minutes, I had managed to only lose about 5 or 6 hundred feet. By now **Tony** was in the air and he soon released several hundred feet above me. But now we had two of us in the air and it is always easier to find and center a thermal when someone else is circling with you, especially if that someone is **Tony**. It wasn't too long before we were close to each other's altitude, working the same thermal, but by then we were also less than 1500' AGL and downwind of the airport.

There is a point in every X-C where one has to decide to commit and just go for it. I've heard it alluded to as “breaking the apron strings” when you first get outside of gliding distance to the airport. For those who have never soared X-C, I think there is something of a psychological barrier. But once you get out of gliding distance of the airport, your decision making and thought processes are totally different, and I think your flying improves as well. At least it seems that way to me. Ideally this point happens after a nice initial climb at the home field followed by a very deliberate turn onto the outbound course. For us, we were at that point about a mile or two south of the airport as we slowly drifted out of gliding distance from the airport, still well below our release altitude. It rather inglorious start to a cross-country flight for sure.

Eventually, the lift did get better (did I mention that one flies better when they are out of gliding distance from the airport?) and I was starting to gain more than I was losing most of the time. I'm guessing my average climb rate might have been about 10 fpm, but we were drifting south at probably 30 or 40 fpm, so things were really looking up! (see what I mean about different thought processes). Finally, the thermals broke loose and we were actually climbing at a respectable rate all the way around the thermal for several turns. It was 35 minutes after I released before I finally climbed back up through my release altitude of 2000'. By then, I was well south of the airport. I worked that thermal to about 4500 feet and then we headed on south.

Years of flying a 1-26 has taught me the bad habit of circling in every hint of lift and staying as long as I possibly can. I am trying hard to break this habit, but when **Tony** headed south, I just couldn't resist one or two more turns and then I quickly followed least I lose sight of him. We glided several miles to a point just east of Cheney dam where we once again found a decent thermal worth working. Highway 54 soon slipped by as we drifted downwind in the thermal. This thermal topped out at about 4000 msl and we soon headed south again feeling almost comfortable with all that extra altitude.

Up to this point, **Tony** and I had been flying fairly close together since we first joined up just south of Sunflower. It was somewhere along this glide that our flights began to depart. I'm still not sure how it happened. I was following about a half mile behind **Tony** and a little below him. But as we glided south **Tony** seemed to just get higher and higher than me. The L/D of the Cirrus and Libelle are not much different, so I think either he was in better air or I had my spoilers open and didn't notice. Whatever caused it, we got to the next thermal with **Tony** still up around 4000' msl and I was closer to 3000'. **Tony** apparently got into some decent lift at that point, because I never saw him again after that. I was back down to the scrappy 200 fpm up on one side to 200 fpm down on the other side averaging something less than zero sink. I bumped along from one unworkable thermal to the next continuing south hoping I'd find something to get me back up. By now, I'd pretty much given up any hope that I'd see **Tony** again during this flight. Eventually, I found myself at about 1000 agl a couple of miles NE of Viola at the point where K-42 crosses the Ninnescah River. The lift never materialized and it looked like an outlanding was inevitable. As I was turning downwind and reaching for the landing gear handle, the vario jumped solidly up to 5 kts. I decided it was worth trying just one turn to see if it was anything. To my surprise the vario stayed positive all the way around. After a few more turns I decided that I wasn't going to land out after all. That thermal took me to about 4000' msl and once again, I was feeling pretty fat with all that altitude. I headed south again, not even bothering to look for **Tony**, I figured he was half way to Tulsa by now. My course would be taking me just west of Wellington which by now was coming in to view at 11 O'Clock.

As a physics teacher I teach about the 5 fundamental forces of nature like gravity, magnetism, etc. But I think I have discovered that there is actually a sixth force of nature. There seems to be some mysterious attraction between a sailplane and an airport. My extensive research indicates that the force is directly proportional to the size of the airport and inversely proportional to the altitude of the sailplane. Although my initial intention was to continue on course and pass west of Wellington, one can clearly see on my ground track how the sailplane was pulled eastward by this weird force towards the airport north of Wellington. I soon found myself about 5 miles northwest of the airport at about 1000 feet agl. Once again, I had an off-field landing spot picked out as I circled in zero sink while continuing to drift to the south east. I realized that if I could just hang on to this zero sink for another 10 minutes, I'd be over the airport at Wellington. The last 5 miles of my flight consisted of me circling in zero sink while drifting from one potential off-field landing site to the next. Once I got to what looked like a good place to enter downwind I put the gear down and landed at Wellington. When I called my wife, she was close by in Conway Springs so it was a quick and easy retrieve from there. One nice thing about landing at a public airport aside from the obvious safety factor is that it makes for an easy retrieve. When I asked my wife if she had heard anything from **Tony**, she said it looked like he was half way across Oklahoma. As it turned out, he was not quite that far away. Apparently, **Tony** managed to avoid the airport "tractor beam" force that I got caught in and continued on south. His best and highest climb was just south of Wellington and occurred about the time I was digging myself out of that hole I had gotten into near Viola. **Tony** continued on south and landed in a small grass airstrip near Newkirk Oklahoma.



Jan. 29 landing sites: **Brian Bird's** Libelle at Wellington (above) and **Tony Condon's** Cirrus in Newkirk, OK (below)





U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of the Chief Counsel

800 Independence Ave., S.W.
Washington, D.C. 20591

JAN - 5 2017

David Schober
10919 Green Valley Rd.
Union Bridge, MD 21791

Re: Automatic Dependent Surveillance-Broadcast Out equipment requirements

Dear Mr. Schober:

This letter responds to your request for a legal interpretation dated July 7, 2015, regarding the Automatic Dependent Surveillance-Broadcast (ADS-B) Out equipment requirements in 14 C.F.R. § 91.225. Specifically, you have asked whether these requirements apply to aircraft originally certificated without an electrical system but which have subsequently had batteries or electric starters installed.

Section 91.225(b) requires aircraft operating in certain airspace to have equipment installed that meets: (1) the performance requirements of TSO-C166b (Extended Squitter ADS-B and Traffic Information Service-Broadcast Equipment Operating on the Radio Frequency of 1090 MHz) or TSO-C154c (Universal Access Transceiver ADS-B Equipment Operating on the Frequency of 978 MHz); and (2) the requirements of § 91.227. These equipment requirements do not apply to "any aircraft that was not originally certificated with an electrical system, or that has not subsequently been certified with such a system installed, including balloons and gliders." 14 C.F.R. § 91.225(e).

You note that the exception for aircraft to be equipped with a transponder in § 91.215(a)(5) uses the term "engine-driven electrical system" rather than simply "electrical system" as in the ADS-B Out exception in § 91.225(e). In the notice of proposed rulemaking (NPRM) and final rule for ADS-B Out, the FAA did not indicate that the omission of the word "engine-driven" from § 91.225(e) was intended to mean something different from the transponder regulation. In fact, in describing the transponder exception in the ADS-B Out NPRM, the FAA used the term "electrical system" rather than "engine-driven electrical system." 72 FR 56947, 56958 fn.23 (Oct. 5, 2007). As such, we have concluded that the same aircraft excluded from the transponder requirement are excluded from the ADS-B Out equipage. Accordingly, an aircraft that subsequently has been installed with batteries or an electric starter would not be required to equip for ADS-B Out. The FAA may consider a technical amendment in the future to remove any confusion due to the discrepancy between the language in § 91.215(a)(5) and § 91.225(e).

This response was prepared by Anne Moore, an attorney in the Regulations Division of the Office of the Chief Counsel, and coordinated with the Aircraft Certification Service. If you have any additional questions regarding this matter, please contact my office at (202) 267-3073.

Sincerely,

Lorelei Peter
Assistant Chief Counsel for Regulations

The elements of handicapping gliders

Part 1

Carl D Herold

from *WestWind*, the journal of the Pacific Soaring Council

My first endeavour at handicapping started in 1963, when I made changes to the handicapping process for the Sawyer Award in Northern California. In the 35 years since, I have amassed a lot of data, experience, and wisdom characterizing contest weather, pilot experience, and glider performance for contests throughout the USA and the world. I have shared information with handicappers over the years representing soaring in England, Germany, Australia, New Zealand, and other countries.

In developing and updating the CH handicap over the years, I have been aided by many pilots, glider owners, contest directors and handicappers. The current application of the CH-98 handicap includes the sanctioned Sports class contests, the World Soaring Award, the Hilton Cup (USA), and many regional and club soaring activities throughout the USA.

The introduction of handicapping to soaring has had a major impact on soaring participation in our sport. These handicapped events have embraced more cross-country soaring pilots with less competitive gliders in the USA than all of the SSA-sanctioned Regionals combined. I believe it has provided the stepping stone which bridges badge flying to sanc-

tioned Regionals. At the local level, it has been a factor which has increased structured, cross-country recreational soaring. It has been another important factor which has increased retention of our soaring members.

The handicapping process

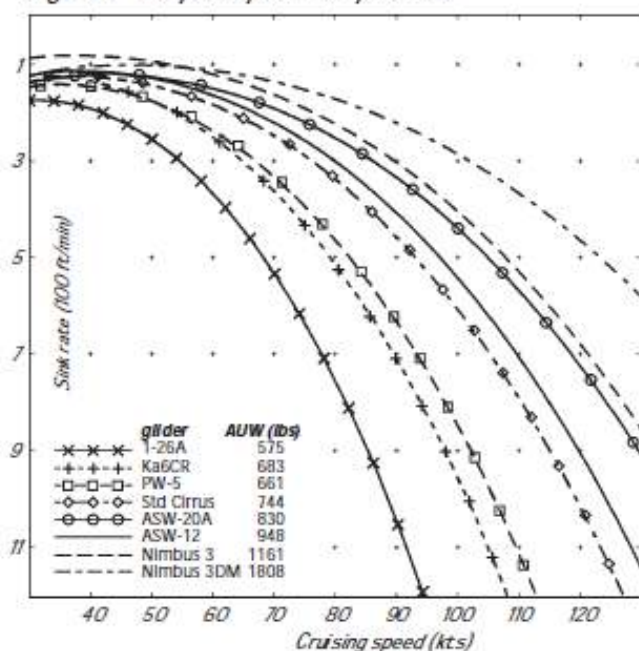
The process I employ to assign a handicap number is based on a broad approach of using mathematics, science, and engineering to understand the interplay of dominant factors such as span, aerodynamic refinement, wind, instrumentation, and wing loading. This process also includes heavy dependence on flight test polar measurements, followed by pilot inputs, manufacturers' sales and pilot handbook data, measured weight and balance data, and most important, the contest performance of gliders and pilots throughout the world. You will find that in spite of the theory, the actual contest performance of consistently performing pilots has more to do with placing high than the handicap. In past years, I and many others have won contest days by our consistent performance with lower performance gliders. In addition, the contest rules can also impact heavily on the handicap results. If a glider can't finish a task, the handicap doesn't have a chance to work for that pilot/glider combination. The impact of the inexorable technology improvements on instruments, gliders and pilot techniques also has a big bearing on the continuing reappraisal of what constitutes a fair handicap. For gliders of the same vintage, the problem of assigning a handicap is easier to address. For covering the extremes in glider performance, the handicap will be perceived to be more fair to the finishing high scorers.

With this introduction, I will write a continuing series of short articles on the use of glider performance testing, mathematical models, and contest performance data which has contributed to the handicap development process. The topics will include the impact of density altitude, wing loading, winglets, start gates, wind, task types, rule changes, expected conditions throughout the country, and the impact of technology on cross-country performance. I will publish contest data showing the years it takes a new class to mature. I will publish statistical data ranking the soaring attributes of contest sites.

What's fair?

How can one make a fair handicap with all these variables for over 324 different types of gliders in the USA inventory, and at least another 200 glider types elsewhere in the world? The included gliders range from less than 20:1 in L/D to over 60:1 with a wing

Figure 1 Sailplane polar comparison



Sunflower Seeds

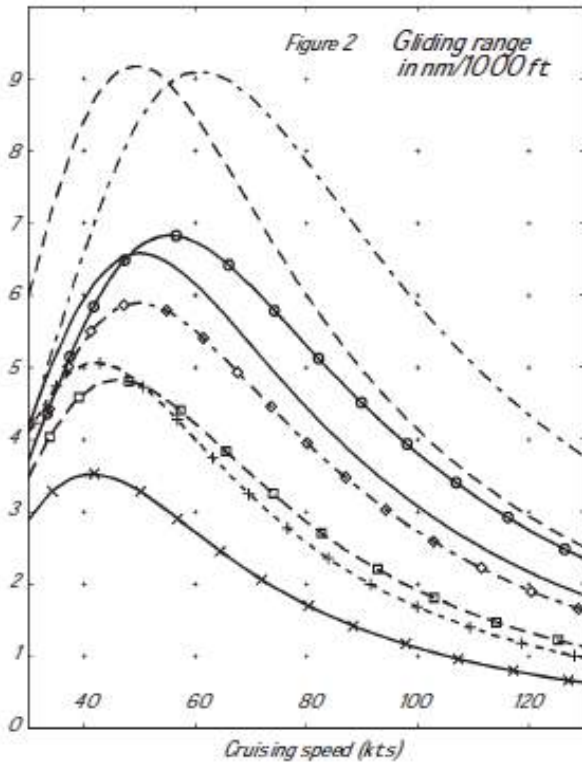
Feb. 3rd: **Mike Orindgreff** flew F8. He says "cold, but nice to get a chance to fly a little this early in the year"

Feb. 15th: **Mike Orindgreff** flew F8 around the WSA triangle.

Feb. 17th: **Paul Sodamann** towed. **Keith Smith** completed his flight review in the 2-33 with **Tony Condon**. **Jim Frizzell** and **Jerry Elmore** took intro flights in the 2-33. **David Kennedy** flew solo. **Josie Condon** took instruction in the 2-33 via Auto Tow at the end of the day. Upgraded electric powered rope rewinder worked well.

Feb. 18th: **Don Jones** and **Matt Gonitzke** did the condition inspection on MB. **Steve Leonard** and **Matt** weighed the ASW-12 and Ka-6. **Tony Condon** and **Josie Condon** flew the 2-33 via Auto Tow in the morning with help from new members **Jerry Elmore** and **Jim Frizzell**. **Bob Hinson** arrived to tow about 11 AM. **Jerry Elmore**, **Alex Hunt**, and **Leah Condon** took instruction with **Tony** in the 2-33. **David Kennedy** flew the 2-33 solo. **Jim Frizzell** and **Robert Estagin** took dual in the 2-22 with **Brian Bird**, with **Robert** going solo. **Mike Orindgreff** self launched in F8. **Bob Holiday** flew in his little airplane to visit.

Feb. 22th: Door work day. **Paul Sodamann**, **Bob Holiday**, **Don Jones**, **KC Alexander**, **Jerry Martin**, and **David Kennedy** worked hard and completed the conversions. All doors have now been converted to new wheel assemblies! Finished about 3 PM and switched to flying mode. **Tony** took a tow from **Paul** in the 2-22 to celebrate the date, 2/22. Climbed to 4100 MSL after release. **Mike Orindgreff** had self launched in F8 and enjoyed a good local soaring flight. **Tony** then gave Cindy (**Paul's** wife) a ride in the 2-22 and **David Kennedy** flew solo. Record high in the upper 70's.



loading ranging from 2.5 psf to over 12 psf. Combining these two factors results in a simple performance "space" of over 14:1 — and that doesn't include wind and thermal strength impacts!

Figures 1 and 2 show performance data for eight gliders ranging from the 1-26 through the self-launch Nimbus 3DM. These figures begin to show the handicap assigners the challenge it is to develop a fixed handicap number for each glider to equalize glider cross-country performance in a fair manner for a wide range of soaring conditions. This is just the beginning of understanding the challenge of handicap assignment. A first step is to define the desired objective in assigning a handicap. I have maintained a consistent objective over all these years.

Is it possible to fairly compare these gliders by a handicap? The answer is of course NO, but in spite of this, many pilots are willing to participate with these numbers. Why? Because it is much fairer and more fun for pilot comparison in many soaring activities than no handicap at all. I hope to concentrate on displaying results for easy understanding.

Handicapping throughout the world is alive and well. Those premier pilots who race and fly records to represent their country for recognition are racing the best gliders and equipment in the world. They represent a very small elite group of very skilled pilots. The rest of us are in the dominant majority of soaring pilots without the best of equipment and time for becoming the best. That is what is attractive to this latter group about Sports class and handicapping. More later. ♦

The elements of handicapping gliders

Part 2

How does climb rate translate into achieved MacCready cross-country speed?

Carl D. Herold

This second chapter on the building blocks to handicapping provides some insights into the idealized MacCready cross-country model, the speeds to fly, and the resulting achieved cross-country speed along the course line.

I have provided idealized sets of MacCready curves for four different gliders. These curves presume the climb rates along the course line are uniformly constant and 100% efficient (there is no thermal searching time or centering time loss, all cruise legs are on the course line, and there is no wind). All soaring is performed at sea level at standard temperature and pressure (STP) of 29.92" Hg and 59°F. The potential energy (height) and the kinetic energy (cross-country speed) of the start of the flight and the efficient final glide are not factored

Table The increase in average cross-country speed for each additional 100 ft./min improvement in lift

Glider	Wt. (lbs)	Weak Lift	Strong Lift	X-C speed @ 300 fpm
1-26E	700	6.0 kts	2.4 kts	28.0 kts
Std Cirrus	744	8.4 kts	3.1 kts	38.4 kts
Grob G-103	1279	8.3 kts	3.4 kts	42.5 kts
DG-400/17	1014	11.5 kts	4.1 kts	51.5 kts

into the achieved cross-country speed. All three of these items add to the achieved task speed shown on these charts. The energy (speed squared) increase due to density altitude of the flight are also not factored in these charts for a fixed achieved climb rate. No sinking air is presumed along the course line during the cruise period to the next thermal.

These charts essentially describe what happens to the achieved cross-country speed as a function of the inter-thermal cruising speed for a fixed climb rate. You will note all four charts have the same characteristics. For each achieved rate of climb curve, there is a best cruising speed to get a maximum achieved cross-country speed. This maximum point essentially describes the best MacCready speed to fly between thermals, all of the same rate of climb.

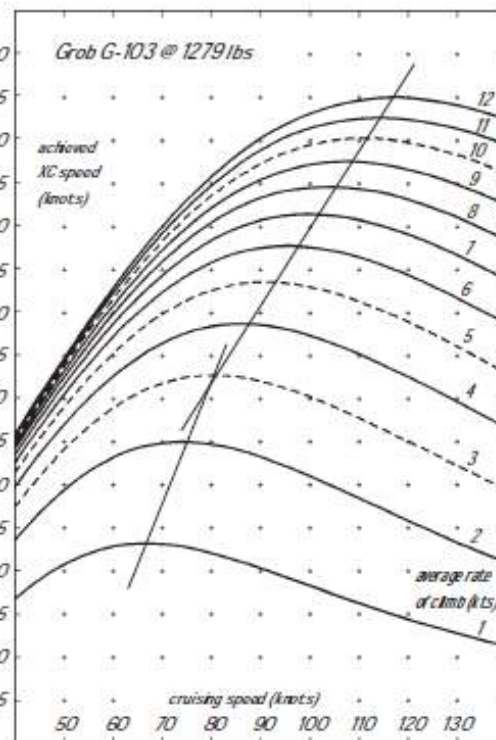
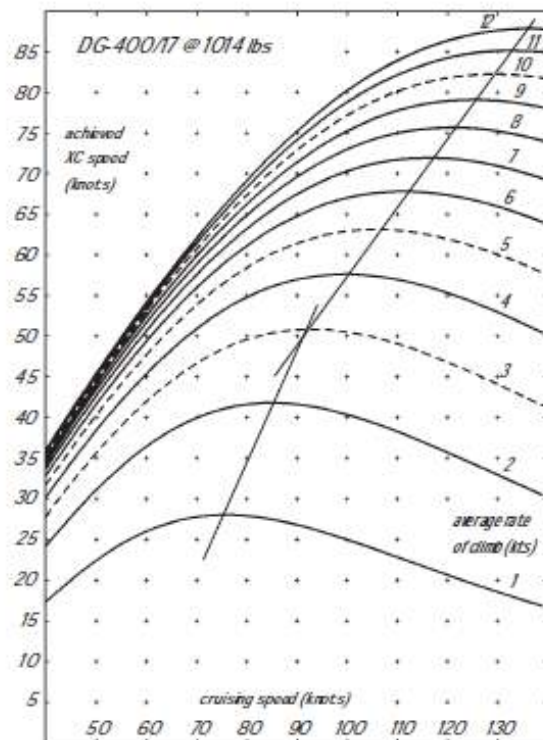
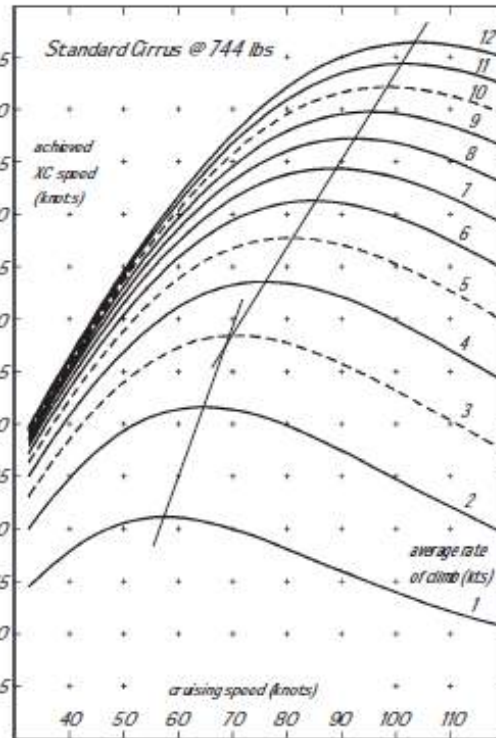
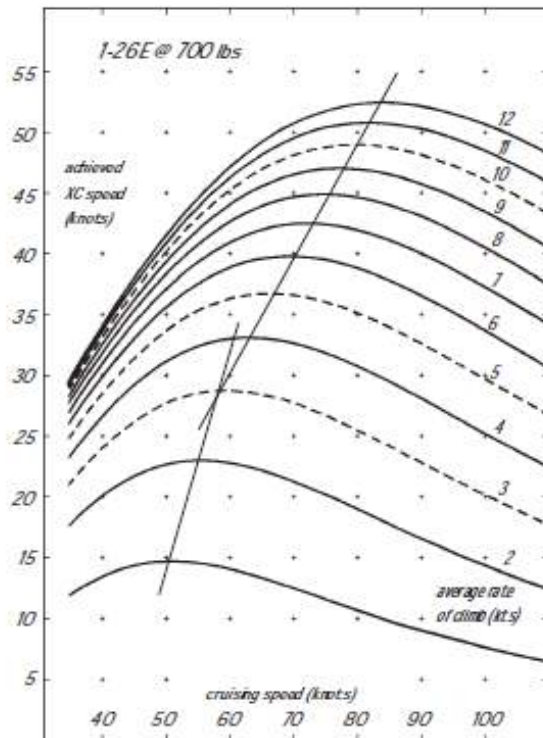
You will note that the point of maximum speed is fairly flat near the maximum. One can in general cruise at plus or minus 10 knots and make just a small difference in the cruising outcome. The advantage of flying slower provides increased gliding range to the next thermal and the reduced sink rate also means you don't have to make your (right or wrong) decisions as fast. Flying faster than the optimum MacCready speed does create a higher risk in making bigger errors, thus requiring more consistent pilot skills.

I have also made some simple comparisons from these four gliders. For weak conditions, I have drawn a short line through the maxima for weak conditions, and for the strong conditions I have drawn a long line through the maxima. The slopes of these lines represent the increase in achieved cross-country speed in knots per increase in 100 ft./min rate of climb.

You will note that the greatest improvement in speed takes place in weak conditions. The converse is most important — a greater penalty to your achieved cross-country speed occurs if you linger too long in weak thermals, wringing out the lift for the soaring conditions described above. Furthermore, these speed gains dimin-

ish for all gliders in increasingly strong conditions. This does not imply it is best to fly in weak lift — quite the contrary is true for all gliders. You will also note that the table shows achieved cross-country speeds for an achieved 300 ft/min 100% efficient climb. Study these charts and reason how you would compare the performance of these gliders (develop a handicap).

The next series of chapters will show the impact of task distance, flight altitude, glider weight, start gates, start speeds, wind and final glides on achieved cross-country speeds. In addition, for a few more chapters, we will assume all thermals are perfect cylinders of lift giving all gliders the same rates of climb as they transit through the idealized thermal soaring day. ♦



A series overview – factors & philosophy

The goal of handicapping is to attempt to "equalize" performance among gliders where the need arises, principally Sports class competition. But what is it exactly that is being equalized? It is the average cross-country speed potential of the glider, which has many elements that this series of articles will introduce and explain. I will not just be describing the theoretical process of handicapping — I am trying to show the complexity of the handicapper's problem.

The series will proceed along these lines:

- First some general graphs on cross-country speed as a function of lift strength (pure MacCready theory) for five typical gliders having a

broad range of performance (presented in the last issue).

- The impact of glider weight on cross-country speed.
- The impact of wind on cross-country speed.
- A following article showing the handicap ratios for the idealized thermal strength, weight, and wind for the same gliders.
- The impact of start gate speed and task length on the handicap.
- With this multidimensional background, I can next show how lift strength, length of soaring day, and winds, impact the percentage contribution of these factors for a broad range of soaring regions, thus providing a lead-in for showing the pilot/contest/

glider performance for soaring sites throughout the United States.

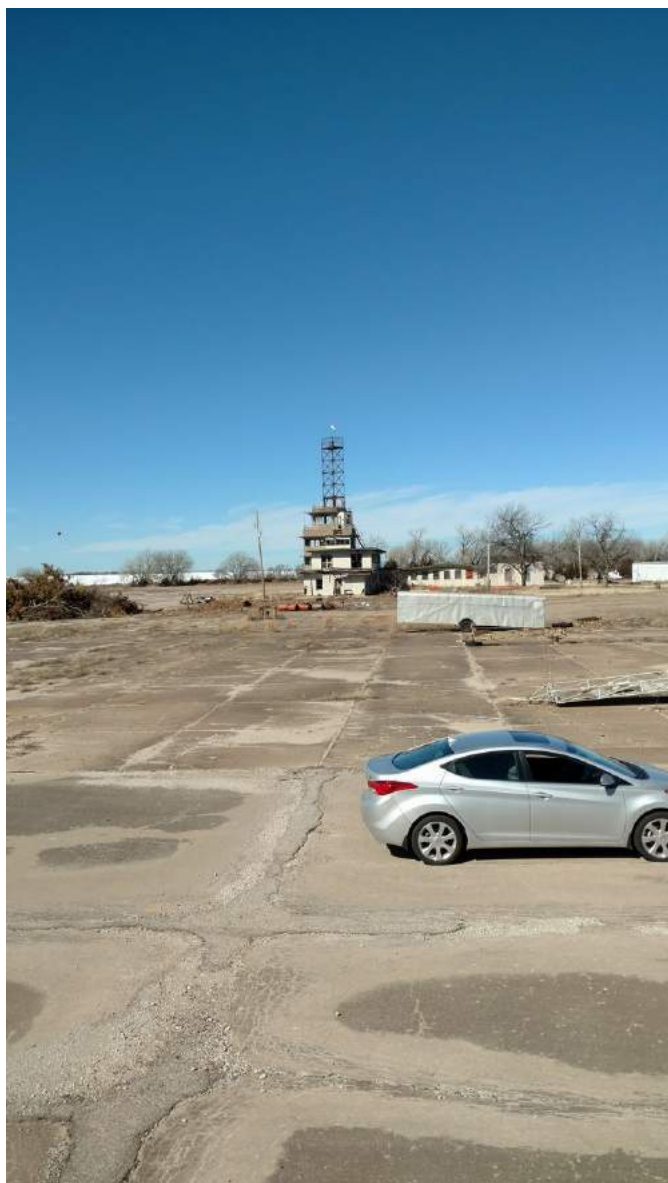
- Once I have presented the simplistic idealized model approach, I will show real contest performance data, and demonstrate that there is a wide gap between the two and they are quite contest site, contest rules, and weather dependent. From this I can show how I merge the results in choosing a handicap.
- With this result, I can then show how the changes in the rules over time make a difference and show the trend in pilot performance, sailplane design, and instrumentation on changing the handicaps over the last forty years.

⇒ p26

16

free flight 5/98

from page 16



Thanks to whoever installed a wind sock on top of the tower building!

A series overview ...

I am not developing or defending my approach to handicapping. I am actually explaining and defining the handicapping problem from a much different vantage point. Eventually my notes will show the limitations in handicapping by just using the MacCready model. Contest results show that the best racing pilots on their better days consistently outfly the MacCready model, and the reasons are quite revealing.

I am trying to methodically provide for the reader some insight into the complexity of the subject and show the differences between the simplistic models and what our best and lowest skilled pilots are doing with their gliders on a comparative basis for the wide range of soaring conditions, gliders, and sites, and (informal and formal) racing rules. One then can better understand that handicapping is a living process, as the handicaps for the past years are constantly changing due to soaring's changing gliders, pilots, instrumentation, rules, soaring techniques, and pilot skill levels. All of these are evolving in about ten year epochs. I should also say that over the years the data shows that the pilots who compete with the most consistency place high in handicapped racing. They might not win, but inconsistency exacts a bigger price in handicapped events than in non-handicapped ones for the scoring rules used.

The real message is the insight the idealized models provide versus the actual performance the pilots/gliders/instrumentation produce and how favoured soaring sites and politics can play a role in what are judged the fairest handicaps. This comes down to what is the objective of handicapping and what is the objective of handicapped contests, and can selected handicaps be insensitive to contest rules and objectives?

Sports class in the USA has for years been able to provide a venue for the owners of noncompetitive gliders to race in a more fair tasking environment. Later these contests became sanctioned, and higher performance gliders moved into the class which increased the performance spread in the contests. Handicapped national Sports class pilots in the USA represent about 50% of all seeded pilots in the USA. Regional competition has been a great incentive to provide a ladder system to develop racing pilots and cross-country pilots in a structured environment.

I am committing myself to a long series of chapters. After a long time I decided to write a book on what I have learned on the subject of handicapping over the last 40 plus years, and decided this series was the best way for me to start documenting what I have learned. In the future I will assemble and edit this material and publish a book on the subject.

Carl Herold

free flight 5/98

SUNFLOWER GLIDERPORT

Est. 1976

The Bill Seed Soaring Scholarship

The Sunflower Soaring Foundation provides scholarships to support soaring as part of its actions as a non-profit activity. This scholarship provides training at Sunflower Gliderport and Aerodrome so that qualified youth are given the opportunity to obtain glider pilot licenses that permit participation toward growth and development in all phases of soaring flight.

Bill Seed is the original owner and operator of the Sunflower Gliderport and Aerodrome. Bill has supported soaring at the local, regional, and national level since the creation of the Sunflower Gliderport. This scholarship is created in the spirit of selflessness demonstrated over the many years by Bill.

The scholarship is awarded yearly to a 14-22 year old non-pilot full time student with a minimum 2.5 GPA. The application requires an essay, which must present a convincing argument that the applicant desires to participate in soaring and has an appreciation for the nature of the sport and the effort required to obtain proficiency. The essay must be of a high quality that demonstrates communication skills. Applications must be received not later than April 1st 2017. The award will be announced by April 30th. The recipient may not reach their 23rd birthday prior to September 30th 2017.

The award will consist of one year membership in SSA & Club Dues, Tow fees, Glider rental, and Instruction fees. The scholarship will be extended one year if the student has demonstrated consistent progress toward the glider pilot license goal.

The winner must participate in the SSA ABC badge program as they progress.

Applications may be obtained from and returned to the Sunflower Soaring Foundation Secretary:

Tony Condon
911 N Gilman
Wichita, Kansas 67203
abcondon@gmail.com

To learn more about soaring in Kansas, visit www.soarkansas.org

Sunflower Soaring Foundation
Bill Seed Soaring Scholarship Application

Date _____
Name _____ Age _____
Address _____ Street _____ DOB _____
_____ City _____ Gender _____
_____ State _____ Zip _____ E-Mail _____
School of enrollment _____ Grade _____ GPA _____

Expand answers onto separate pages if necessary. Attach Essay to this application.
Flying Experience

Experience associated with soaring

Soaring Goals

Other related Aviation Activities

Other activities, honors, and awards

Financial Need

Recommended by _____ SSA#(not req'd) _____ Date _____

The Michael Wallace Memorial Scholarship



An opportunity for a young student interested in aviation to begin or further his or her flight training in sailplanes.

This year, the amount of the scholarship grant is \$1,000.

You must be between the ages of 14-22, be a full-time student and have at least a 2.5 grade point average.

You must also show a strong desire to learn to fly.

This grant may give you a start on the road to becoming a glider pilot, and beyond.

The deadline for receipt of applications for this grant is March 15. The grant will be awarded by April 30.

For an application, call or write today.

Or download an application from www.cypresssoaring.org. Click on the "Scholarship" button.



Michael Wallace was a young man who was always interested in airplanes.

He set his career goal at becoming an airline pilot.

He soloed in sailplanes at age 16, and earned his private pilot glider rating at age 18.

He was proud to be a glider pilot.

This scholarship is offered in Michael's memory.



The Michael Wallace Memorial Scholarship Fund

1784 Muirfield Lane • Beaumont, CA 92223

APPLICATION FORM THE MICHAEL WALLACE MEMORIAL SCHOLARSHIP

Michael Wallace was a young man who was always interested in airplanes. He set his career goal at becoming an airline pilot. He soloed in sailplanes at age 16, and had earned his private pilot glider rating at age 18. He was proud to be a glider pilot.

On February 15, 2001, at the age of 18, he had just begun his training in powered aircraft when he and his flight instructor, and two other pilots, lost their lives in a mid-air collision over the harbor in Long Beach, California. This scholarship is offered in Michael's memory.

It is an opportunity for a young student interested in aviation to apply for a scholarship/grant to begin or further his or her flight training.

The Scholarship awards one or more grants each year for the purpose of flight training in sailplanes. This grant will be paid directly to the glider flight training organization the recipient chooses, and is to be used only for the purpose of providing glider aerotows, flight instruction, and aircraft rentals to the recipient.

WHO CAN QUALIFY

- The applicant must be between the ages of 14 and 22, and will not reach his/her 23rd birthday before April 30.
- Applicant must be a full-time student and have at least a 2.5 grade point average. Proof of current grades must be submitted with application.
- Previous flight experience is not required.

ENTRY DEADLINE

- Complete entries must be postmarked no later than March 15th. The Scholarship Grant will be awarded by April 30th.

JUDGING

- The applicants will be judged based on their desire to learn to fly. A one-page essay must be submitted by the applicant, explaining why he or she wants to learn to fly gliders, what goals he or she may have in aviation, and what career goals he or she may have for the future.
- Financial need will also be a consideration. The Applicant's financial resources will be compared to that of the other applicants for the same grant. Financial need will be determined based on this comparison.

APPLICATION

- A recommendation from a school teacher OR flight instructor/flight school is required.
- If you are chosen for this grant, you must select a soaring club or fixed base operator who provides glider flight instruction, and whose name will be co-written on the award check along with the recipient's name.

The Michael Wallace Memorial Scholarship Fund

Application Form

Application Date _____

Name _____ Birthdate _____ Age _____

Address _____ City _____ State _____ Zip _____

Phone _____ E-Mail address _____

School Attended _____ City _____ State _____ Zip _____

Grade or Year in School _____ Grade Point Average _____ (Attached last grade report or letter from school verifying current GPA)

Are you attending any aviation classes? No Yes What kind of class(es)? _____

Have you had any flight training? No Yes What type of aircraft? _____

How many hours of flight training have you had? _____ Have you soloed? No Yes

Do you hold any FAA Ratings? _____

Do you work? No Yes Employer _____ Phone _____

Approximate earnings per month \$ _____

Parents/Guardian:

Name _____ Relationship _____

Address _____ City _____ State _____ Zip _____

Phone _____ E-Mail address _____

Employer _____

Total annual household income from all sources: \$ _____

Consent statement by parent or guardian of a minor: I give consent for _____ to apply for the Michael Wallace Memorial Scholarship which will provide a grant for the purpose of glider flight training, and will consent to allow him/her to receive such flight training as deemed appropriate by a Certified Flight Instructor.

Signature _____ Relationship _____ Date _____

Teacher Recommendation:

Teacher's Name _____ Signature _____

School _____ Phone _____

Why do you recommend this applicant for this Scholarship Grant? _____

OR Flight Instructor/Flight School Recommendation:

Instructor's Name _____ Signature _____

School or Club _____ Phone _____

Why do you recommend this applicant for this Scholarship Grant? _____

Please give the name, address and telephone number of the glider club or flight school you would like to have receive this grant on your behalf should you be chosen for this scholarship.

Flight School or Club _____

Contact Person _____ Phone _____

Address _____ City _____ State _____ Zip _____

Please write an essay, one page in length, hand or type written, about your interests in aviation and in particular gliding. Tell us why you want this scholarship. Also explain any future goals you have in aviation, and also your career goals.

Mail to: The Michael Wallace Memorial Scholarship
c/o Arthur Wallace • 1784 Muirfield Lane • Beaumont, CA 92223



FLARM Firmware release notes – v 6.08

Published 28 February 2017

Platforms All FLARM and PowerFLARM devices including OEM FLARM devices
Build 0a62df4

Compatibility

Every FLARM device has to be updated with the latest firmware version at least once per year (rolling 12 months). This will ensure compatibility with all other FLARM devices. If you haven't updated your device within the last 12 months, you have to update now!

The firmware may no longer be compatible with other FLARM devices 12 months after having been downloaded from www.flarm.com. Make sure to enter the next update date into applicable maintenance documentation. The device will **NOT** warn after 12 months!

Changes since 6.07

Enhancements

- Changes in Alert Zone (AZN) alarm behavior:
 - On entering the zone: Alarm is repeated 3 times every 12 seconds. Alarm duration is 4 seconds
 - After the first 3 alarms, while still in zone: Alarm is repeated every 60 seconds
- PowerFLARM: New serial command to test audio out (\$test,audio)
- PowerFLARM Core: Maximum allowed supply voltage increased to 32V
- Changes to the 'No track' configuration setting while flying are recorded to the IGC file
- Faster automatic detection of GPS leap second after startup

Fixes

- PowerFLARM: RANGE configuration setting handles unlimited range correctly
- PowerFLARM Portable: Airplane type 'Unknown' can no longer be selected on display ■



FLARM Firmware release notes – v 6.07

Published 09 September 2016

Platforms All FLARM and PowerFLARM devices including OEM FLARM devices
Build 5a5905f

Compatibility

Every FLARM device has to be updated with the latest firmware version at least once per year (rolling 12 months). This will ensure compatibility with all other FLARM devices. If you haven't updated your device within the last 12 months, you have to update now!

The firmware may no longer be compatible with other FLARM devices 12 months after having been downloaded from www.flarm.com. Make sure to enter the next update date into applicable maintenance documentation. The device will **NOT** warn after 12 months!

The data port protocol has changed. FLARM Compatible displays, moving maps, etc. may require an update to utilize distances to other aircraft greater than 32 km. Check with your display manufacturer.

Changes since 6.06

Enhancements

- Increased the maximum distance to other aircraft that is transmitted to FLARM Compatible displays from 32 km to unlimited.

Fixes

- Minor fixes. ■

US National & State Record Rules

Revised December 15, 2016

1. Applicability: Except as provided by these rules, US National and SSA State Records shall comply with the FAI Sporting Code General Section and Section 3 ("SC3"), as in effect on the date of flight.

2. Record Categories: World, US National and SSA State record Categories are "General" encompassing all pilots, and "Feminine," where the pilot and flight crew, if any, is/are female. SSA State records provide a "Junior" category for pilots and flight crews whose 25th birthday occurs on or after January 1 in the calendar year during which the record flight is made.

3. Record Classes & Categories:

FAI RECORD CLASSES	US RECORD CLASSES	GENERAL CATEGORY	FEMININE CATEGORY	JUNIOR CATEGORY (State Only)
(DO) Open Class (DO) Open Class	Open Class Singleplace Open Class Multiplace	X X	X X	X X
(D15) 15 M Class (No Equivalent)	15 Meter Class Standard Class	X X	X X	X X
(D13) 13.5 M Class	13.5 Meter Class	X	X	X
(DU) Ultralight Class	Ultralight Class	X	X	X
(No Equivalent)	Sports Class (State Records Only) (Handicapped)**	X	X	X

**** Disposable ballast is prohibited except when necessary in the tail for weight & balance purposes. See Handicapping procedures at rule 6.3c in this document**

4. Motorglider claims: Motorglider pilots may claim records in any applicable class.

- a. Motorgliders requires an MoP recorder or the use of seals destroyed by MoP use.
- b. If a critical component is removed that does not allow the motor to be used, any flight documentation methods under 6.2 or 6.3, as applicable, may be used.

5. US National & State Record Types: Except as noted below, each record TYPE is available in any combination of Category and Class (* indicates a TYPE NOT recognized for World Records)

ALTITUDE SC3 Reference; Type	DISTANCE SC3 3.1.5	OUT & RETURN SPEED SC3 3.1.6	TRIANGLE SPEED SC3 3.1.6
1.4.2; Absolute Altitude 1.4.2; Altitude Gain	Goal Distance 3 TP Distance Out-and- Return Distance	300 km* 500 km 750 km*	100 km 200 km (State Only) 300 km
Available only in these Categories and Classes: General, Open Singleplace General, Open Multiplace Feminine, Open Singleplace Feminine, Open Multiplace Junior, Open Singleplace* Junior, Open Multiplace*	Triangle Distance Free Distance Free 3 TP Distance Free Out-and-Return Distance Free Triangle Distance	1000 km 1250 km* 1500 km 2000 km and multiples of 500 km	500 km 750 km 1000 km* 1250 km 1500 km* 1750 km and multiples of 500 km

US National & State Record Rules

Revised December 15, 2016

6. General Requirements & Procedures:

6.1. For both National and State Records:

- a. The calibration requirements of SC 3.4 must be met
- b. Course leg distances shall be calculated per http://www.fai.org/distance_calculation/
- c. Any/all conversions from metric to English units shall be based on 3.281 feet per meter
- d. Multi-place aircraft flown solo will only be considered in the appropriate single-place class.
- e. All Motorglider claims require a completed FAI/SSA Claim Form D
- f. No valid record claim can be made when an in-flight accident rendered the aircraft unairworthy, or resulted in pilot or passenger injury requiring hospitalization.
- g. Multiple speed records may be claimed only for the record Type(s) immediately less than the official course distance flown; multiple distance records may be claimed in each applicable Category and Class for a single flight.

6.2. For National Records:

- a. The pilot in command must hold an NAA-issued Sporting License
- b. Documentation must be provided by a Flight Recorder IGC-approved at the "All Flights", "All Badges" or "Up to Diamonds" level (See list at <http://www.fai.org/igc-documents>)

6.3. For State Records:

- a. Documentation may be provided by any means acceptable for FAI Silver badge flights.
- b. The Start Point location, SC 1.2.9 for all State records, determines the State in which the record is claimed. The pilot need not be a resident of that State but must be a voting member of SSA and a US citizen or resident alien. Records may only be claimed in one state per launch.
- c. For Sports Class Records: at ssa.org, use "Sailplane Racing" and "Other Resources" links to find the current listing for the aircraft flown and note the figure in the HANDICAP FACTOR column. Then:
 - i. Calculate Handicapped Distance: Multiply Official Distance (SC3 1.3.7) by the current handicap. On the State record claim form, annotate the result as "HMI"
 - ii. Calculate Handicapped Speed: Verify that the Handicapped Distance is not less than the required record task length. Divide the Handicapped Distance by the Duration (SC3 1.3.3).
 - iii. On the State record claim form, annotate the result as "HMPH"
- d. There is no minimum performance requirement for any State record.
- e. For Altitude and Altitude Gain records, calibration may be either before or after the flight.

7. Application Procedures:

7.1. Post-Flight Notification by the pilot is required for ALL records;

- a. National Records; notify the SSA FAI Awards Coordinator by e-mail within 72 hours
- b. State Records: notify the State Record Keeper within 10 days; phone notification may be accepted at the individual Record Keeper's discretion

7.2. Application materials must be postmarked within 45 days after the flight, or within 15 days of any required post-flight calibration.

- a. For US National Record Claims and State Records concurrent with any FAI Badge: send original flight documentation, completed FAI Record form(s) if applicable, State Record Application and an SSA Awards Application Master Form to SSA; PO Box 2100; Hobbs, NM 88241; ATTN: RECORD CLAIM
- b. For State Record claims without a National Record or FAI Badge claim: send original flight documentation, a completed SSA Awards Application Master Form, an SSA State Record Application and, if applicable, SSA Form D for motorgliders to the State Record Keeper. At the discretion of the individual State Record Keeper, the flight documentation and files may be submitted electronically, via scanned documents with e-mail or fax.

Kansas State Soaring Records

Distance

	Free Distance	Free Out and Return Distance	Free 3-Turnpoint Distance	Free Triangle Distance	Straight Distance to a Goal	Out and Return Distance	Distance up to 3 TPs	Triangle Distance
Open Class Singleplace	557.5mi Steve Leonard 7/7/2012	428.6mi Steve Leonard 7/4/2012	581.2mi Steve Leonard 7/7/2012	425.2mi Steve Leonard 7/6/2012	438.9mi Tony Condon 4/8/2014	425.4mi Steve Leonard 7/4/2012	560.8mi Steve Leonard 7/6/2012	419.2mi Steve Leonard 7/6/2012
Open Class Multiplace	217.3mi Arnold Peters 1/1/1970	109.1 mi Tony Condon & Brian Silcott 9/7/2015	115.2 mi Tony Condon & Brian Silcott 9/7/2015	69.2 mi Tony & Leah Condon 6/28/2015	116.4mi Arnold Peters 1/1/1976	107.6 mi Tony Condon & Brian Silcott 9/7/2015	52.3mi Tony Condon & Chris Swan 6/16/2012	30.3mi Tony & Leah Condon 9/18/2010
Motorglider Singleplace								142.4mi Robert Holliday 8/6/2010
Motorglider Multiplace								
15-Meter Class	527.9 mi Tony Condon 4/8/2014	215 mi Andrew Peters 7/14/2012	530.2 mi Tony Condon 4/8/2014	234.7mi Steve Leonard 5/13/2012	438.9mi Tony Condon 4/8/2014	362.2mi Steve Leonard 6/21/1995	318 mi Tony Condon 3/12/2014	340.03mi Steven Leonard 8/29/2000
Standard Class	527.9 mi Tony Condon 4/8/2014	191.8mi Tony Condon 9/1/2012	530.2 mi Tony Condon 4/8/2014	190.9mi Tony Condon 7/6/2012	438.9mi Tony Condon 4/8/2014	228.6mi Tonk Mills 7/14/1984	318 mi Tony Condon 3/12/2014	324.97mi Tonk Mills 7/24/1987
13.5-Meter Class	310.47 mi Jerry Boone 6/4/2016	109.3mi Keith Smith 7/12/2012	320.91 mi Jerry Boone 6/4/2016	90.9 mi Keith Smith 6/16/2013		107.6mi Keith Smith 7/12/2012		
Ultralight Glider								
Sports Class	527.9 mi Tony Condon 4/8/2014	221.5mi Tony Condon 9/11/2011	530.2 mi Tony Condon 4/8/2014	294.56mi Tony Condon 7/6/2012	438.9mi Tony Condon 4/8/2014	354.96mi Steve Leonard 6/21/1995	318 mi Tony Condon 3/12/2014	329.83mi Steve Leonard 8/29/2000

Speed

	300km Out & Return Speed	500km Out & Return Speed	100km Triangle Speed	200km Triangle Speed	300km Triangle Speed	500km Triangle Speed
Open Class Singleplace	71.75 mph Tonk Mills 7/30/1988	71.2 mph Steve Leonard 7/4/2012	70.9 mph Tonk Mills 1/1/1980	83.48 mph Bob Holliday 8/24/2003	76.57 mph Bob Holliday 9/6/2004	75.88 mph Steve Leonard 7/6/2012
Open Class Multiplace			52.84 mph Steve Leonard 8/10/2005	46.14 mph Tonk Mills 7/31/1982	43.5 mph Tonk Mills 1/1/1985	
Motorglider Singleplace				51.4 mph Bob Holliday 8/6/2010		
Motorglider Multiplace						
15-Meter Class	71.75 mph Tonk Mills 7/30/1988	59.7 mph Steve Leonard 6/21/1995	70.9 mph Tonk Mills 1/1/1980	83.48 mph Bob Holliday 8/24/2003	76.57 mph Bob Holliday 9/6/2004	65.6 mph Steve Leonard 8/29/2000
Standard Class	71.75 mph Tonk Mills 7/30/1988		70.42 mph Tonk Mills 7/30/1989	58.47 mph Tony Condon 8/19/2012	56.67 mph Tonk Mills 7/22/1987	60.93 mph Tonk Mills 7/24/1987
World Class Glider						
Ultralight Glider						
Sports Class	53.44 mph Tony Condon 9/1/2012	58.5 mph Steve Leonard 6/21/1995	60.24 mph Steve Leonard 8/10/2005	64.18 mph Steve Leonard 9/6/2004	64.54 mph Tony Condon 7/6/2012	63.63 Steve Leonard 8/29/2000

RULES FOR KSA FLYING AWARDS, 2017

Unless otherwise noted, the following applies to all awards:

For definition of bold terms, refer to the FAI Sporting Code Section 3-Gliding.

Awards are to be made for SOARING PERFORMANCES with a START POINT in the state of Kansas.

On distance and speed flights, the maximum LOSS OF HEIGHT allowed is 1000 meters (3281 feet)

For sailplanes without a SSA handicap, a handicap will be established by the KSA Board of Directors.

If disposable ballast is on board at takeoff, any handicap will be further multiplied by .92.

Flight documentation shall be submitted in .igc format

Task Declarations may be electronic, written, or verbal

TURNPOINTS will be attained by entering an OBSERVATION ZONE

Wooden Wings

The Wooden Wings Trophy is awarded for the longest distance SOARING PERFORMANCE in a wooden winged sailplane. The task may be FREE DISTANCE or 3 TURN POINT DISTANCE.

If the COURSE is abandoned before all TURNPOINTS are achieved, the flight will be scored as the distance for the achieved TURNPOINTS, plus the distance to the next declared TURNPOINT, minus the distance from the FIX establishing a landing or starting of a MoP to the next attempted TURNPOINT, but not less than the distance to the last achieved TURNPOINT.

Mamie Cup

The Mamie Cup is awarded for the longest distance SOARING PERFORMANCE of the year. The task may be FREE DISTANCE or 3 TURN POINT DISTANCE.

If the COURSE is abandoned before all TURNPOINTS are achieved, the flight will be scored as the distance for the achieved TURNPOINTS, plus the distance to the next declared TURNPOINT, minus the distance from the FIX establishing a landing or starting of a MoP to the next attempted TURNPOINT, but not less than the distance to the last achieved TURNPOINT.

KSA Flying Horse (Silver)

The KSA Flying Horse Trophy is awarded for the highest speed achieved around a CLOSED COURSE with a maximum of two declared TURNPOINTS and OFFICIAL DISTANCE of at least 100km and less than 200km.

Dennis Brown Memorial

The Dennis Brown Memorial Trophy is awarded for the highest speed achieved around a CLOSED COURSE with a maximum of two declared TURNPOINTS and OFFICIAL DISTANCE of at least 200km and less than 300km.

KSA Flying Horse (Gold)

The KSA Flying Horse Trophy is awarded for the highest speed achieved around a CLOSED COURSE with a maximum of two declared TURNPOINTS and OFFICIAL DISTANCE of at least 300km.

Curt McNay Pilot of the Year

The Curt McNay Pilot of the Year Trophy is awarded for the best combined score in four tasks - DURATION (6 hours maximum), GAIN OF HEIGHT, Handicapped Distance, and Handicapped Speed. Each task will be scored from a different SOARING PERFORMANCE.

The Distance task may be FREE DISTANCE or 3 TURN POINT DISTANCE.

If the COURSE is abandoned before all TURNPOINTS are achieved, the flight will be scored as the distance for the achieved TURNPOINTS, plus the distance to the next declared TURNPOINT, minus the distance from the FIX establishing a landing or starting of a MoP to the next attempted TURNPOINT, but not less than the distance to the last achieved TURNPOINT.

The speed task must be a CLOSED COURSE with an OFFICIAL DISTANCE of at least 100 KM. However, a 3 TURN POINT DISTANCE of at least 200 KM may be used if you are flying a sailplane with a handicap of 1.36 or greater. In this case, a wind correction factor of 15 MPH will be subtracted from the achieved speed prior to scoring.

1000 points will be awarded the best performance in each task. Each contestant's performance will be ratioed according to the best performance in the task being evaluated. The sum of each contestant's scores will be compared, the highest being the winner.

Charles Henning Award

The intent of this trophy is to encourage more people to fly cross country.

- 1) The cross country task will be a CLOSED COURSE with any number of TURNPOINTS.
- 2) Handicapped Speed will be determined by the DURATION or 2 Hours, whichever is greater.
- 3) There is no limit on start or finish altitude.
- 5) TURNPOINTS may be any TURNPOINT published in the KSA Turnpoint File or a public use airport marked on a Sectional Chart.
- 6) The winner will be determined by averaging the two best tasks of the year for each pilot. The averaging will be accomplished by adding the two speeds and dividing by 2.

Lead C

Awarded to the pilot or soaring supporter who makes the most noteworthy non-achievement during the calendar year.

Praying Mantis

The Praying Mantis is awarded to the pilot who makes the most significant advance in his or her soaring ability during the calendar year. To be eligible for this award, the pilot must not yet have his or her Silver Badge at the beginning of the calendar year. The Praying Mantis selection committee consists of the KSA President, WSA President, *Variometer* Editor, WSA Chief Instructor, and the SSA State Governor for Kansas.

Towing Operations

The Towing Operations trophy is awarded to the person making the most significant contribution to the operation of the KSA Towplanes for the year.

Maintenance Trophy

The Maintenance Trophy is awarded to the person making the greatest contribution via maintaining equipment related to soaring flight during the year.

Submit flights at

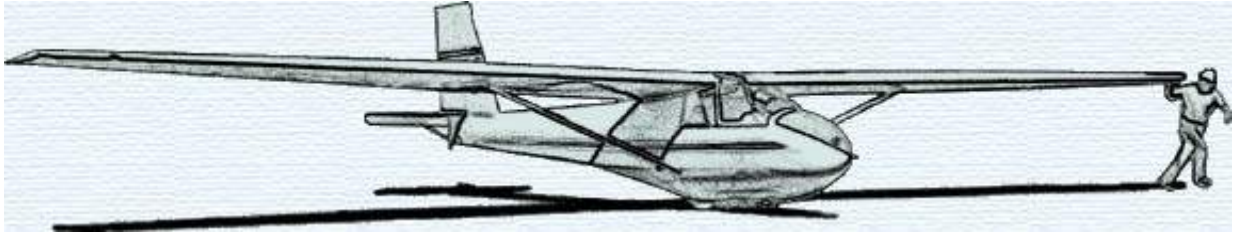
<http://www.soarkansas.org/soar/scoring.aspx>

KSA VARIOMETER

911 N Gilman

Wichita, KS 67203

abcondon@gmail.com



KSA Meeting

March 11th - 6:30 PM

Badge Flying - Tony Condon

Jabara Hall Room 127 - Wichita State

Drop of Parachutes for repack

Get Kansas Aeronautical Charts

Sign up for Towing/Line Duty, Pay your 2017 Dues!