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Front Cover

HP-8 designer, builder, and 1960 national sailplane champion Richard E. Schreder receives some family assistance during the 27th Annual U.S. Sailplane Championships at Ector County Airport Odessa, TX. Built in 1958, Schreder’s all metal HP-8 (for ‘High Performance’) N34Y was donated to the National Soaring Museum by Fred Hefty. This ship is currently being restored.

Back Cover

Foreground - Pete Bowers’s Laister Kauffman Flat-Top, Victor Saudek’s Pratt Read (center), Herman Stiglmeier’s Pratt Read (alongside), Douglas Pratt Read at left. Richard Bush photo, 1952, Torrey Pines San Diego, CA.

SYMPOSIUM WEEKEND MAY 6 AND 7, 2011



National Soaring Museum Director Peter Smith welcomed more than ninety visitors to the informal buffet luncheon held in the Edward A. Mooers Community Room. It was the museum's annual 'thank you' for the continuing support of Chemung County, our community and museum volunteers.

Smith introduced Mark Doyle, President of the Harris Hill Soaring Corporation. Doyle gave a rundown of last year's sailplane activity on the Hill: 1248 rides, 2700 flights altogether. HHSC stated that they were preparing schedules for the summer passenger and instructional program. Doyle noted that next year's International Vintage Sailplane Meet will require extensive planning and coordination with HHSC, the National Soaring Museum, the Vintage Sailplane Association, and Chemung County. He said that Harris Hill Park is unique in this country, and perhaps the world, for having a nationally and internationally known soaring site like this within its county park boundaries.

Chemung County Executive Thomas Santulli reported that work would soon start on sealing the Harris Hill runway. He noted that the Elmira-Corning Regional Airport activity was up 27%, the largest increase of any airport in the United States. He said of Harris Hill, "It's nice to have an international attraction in Elmira."

Symposium Weekend also marked the opening of the exhibit "In Plane View / Abstractions of Flight." Imaginative and thought-provoking, this Smithsonian Air and Space Museum traveling show was on display until August 5, 2011. Its photographic abstractions are shown in fifty-six large colorful panels comprising: 1) Speed, Bursts Movement, 2) Flora, Fauna, Anthropomorphism, 3) Propellers, 4) Graphics, and 5) Textures and Skin.

Winter Soaring in the Mid Atlantic Region

By Baude Litt

Like many pilots Baude Litt wanted to extend the summer soaring season by flying later than October and November. Some of his winter forecasts showed excellent weather possibilities for flying the Appalachian ridges in mid-winter. To support his suspicions, around February and March 2003, he began to extend his soaring calendar to include these winter months.

Litt is a Belgian citizen living in Washington, DC since 1997, and has been flying gliders since he was 15; not surprising since both parents were Belgian soaring champions. A former pilot in the Belgian Air Force (17 years in #1 Squadron flying the Mirage V and the F-16), he holds and held 28 Belgian soaring records. "Before I left Belgium I restored a few old wood and fabric gliders, and won the best restoration prize for a SZD-22C Mucha Std.," he said. He is a member of the Mid-Atlantic Soaring Association.



Baude Litt

He said that in the wintertime any west to north-westerly flow, with a minimum 10 mph surface wind speed from 240 to 350 degrees "will put our region in a favorable position." Winter cold fronts generally completely block the main ridge with high humidity, snow and very low ceilings. "But as it happens throughout the year, the air masses generally dry out rapidly across the Appalachian ridges, and that is a very big advantage we are now exploring from Fairfield (PA) to Front



Royal (VA). He said that in situations where they were airborne before the actual frontal passage, or well after 48 hours after its passage, "we were still able to achieve extraordinary flights."

Preparations often start a week before. Two or three days in advance, "I start sending out more accurate forecasts. The day before, I spend two or three hours analyzing the whole region and sending out e-mails." To bed by 8 PM the night before, he is up between 3 and 4 AM the next morning for the hour-and-a-half drive to Fairfield. He said that "years and years of winter practice have led to many solutions to counter the frigid temperatures of winter. The key is simple, layers and layers.8 to 10 layers for the top of the body and 3 to 4 for the legs, plus one black blanket turned around each leg. The blanket is dark-colored to capture a little of the sun's heat. And that's just the beginning," Litt ticks off, "the four-way Canadian fleece hood for mouth /nose protection. Most of the time the flights are done with the vents open to prevent frost on the canopy's inside from the exhaled humidity and from the outside humidity of surrounding air." For foot protection he advised electrical heaters from Thermic -1C inside the soles of Italian Moonboots with two pairs of socks.





Above the midwinter clouds over the ridge.

Litt described in detail winter flights to “the way west, south, north and finally the way back home.”

Other pilots who join him from time to time are, Erik Nelson, Ed Brau, Stefan Schroth, Dave Weaver, Paul Rhem, Dave Pixton and Danny Brotto. He said that thanks to SPOT, the SSA, and Frank Paynter, many other M-ASA members who were unable to accompany them can now follow their flights almost in real time on a satellite Google map.



Other Limitations

- The severe cold (the lowest, minus 27 degrees C, or minus 17 degrees Fahrenheit.)
- OLC (On Line Contest) request for flight strictly between sunrise and sunset.
- Our physical condition
- The sun glare or reflection- “It’s low on the horizon. It can blind you when flying to the south in the afternoon.”
- The weather

“Time was our main constraint,” he said. From mid-November to mid-February days are less than 10 hours long. He said that unless you are in a wave, “it’s almost impossible to achieve distances greater than 750-800 km (approx. 437-497 miles) at that time of year.”

He concluded: “I do not think that conditions are weak in the wintertime.” On February 26, 2006, Litt said that he had the best vario average he ever had in an east coast thermal.



To counter winter’s frigid temperatures: layers and layers covering the body.



Rigging the sailplane at dawn in Fairfield.

Cloyd and Audrey Artman, Washington State Soaring Pioneers by Linda Chism



Cloyd Artman

Museum director Peter Smith said, "I'm really delighted that Linda Chisolm is nice enough to come all the way across the country to tell us about Cloyd Artman and his sister Audrey."

There is an annual Seattle Glider Council Cloyd Artman award. But Chisolm, a SGC glider and tow pilot said, "I didn't know what it was for. I asked people who or what Cloyd Artman was and no one seemed to know." They just told her that he had done some amazing things and that he passed away. So Chisolm decided to find out about this fascinating piece of Washington State's soaring history.

Artman built his own training glider and taught himself to fly while still in high school. A short time after the 1929 National Geographic story on German gliding was published, Popular Aviation magazine started a six issue series on glider construction. It was written in German and translated to English so that any boy could build his own primary glider. "The last installment was how to fly," Chism recalled. Artman's glider, called the "Golden Dawn," was finished while he was a senior at Oroville High School. It had a 30-foot wingspan, wings covered with muslin from a dry goods store, and butcher paper cov-

ering the tail. He rigged a pick handle for rudder control and had a surveyor's altimeter on a string around his neck.

His Manual Arts teacher, Mr. Nelson, and his wife towed "Golden Dawn" with their car. The self-taught gliderman mounted a camera on his landing skid and took a picture looking back at himself. If it was going to be a long flight, Artman carried food, his harmonica, and sometimes a bugle or coronet that he played over town. "I think that he used it to make some noise as part of a signal if he wanted Audrey to clear a landing," Chism said.



Cloyd and Audrey Artman

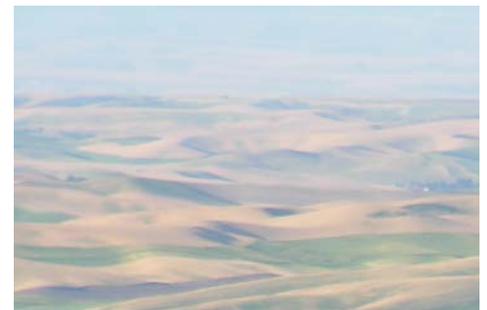
One of his launch schemes involved a home-made winch. He blocked up the rear end of his Model A Ford and replaced one rear wheel with a half oil drum, on which the tow line would be coiled. "Someone would hit the gas, and WHZZZ, away they'd go!" But most commonly they used young boys from town to launch the glider. Chism talked with a few of his helpers from Oroville who are now in their 80s or 90s. "They spoke about it like it was the most fun they ever had. Some of his glider flights

were pretty amazing even by today's standards," she said. Artman founded the first glider club in the state, taught a college level course in aircraft construction, and organized the first competitions. He promoted soaring through air shows throughout the state while earning money to attend college.

Audrey was Cloyd's first flight student. She became Washington State's first female glider pilot and had 30 flights in "Golden Dawn" by the end of 1932. "I think he damaged the glider a lot, but it was always repaired," Chism said. "In one article he told a reporter that he was on his third set of wings."

Sometime in mid '34 he decided to design and build a secondary glider that he referred to as "the sweetest little crate that ever took to the air." It had a 33-foot wingspan, weighed 170 pounds, and was built for \$70. His mother called it the "Lone Eagle." The name stuck, and the logo can be seen on the tail.

In the late summer of 1934 he gave exhibitions in north central Washington towns to help make money to repay his loans for mechanical engineering studies that fall at Washington State. Piloting his "Lone Eagle," he was launched by elastic banded inner tubes, and in an even more bizarre mode, from atop a greased board tilted off the back of a Model 'A' Ford. That September he gave glider demonstrations at the Grand



The view from Steptoe Butte, the WSC Aero Club's favorite training site.

Coulee Dam construction site to the delight of about 15,000 workers, in the "Lone Eagle." "I think Audrey flew just once at the Grand Coulee. She caused a considerable gasp when the glider slowly slid off the rocky point and skidded 100 feet before straightening out. Press and Pathe' News photographers loved it," Chism said.

Artman founded the WSC Aero Club. The idea was not only to learn to fly, but to build gliders as well. One of the first things the Aero Club did was to purchase a Mead primary glider kit. They built it together in the basement of one of the fellows who lived in town.



Cloyd Artman and the Lone Eagle 2.

Then disaster struck: the Lone Eagle was destroyed in a trailer accident in April of 1935. While driving back from the club's Steptoe Butte launching site the Lone Eagle partially blew off its trailer and was hit by an oncoming car. Artman told a newspaper reporter the ship had logged 312 flights, and 62 hours, 14 minutes at the time of its destruction. Right away he proceeded to build a replacement, all his own design: the "Lone Eagle 2."

He received increasing national coverage in the summer of 1935 when a Popular Mechanics cover featured a drawing of his greased board launch off the Coulee wall. In September he was invited to be the opener at the three-day Norton Field air show in the "Lone Eagle 2."

In June the following year, he organized the first Northwest Soaring

Meet at Wenatchee. With a balloon chase to kick off the meet, there were drum tows, aero tows, and glider aerobatics. The well-known "Yakima Clipper" was among the five participating



The Snake River.

gliders. So with the roughly 10 enthusiastic glider pilots in attendance, it was decided to make the contest an annual event. "No longer at Wenatchee, but at Ephrata now," Chism said.

At this time Artman, an assistant instructor for the WSC Engineering Department, designed the "Comet." It was a new two-place, low-wing, high-performance glider. Built with the rest of the class, it took 2,300 hours of work over 1936 and 1937. The "Comet" had a control wheel instead of the conventional stick, and a retractable landing gear. As the most experienced of the group, Artman checked it out solo for three days, April 5, 6, and 7.

Chism described the tragedy that followed. "Cloyd and his student, Frank See, took off at the Snake River site for the first two-man flight of the "Comet". They soared for seven minutes, then the left wing folded up and the glider went straight downward and crashed 1,200 feet below the launch point." Both men perished instantly.

Engineering professors and Glen W. Neel, the regional inspector examined the

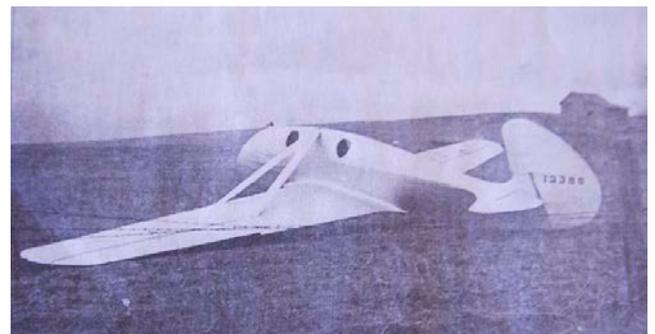
wreckage," but no clues were found and the glider club burned the remains of the glider where it came to rest." Chism said. Artman's heartbroken mother never wanted his gliders flown again and later had her husband burn the "Lone Eagle No.2" as well as other personal material at home. Cloyd Artman is buried at Oroville Riverview Cemetery with a gravestone in view of Mt. Ellingham, where he first flew.



Memorial stone at Riverview Cemetery near Oroville, with a view of Ellemham Mountain, Artman's first mountain soaring site.

Audrey married a Canadian miner and had a daughter. "According to her sisters," Chism said, "she never flew again."

At the end of her presentation and question period, NSM Director Peter Smith said, "Thank you Linda. When Paul Schweizer first initiated these symposia, his primary purpose was to increase our knowledge of soaring history. I think he would be very happy with your talk."



The ill-fated, low wing, two-place "Comet." It had dual controls, retractable landing gear, a lighting system, and a small compartment for food, cameras and notebooks

A Tale of Three Schweizers and More

By Dr. Walter B. Cannon

Three Schweizer gliders that held an important place in the history of soaring were the focal point of a talk by Dr. Walter B. Cannon of Palo Alto, CA. As a boy, Cannon became fascinated with aviation. At the suggestion of Bertha Ryan, a member of the Massachusetts Institute of Technology Glider Club, and his parents, the 13 year-old wrote to Paul A. Schweizer. "Incredibly, he wrote back," Cannon said. "When I was old enough I could come to the Schweizer Glider School and they would teach me to fly gliders." At the age of 14 in 1954, he enrolled in the school, and has been flying gliders ever since. "That's why whenever I come back to Elmira, it feels like I'm coming home ... This is where it all started for me and my family."



Schweizer 1-19, restored by Walter Cannon in 1956.

Walter and his two older brothers bought their first glider, a Schweizer SGU 1-19. They flew it for about a year, then it needed recovering. But as 15/16-year olds they had no idea of how it was done. They bicycled to nearby Hanscom Air Force Base (MA), where there was a school for mechanics called East Coast Aerotech. The brothers asked if anyone there could help them with information on recovering their glider. Cannon said, "I think they thought it was a model we were talking about." They were ushered into the vice president's office. He sat down with them and discovered that

they were serious. It was a real glider that they wanted to recover. Fortunately the V.P. lived close by the Cannons and said that he would come to their house and see what was going on. He explained exactly what they had to do and checked on their progress on a fairly regular basis. By winter's end they had covered the 1-19 completely. "We had a big field in back. We would get five feet in the air and we felt like the Schweizers, or frankly the Wrights. We had a great time."

Walter Cannon spent his summers as an instructor and tow pilot at the Schweizer School and eventually bought a Schweizer 1-23H. "It stimulated my competition interest," he said. He achieved his Silver C, Gold C and Diamond C (#64) in that ship. Flying in many regional and national championships since 1993, he has placed as high as third in the 15-meter championships at Minden, NV. His competition gliders since the 1-23 include a H301B Libelle, an ASW 20, a Discus B, and currently a Discus 2B. He has soared to 30,000 feet, travelled as far as 750 kilometers and in various flights.



Zugvogel IIIA restored by Walter Cannon in 2009 and flown for the first time in 20 years at IVSM 2009.

Cannon said that he didn't do any more restorations, being involved with medical school and a residency program. Over the years he became active in sailplane competition, but he still

had the urge to get back to glider restoration. He said, "Vintage glider pilots were a wonderful group of enthusiasts, more interested in the past than the modern competition pilots. Each has its qualities, and I am thrilled to be part of both."

At a Seattle, WA conference, Bob Moore was looking for someone to take his 1947 Schweizer SGS 1-21 off his hands. Only two of that model sailplane were built. It was a superb sailplane, but too expensive for the market at that time. The other was purchased by Dick Comey who in 1947 flew it to a National Soaring Championship at Wichita Falls, TX.

After passing through several

Schweizer SGS 1-21

- wingspan: 51ft
- weight (empty): 470lbs
- L/D: 27:1
- aspect ratio: 15.75
- min. sink rate: 2.2ft/sec @ 38mph
- number built: 2

owners, Moore's second production SGS 1-21 badly needed restoration. It was hangared in Richmond, Washington, and in Cannon's words, "let die." In 1993, he bought the 1-21 and was thrust again into the vibrant yesteryear of vintage gliders. He transported it down from Washington to his garage in Palo Alto, CA.¹ The trailer was a mess according to Cannon and a considerable

¹ Cannon mentioned that he had the longest garage in Palo Alto for obvious reasons. When they purchased the property, his wife looked at the house; he looked at the garage. "That's how it works," he added with a smile.

amount of time was spent just making it roadworthy. There were a few dents in the wings and fuselage. He painted the aluminum silver with a blue trim, before re-covering the fabric on the aft portions of the wings, the elevator and rudder. At Paul and Ernie Schweizer's suggestion, an SGS 1-23 canopy was substituted for the more bulbous original.

Paul had urged Cannon to complete the 1-21 restoration in time to bring the finished ship to Elmira for the 1995 International Vintage Sailplane Meet. "And so I did," Cannon said. He



Ernie Schweizer, Paul Schweizer, and Walter Cannon discussing the Schweizer 1-21 at IVSM 1995.

trailed it across the country and flew it at the IVSM. There it won the Best Schweizer Award. Schweizer test pilot Franklin Hurtt was there as was Bob Moore who travelled all the way from Washington State to see it. Cannon asked Moore if he would like to fly it. "No," he replied, "I just want to remember it the way it was."

Noting the beautiful job Cannon did on the 1-21, Paul asked him if he would be interested in doing the Schweizer SGU 1-7. "I said okay. I had been to Pear Blossom (CA) where the 1-7 was sitting in a wooden trailer that



Schweizer 1-21 #2 at Harris Hill, restored by Walter Cannon for IVSM 1995.

- Schweizer SGU 1-7
- wingspan: 36ft
 - weight (empty): 320lbs
 - L/D: 17.5:1
 - aspect ratio: 7.9
 - min. sink rate: 3.5ft/sec @ 40mph
 - number built: 2

kept getting tipped over by the wind. It had been beat up for years." Paul Schweizer and Bob Gaines convinced the owner of record to donate it to the NSM, and Jeff Byard took it to his shop in San Luis Obispo (CA). Then Cannon went down to pick it up. He described it as having aluminum wings, tail surfaces, and steel tube fuselage. Bill Schweizer, who was in the Symposium audience, said that the 1-7 (named "Pterodactyl" by members of the Altosaurus Soaring Club, one of the previous owners) was built in Peekskill, NY in 1937. "It was another restorer's delight," Cannon said. "There was very little rust on it. The trailing edges were all bent, and some of the ribs were broken and bent, but the structure was sound and that was the key part of it." He said that for being 60 years old, and in the desert for the last 20 of those years, the wind and sand-whipped glider was in pretty good shape. "So I took it all apart, cleaned it up, re-primed it and put new cables in it." It was assembled in Cannon's backyard to be sure the rigging was correct.

Then came the covering: Dacron instead of the original cotton.



Schweizer 1-7 assembled in Cannon's backyard in Palo Alto, CA before covering.



Walter Cannon covering the wing of the Schweizer 1-7 in 2000.

"For those of you who don't know about these things, you put the fabric on relatively loose and tighten with an iron. It does just fine." Cannon had a sock made for the wing. The sock was just slid on to the wing and then was glued in place. With the fuselage they used spruce and reinforcing tape to hold the fabric on. It was brought to Elmira where the 1937 paint scheme was applied, as recalled by Paul Schweizer. The "Pterodactyl" SGU 1-7 is currently on display overhead in the NSM's Schweizer Gallery.



Schweizer 1-7 hanging in the NSM.

Cannon holds the following pilot ratings: commercial airplane, single, land and sea, instrument, and glider. He closed by saying that he had been gliding for over 53 years. "And I hope to continue for many more," he said.



Paul Schweizer, Mr. See, Laurie Cannon, and Walter Cannon in front of the Schweizer 1-7 just before its first flight in 30 years.

Early California Soaring *By Jeffery Byard*

Introducing Jeff Byard, National Soaring Museum Director Peter Smith said, “Jeff knows more about soaring than almost anybody else in this room.” Byard said that he was going to speak on early California soaring, then move on to the history of the Bowlus Baby Albatross, a glider on display here in the NSM’s Johnson Gallery.

A US Airways pilot, NSM Board member and historic glider restorer, Byard mentioned that California soaring started way before people were around with the condor, the largest flying bird in the western hemisphere. “So few are left that every condor in the wild is honored with a number and has a transmitter.”

Serious bird study and experimentation with the thought of flying himself motivated John J. Montgomery in the early 1880s. As early as 1884, it was said that he made a flight (though poorly documented) near San Diego. In 1905 Montgomery constructed a man-carrying glider, the “Santa Clara.” In April of that year, parachutist and balloonist Dan Maloney made the first successful glider flight from a balloon launch. Maloney was eventually killed while performing in the “Santa Clara.” The focus shifted to powered flight by 1910. Montgomery built a glider he called the “Evergreen” and was preparing to put an engine on it. He was killed in this glider in 1911, when he pulled up sharply, stalled and went in .

In 1910, William Hawley Bowlus made a crude attempt at a glider with his first full scale monoplane hang glider. It didn’t fly well but it was the beginning of a long line of outstanding sailplanes bearing his name. The following year Orville Wright made the first successful soaring flight of nine minutes, 45 seconds at Kitty Hawk, North Carolina. That flight almost marked the end of gliding in the United States. Some things happened in 1929 to contribute to re-energizing the sport in America: the 1929 Charles and Anne Lindbergh glider flights near San Diego¹ and an article in the June issue of National Geographic that same year, “On The Wings Of Wind.” The story reported the renewal of glider activity in Germany. The Schweizer brothers started work on their first glider, the SG 1-1 Primary (on display in the NSM’s Schweizer Gallery.)

Jay Buxton was another notable figure in early California soaring who was often pictured with his multi-place ‘Transporter’. “The Transporter was a big monster sailplane, not real attractive, but they got a lot of wonderful flights out of it,” Byard said. The Buxtons used a Duesenberg limousine to haul the big ship across the country to the Elmira Nationals.

Richard DuPont commissioned Hawley Bowlus and Martin Schempp to build the Bowlus-

DuPont Albatross. After many outstanding and record-breaking flights, this ship was fully restored, and is now on display in the Museum’s Johnson gallery.

Arvin, CA, with its rolling hills, became the focal point of West Coast soaring activity when Bowlus and Lindbergh pioneered the site in 1928-29. Through the years it has played host to almost all the outstanding soaring builders and pilots. It is notable that Arvin was honored as the Tenth NSM National Landmark of Soaring. Primary glider plans were available and they were being built all over the United States. At that time the US lagged a few years behind Europe in sailplane development. “We were about five or six years behind east coast soaring. It was pretty much letters and magazine articles as they came out to California,” Byard said. The West Coast Sailplane Homebuilders workshops were started by Gus Briegleb in Arvin. Almost all at Arvin were one-offs or home built models; there were very few manufactured ships. Dick Essary’s “Baby Bomber,” winner of the 1941 Arvin contest had Bowlus Baby Albatross wings. Dick and Dave Johnson appeared with their Schweizer 2-8, one of the few factory-built ships in CA at that time. Byard said that later they were both impressed into the service when WW II broke out.

¹ A National Landmark of Soaring plaque No.7 marks the Point Loma site where these flights took place.

Volmer Jensen was another well-known glider builder. But what he is best known for is designing and building the model for the Starship Enterprise that was used in the Star Trek TV series. Byard said that almost everyone in California in those days was flying homebuilts.

John Robinson, another CA luminary, was the first pilot in the world to earn a Diamond "C" and he is also credited with devising the auto pulley tow.

Harvey Stephens (not to be confused with Don Stephens), a Hollywood actor, commissioned Harland Ross to design a high performance sailplane called "Zanonia."² A few years later it was purchased by John Robinson who flew it to several national championships, 1940, '41 and '46.

Next spring Byard said, "An International Vintage Sailplane Meet will held here in Elmira and we have adopted "Zanonia " as the mascot for next year's meet."

Stan Hall made the first soaring flight in the prototype Bowlus Baby Albatross. Hall was also one of the founders of West Coast Sailplane Homebuilders western workshops. A famous publicity stunt promoting Arvin showed movie/radio cowboy star Andy Devine on horseback launching a Baby Bowlus with aircraft manufacturer Glenell Houghton in the

² *Zanonia (native habitat, Indonesia) is a vine whose fruit opens and begins dropping its seeds in August. Then prevailing winds aid in their dispersal owing to butterfly-like wings that carry them great distances. (Natural History- November, 1953, Pgs. 416-417).*

cockpit. Comedian/ventriloquist Edgar Bergen and Jack Benny announcer Don Wilson watched.

"The golden age and all the fun of early California came to an end when WW II broke out. All the gliders on both coasts were mostly taken over by the military, all of them ending up at Edwards Training Base, or throughout the country," Byard said. Though Twenty-Nine Palms was a large training center, Byard's TG-2 was in Arizona at that time.

Byard shifted his talk to the National Soaring Museum's Baby Bowlus. "It's a California glider so it fits right in with my talk." There are four Baby Albatrosses and one is at the National Air and Space Museum. "The second prototype, we think we might have here at the National Soaring Museum." There followed a challenging array of facts, figures, serial numbers, locations, dates and names. Byard had researched thoroughly each of the four prototype Babys. "Right now, mine is the only one in the world still flying," he said.

Don Mitchell, who was living with Bowlus while the Baby was be-

ing designed, told Byard that Hawley would hold whatever he was carving up to the light, and examine it from every angle. "No matter how you look at it, it's just a pretty design. That 's the Baby Albatross," he commented.

Byard said that he believed that the National Soaring Museum's Baby Albatross has the fuselage serial no. 167 and the wings are No. 102.

In the Q&A period following, a questioner who talked to Bowlus Baby builder Jim Stoia said that Stoia indicated that the first time he flew it on tow he was thinking seriously about bailing out. Byard, who wore a 'chute said, "The same story when I flew mine." He described how the little ship was violently pitch unstable on tow. "It would want to rip the tow wheel out of my hands...I released, so it wasn't so bad anymore. " Irv Culver, a long-time designer and builder watched Byard land a couple of times and suggested that Byard redesign a couple of things.

National Soaring Museum Archival Collection

The National Soaring Museum houses the official archive of the Soaring Society of America.

Research fees are at an hourly rate and NSM Members receive a 50% discount.

Fees for digital images at discretion of the Director.

The Peyret Tandem-Wing Glider

In the long history of glider design, flamboyant departures from planform orthodoxy occur. A tandem-winged concept was envisioned by Louis Peyret. Peyret was commissioned by Alexis Maneyrol to build a tandem glider to compete in the 1922 meeting to be held at Combegrasse, France.

Tandem aerodynes were not new. In 1905, John Montgomery's Santa Clara, piloted by Dan Maloney, made several successful gliding flights of 15-20 minutes from 4,000 feet after Maloney released from a hot air balloon. In 1898, Wilhelm Kress, an Austrian piano maker turned inventor, built a giant flying machine with three sets of wings in tandem with twin propellers placed behind the second set. Maneyrol's design was said to have been largely inspired by Samuel P. Langley's 1903 tandem-winged Aerodrome.



Launching the tandem-wing Pryret.

Each of Peyret's two tandem wings was constructed with two tubular duralumin spars that were stiffened together by diagonal steel wires. Further stiffening was by N-shaped struts that were connected to the fuselage. The fuselage had a skeletal structure covered by thin plywood. The decking was curved to

form a narrow pylon to which the wings were attached. The ribs were of wood and the wings covered by rubber-coated fabric. The trailing edges of both wings were full span elevons. The pilot's head showed behind the pylon that supported the forward wing, with the top fuselage longeron over his head. The Peyret Tandem had a wingspan of 6.6m, length 5.34m, wing area 14 sq. m, aspect ratio 6.22, flying weight 135 kg, wing loading 9.7 kg/sq. m.¹ Aeroplane wheels with axles and springs were fitted to the fuselage, forward of the center of gravity.

Moving the stick forward lowered both the rear wing elevons and raised both in the front wing, resulting in a strong nose-down pitch. Back stick movement

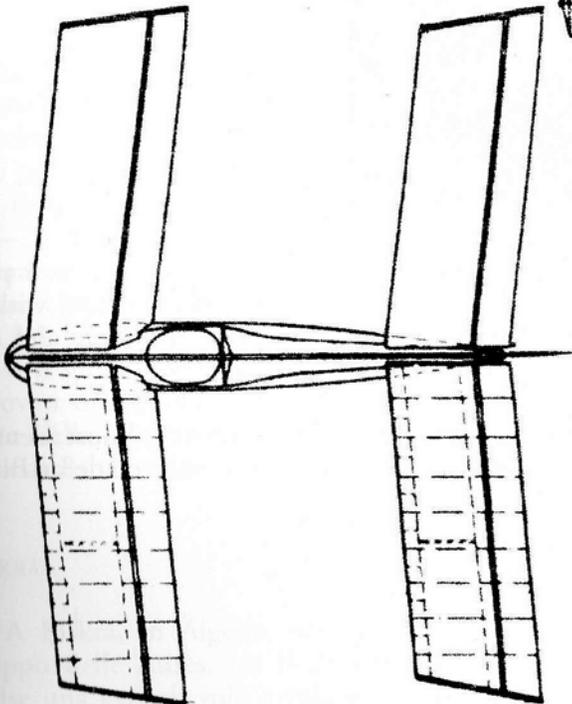
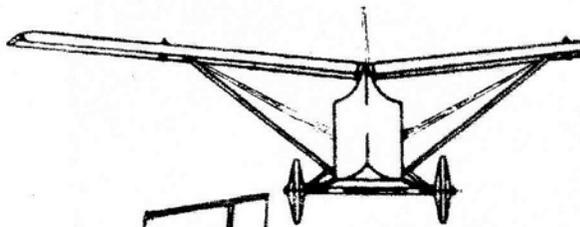
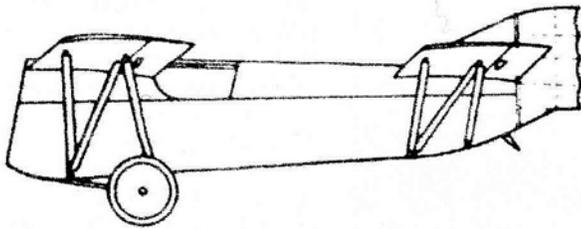


Alexis Maneyrol ready for take-off in the tandem-wing.

¹ "The World's Vintage Sailplanes 1908-1945" by Martin Simons. Kookaburra Technical Publications Pty Ltd, Melbourne. Pgs 22-23.



The Peyret in free flight.



A three view of the Peyret Tandem.

had the reverse elevon effect. Moving the stick to the left for a left bank raised both elevons on that side and depressed both elevons on the right. The opposite elevon movement would be required for a right bank. The rudder was controlled by pedals.

“The small craft with its center of gravity well-positioned between the two supporting surfaces, and with its considerable transverse dihedral, was very stable and easy to pilot.”² In September 1922, Maneyrol flew the Peyret Tandem for three hours and twenty-one minutes at Itford Hill, England. The following January at Vauville, France, Maneyrol flew it for eight hours, five minutes and 50 seconds—enough for inclusion in Edwin W. Teal’s 1930 “The Book of Gliders,” the Milestones in Glider History section. Peyret built a second tandem almost identical to the first with which many flights were made by Lt. LePetit at a meeting held in Biskra, Algeria in January 1923.

A 12 horsepower motorized version of the tandem-wing was built by Peyret for the light aeroplane trials at Lympne, England in 1923. One of the little ship’s wings failed in turbulent air during the trials and Maneyrol was killed in the resulting crash. Subsequently, the development of tandem-wing aircraft virtually ended. In 1931, Peyret built another powered tandem-wing, the Taupin, that he flew himself. The Taupin underwent a restoration and flew again in 1979.³

² “Storia ed Evoluzione dell’ Aliante (The History and Evolution of the Glider)” Vol. II 1915-1945, by Giorgio Zanrosso, pgs. 37-38.

³ “The World’s Vintage Sailplanes 1908-1945” by Martin Simons. Kookaburra Technical Publications Pty Ltd, Melbourne. Pgs 22-23.

Wally Scott - His Life, His Flying

By *Samantha Hilbert Thomas*

At 37, Wally Scott took his first glider ride. That was in 1961, but it was only the beginning.

“Barely a year-and-a-half later, he set his first distance record: 443.5 miles in a Schweizer 1-26,” S. H. Thomas said of the renowned airman in her book, ‘WA, the Life of Soaring Legend Wally Scott’*. Over the next 33 years he soared to four FAI world straight distance and out-and-return records, various Texas state records, 20 Barringer Trophy wins for years’ longest flights, induction into the U.S. Soaring Hall of Fame, and two Smirnoff Transcontinental Sailplane Derby wins.

He was ten years old when he took his first flight in a Ford Tri-motor. He learned to fly power in a Piper Cub J-3, taught by his brother Scotty. After Army Air Corps service in World War II, he joined the family movie business. Settling in Odessa TX, he made over 700 successful flights spanning a period of 33 years.

Wally’s near perfect situation was with his wife of 56 years, Boots (Beverly May). Thomas wrote, “Picture this: Boots leaving work and heading to the airport in their Buick Century Wagon. Still in high heels, she would hook Wally’s 1-26 up to the towline, then drive to the end of the line, hook up the Buick, clear for airport traffic and rapidly sling the glider airwards.” That done, she would promptly head back to work ...while Wally spent his daytime hours (he worked at night at the movie theater) pursuing free distance.

The author said that in preparation for her book she “had the privilege of interviewing Boots who gave me access to all of Wally’s writings.” When Wally was diagnosed with Parkinson’s disease in the late ‘90s, he started an extensive personal journal for his children and grandchildren.

Samantha Thomas closed by reading an excerpt from her book WA¹ about one of his early world record setting flights on August 22, 1969, the chapter entitled “Showdown over Gila Bend.”

1 WA- *Whiskey Alpha, the competition identification on Scott’s ASW-12 sailplane.*

NASA Deep-Stall Flight Program and the 2010 U.S. Soaring Hall of Fame Inductee Einar Enevoldson

In the early 1980s, a Schweizer SGS 1-36 sailplane was modified for the National Air and Space Administration’s controlled Deep-Stall Flight Program. It was used for controllability research in the deep stall region at an angle of attack above 30 degrees.

Einar Enevoldson was a civilian research pilot for NASA’s Dryden Flight Research Center at Edwards, CA from 1968 to 1986. He was closely involved in development of the Deep-Stall Flight Program. Enevoldson had been associated with several other research projects including those with experimental wings, propulsion and digital computer flight control systems.

The stabilizer of the 1-36 was modified so that it could pivot as much as 70 degrees with the leading edge down. Further modification included the cockpit area to accommodate a NASA instrument system and to permit easier pilot egress. After these changes were made, radio-controlled model, simulator, and ground tests of the aircraft preceded the actual flight testing.

The objectives of the program were to demonstrate the feasibility of piloted controlled flight at very high angles of attack and to refine piloting techniques to make a safe transition into, maneuver in, and recover from controlled flight in these very high stabilizer angles. Of the sailplane’s 20 flights, NASA’s particular interests were: the stability and control derivatives, trim data, and pilot techniques required to enter and exit a very high angle-of-attack flight regime.

The sailplane was generally towed to 8,500 feet and released. When the 1-36 was decelerated to near-stall speed, the pilot then inaugurated maneuvers to investigate handling qualities. Flight results showed that piloting techniques allowed safe entrance and recovery from controlled flight with the 30-72 degree angle-of-attack arc, as well as other ancillary aerodynamic data. These data were also used to better define the sailplane’s trim and operational performance envelope.

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Our Mission is to preserve and present the heritage of motorless flight and promote, through education, a greater knowledge of soaring, aeronautics and related physical sciences for everyone.



NSM Archivist Bill Gallagher and Hall of Fame Inductee Einar Enevoldson reminisce about the NASA Deep Stall 1-36 in the NSM Schweizer Gallery at the 2011 History Symposium.



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Anyone is invited to contribute material and photographs with identification about historical soaring activities, renovation of old sailplanes, soaring pioneers, unusual uses of sailplanes, etc. Manuscripts are subject to whatever revisions, additions, or deletions are necessary to make the material conform to the space limitations and standards of the NSM. Material that is to be returned must be accompanied by a self-addressed stamped envelope. No compensation other than credit will be given.

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