

# The Frequent Flyer

The Monthly Newsletter of Caesar Creek Soaring Club

Happy New Year!!!! January 2004

## From Dream to Reality: Part 4

By Thomas Turner

*Editor's note: This is the fourth of a four-part article reprinted from ipilot.com*

Success! After years of experimentation, building on the work of countless others yet furthering the science of aeronautics well beyond any others before them, Wilbur and Orville Wright had solved the elusive problem of aircraft control in gliding flight. The ultimate prize, however, was to combine that control with power to go when, where and however long they wished. The Wright Brothers needed an engine.

In December 1902, freshly returned from gliding at Kill Devil Hills, Wilbur wrote ten leading engine manufacturers of the age. He inquired about an engine meeting these specifications: gasoline powered, producing at least eight horsepower, weighing no more than 180 pounds. To his and Orville's dismay, the replies confirmed that *such an engine simply did not exist*.

Typically, the Wrights saw this not as an impediment, but instead merely another challenge to be overcome. They turned to their bike-shop mechanic, Charles Taylor, with instructions to design and build an engine to their specifications.

## MEANWHILE, BACK AT THE WIND TUNNEL...

Meanwhile, the Wrights made another leap of logic while experimenting with propeller designs in their wind tunnel. Researching propulsion methods, they had written to the engineering branch of the Navy asking about the mathematics of ship's propeller design. They were aghast at the reply: ship's screws were designed entirely by trial and error, twisting the blades this way and that until a particular pitch seemed to work. There was no science to blade pitch and design... sounding like another job for the Wright Brothers.

With their wind tunnel the Wrights quickly came to the not-so-obvious-at-the-time realization that a propeller blade was simply another airfoil, subject to the same physics and mathematics governing wing design. Making that simple yet dramatic realization, they began testing propeller designs. Their result was extremely efficient in turning horsepower to thrust, rivaling some propeller designs of as late as the Second World War, and recorded on propeller design tables that were still in use well into the 1950s. Needing to turn low horsepower into high thrust at low forward speeds, the Wrights settled on a pair of huge, two-bladed propellers, counter-rotating to eliminate the added control problem of torque. The blades would be spun by bicycle chain from their single, gasoline-powered engine ... if a powerful and light enough engine could be built.

## THE INDESPENIBLE "THIRD WRIGHT" -- CHARLES TAYLOR

Charles Taylor is now known in the aviation technical profession as the first aircraft mechanic, first airport manager, and first air crash investigator. His career took him from the Wright Brothers' bicycle shop to aircraft hangars at the dawn of the Jet Age. In fact, the FAA's highest accolade for aircraft technicians, the [Charles Taylor Master Mechanic Award](#), honors this vital aviation pioneer.

Taylor came back to the Wrights with a four-cylinder, 201-cubic inch, water-cooled engine. It was heavier than the Wrights wanted -- weighing 200 pounds -- but it was 50% more powerful than "spec," producing 12-horsepower at full throttle, the only operational setting. First engine-stand tests were disastrous, but by May of 1903 this engine (the basis for over 200 he'd later build for the Wrights) was running reliably, and smooth.

### Upcoming Events!!

#### Annual Dinner

January 17, 2004  
Kings Island Resort

Caesar Creek Soaring Club  
P.O. Box 918  
Waynesville, Ohio 45068  
(513)932-7627

See our website at:

<http://www.wrightdesigns.com/ccsc>

## **A "WHOPPER FLYING MACHINE"**

With wing-warping and a moveable rudder providing control, wildly efficient low-speed propellers, and a light powerful engine, the Wrights began cutting wood and sewing cloth for what Orville called a "whopper flying machine." The 1903 craft, dubbed the Flyer, had a wingspan of just over 40 feet.

As they made final preparations the Wrights filed an application for a patent on their invention. The U.S. Patent Office declined, saying it was not their first such application, claiming the Wrights' drawings and descriptions were not detailed enough, and concluding that "obviously the device could not perform its intended function" anyway (all of which to me sounds like trying to get a [Form 337](#) Field Approval these days!). Undeterred, on September 23, 1903, Orville and Wilbur Wright, their disassembled Flyer, and their new launch-rail system departed Ohio for the North Carolina shore

## **RECURRENT TRAINING ... AND AIRCRAFT CONSTRUCTION**

While they rebuilt their remote camp at Kill Devil Hills and assembled the powered airplane, the Wrights took a "flight review" by experimenting with their 1902 glider. Meanwhile, ground-based engine runs of the assembled Flyer caused extreme vibrations that threatened to destroy the craft. The Wrights shipped the damaged propeller shafts back to Dayton, where Charles Taylor rebuilt them. The repaired shafts, when reinstalled, were quickly damaged again. As ingenious as the Wrights themselves, Taylor produced a new design built from solid steel. The new propeller shafts did the trick.

Although the Wrights had planned to first test the 1903 Flyer as an unpowered glider, the delays prompted them to move directly to powered flight testing in order to be home as promised for Christmas. All was ready for flight on Saturday, December 12th, but the winds were too light for launching. Honoring their promise to their father, Bishop Wright, not to fly on a Sunday, the first flight was rescheduled for Monday, December 14.

## **FIRST ATTEMPT -- DECEMBER 14, 1903**

On that Monday morning the Wrights held their famous "coin toss" to see which of the two would have the honor of becoming the first to pilot a controllable, powered, heavier-than-air machine. Wilbur won. The Wrights and volunteers from the local Lifesaving Service station manhandled the Flyer into position on its launching rail.

A chilly wind blew in from offshore. Wilbur lay prone on the bottom wing of the Flyer at the controls. The engine balked as Orville spun the props, but it eventually started; the Flyer began slowly moving down the launch rail, supported on a small, wheeled dolly. Not realizing the effectiveness of the Flyer's huge elevator Wilbur over-rotated; the Flyer became briefly airborne, then slammed down onto the sand in a stall. Repairs took two days. But now Wilbur and Orville were sure their airplane would soon fly.

## **DECEMBER 17TH**

With a steady, 25 mile per hour wind, the Wrights and their volunteers again positioned the Flyer on its rail at 10 a.m., December 17th, 1903. Since Wilbur had the first chance on the 14th, it was Orville's turn to fly. Like Wilbur, Orville over-rotated at first, quickly entering an up-and-down pilot-induced pitch oscillation that lasted 12 seconds and covered 120 feet, until the Flyer slid to a stop in the sand. But there was no mistaking that Orville had flown, and that the Flyer responded to his control. At the moment of liftoff, a pre-positioned volunteer snapped a picture that has been described as the most-reproduced photograph of all time. It captured liftoff on the first controlled (albeit, poorly), powered, heavier-than-air aircraft from level ground.

Taking turns, the Brothers made three more, increasingly successful (in control and distance) flights as they taught themselves to fly among the dunes. During ground-handling for a fifth attempt, a gust of wind damaged the Flyer enough to suspend further flight operations. The longest flight traveled 852 feet in 59 seconds. Beaming, Orville traveled to the lifesaving station and sent his father a famous telegram that started with the word that says it all: "Success."

## **SUCCESS**

Building on the wealth of hundreds, if not thousands of years of knowledge borne of myth and science, two flying enthusiasts made phenomenal advances by drawing together the best information of their age and

tempering it with their own insight and ingenuity. These two, who received formal education not beyond high school, painstakingly developed the system of aircraft control still in primary use today; one lost technology is even making a comeback in the latest test versions of the wing-warping F/A-18 Hornet supersonic attack jet.

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The Soaring Society of Dayton and Caesar Creek Soaring Club invite you to attend the 2003 Annual Awards Dinner, on Saturday, 17 January 2004. The event will be held in the evening, at the Kings Island Resort and Conference Center. (Across Rt 741 from Kings Island. Go to the park, and follow the signs for the Resort/conference Center).

We will present our usual "...of the Year" awards, based on statistics and the information that we have. But we would also like to present several special awards to recognize special events or accomplishments. And here, we need your help! If you, yes YOU, would like to propose an award, or certificate or, ANYTHING to commemorate any special achievement or act by any club member, then please contact me. Serious awards for good things done are highly desired of, course, but humor is encouraged too. We're pretty open-minded about this. (Just no outright making fun of someone, OK?)

Another area where we need help is the annual "Flight of the Year", typically, the longest distance flight flown FROM CCSC when not part of contest. I don't necessarily know who did what, here, and sometimes the pilot is too modest to nominate himself. So, if you made a great flight, or know of a great flight, submit the nomination.

Thanks, and we hope to see you soon. Dick Holzwarth

**Caesar Creek Soaring Club  
and Soaring Society of Dayton**

**2004 Awards Dinner**

**Please Join US**

Saturday 17 January 2004  
Kings Island Resort and Conference  
Center

Social 6:30 PM

Dinner 7:30 PM

Presentations Afterwards

**Reservations Required**

Please RSVP Dick Holzwarth

937 885 4156

Holzwarth@woh.rr.com

**"On a clear day, you can see forever"** so goes an old Broadway tune. And so it is at the clubhouse with all brand new windows.

Thanks goes to Jack Morari, who supplied and has been installing them these past couple of weeks.

Thanks, Jack !

## Grob Canopy Discussion

By Bill Gabbard

On Saturday, September 6, 2003 I was to give a guest ride in the Grob 103. It was midafternoon, visibility was excellent, there were cu's in the area and a light NE wind of about 2-3 knots. Though the Grob had been flown previously, I did a walk-around prior to our flight. I had already briefed the guest on cockpit procedures, what to touch and what not to touch, and how to operate the canopy. I verified weight and balance and decided to add ballast.

We got in the glider (guest in the front seat) and secured our seatbelts. I proceeded through the pre-flight checklist, verified rope readiness and we were hooked up to the towplane. Slack in the rope was taken up, and both the ground launcher and myself checked for last-minute traffic. When I was satisfied all was in order, I gave our launcher "thumbs up" and the take-off roll began. As the airspeed increased, the glider lifted off; I held position about a foot or so off the ground and a few moments later the towplane lifted off. I held position behind the towplane as it began the climb out. From years of great Caesar Creek training, I looked over to visually confirm that the airbrakes were closed and locked. At this point, we were still above the field (I would estimate 70 ft. AGL) almost ready to cross over Elbon Road in a slight right turn. Everything looked great, right on the numbers.

As we crossed over Elbon Road, I glanced at the altimeter and we were approaching 150 ft. AGL. Only seconds later, with no warning, the rear canopy came completely open. As I briefly looked over at it, the canopy shattered and left its frame. I looked back at the towplane, noting that we were still in good tow position. I now looked back to the right to assess the condition of the remaining frame and saw that it was now twisting on its hinges in the wind. Realizing that we were unhurt and the glider was flying OK, my intention was to abort the tow and return to the field.

As I looked back over my right shoulder to assess our position I judged that we needed more altitude for a safe return. Since all factors seemed OK (myself, the passenger, the glider and towplane), I continued to fly the tow to gain additional altitude. I then took another look to the right, looked OK, so I then released and made a right turn heading back toward the field. Using the yellow triangle on the Grob's airspeed indicator as my guide, I flew best L/D of approx. 51 knots. I rolled out parallel to Elbon Road on base leg and opened and closed the brakes to check their operation. A visual check to the left confirmed no traffic on the field, so I turned left onto final. Opening the airbrakes to half, I set up for a mid-field touchdown. Upon touchdown the glider rolled out to a stop, ending just about where we had taken off. We then got out and looked over the glider. Apart from the shattered and now missing canopy, the Grob appeared unscathed.

So, what are the lessons to be learned from such an incident? First, we prepare for tow emergencies by practicing "rope breaks". We should be aware that an actual rope break is only **one** of **many** things that could cause an early unexpected tow release. Also, "200 feet" is only a *guideline* not a guarantee that one can make it back to the runway. Training for emergencies and practicing coordination enables you to function when things go wrong. Don't let a distraction become lethal. Don't let anything keep you from flying the aircraft; maintain control until it is completely stopped.

Also, I suggest reading (or re-reading) Pete Williams' column *Motorgliding Corner* entitled *Lethal Distractions!* In the November, 2003 issue of *Soaring*.

**ATTENTION INSTRUCTORS !** We now have "Solo Certificates" available for your student's first time solo. They are suitable for framing and will be kept in the top drawer of the instructors file cabinet. There are two different versions, gender specific, so make sure you get the correct one.

Tom Bales

**CCSC Board Meeting Minutes  
December 6, 2003**

Meeting called to order by outgoing President Mike Karraker at 9:35

Present : Mike Karraker, Joe Jackson, Jim Lowe, Dave Menchen, Bill Paar, Brian Stoops,

A trustee from the township spoke to us about the road frontage and what the township would like to do to keep the roads safe and in repair while helping us improve the looks of our property. He asked us to decide what we would like and to propose it to the township in early spring. This will be our only opportunity to have the township help with the effort for the next 5 years. After brief discussion it was decided that this is a SSD issue but that we will provide our perspective on the subject as a recommendation to them.

The members of the board were nominated and elected to the following positions:

President: Joe Jackson	Vice President: Mike Karraker
Treasurer: Jim Lowe	Secretary: Rolf Hegele
Operations: Brian Stoops	Maintenance: Dave Menchen
Publicity: Dave Rawson	Social: Dick Holzworth
Grounds: Bill Paar	

A discussion of the requirements to be a Tow Pilot and to be on the insurance was held with the result that Rich Carraway will revise the Tow Pilots manual. Paul McClasky was appointed as Chief Tow Pilot. (We have added 4 new Tow Pilots and have 1 more in the process of being added.)

A new "preliminary" copy of the By-laws was presented by Joe Jackson. Minutes of previous meeting were approved by the board.

A question was raised about insuring the trailer for the ASK-21. Bill Paar volunteered to look at the cost of such insurance and to determine the value of having the insurance.

The budget was presented leading to a discussion of weather to pre pay some 2004 expenses to reduce the tax implications for 2003.

New belts have been ordered for 16Q and will be evaluated with the thought of upgrading all the 2-33s

A request was made to have anyone interested in coming to the 12/17 celebration send a RSVP to Dick Holzworth

Bill Maxwell requested that the board members and their responsibilities be listed in the newsletter.

Bob Root requested (on behalf of the SSD board) that we provide guidance as to the acquisition of a ship to replace the white 1-26 which seems to be flown infrequently. A discussion of the relative merits of the 1-26 resulted in a general consensus that the CCSC board feels that some other ship would have more utility.

Steve McManus and Buck Towne requested permission to hold another Youth Soaring camp this summer. The request was approved.

Pat Denaples requested that the club allow the use of all three tow planes for a formation fly over of the Wrights home on 12/17. The request was approved

The meeting adjourned at approximately 11:45

### The CCSC Bookstore

As you know, the display case in the clubhouse contains training manuals, logbooks, CCSC t-shirts and other items for sale to members. Access to this locked cabinet has been limited, as only a few members have a key. To address this issue, all CCSC instructors now have access. A key is located in the instructor's file cabinet (top drawer, first file folder) so if you wish to purchase an item, your instructor should be able to assist you. Please be sure to record your purchases on the log sheet provided.

A supply of the new "Glider Flying Handbook" has just been received. This new training manual, released last summer, is published by the FAA, and was written by a group of experienced flight instructors from the glider community. It is comprehensive, well-written and very nicely illustrated. Like most soaring publications, it is a little pricey, however, SSA offered us a club discount. It is available to our members for \$25 a copy, instead of the \$34 retail price.

Rich Carraway

#### **2004 SSA Calendars available at clubhouse for \$6.50 each.**

You can pick them up on the display. Take as many as you want.

Be sure to log your purchase on the adjacent clip board. Only 18 left on 12/31/03.

**Please help our bookkeeping crew by writing your account number on all your checks. Saves having to stop the data entry to it look up. Thanks**

## Classifieds

**For Sale:**

Security 150 parachute, chair-type. Also Raine Winter barograph, 10 km.  
Contact Kent Sorrell 937-855-7135

**For Sale:**

One share of Redwings SGS 1-26. Contact Stewart Trefzger at 513-561-5579 or e-mail at [strefzger@worldnet.att.net](mailto:strefzger@worldnet.att.net)

**For Sale:**

1/2 share in 6V, N178K, 1972 ASW-15. \$7500, contact Gil Stengel 513-233-2103 or [gstengel@fuse.net](mailto:gstengel@fuse.net)

**For Sale:**

26' Kencraft 1966 Travel Trailer. Located at the glider port. \$1500.  
Call Gloria Dalton at 704 394-0401 or e-mail [gbdalton@juno.com](mailto:gbdalton@juno.com).



Submissions for *The Frequent Flyer* should be sent to:

[aaronsorrell@ameritech.net](mailto:aaronsorrell@ameritech.net)

- or -

Aaron Sorrell  
128 McDaniel St.  
Dayton, Ohio 45405  
(937) 220-9026

## Crew Schedule

Date	Crew Chief	Tow Pilots	Instructors	Ground Crew
1st Sat & 3/29	G. Daugherty	J. Armor T. Hudson	R. Hennig W. Miley	J. Beaupre, J. Chiles, A. Colvin, P. Nord, Dave Edwards, J. Lowe, A. Sorrell
1st Sun & 3/30	M. Karraker R. Carraway	M. Maurer N. Maurer D. Schmidt	A. Swanson	W. Van Breukelen, M. Jett, W. Schmid M. Munz, B.& B Towne, J. Miles, D. Rawson J. Sorrell, S. Tagariello, T..Lynch
2nd Sat & 5/31	R. Root D. Staarmann	R Anderson	J. Price J. Hurst M. Williams	J. Antrim, J. Biernacki, B. Connolly, D. Colvin, W. Detert, S. Trefzger, J. Benner, J. Inman
2nd Sun & 6/29	D. Menchen T. McDonald	L. Kirkbride F. Hawk T. Holloran	G. Wade T. Rudolf	R. Anderson, Ed Dorosz, M. & L. McKosky, K. Menchen, J. Muth, P. Pedersen, R.Sexton, M. Debeque, J. Smissaert, T. & G. McDonald, H Goebel, E. Tete
3rd Sat & 8/30	R. Hegele R. Griffiths	D. Green A. Widner	B. Gaertner C. De Berry	B. Boesel, R. Weaver, D. Klenbanow T. Bresser, P. Vintrup, D. Rivers
3rd Sun & 8/31	J. Morari B. Paar	B. Oagley	R. Eckels * B. Gabbard	S. Estell, K. Sorrell, J. Koons, M. Keller K. Robertson, S. Shields, T. Bonser R. Reinhart, J. Macnicol
4th Sat & 11/29	J. Miceli J. Murray	T. Bales G. Byars S. Day	J. Jackson ** T. Bales	T. Spillane, C. Lohre, H. Meyerrose, E. Saladin, B. Stoops, A. Dignan, D. Corni
4th Sun & 11/30	R. Holzwarth M. Statt	F. Paynter R. Scheper	J. Lubon	C. Burns, R. Cedar, G. Crook, B. Kish, J. Jordan, P. Lubon, G. Stengel, G. Berneir

\* Designated Examiner

\*\* Chief Instructor

**If you are not assigned to a crew and would like to be, contact Dave Menchen at  
513-779-0821.**

**Former Floating Crew members should contact Dave Menchen  
for crew credit information.**