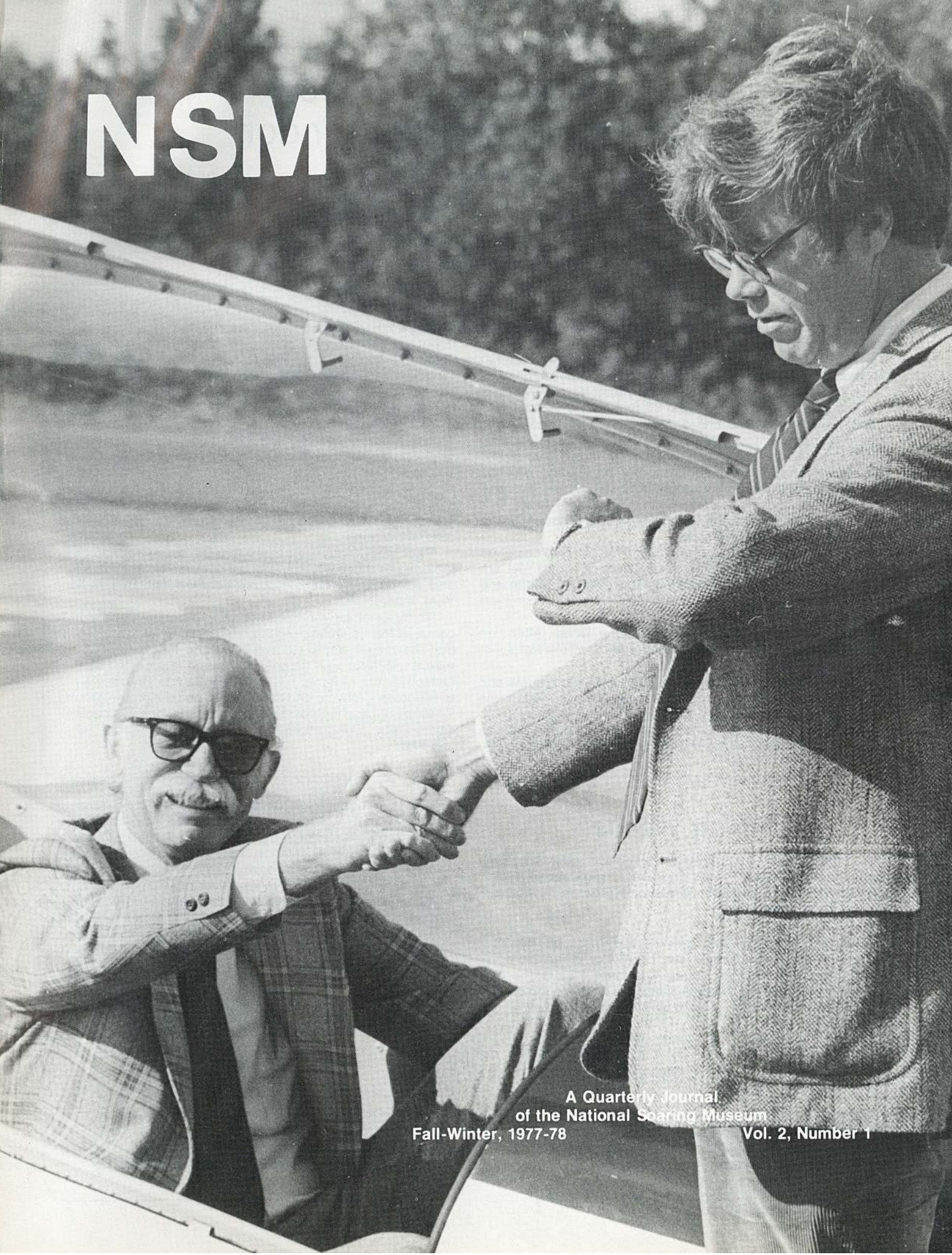


NSM



A Quarterly Journal
of the National Soaring Museum
Fall-Winter, 1977-78 Vol. 2, Number 1

A Technical Overview Of the Gossamer Condor

Editors Note: Jack Greene has a long time interest in man powered flight and was at work on his own craft when the Gossamer Condor made its flight.

by Jack Greene

One of man's lifelong dreams has finally been achieved. I refer to the successful "Man Powered Flight" by Paul MacCready's Gossamer Condor, as laid down by the Kremer Competition rules. Here are some of the technical details and other interesting sidelights to this truly historic achievement.

The wing span is a colossal 96 feet with a 10 foot root chord and a 5 foot tip chord. Maximum wing thickness is about 13 inches with an aspect ratio of 13:1. Total lifting area (including the horizontal stabilizer) is about 820 square feet and results in a 4 ounce/square foot wing loading with the 140 pound pilot. The empty weight is close to 70 pounds, and Paul MacCready said that based on current knowledge, this machine could be constructed at a weight of 55 pounds — a truly remarkable achievement.

Cruising speed is 10 to 11 mph with the airframe designed for a 1.2 G. gust load factor. Altitudes to 50 or 60 feet are achievable. However, considering the extremely fragile and marginal construction, this would hardly be an assignment for a good friend.

The successful flight was piloted by Bryan Allen, an amateur bicycle racer and hang glider pilot, who weighs just under 140 pounds.

Time for the official flight was close to 6 1/2 minutes and the course covered more than one mile. The two pylon turns required a turning radius approaching 250 feet at a maximum bank of about 3 degrees. Straight line cruising flight requires about 1/3 HP while turns and climbs require about .6 HP.

Average HP expenditure for the full flight worked out to about 1/2 HP. To get a picture of what this means, imagine yourself using only your legs to raise 275 pounds a distance (height) of 1 foot and doing this once every second — continuously. At the same time, some skillful flight coordination is required hardly a few feet off the ground. That's 1/2 HP. Roll control for turns is achieved through wing twisting (a Wright brother's patent) with the stabilizer protruding out front and the 12 foot diameter pusher prop turning at about 100 rpm.

Basic construction is of aluminum tubing, lots of piano wire, and a plastic film skin. Twelve different modifications or designs were worked out before achieving the final successful machine.

Paul MacCready suggested that the following names be included as those who generously contributed of time, effort, and advice: Jack Lambie, Kirke Leonard, Bill Beaby, and Vern Oldershaw.

To those of us who like to feel we understand the significance of Paul's magnificent achievement, it is disappointing that the media would treat this historic first with such apparent indifference. The general opinion (suggested by Paul himself) is that another nut in California has strapped a pair of wings on a bicycle and managed to pedal it off the ground. To those of us who know the stature of the man, we can only say to Paul, "Congratulations and thanks for a great American first."

Filling Needs

This column will be reserved for want ads, trading requests and the like. Please address all requests to NSM, c/o The National Soaring Museum, Harris Hill, R.D. 1, Elmira, New York 14903.

Does anyone have any books, literature, photos or records or plans I might purchase, borrow or otherwise acquire on the 1941 Bowlus Super Albatross? I have one of these and would like to get some historical background on it. Do you have any articles or books on Hawley Bowlus?

Thanks.

Mike Shoen
2727 N. Central Ave.
Phoenix, Arizona 85004

NSM is a publication of the National Soaring Museum, Harris Hill, RD 1, Elmira, New York 14903. Anyone is invited to contribute material and pictures 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 NSM. Material that is to be returned must be accompanied by a stamped, self addressed envelope. No compensation other than credit will be made.

Publisher — National Soaring Museum
William D. English, Jr., director

Editor — Meta L. Levin

On the cover: Museum president Bernald Smith arrived at groundbreaking ceremonies for the new building in an SGS 2-32, courtesy of Schweizer Aircraft Corporation. William D. English, museum director, (right) noted Smith was exactly on time (See pages 3 and 4). Photo courtesy of Jim Gill.

Use Your Film Library



Artist's drawing of the new building.

New Building to Solve Old Exhibit Problems

With the official ground breaking for a new building last September, hopes for a proper space for the National Soaring Museum moved closer to reality.

For many years the museum has operated under a severe handicap: less than 1,300 square feet of exhibit space for a subject that demands maximum space for exhibition. The largest single area measures 16' x 23' and, because of a large west window, has problems with the sun. There is possible ultra-violet deterioration and excessive brightness. Other rooms were much smaller, and while they did not have a sun problem, they were difficult with which to work. Our theater, where films and classes are held, is a converted garage that was hot in summer and freezing cold in winter. At all times the acoustical quality of our "theater" was abominable. Sound tracks and lecturers' voices bounced endlessly from concrete surface to concrete surface.

The actual location of the old museum building also is a serious problem. It is 1/2 mile from the Harris Hill glider field. Each year, tens of thousands of visitors come to the Hill to watch the gliders and to see the lovely view over the valley below. Those visitors would drive past the door of the museum on their way to and from the glider field. Only a small percentage could be enticed to deviate from their route, drive up the long dirt road, and enter the house that served as our quarters. This situation was frustrating for all

associated with the museum.

With the completion of our new building this spring, for the first time the museum will have a structure that will allow effective and more complete exhibition of its collection as well as development of temporary thematic shows. In anticipation the museum has applied to the New York State Council on the Arts and other governmental bodies for help in underwriting such special shows. It is our goal that at least one special show will be mounted each year to celebrate or illuminate some facet of soaring.

Our new 7,500 sq. ft. main exhibit hall was designed specifically to exhibit sailplanes and gliders. A more accurate measure of this space is the cubic foot because sailplanes will be not only at floor level but in the air. The ceiling is 19 feet high, giving the hall a volume of 142,500 cubic feet. Skillful use of this space by exhibit designers will make it possible both to show many sailplanes and preserve the feeling of space and openness that is so much a part of soaring. After exhibiting the museum's sailplanes without wings and horizontal tail surfaces to fit them into the old building, this will be a welcome change!

Two years ago, the museum was designated as the custodian of the United States Soaring Hall of Fame by the SSA.

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First shovels of earth. (From left) Peter Chalk, Chemung County legislator, Paul Schweizer, SSA director and museum trustee, Bernald Smith, museum president, and William English, museum director, lifted the symbolic first shovel of earth, while a bulldozer waited to do the big job.

Photo by Jim Gill

From the Director

Work Begins on New Building Opening Scheduled for Late May

It has been several months since you have received your regular issue of NSM. I apologize for the delay, and assure you that we are back on schedule and do not expect to fall behind again.

Our publication delay was due to many factors, most of which were involved with the additional responsibilities on the museum staff because of our building project. At any rate, it seems as though the pace of events has returned to a manageable level.

Perhaps the most significant single event that has taken place in the life of the museum was the groundbreaking ceremony September 29 at Harris Hill. On hand for the occasion were museum President Bernald Smith, several trustees and Chemung County governmental representatives, and a number of well wishers.

It was a grand and glorious day. The sun was shining and the air crisp, a rarity during what was perhaps the wettest September on record here. President Smith arrived at the site by sailplane — exactly on time — and those assembled for the occasion witnessed an exciting display of aeronautical prowess by Bernie Carras in a Schweizer 1-35.

Following the inevitable speeches, the first shovel full of dirt was turned over. Immediately we heard the roar of diesel engines as the bulldozers moved in. The heavy earth movers proceeded so quickly that several spectators were hard pressed to get out of their way!

By the end of the first week in October the task of clearing and preparing the site for the new building had finished, and construction crews began laying footers. The crews raced

against the onset of winter, and the building seemed to grow out of the ground almost overnight. By Thanksgiving, nearly all the cement and blockwork had been done and the building was taking shape. If all continues to go well, it seems certain that the building will be opened to the public by late May, 1978.

With its completion, the museum will at last be able to exhibit many of the significant sailplanes in its collection, the largest of its kind in the world. Plans are being developed for exhibition of the aircraft on a rotating basis, and for installation of permanent exhibits about fundamental aspects of the sport. In addition, we are developing the museum's first thematic show about the long and mutually rewarding relationship between the Elmira area and soaring. In the next issue of NSM we will give you a sneak preview of some of the exhibits going into the new building.

Funding for this project is proceeding well. As of Thanksgiving, more than half of the \$500,000 required for the building had been collected. The trustees pledged more than \$100,000 at their meeting last February. Since then, Chemung County, because of its long standing interest in soaring and understanding of the museum's capacity to attract visitors to the area, has contributed another \$100,000, and provided important and valuable services in preparing the building site. Additionally, the County has agreed to provide maintenance and utilities for the new building in perpetuity, a commitment that is significant in light of today's rising energy and labor costs.

Two foundations also have been of significant help to the



Exhibition. Schweizer Aircraft Corporation test pilot Bernie Carras opened the groundbreaking ceremonies with a high speed pass in an SGS 1-35.

museum's fund raising efforts. Citing the museum's national and local significance, The Corning Glass Works Foundation and The Anderson Foundation **each** gave \$25,000 grants to the museum. Especially pleasing to me was that both foundations mentioned the quality of the overall program in making their grants.

I hope that our fund raising efforts will be completed in the next few months. I know that museum supporters will help put our fund raising effort "over the top," when asked to help. Participation in this — the largest single effort ever mounted by the soaring community for any purpose — will ensure the survival of the rich heritage of the sport.

While 1977 has been a year of great progress for the museum in many areas, it has been a year of tragedy as well. Members already know about the fire which destroyed the Administration Building last January.

Death also has taken its toll. Several men closely associated with the museum have died during the past year. Larry Lawrence, Harland Ross, Robert Stanley, and Eliot Noyes will be missed by all. These men have all contributed much to soaring. All have been active in helping to develop this museum. I have been privileged to work with them. I hope the museum will live up to the high expectations they held for it.

A Museum Milestone: Membership Over 1000

We have reached a milestone: the National Soaring Museum's membership has exceeded 1,000. With the addition of the Harris Hill Soaring Corporation as the museum's first Chapter Member, membership now stands at 1,200 people - a large group for so young an organization.

With the completion of the museum's new building next spring, we anticipate museum membership will grow even more rapidly.

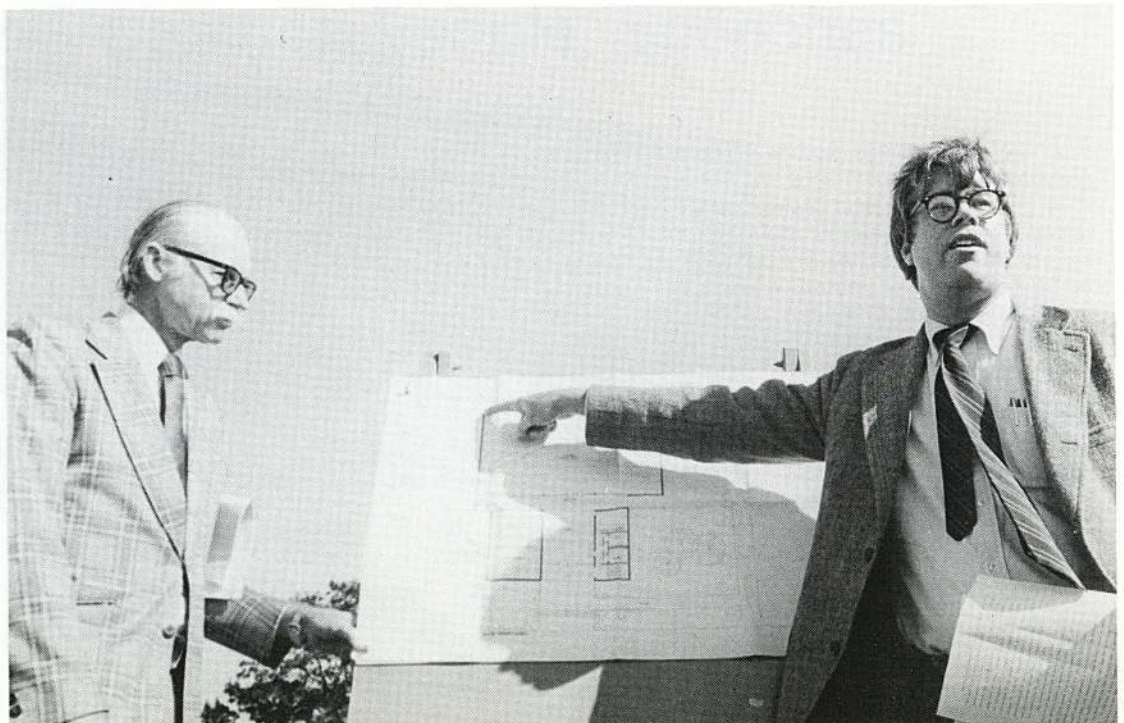
Incidentally, the museum now has members in all 50 states and in several foreign countries. Of the states, California and New York share honors for having the largest number of members, with more than 150 each.

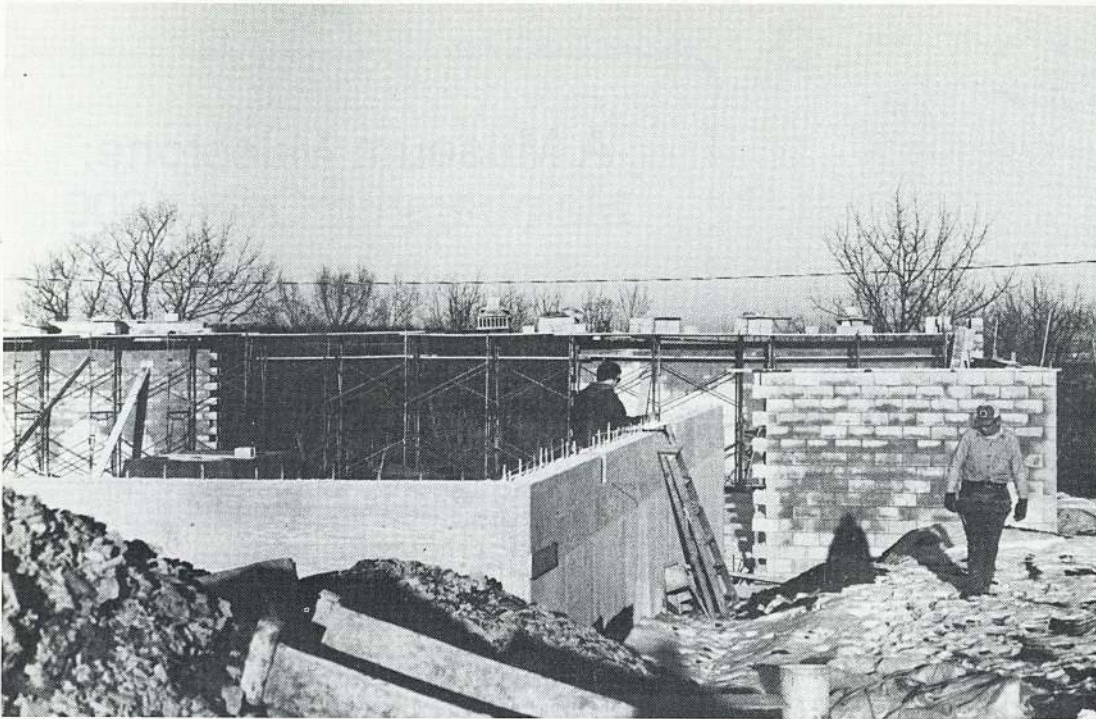
The museum's latest category of membership is the Chapter Membership, modeled after the SSA's Chapter Membership program. A museum chapter is an organization which maintains 100% membership — of any category — in the National Soaring Museum. All museum members receive a 10% discount on items sold by the museum, free admission to the museum, a subscription to this magazine, and invitations to events sponsored by the museum. Membership dues are collected by the Chapter which in turn receives a 10% rebate on all Museum and Family membership dues collected.

We hope that this form of museum membership will be adopted by many soaring clubs, thus helping the museum establish closer ties with clubs and their members throughout the nation.

Anticipation. Bernald Smith (left) and William English explained the new building's features for media and guests.

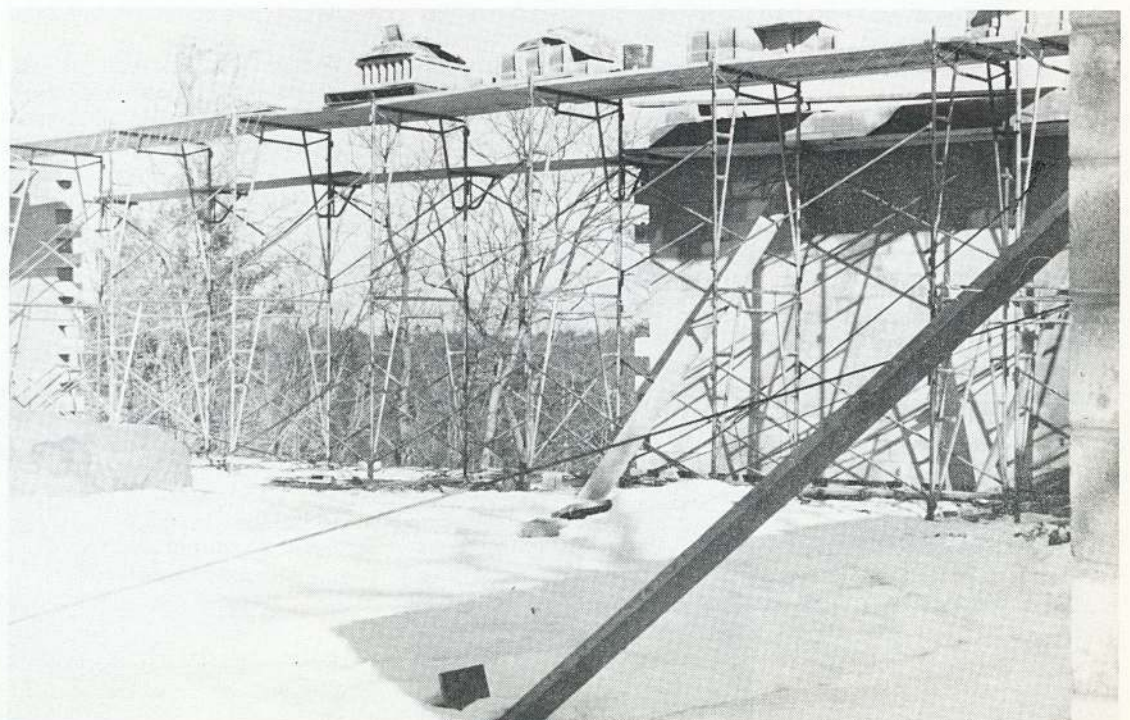
Photo by Jim Gill





Work progresses. The new foundation is laid in cold weather and snow.

Bad Weather No Deterrent To Work on New Building



Snow was no deterrent as the back wall is built.



Bob Stanley reminisces after receiving his Hall of Fame award.

Hall of Fame Weekend Included Good Weather, People, Speeches

Last May's second annual Hall of Fame Weekend at the National Soaring Museum was blessed with good weather, good talks, and good people in abundance.

The weekend's festivities ran the gamut from an informal soaring contest — won by John Gill flying a Libelle over a 45 mile triangle at the blistering pace of 89 MPH — to a conference on airworthiness requirements for gliders.

The highlight of the weekend came on Saturday night with speeches by Hall of Fame inductees Harner Selvidge and Robert Stanley, and by T. Claude Ryan, Gren Siebels, and Bill Holbrook.

Harner Selvidge, one of the Hall of Fame's two new members, was SSA president in 1959 and 1960 and treasurer in the two years preceeding that. A recipient of the Eaton Award, the SSA's highest, he was instrumental in publishing the American Soaring Handbook and several other publications. He is presently one of three SSA trustees. During his acceptance speech, Selvidge made observations about soaring's future and emphasized the impact on soaring of the growing energy crisis.

Robert Stanley entered the soaring scene in 1938 when he completed his well known ship Nomad, an original design

which incorporated a metal fuselage, retractable gear, and provisions for water ballast. In 1939, the ship was modified and arrived at the National Contest at Elmira sporting a V-tail, the first aircraft so equipped. Stanley soon set two national records and established himself as an authority on sailplane design. In his speech Stanley remembered some amusing soaring experiences including making the first landing ever of an aircraft at New York's Laguardia Field, and a thrilling altitude climb for a national record in a billowing cu-nim.

(Editors note: Robert S. Stanley was killed in an airplane crash off the coast of Florida in mid July. During his busy life, he not only developed the significant Nomad, but also was the first American to fly a jet aircraft — the Bell Airacobra — and was the developer and manufacturer of Yankee Escape Systems, a device that saved the lives of many combat pilots in Vietnam.)

Gren Siebels was this years recipient of the Joseph C. Lincoln award for excellence in writing about soaring in the English language, established by the Harris Hill Soaring Corporation to honor the late writer. (See Page 9).

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Soaring Hall of Fame members posed after welcoming two new inductees. They are (back row, from left) Floyd Sweet, Stan Smith, A.J. Smith, Virginia Schweizer, Bill Holbrook,

Richard Schreder, and Paul Schweizer; and (front row, from left) Gus Scheurer, Harner Selvidge, Bob Stanley, and Ralph Barnaby.

Award. Harris Hill Soaring Corporation president Archer Martin (left) admired the engraved piece of crystal before presenting it to Gren Seibels, the 1976 Lincoln Award Winner.



Selvidge, Siebels, Ryan, Stanley and Holbrook Speak at Hall Banquet

(Continued from Page 7)

Since it was the 50th anniversary of Charles Lindbergh's flight across the Atlantic, it was fitting that T. Claude Ryan was present. Founder of Ryan airlines, participant in the project that developed the Spirit of St. Louis, and more famous still among soaring pilots for his development of the Ryan Cloudster which made such a spectacular appearance at the Tucson Soaring Convention, Ryan shared interesting details on the building of Lindbergh's famous airplane.

The evening's featured speaker was Bill Holbrook, a well known competition pilot and former world out and return record holder. He discussed the prospects for improving soaring performances in the years ahead, predicting that pilots would be routinely using energy sources about which we have only a glimmering of understanding now.

The Hall of Fame Evening had something for everyone. After the formal portion people lingered. Dick Schreder flew his wonderful foam gliders over the empty tables. Gren Siebels autographed his book as Ed Byers and Holbrook, the book's publishers, watched and discussed collaborative efforts to improve soaring. Floyd Sweet and Claude Ryan discussed the cloudster. Forrest Blossom, the new SSA Executive Director, and Ralph Barnaby, the first American to earn his soaring license talked about the society. No one wanted to leave, and none did, until the lights were turned off.



Judy English, wife of museum director Liam English, watched Gren Siebels autograph his award winning book, "A Gaggle of One."

For Lincoln Award

Gren Siebels Thank You . . .

Let me propose a small modification.

Those whom we should be honoring tonight are lately dead. Joe Lincoln, whose correspondence with me is one of the treasures I shall always cherish. Joe heard me give a long, disorganized banquet talk at the Dallas SSA convention, back in the early '70s. That uninhibited, honest, booming laugh of his was what made most of my feeble jokes seem funny to the rest of the audience. It was so contagious! So was his enthusiasm for anything written about soaring that contained the slightest germ of truth or insight or I-was-there. He would write me two- and three-page letters about little things I had done in SOARING, or in a book, and from what he wrote or said I knew that he, too, had been there, had seen the same thing, or knew the same truth, or felt the same shivers.

A little further back — in fact, precisely 50 years ago, when I was almost six — a man named Lindbergh headed east from Long Island and flew for 33 hours in a single-engine monoplane with no forward vision whatever, no nav aids beyond a simple compass; a few sandwiches to sustain his body; and a planeful of gasoline and guts. He landed at Le Bourget airfield, near Paris, and became the only true 20th Century hero for all the people in the world.

I must pay tribute to one other airman — lately living, thank God: my friend, Karl Striedieck, whose first 1000-mile soaring flight was a near-Lindbergh thing, and whose **second** 1000-mile flight, made to correct a turnpoint-picture deficiency, was also completed against a host of odds beyond mortal imagining . . . placing him, I think, in the company of eagles such as Lindbergh, Lilienthal and Icarus.

How lucky I am, to have been born in the first century of man's introduction to the sweet rapture of flight. How I envy, not those who may travel through ionized, frozen, black and limitless space — but those in the coming century who may truly plumb the invisible mysteries of the elusive thermal, or the evasive patch of lift that can transform lost hope into triumphant victory aboard our seductive, whispering craft.

I anticipate spending eternity aboard this whirling cinder of salt waters and precious green lands; and could I but learn, before my sand runs out, why the sky behaves as it does, or even why I love it so, I would sleep in my small plot of this beloved earth of ours a happy, complete and satisfied soul.

May God make His face to shine upon us all, from Lindbergh to Lincoln to Striedieck . . . to, if I am very lucky indeed, even me.

Thank you.

A Vintage Visit Across the Ocean

Editors Note: After Jan Scott's first trip to the Wasserkup in Germany, museum director William English asked him to write an article about his experiences. However, Scott noted he had not met any of the people involved. A second trip was more extensive and people oriented. Here are the results.

To the Editor:

A year and a half ago you asked me to write an account about my visit to Wasserkuppe, and at that time I felt there was not much to report that was worth publishing in NSM. Last month our family packed up and left for another trip; this time with emphasis on meeting some people involved with soaring history rather than just visiting the sites. The results were rewarding.

Our first stop was London, where we spent a delightful sunny Sunday with Chris Wills, who is president of Great Britain's Vintage Gliding Club. Chris is a son of the famous Philip Wills, and is a walking encyclopedia of information about old sailplanes.

He drove us to the Wycombe Air Park, about 30 miles west of London, where he keeps his DFS Kranich, alongside a Rhonbussard and a MU-13D (Merlin). In addition to its glider activity, Wycombe is home base for a magnificent collection of vintage airplanes, including a Russian Yak 11 World War II fighter, supposedly the only one in Western captivity.

Chris told us that his Vintage Gliding Club had almost 300 members and was organized and operated pretty much like our own VSA.

I was surprised to learn that all registration and airworthiness compliance on British gliders is under the control of the British Gliding Association. The British government does not involve itself at all. British gliders therefore, carry a contest number only as registration mark. This has resulted in a liberal although not careless attitude towards old gliders, in contrast to certain other European countries, where flying old wood gliders is not permitted at all.

We also were allowed to visit Chris' home on a farm in the village of Nettlebed. Here, stored in a barn loft, were a collection of original drawings of sailplanes along with several sets of blueprints, liberated from Hans Jacobs safe by the allies at the end of WW II. I fear some of these priceless drawings may be lost forever, unless funds can be made available for their preservation.

Our next stop was Stuttgart, Germany, where we went to the Daimler Benz factory and took delivery of a car we had ordered before we left. This increased our mobility dramatically. We met Peter Selinger, with whom I had corresponded about my Wolf.

Peter is writing a book on the history of the Schempp-Hirth firm and its products. The company was founded by Wolf Hirth in Goppingen under the name Goppingen Sportsflugbau, about 1934. It later moved to Kirchheim Teck, and the name was changed to Schempp-Hirth Flugzeugbau. Five sailplane models were built at the Goppingen plant, production of three of them continued at Kirchheim Teck throughout the thirties. Peter has an impressive file on most sailplanes built in Germany. Of particular interest was some pictures of a well known production glider (Habicht), with a 6 meter wing. It was used for training of Me 163 pilots. Other gliders were fitted with machine guns in the nose, and bomb racks.

We also met Klaus Heyn in his home near Goppingen. Klaus restores old gliders to perfection for the Deutsche Museum in Munich, and specializes in gliders of the twenties. He does not fly himself, and considers anyone who flies an antique glider to be out of his mind. Not that he worries about the pilots, but when there are only one or two gliders left in the world they belong in a museum, he says. His home contained a fully restored Besenstiel (Broomstick Primary), Grunau 9 Schaedelspalter (Scullslitter Primary), a Falke, Rhonbussard and the remains of a laminar wing Horten IV, which crashed nearby during the war.

Klaus accompanied me to the home of Fritz Ulmer in Goppingen. Fritz collects Bucker airplanes and has about three complete airplanes on display fully assembled in his LIVING ROOM! A system of spotlights operated from his easy chair highlights the various features of these hard to ignore conversation pieces.

Fritz also has a personal collection of sailplanes consisting of a Minimoa, Goevier, H 17, Baby 2B, Olympia Meise, Kranich II and a Rhonsperber. Fritz and Klaus are trying to collect all five Goppingen sailplanes for a special museum in Goppingen. They lack only the Goppingen 1 (Wolf) and the Go. 2 (Blind Cow). Klaus confirmed what I already suspected — my Wolf is the only one flying in the world, out of a total of about 135 built.

In conversations with Peter Selinger, Klaus Heyn and earlier, Peter Riedel I learned some interesting facts about Wolf Hirth. The son of a well known aircraft engine manufacturer, he was bitten by the glider bug in 1920 and after hanging around the Schneider Works for years, he decided to abandon the family enterprise, (which his brother continued to run) and started his own factory in Goppingen. His first

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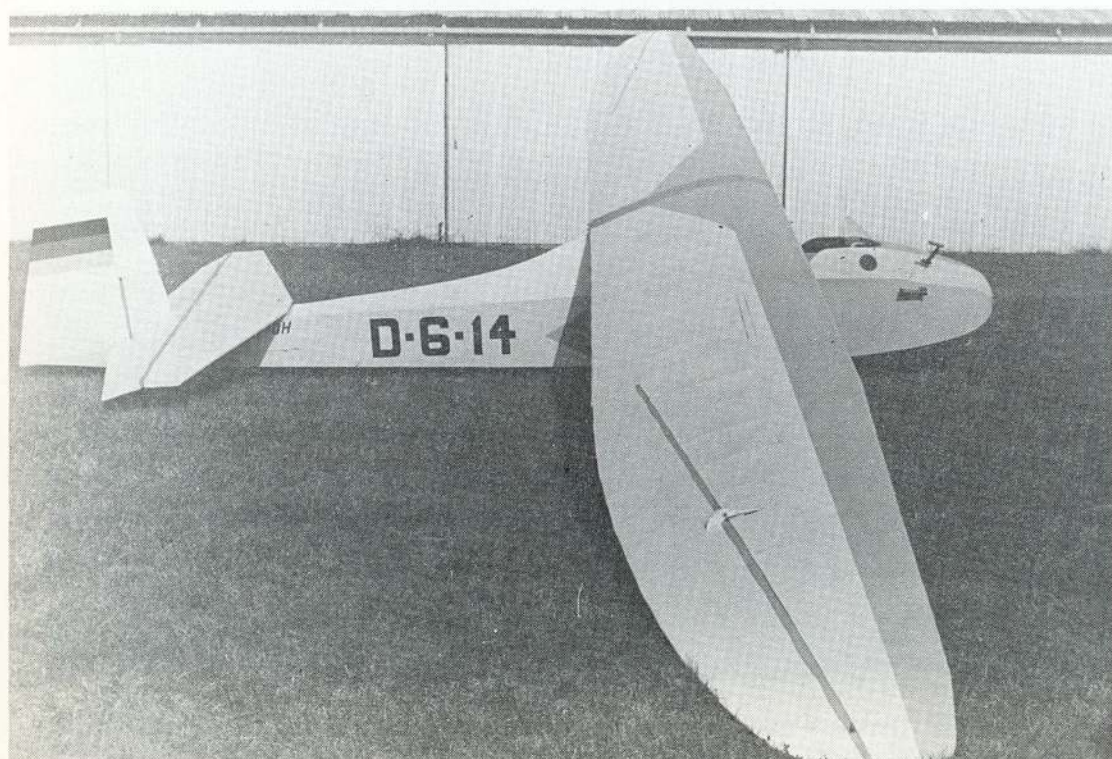
A visit to remember: (from left) Chris Wills and Jan Scott, with Wills' DFS Kranich II.



Jan Scott's Wolf, which now has authentic German registration.

The Wolf

. . . . And the Baby



Skip William's Grunau Baby. Jan Scott found that while there was similarity in construction and assembly details to his Wolfe, the Baby was easier to fly. He said it was smooth, coordinated and predictable.

Scott's Vintage Visit

(Continued from Page 10)

sailplane, named Wolf after himself, was in appearance almost a direct copy of Schneiders Grunau Baby, but lacked the Baby's handling and stability. In fact, the Wolf's low speed characteristics were so vicious that the German government grounded it in 1941 after several fatal accidents, pending modification of the aileron.

The next one, Goppingen 2, also was an almost direct copy of Schneiders Grunau 8, a two place glider, where the instructor was seated in the pylon under the wing, with a small window by each ear and tunnel vision straight ahead to the student's neck. It was quickly known as The Blind Cow, and only a handful were built.

The Goppingen 3 was a scaled down version of Schneiders famous Mozagotl, and was named the Mini Mozagotl, soon shortened to Minimoa. Hirth managed to get Dr. Friedrich Wenk, designer of the Mozagotl, to design the Minimoa wings, and this aircraft became the only superb sailplane from the Goppingen factory.

The Go. Four (Go vier in German), was another two place, with side by side seating, and was so narrow that the pilots' outboard elbows had to be held inside the wing. The fuselage was designed by the Hutter Brothers who now worked for Hirth, and the wings by Wolf Hirth himself. Again, flight characteristics were unpredictable, and the glider never gained much popularity. This apparently was Wolf Hirth's last attempt as a designer, as the Goppingen 5, also known as the Hutter 17, was designed in its entirety by the Hutters.

While Hirth's abilities as a designer may leave something

to be desired, there is no doubt that his ability to organize and promote soaring was of the highest order. He also was a great soaring pilot. However, when the first silver C badge ever was issued to him in February 1931, another soaring pilot had already fulfilled the requirements. But Robert Kronfeld, an Austrian Jew, could not be permitted to overshadow a true son of the Reich!

Rich as it is in soaring history, we found, as we did on our last visit, that Germany does not have many people interested in old sailplanes. There is a small enclave of vintage glider enthusiasts in Munster, near Dusseldorf, where the fourth international vintage glider rally was held in July this year. In Frankfurt, a Karl Vey is in charge of the archives of the German Aero Club. Here again is a large collection of priceless construction plans stored in a damp basement, that I fear will soon be lost for lack of time, money and interest.

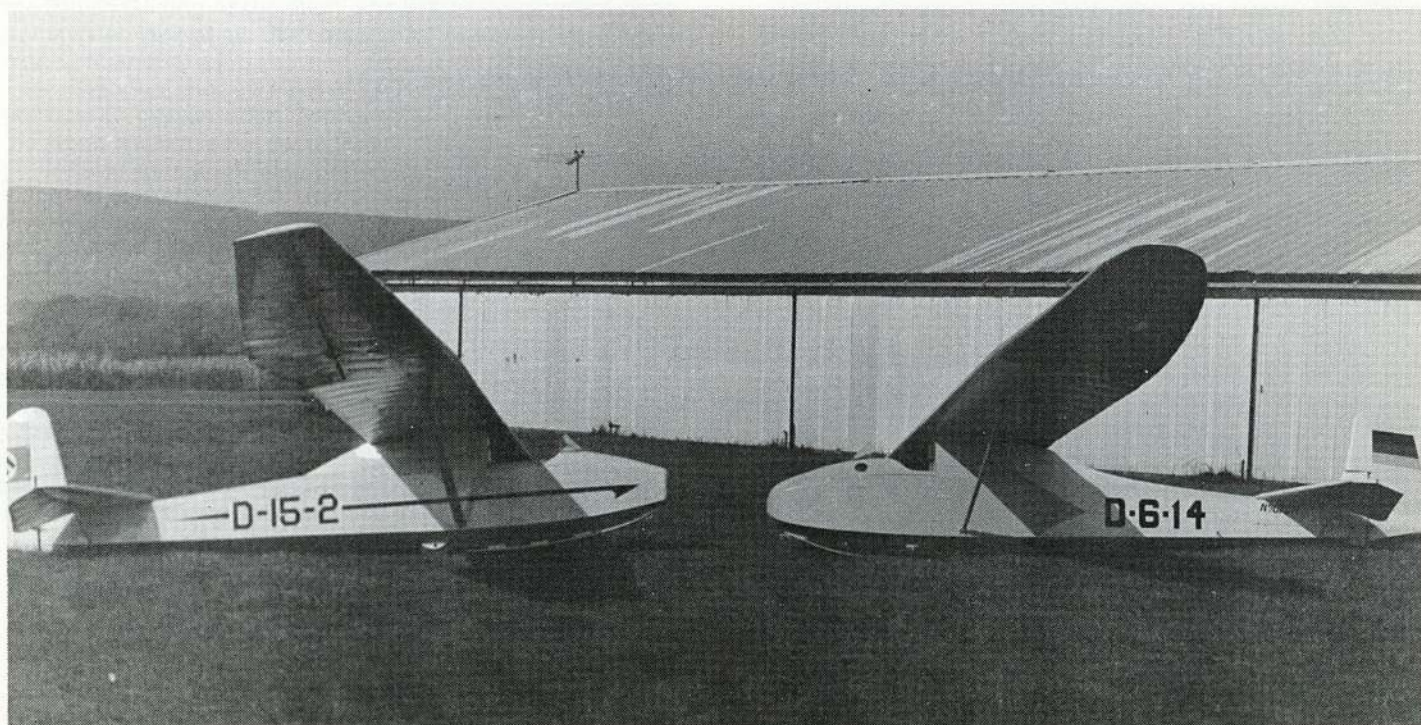
Following our interesting but much too short stay in Stuttgart, we continued to Zurich, Switzerland, where we inspected, and arranged for the purchase of a Moswey III for VSA'er Al Uster. The Moswey is a beautiful little fullwinged sailplane, designed and built in 1943 in Switzerland. It should be appearing at vintage regattas this fall.

We continued on to France. There are supposed to be a large number of vintage gliders here, but the types are unknown to us. Even the familiar German designs have been redesignated and usually modified. Thus the familiar Olympia, is known as the Nord 2000 or something.

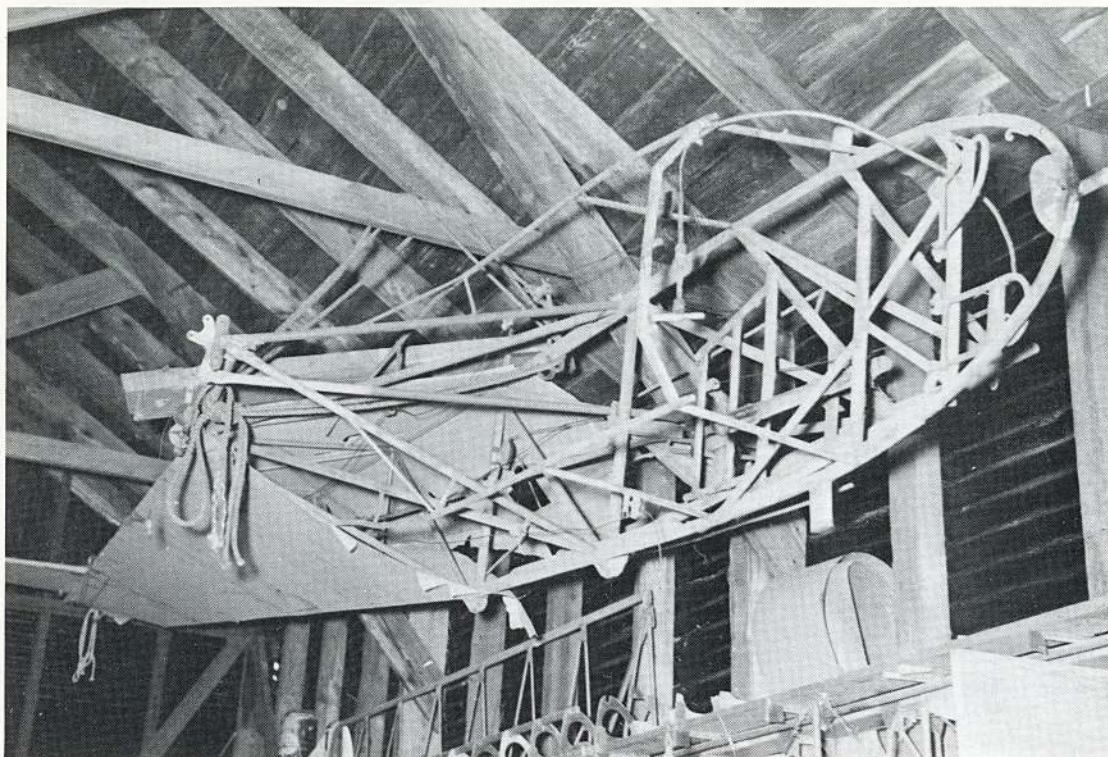
Our trip ended by our ancestral burial grounds in Oslo, Norway. I met with the sailplane representatives of the Norwegian Aero Club, Helge Lium, and Knut Swensen. I was told that a Baby 2A, and an Olympia still exists, but they are now grounded by the Air Ministry. I was delighted to find out that I had flown them both almost 30 years ago.

In Sweden, where a large number of German sailplanes were produced by an aircraft factory during World War II, a mandatory lifespan of 25 years was set by the Swedish government. Many of these gliders were sold abroad just before the deadline, but most were simply cut up and burned.

Jan Scott



Nose to nose: The Wolf (left) and the Grunau Baby are matched for comparison.



The 1-19 was a wreck in a Massachusetts barn in 1950.

A Tale of Hard Work

Restoring the SGU 1-19

Editors Note: The restored SGU 1-19 now is displayed in the National Soaring Museum. This article originally appeared in the Vintage Sailplane Association's newsletter, The Bungee Cord.

by Gus Scheurer

S.G.U. 1-19 Serial No. 14 was manufactured June 19, 1946 and was assigned F.A.A. No. 91806. The ship had only 17 hours logged when it was damaged.

A young neighbor of mine bought it in 1950 at the Worcester Airport. It was a wreck and was considered a complete loss to be used only for spare parts. Therefore, he paid a small price. The young man was a student at M.I.T. and did some flying with the M.I.T. group. He believed he might be able to rebuild it and eventually fly his own glider.

Where to store it? First he stored it in a barn near the campus. Then one day the fuselage arrived in front of my house in Maplewood, N.J. It was on top of his car. Can you picture that? At that time, the Aero Club Albatross was flying with the Philadelphia Glider Council and to help him out, I asked permission to store the fuselage and wings in their hangar. When our hangar was completed at Somerset Airport and the A.C.A. was established there, the fuselage and wings were moved to our new location where they were stored on the rafters. The P.G.C. was happy to see it go. No club likes to see a wreck on its field.

What happened to the poor thing? It was flown into a stone wall hitting, fortunately for the pilot, just below the main horizontal fuselage members which are very husky. The

pilot's legs were above the impact point and so were safe. The lower structure was wiped out to the wheel and some of the upper structure was torn and bent and had to be spliced and replaced.

What happened to the wings? That was quite clear. They resembled one of those forward sweep designs. The wings were in bad shape. The Schweizers no longer manufactured the glider, but did have a number of wings stored, first in the rafters of the factory and later in a small barn next to Paul Schweizer's home. This was a great help to me later.

I was in Europe in 1955 for the first time in 30 years. I spent most of my visit with my long time friend, Wolf Hirth. We went to the German Nationals in Oerlinghausen and toured various glider schools. When I returned home, I was told my young neighbor had died during surgery in Boston. The family wanted to dispose of the glider elevator, stabilizer, rudder, fin and struts plus smaller parts that cluttered their attic. The fuselage and broken wings were in our hangar in Somerset. Who would buy a thing like that? The family thought it would be worth a fortune. However, they accepted my offer of the same price their son had paid for it. So I owned a 1-19 in 1956.

(Continued on Page 14)

FAA Approves Modified 1-19

(Continued from Page 13)

I had a workshop in my cellar big enough to work on a fuselage or on a wing. Unfortunately the builder did not follow the specifications regarding the size of the window opening that I wanted. So the first thing was to chisel a groove in the cement sill and the window frame to make room for the strut fittings on the fuselage to pass through.

Work began with the cleaning of the structure and the removal of the damaged members. I bought steel tubing and part assemblies from Schweizer. They also furnished all necessary drawings. While rebuilding the front end, I streamlined the fuselage a little more to accommodate an enclosure similar to the 2-22 design.

The late Art Zimmermann, of "C70" fame, did all the welding. Art was an excellent welder. He grew up in his father's shop making fittings and metal parts for various sailplane manufacturers in Germany.

The old paint was removed down to the bare metal. But before I had finished, the structure started a rust film again. A dehumidifier did the trick of drying out the cellar air, and the fuselage was primed and painted.

I made a new instrument panel with a winter vario, air-speed, sensitive altimeter, bank indicator and compass. All the wires, push rod and wheel were installed again. I added a wheel housing and a support platform for the thermos bottle and a barograph behind the pilot seat. The board seat and back rest were replaced with a comfortable plastic body form seat.

Rather than repair the badly damaged wings I decided to buy a set of wings from the Schweizers in Elmira. They were sold "as is," minus leading edge and ailerons. In order to move them from Elmira to Maplewood, I made a carrier for the top of my car, full length. Beside the regular roof top support, I added a frame from front and rear bumpers so as to rest the wings in a horizontal position, supporting them on the spars with necessary spaces between them.

On my way home, I noticed a spinning tag attached to one of the wing roots. I stopped and read the tag which said "Rejected." What luck. On further examination at home, I found it was only the fittings that were misdrilled and would not line up with the spar holes. So a call to Paul and a new set of fittings took care of that. As usual, the cooperation of the Schweizer brothers was tops.

I used the old ailerons that needed some woodwork repair. For the leading edge, I used 1/16 plywood instead of the usual aluminum. The front spars had to be built up to the rib level on top and bottom. Another support strip of wood was added well beyond the high arc of the airfoil. The plywood covered the leading edge from the bottom of the spar to the added support on the top of the wing. This improved the upper wing surface.

The wood frames of the wings were varnished twice and then covered with light aircraft fabric. I applied four brush coats of clear and two coats of aluminum dope.

The dope job was done in the cellar during the winter months with the gas furnace operating, of course, and with two window fans working to exhaust the fumes. Still I had a close call with a fire. Some spilled thinner ignited. Fortunately, I was able to extinguish it before it reached the newly doped wings. This should be a warning not to do any doping in your house. One finish spray coat and the color scheme finished the job.

The tail assemblies were in good shape. They were stripped, repainted and recovered.

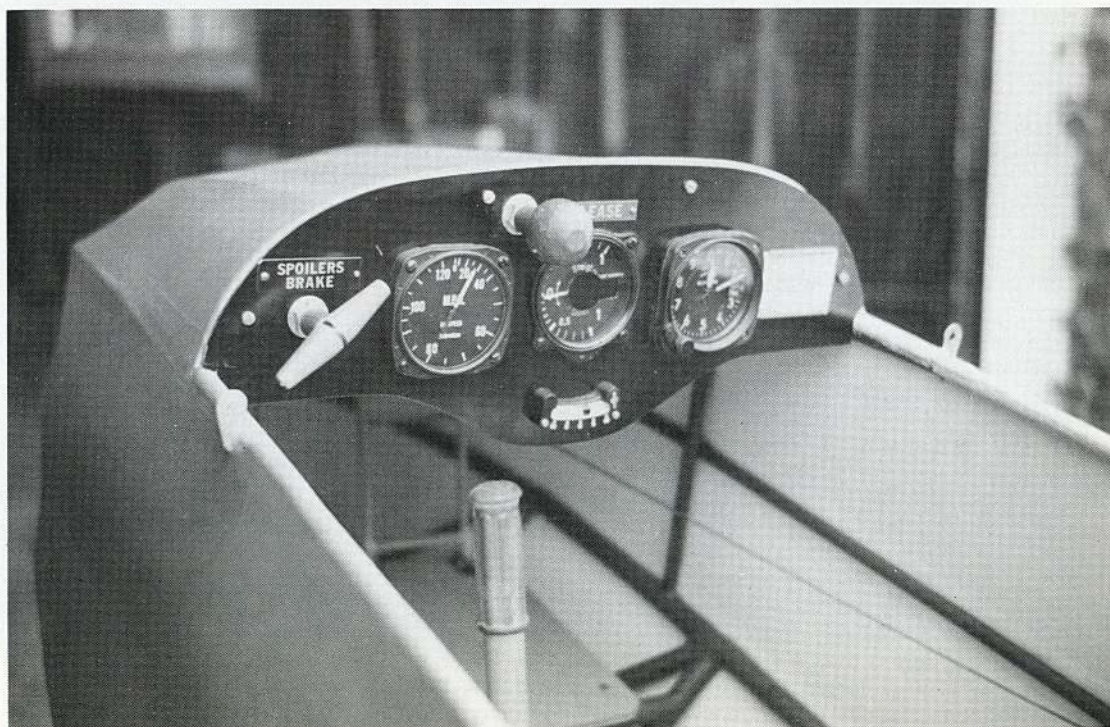
The F.A.A. was so pleased with the workmanship that they gave me a full license despite the modifications. In November 1960, the F.A.A. witnessed the test flight to their satisfaction. The 1-19 is a very safe and satisfying training and thermal flyer. Several "C" altitude requirements were made in it. In 1963, Walker Trussell bought the 1-19. He made his complete Silver C badge flights in it.

Following is a list of some of the flights made:

- 27 flights over 1 hour
- 9 flights over 2 hours
- 10 flights over 3 hours
- 3 flights over 5 hours

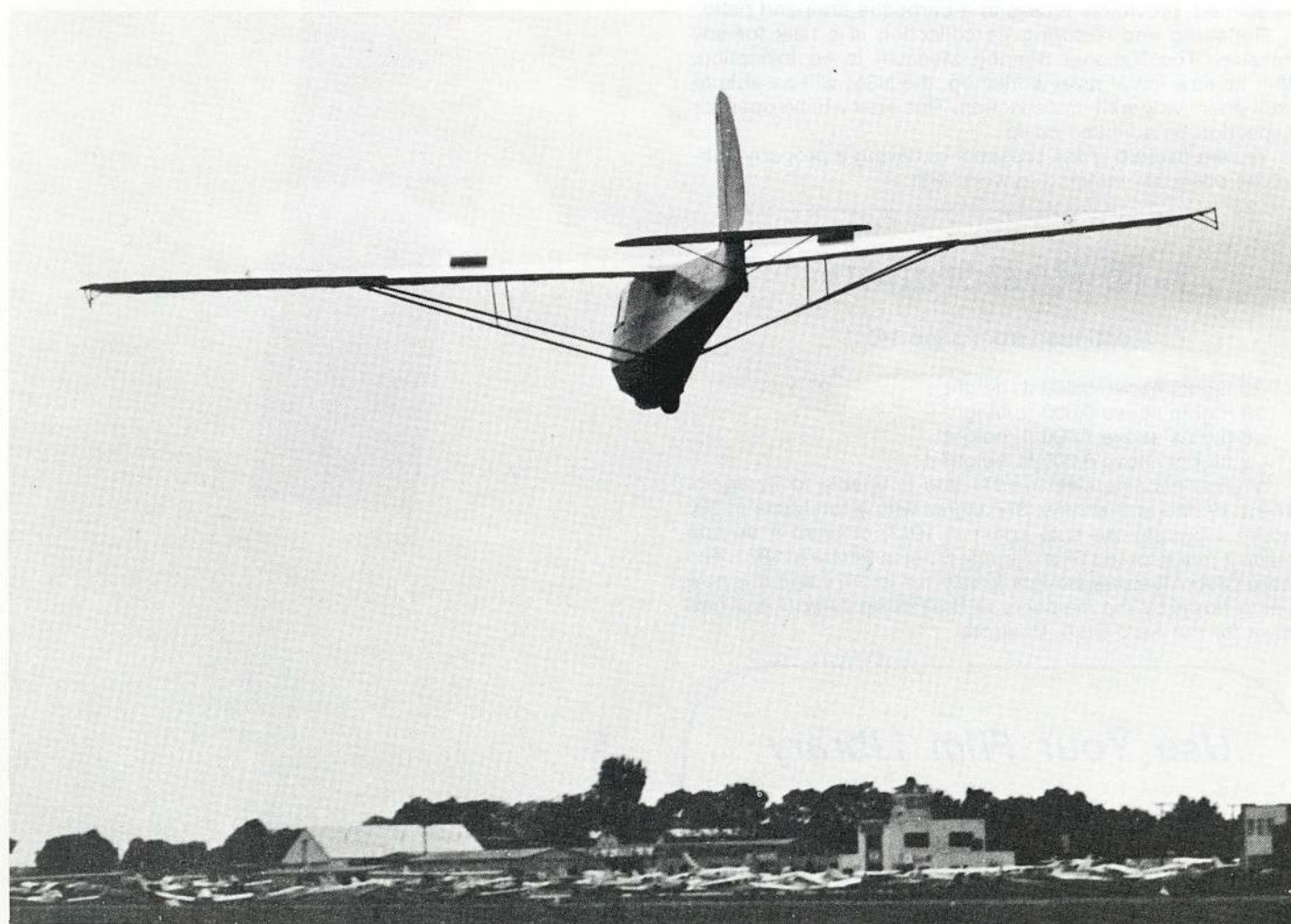
(Continued on Page 16)

The restored instrument panel.





Art Zimmerman (left) and Gus Scheurer fit the 1-19 through Scheurer's basement window after some careful measuring and chiseling (on the window frame).



Test flight. After restoration, the 1-19 flew well.

Soaring Community Awaits New Building

(Continued from Page 3)

We have not been able to honor the members of that distinguished company properly because there was no space available in the old building. One of the nicest things about our new building is that we will at last have facilities for the hall. Although final details have yet to be completed, we believe the entry area of the new building will be used for this purpose. This area alone is almost as large as the entire space available in the old building.

The museum has an extensive collection of periodicals, technical publications, and books on soaring. Again, because of lack of space this material has not been accessible, even to the staff. In the new building a substantial area has been set aside for the library. Individuals wishing to research specific topics will be able to use the collection and work in pleasant surroundings.

The museum has been fortunate in having a fine collection of soaring art. While the old building did have some space for hanging pictures, our new building will greatly expand our capacity to exhibit them in more attractive surroundings.

The large multi-purpose area on the lower level, with its attached kitchen, will be a wonderful spot for museum functions. The area can be closed off from the main exhibit hall if desired. Similarly, in warm weather, a door to the outside can be opened, providing access to a barbeque area and patio.

Repairing and restoring its collection is a task for any museum. The National Soaring Museum is no exception. With its new lower level workshop, the NSM will be able to work effectively with its collection. This area will be open for inspection on a limited basis.

We are excited at the prospect of having a properly conceived adequate building to work with.

1-19 Restoration

(continued from page 14)

- 30 flights above 5,000 ft. height
- 13 flights above 6,000 ft. height
- 6 flights above 7,000 ft. height
- 2 flights above 8,000 ft. height

Walker became sick in 1971 and is unable to fly again. The 1-19 had at that time, 377 flights with a total time of 290 hours. I bought the ship again in 1973, cleaned it up and made it ready for the First Vintage Meet in Elmira in 1973. The Aero Club Albatross bought it from me in 1974 and it is now being flown by the members at Blairstown Airport, the new base for the Aero Club Albatross.

Use Your Film Library

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