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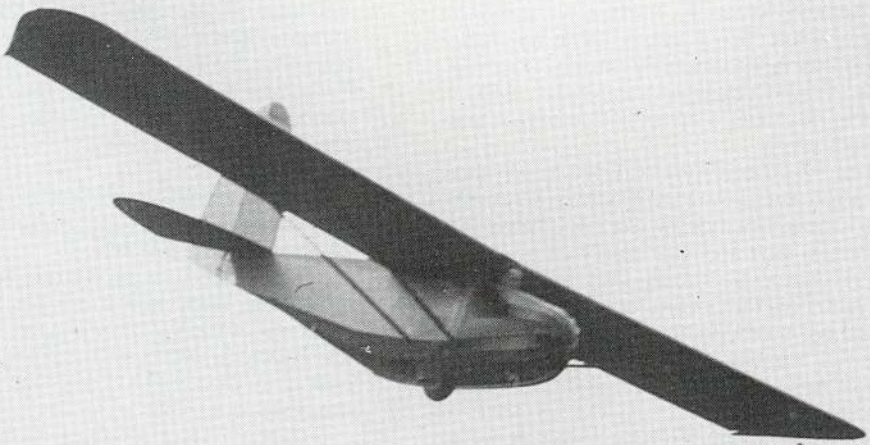
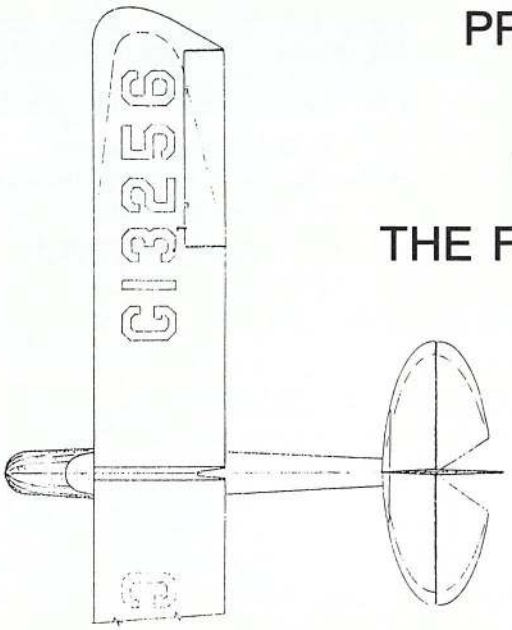
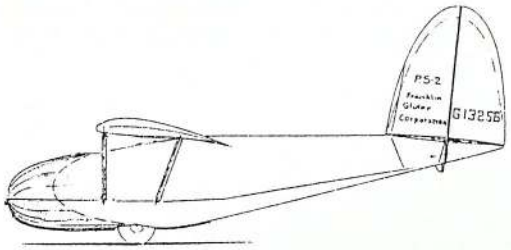


PROF. R. E. FRANKLIN, BROTHER WALLY, WALTER GRAVES, THE FRANKLIN "9491" AND PS-2 GLIDERS





Right: Professor Roswell E. Franklin, from the Fred T. Loomis NSM Multi-Media Collection.
Left: A Two-view of the Franklin PS-2, from the Vintage Sailplane Association, "Bungee Cord."

It was one of those golden moments in aero-history when some of the world's most renowned pilots met for the 1929 Cleveland Air Races. Flyers like Major Reed Landis, Lady Mary Heath, Frank "Speed" Hawks and Amelia Earhart were there.

One of the side events was "The Famous Motored Pilots Derby," in which the Race luminaries would fly gliders.(1) Amelia Earhart was flying the Franklin-designed-and-built "9491." Somehow she managed to get it into a spiral and twisted it into the ground, damaging both wings.

Earhart was unhurt. But Wallace H. (Wally) Franklin, brother of famed glider pioneer Prof. R.E. Franklin, gloomily surveyed the remains of their now stub-winged glider. He confronted the famed aviatrix with a funereal face and mumbled that he didn't know whether the "9491" could be rebuilt with their limited resources. He, the Professor, Walter Graves, and the University of Michigan students, had put so much time and effort into the construction of the "9491." He didn't know what they were going to do. Times were hard; it was 1929 and the Great Depression had just started.

Never profoundly troubled by money, Earhart scribbled out a check for $400 on the spot and handed it to Wally Franklin. He later admitted that $200 would have done the job — with some to spare.

Earhart's $400 check was used as seed money to build the Franklin PS-2. The ship became winner of three of the first four National Soaring Championships and the sailplane base from which the American soaring movement took off in the 1930's.

Roswell E. Franklin was born in 1895 at Oswego, N.Y., graduated from Rensselaer Polytechnical Institute as a chemical engineer and went into the Army Signal Corps/Air Service during World War I. He was the first to take aerial wet plate photos flying in a Curtiss Jenny from Langley Field,VA.

In a recent interview, R.E.'s son Charles Franklin, Ann Arbor, MI, recalled events of that era.

Around 1920, R.E. took up mechanical engineering at the University of Michigan at Ann Arbor and stayed as an instructor at the University's West Engineering School.

R.E.'s brother, Wally, was about 14 years younger and went to high school across the street from where R.E. taught.

The Franklins became interested in gliders when two University students, Bob and Edward Evans, brought home plans for a Zoegling primary glider from Germany.

Charles Franklin recalled that two gliders were built from these plans, one by his father and uncle and the other by the U of M glider club, then grandly known as "The Glider Section of The University of Michigan Aeronautical Society."

In his book, "Sailing The Skies, Gliding and Soaring,"(2) Malcolm Ross said "Professor R.E. Franklin saw the imperfections in the Zoegling and implemented modifications by lightening the construction and increasing the tail surface area. They flew it by automobile tow off the ice of a small (Barton) pond, with Professor Franklin working out the technique of towing as they went along. In this way Wallace learned how to fly a glider."

Charles Franklin said that his father and uncle developed a fast method for making glider ribs that surpassed anything being done in Germany.

"There were two gliders built from these plans, one by R. E. and Uncle Wally and the other by the University of Michigan students," Charles Franklin said. The former never flew; instead the brothers, along with Walter Graves, designed their own, calling it the "9491," after its Civil Aviation Administration designation number.

Graves, a U of M student, was a talented and innovative engineer. He introduced the "9491's" wheel and skid combination landing gear, along with a braking system.

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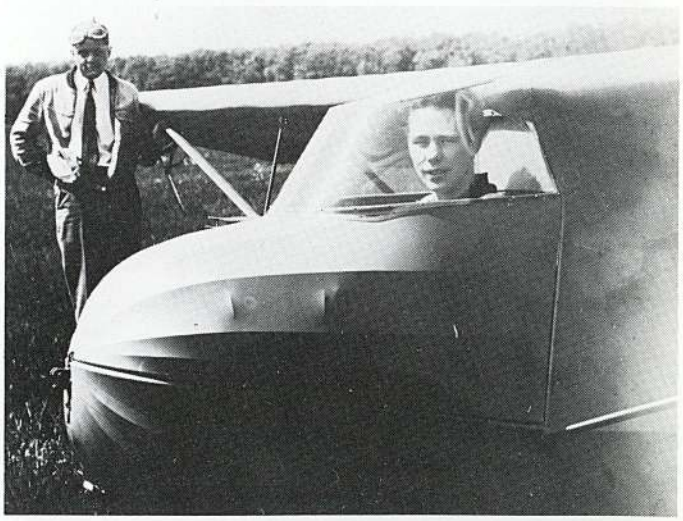
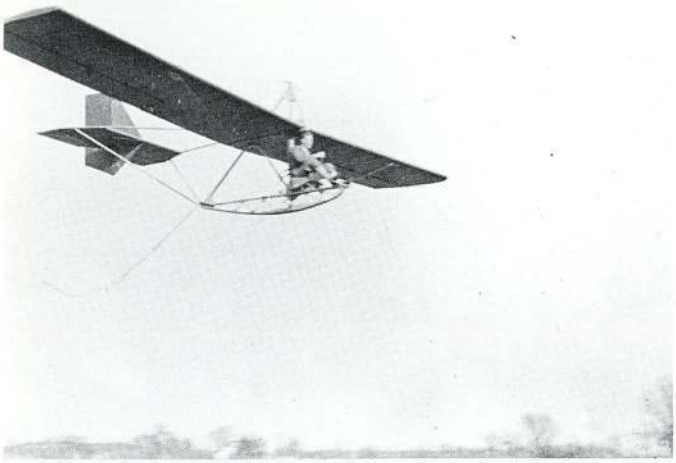


Wallace H. (Wally) Franklin, in the cockpit of a Franklin PS-2 or "9491" in the late '20's or early '30's. A Charles Franklin photo.



After a shock cord release. The first German design, built by University of Michigan students with Prof. R.E. Franklin's assistance. James D. Redding photo.

(continued from page 2)

Originally designed with an open fuselage, the "9491" had a six-foot wing root chord and about a 45-foot wing span which tapered to a tip of about three feet. C. Franklin said that it was strut-braced and had one of the Monk airfoils. It had a lot of wing area. Malcolm Ross in his book said that the "9491" had a high aspect ratio (The ratio of the glider's wingspan to its mean wing chord) and a closely coupled tail.

Around late 1928, R.E. and Wally Franklin decided to go back East and ended up in Albany. There they met Slim Emmerson(3) a pilot for the airlines that later became USAir. Slim owned a Hispano-Suiza powered Standard biplane and asked the brothers if they had ever towed behind a glider. Wally thought that was a great idea but Emmerson wondered whether they wanted to tow that high with an open fuselage. The Franklins went out and bought some bed sheeting and spent all afternoon covering the fuselage of the "9491." It was almost dark when they finally tied the towline to the Standard and were ready to go.

Just before takeoff, Slim casually told Wally that he couldn't tow him too long because the Hisso's bearings were worn and when the engine got warm he'd lose pressure and have to shut down.

By then it was so dark that all Wally could see was the blue glow from the engine exhaust stacks.

Charles Franklin said that as far as he knew his uncle didn't have an airspeed indicator or altimeter on the glider and couldn't read it if he had, because of the darkness.

After a hair-raising flight in the inky abyss, Wally finally made out the airport where an attendant had a spotlight on for landing planes. Compounding Wally's problems, the spotlight was aimed directly at "9491" temporarily blinding him. According to his nephew, "Somehow or other it all turned out OK and Wally hit the runway going like the devil....I think it was the first aero-tow in this country....at least at dusk..."

Again from Ross' "Sailing the Skies,": "At the Williamsport, NY (PA,? ed.) Airport, in the Summer of '28, Wallace Franklin was towed up to 4,000 feet by a Kinner-powered ship piloted by Lieut. Harry Mills. Wallace cut loose and descended to Bald Ridge, over which he made a true soaring flight — using nothing but ridge upcurrents for nearly an hour, whereupon he became cold and nosed down for a landing. This was the first American use of airplane towing to launch a soaring plane into regions where it could keep aloft."

A more important fact to the Franklin Brothers was the proof that they now had a ship that could soar; a real utility glider, capable of use for training purposes, for automobile and airplane towing, and still able to use light winds for the skillful sailplane pilot.

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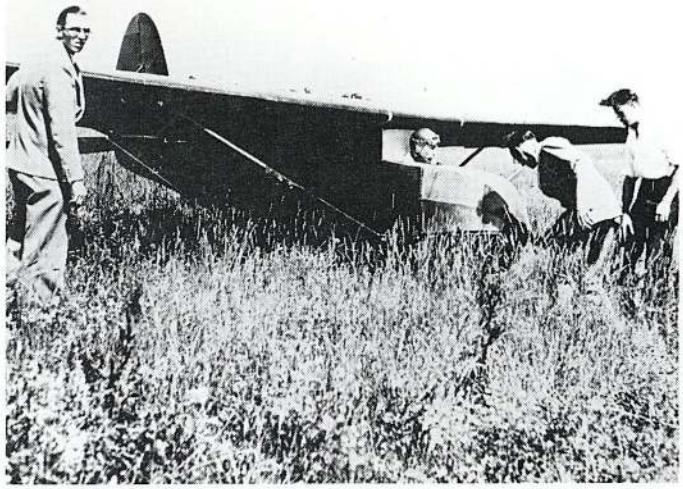
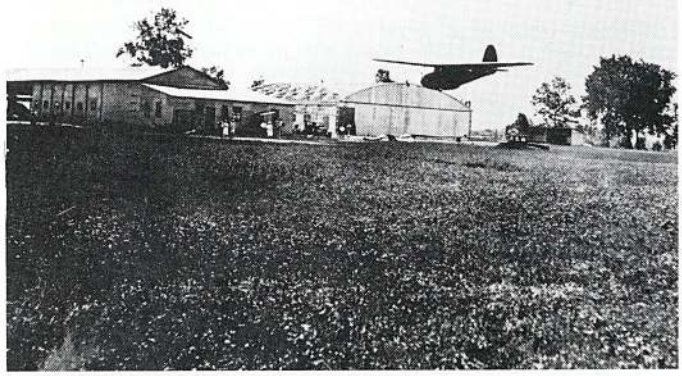


Glider built by the Franklin Brothers at Ann Arbor, MI, Prof. R.E. Franklin leaning over, inspecting nose release. James D. Redding photo.



James D. Redding captioned this photo, "Probably the Franklin Brothers' second design, landing at Ann Arbor Airport."

A Fred T. Loomis photo of the University of Michigan Glider Club's PS-2 at Elmira, in 1936. From left: unidentified, Bob Auburn, unidentified and Nelson Shapter.

A Charles Franklin photo of Wally Franklin at the Irvin Parachute Co., Buffalo, NY.

The Stevens Tech Gull Wing Franklin shock cord launched from site #6 on the Rhodes Farm, Elmira, 1936. Fred T. Loomis photo.

(continued from page 3)

This duration flight was disallowed for record purposes because it was made by aero-tow.

Charles Franklin continued: "The group took '9491' to Akron, OH, where Wolf Klemperer arranged another first, a tow behind a blimp. While staying there at the YMCA, they laid out plans on butcher paper for what they referred to as the 'Big Ship,' on the gymnasium floor. It had a wing span of something like 50 feet and ended up as being the Texaco Eaglet, the glider that Frank Hawks flew across the country. Anyway, in a couple of days they had the design completed.

"When they returned to Ann Arbor, my uncle and Walt Graves, with the aid of interested University students, worked almost around the clock and in three weeks had the the 'Big Ship' completed. My father was not directly involved here, because he was teaching.

"Meantime, my uncle trailered '9491' 185 miles from Ann Arbor to the Cleveland Air Races, and returned to Detroit to help Walt Graves work on the 'Big Ship' which, when finished, was aero-towed to Cleveland. There a deal was made with Frank Hawks and the Texaco Company to buy the 'Big Ship' for a coast to coast flight.

This was when Earhart cracked up '9491.'"

Later Frank Hawks came to Ann Arbor where he saw the refurbished "9491" and the "Big Ship" in a side by side flight. He was much more impressed with the flight characteristics and strength of the "9491" than with the performance of the "Big Ship". He decided to purchase the former.

But it wasn't to be. Instead, he watched as one of the students who decided to put on a demonstration, kicked the "9491" into into a vertical bank that resulted in a spiral dive into the ice, totalling it. Miraculously, the student walked away badly shaken but unhurt.

With "9491" wrecked, another deal was made with Hawks, and the "Big Ship" became the Texaco Eaglet.

R.E.'s son said that the brothers used Earhart's $400 to build a new ship, the Franklin PS-2. (The story goes that the P stood for Primary, the S stood for Secondary and the 2 stood for Too — Primary and Secondary Too.)

The PS-2 was designed originally with a Monk wing section, Charles Franklin said, "But this made the ship so hot and fast that it was soon wrecked. The wing was changed to a Clark Y, or more likely, a Gottingen 530 airfoil, close to the airfoils that had been used on other gliders."

Fifty-two PS-2's were built in the depths of the depression and were sold for between $500 and $650 apiece; plus $75 for the trailer. The 36-foot wing was of wood and fabric construction with a steel tube and fabric fuselage. Wing area was 180 square feet with an aspect ratio of 7.2. Empty the PS-2 weighed 280 pounds, with a payload of 180 pounds, for a gross weight of 460 pounds. It had a glide ratio of 15 to 1 and a minimum sink of 2.5 feet-per-second.

(A restored Franklin PS-2, which belonged to Warren E. Eaton, first president of the Soaring Society of America, was donated to the National Soaring Museum. It is on display at the NSM as part of its 1990-91 exhibit focus "The 60th Anniversary of the First National Soaring Contest.")

"They were turning out one a week, Uncle Wally doing the welding and University of Michigan students interested in aeronautics helping," young Franklin laughed. "My father had the prestige and Uncle Wally didn't have a college education, but he could stay on his feet longer."

(continued on page 5)

Massachusetts Institute of Technology Glider Club members preparing to launch one of their members as A. Larry Lawrence checks the cockpit, Elmira, 1936. Fred T. Loomis photo.

A Fred T. Loomis group photo taken at the Rhodes Farm, Elmira, in 1939. Standing from the left: Alfred Heath, Dana Darling, Glen Sweet, Gus Scheurer, Edward A. Mooers, Gus Haller, William Enyart, Dr. Arthur Glover, Dr. Karl Lange, M. Holmes Shoemaker, Mrs. Irene "Ma" Rhodes, Emerson Mehlhose, George MacGreevey, Fred Decker, Wolf Hirth, Mathews, William Gunter, Sherman Voorhees.
Middle row: Dr. Wolf Klemperer, Arthur Schultz, Mrs. Schultz, Charles Franklin (R.E.'s son), Prof. R.E. Franklin, Capt. Thomas Phillips, Dorothy Holderman, Russell Holderman.
Front row: Howard Funk, Sgt. Roche, Joe Funk, Floyd Sweet, Youston Sekella, Herschel King, Alcide Santilli, A. Larry Lawrence, Stan Smith.

(continued from page 4)

"It was generally agreed that the PS-2 was jigged and fixtured better than any other aircraft of the day. Production techniques for interchangable parts were developed," Charles said. "Students later applied those methods to WW II production problems with amazing results."

He continued, "The first two gliders that the American military purchased in 1933 or 1934 were Franklins. The late Capt. Ralph S. Barnaby was involved in this purchase while he was assigned to the Pensacola Naval Air Station."

The PS-2 was the last of the Franklin designs but other sailplanes, such as the Stevens-Franklin Sunspot, incorporated some of its components.

R.E. Franklin left the University of Michigan in 1935 and went into the engineering consulting business. He joined Dr. Klemperer in surveying West Coast defenses just before WWII, then returned East to work on the A1 automatic pilot program. Then he went to the Ford Motor Company's B-24 bomber plant to work on automatic pilot systems and procedures.

After the war, R.E. purchased some war surplus equipment and invented a cinderblock-making system that was much faster than anything then in use. This venture took him to Israel in 1953-54. Later he toured Europe and again met with Wolf Hirth, Hanna Reitsch and several of his soaring friends from the early days. He died in 1973.

Around 1934-35, Charles' Uncle Wally got married and dropped out of soaring. He moved to South Dakota and worked on the development of the Mt. Rushmore/Black Hills National Park. During the war he returned East to join his brother as an inspector at the Ford complex. Later he went to Mexico where he became interested in the dried lakes and the dolomite caves around San Cristobal de Las Casas. He died in Mexico in 1984.

Before WW II Walter Graves designed a gauging system that checked the rifling accuracy of large cannon barrels. After the war he went into the bearing business and founded Industrial Techtronics. Graves died in 1954.

Prof. R.E.'s son Charles lives in a rammed earth house that his father built between 1923 and 1933. It has walls 18 inches thick and was constructed by excavating the basement and ramming the dirt up to form walls. He is an aerospace consulting engineer and has been associated with the Department of Defense working on icing problems.

Footnote References

1. Wings Like Eagles The Story of Soaring in the United States, Paul A. Schweizer, Smithsonian Institution Press, Chap. 2, pgs. 17-18.
2. Sailing the Skies, Gliding and Soaring, Malcolm Ross, The Macmillan Company, 1931, pgs. 109-156.
3. The Uncle Wally Stories, Charles Franklin, SOARING, November, 1988, pg. 48

Completed drawings (about 60) for the Franklin PS-2 glider are available. They were made from information obtained by examining two highly modified PS-2's, old notes, sketches, data from friends, plus memory and design logic. They are intended to be used as a guide for the restorer or replica builder, as well as to document the configuration of the PS-2 to the extent possible. The type was the basis of early soaring in this country. Anyone desiring a set of these drawings may contact: F. A. Chardon, Aircraft Instruments Co., 4039 Skyron Dr., Doylestown, PA 18901. Phone (215) 348-5274 day or 862-2236 eves. The price per set is $90, US.

JAMES REDDING REMEMBERS PROF. R. E. FRANKLIN AND UNIVERSITY OF MICHIGAN GLIDING ACTIVITIES

University of Michigan student James D. Redding, before a shock cord launch, Barton Hills, Ann Arbor, MI, 1928.

Professor Franklin, who taught in the Engineering Mechanics Department of the University of Michigan, was a very practical, rather than theoretical, type of engineer, said James D. Redding of Gaithersburg, MD.

"He was very knowledgable in both dynamic and static mechanics," Redding said during a recent telephone interview with the NSM.

Redding was 1929 president of the U of M Aeronautical Society, composed of three sections: Gliding, Balloon and Power.

Prof. Franklin provided hands-on assistance to students building a glider from plans brought from Germany in 1928 by two university students, Edward and Robert Evans.

"It had an A-truss down the center with another A-truss above the wing. The pilot sat on an open seat with a sled-type bar and a joy-stick for controls. If you had a hard landing, you'd break a fitting and we'd have to spend weeks, maybe months repairing it," Redding said.

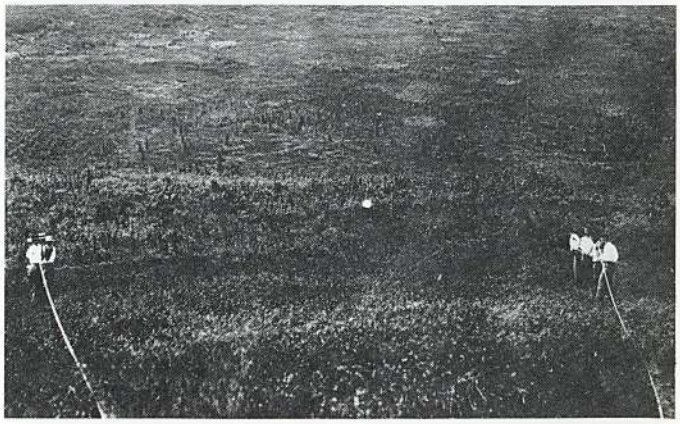
(continued on page 7)

All photos on pages 6 and 7 were loaned to the NSM Quarterly for these articles, by James D. Redding, Gaithersburg, MD.

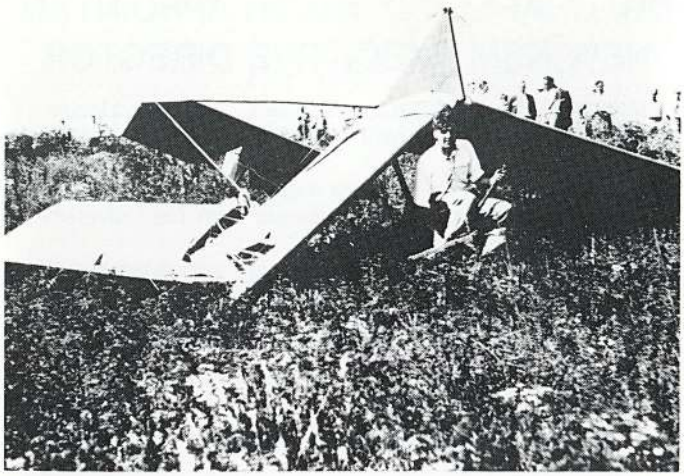
James D. Redding, with the University of Michigan primary glider, Barton Hills, Ann Arbor, MI.

"A successful takeoff! A minimum flight time of 30 seconds was required for a glider pilot's license," Redding said.

A typical shock cord launch as it looked from the ground.....



.....And as it looked to the glider pilot waiting to be launched.



Typical glider condition after a hard landing. "We'd have to spend weeks, maybe months repairing it," Redding said.

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The U of M Gliding Section had 100 members. One of them, Edward S. Evans, who furnished the glider plans, managed to get the Ford Motor Company to donate a 1930 Model A coupe for glider towing.

Redding said, "The Gliding Section became so popular, everybody was interested in gliding. We not only had this towcar, but also had $1,000 in our account."

Such success in the middle of America's gloomiest depression did not go unnoticed, especially when it was reported in the school newspaper. "I had to placate the Dean of Students because college clubs were not supposed to have that much money," said the gliding pioneer.

"With Professor Franklin's encouragement, we were gliding every chance we got. He was a very personable man and an excellent teacher. We even started gliding on ice," Redding continued.

U of M students were required to spend one of four summers at school. During the several weekends in the summers of 1929-30, some of the students put on glider demonstrations in various towns, usually at the invitation of Chambers of Commerce.

"We put on one demonstration at the Cleveland Air Races where Amelia Earhart flew our glider and cracked it up on a landing.....I think that the fittings were very weak on that ship," Redding said.

In 1930, one of the club members was killed when his safety belt failed on landing at Barton Pond (MI).

Redding worked for the Civil Aeronautics Administration, forerunner of the present Federal Aviation Administration. He recently attended the 75th Anniversary of the founding of the U of M School of Aeronautics and learned that he was the oldest there.

"My glider license is either #13 or #15, in this country. I can't find it because I've recently moved and I haven't unpacked; anyway, it's signed by Orville Wright," Redding said.

You can help in preserving America's soaring heritage.

If you have historic memorabilia and excess or duplicate publications, please contact the the National Soaring Museum to discuss contribution to the Museum's collections and archives.

Share your collection of Soaring artifacts and reminiscences with interested succeeding generations.

Address: Charles D. Smith, Ph.D., Executive Director
National Soaring Museum
Harris Hill, RD #3, Elmira, NY 14903

Club members retrieving the glider after a flight, in preparation for the next hilltop shock cord launch.

Redding said that this ship may have been the Franklin Brothers' first design in Ann Arbor, MI.

ON THE COVER

A Fred T. Loomis photo of a Franklin PS-2 landing at the Caton Ave. Airport, Elmira, 1930. The PS-2 of Warren Eaton, first President of The Soaring Society of America, is on display at the National Soaring Museum as part of the NSM's 1990-91 Exhibit Focus, "The 60th Anniversary of the First National Soaring Contest."

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The bricks are walnut, laser engraved, 2¼″ x 5¾″, with the donor's Name, City, and State. All levels of support are welcome and will be acknowledged. We will send engraved certificates for $100 or more.

NSM EXECUTIVE DIRECTOR SHIRLEY SLIWA RETIRES

The retirement of Shirley Sliwa, National Soaring Museum executive director since 1980, has been announced by NSM President John C. Lincoln II.

Mrs. Sliwa has been associated with the NSM since 1972. She played a major role in the funding and supervision of the 12,000-square-foot expansion dedicated in September 1989, and was involved in the building of the first section of the Museum on the site of the old W.P.A.-built Harris Hill Administration Building in 1978. The NSM has one of the largest exhibit of classic and contemporary sailplanes in the world.

Mrs. Sliwa received two Soaring Society of America Achievement Awards, in 1982 and 1989. The Award is given by SSA Directors to "an individual or group whose achievement was of such import as to warrant special recognition."

Paul A. Schweizer, NSM past President and current member of the boards of both the NSM and SSA, said, "It has been a pleasure to work with Shirley for almost 18 years, having been on the Harris Hill Soaring Corporation committee that hired her as a part-time worker for that organization and the newly formed NSM, as well as being on the NSM Board of Trustees in 1980 that appointed her as director. Her interest, enthusiasm, and dedication have been great contributions to the NSM and to soaring."

Mrs. Sliwa and her husband, Kenneth, an International Sales Manager for Corning, Inc. and a former Navy pilot, owe their abiding interest in motorless flight to their children, who as youngsters joined the H.H.S.C. Junior Program.

"With the entire family involvement," the retiring Director said, "there will always be a commitment to the history and sport of soaring."

CORRECTION:

On page 5 of the Spring, 1990 NSM Quarterly, Paul A. Schweizer's name was omitted from the identification of a photo of Hall of Fame members. He is pictured in the top row, second from right and has been a Soaring Hall of Fame member since 1955.

DR. CHARLES D. SMITH APPOINTED NEW NSM EXECUTIVE DIRECTOR

National Soaring Museum President, John C. Lincoln, II announced the appointment of Dr. Charles D. Smith as Executive Director.

Dr. Smith received his bachelor degree from Brown University and earned his master's and doctorate from the University of Virginia.

He has been a museum professional and educator since 1973, serving in several senior staff positions at the Science Museum of Virginia in Richmond, as Director of the Museum of Science and Industry in Tampa, FL and most recently as an educational consultant. He has also taught at the college level for 11 years.

A more detailed article on the NSM's new Executive Director will appear in the next NSM Quarterly.

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Executive Director — Charles D. Smith. Ph.D.
Editor — Bill Gallagher

The National Soaring Museum is an affiliate of The Soaring Society of America and, as such, is the official repository for all its artifacts and memorabilia.

1990 CALENDAR OF EVENTS

Date	Event	Location
Oct. 6	Fifth Annual Kitecitement Kite-fly	NSM/Harris Hill
Oct. 6, 7-13, 14	Fall Foliage Weekends	NSM/Harris Hill
Nov. 3	17th Annual Ralph S. Barnaby Lecture NSM Trustees Fall Meeting	Colorado Springs, CO
Nov. 23, 24	Annual Snowbird Sailplane Regatta	NSM/Harris Hill
Dec. 7	Community Soaring Committee Luncheon	NSM
By Reservation	NSM Educational Outreach Programs: "History Of Soaring" "The Wright Brothers and the Beginnings of Soaring" "The Glider War, 1940-45" "Aerogami"	As Requested