



NSM

A Quarterly Journal
of the National Soaring Museum

Spring, 1976

Vol. 1, Number 3

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.

Needed: canopy for Pratt Reid, serial number in the 31,000; gull wing pattern by entrance doors.

Leo Schober

Composite Systems Sailplane Repair

35 Gary Ave.

Ottawa, Ont., Canada K2G3L2

* * * *

I am a radio control model airplane glider guider. Am interested in modeling the Waco CG-4A. So far, have not been able to locate a good set of 3-view drawings. Do have a silhouette from "Jones" and a small 3-view from "United States Military Aircraft Since 1909."

Am also interested in the CG-4A colors. Do know about the olive drab and the D-day stripes. But am looking for some authentication on its training colors. Do have a black and white picture of the CG-4A from "the Official Guide to the Army Air Forces (1944)" that shows a dark fuselage with light color wings and stab, and what looks like the red, white, and blue stripes against a light color rudder.

Can you help me out with a set of 3-views about 8 1/2 x 10 or bigger and some authentication on its training colors or steer me towards another source. Am willing to pay for all information that I can get on the Waco CG-4A!

Lawrence R. Horacek

441 Ridgeview Dr.

Pleasant Hill, CA 94523

* * * *

P. J. Baugh is attempting to complete a set of **Soaring** magazines for the National Soaring Museum. As of January 1, 1976 he needed the following issues:

1937 January through July, Oct. and Dec.

1938 All

1939 All

1940 All

1941 July-August

1942 All

1943 All except Nov.-Dec.

1944 January-February

1945 All

1946 All except January-February

1947 All except September-October

1948 January-February, May-June, July-August

1949 All

1950 January-February, July-August

1951 January-February

1952 September-October, November-December

1953 March-April, May-June, July-August

1954 March-April, May-June, September-October

1955 March-April, July-August, September-October

1956 January-February, March-April, July-August, November-December

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

Papers Available

Four papers are available through the National Soaring Museum. The first three are reprints from the 1974 symposium and are \$1.25 each, plus \$.25 for postage and handling, or \$4 for all three including postage and handling. The fourth is \$.50, including postage and handling.

1. Some Light and Ultralight Sailplane Designs, Carmichael.

2. Second Generation Ultralight Sailplanes, S.O. Jenko.

3. Some Thoughts on Ultralight Sailplanes, E. Schweizer.

4. Experiments and Observations in Soaring Flight, Wilber Wright

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- ☐ Some Light and Ultralight Sailplane Designs, Carmichael, \$1.25
- ☐ Second Generation Ultralight Sailplanes, S.O. Jenko, \$1.25
- ☐ Some Thoughts on Ultralight Sailplanes, E. Schweizer, \$1.25
- ☐ All three ultralight papers, \$1.25
- ☐ Experiments and Observations in Soaring Flight, Wilber Wright, \$.50

Name

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.....

I enclose \$

Mail to: Publications Office
c/o Deboarh L. Hudson
National Soaring Museum
R.D. 1, Harris Hill,
Elmira, New York 14903



PLANNERS:
Ralph Barnaby (left),
now museum hono-
rary vice president,
Gen. Hap Arnold and
Edward S. Evans met
on Harris Hill to
discuss training
plans. Barnaby was in
the U.S. Navy.
Photo by Fred Loomis
from the museum's
collection.

EASC vs. U.S. Government or In Debt for the War Effort

Editor's Note: This article originally was written for the
National Soaring Museum's 1973 spring symposium.

by E. A. Mooers

Anyone who observed the scant attention and no enthusiasm for gliding from the military services for many years, must have been impressed by the swift turn around during the war. Suddenly the glider program became a frenzied project.

One reason for the earlier attitude is well expressed in Don Dwiggins' book, "On Silent Wings":

"On August 1, 1929, F. W. Pawlowski, Director of the newly formed National Glider Association, sat down and wrote a letter to Major General J. E. Fechet, crusty Chief of the Air Corps in Washington, D.C., inviting Air Corps participation in the first Elmira soaring meet. Why not, Pawlowski pressed, train pilots on gliders as the Germans were doing? General Fechet's reply was curt: 'It is not believed that any good purpose would be served by introducing the use of gliding in the Army flying schools.'

"If that were not enough to quiet the matter, a firm directive was issued by the Adjutant General on December 28, 1931; 'Except on specific permission from the War Department, Army personnel are prohibited from participating in any form of glider flying in other than government-owned aircraft.'

"For the remainder of the 1930's the U.S. military mind

remained closed to the subject of gliders."

Then suddenly it was May 1940 and the Germans began effectively using troop carrying gliders.

General Hap Arnold should be given credit for starting the ball rolling toward military glider activity in the U.S. By May 1941, the Army Air Force had ordered eight two-place training gliders. At this time there were only 166 certificated glider pilots in the whole country of whom not more than 15 were competent instructors. There was a total of 174 gliders, of which only 60 were certificated.

Soon the Elmira Area Soaring Corporation was brought into the picture.

On May 1, 1941, EASC had started a tiny civilian glider pilot training school with John Robinson, 1940 national champion, as instructor. Three members of the Board of Directors were appointed a committee to supervise glider training. They were Youston Sekella, James Beecher and myself. We continued in this capacity until all glider activity ceased in early 1943 and often felt we "had a bear by the tail."

In May 1941, the Army Air Corps contracted with the Elmira Area Soaring Corporation for the glider training of

(Continued on page 4)

EASC-Army Glider School

(Continued from page 3)

18 Army power pilots. The first group of six started instruction at Harris Hill on June 1. This class was led by Major Fred Dent, Jr. who later on became a Major General. The course, lasting three weeks, consisted of ground instruction and 30 hours of flying per student.

Parker Leonard and Ray Parker were added as instructors with Jay Buxton supervising. A second and then a third class of six men were trained. This completed the activity in 1941. General Arnold showed a real interest, visiting the site several times. On one of these visits he gave the main speech at the closing banquet of the 1941 Soaring Contest.

The small school here for civilians was resumed in early 1942 but most of our instructors had joined a new school just starting at 29 Palms, Calif.

Meanwhile, the Germans had made a successful conquest of Crete using glider troops.

On April 18, 1942, a telephone call from a Col. Lee of the Army Air Corps in Washington, told us that the decision had been made to start a large and intensive program to train glider pilots and secure a great number of gliders.

Col. Lee said, "You people know more about gliding than anyone else and we need your help. Please send someone to see me in Washington tomorrow."

Arthur Mann, one of our Directors, and I believe Youston Sekella, who was President of the Soaring Corporation, visited Col. Lee. His opening statement to them really raised their eyebrows.

He said, "We want to send 60 students to Harris Hill on May 1, two weeks from now, to start training and many more after that. Will you undertake this?"

At that time we had two gliders and one instructor and odds and ends of equipment with an estimated total value of \$6,000. The Elmira Airport was in the process of reconstruction and enlargement, so it was not easily available for glider use.

After years of trying to get the Services to use glider training and especially with the war in progress, we felt there was no alternative but to accept the challenge. But it could not be overnight. The result was that six students, not 60, appeared on May 1; 12 on May 14 and 24 on June 21. Art Mann resigned from his business and became the school's manager. A number of additional gliders were brought together, the Air Corps supplied tow planes, mostly the L-1-A, and a small staff of service officers appeared to supervise under the command of Capt. Butcher.

It was necessary not only to train the students sent here, but to train a reasonable number of civilians to be instructors. This latter could not well be done at Harris Hill or the airport with all the other activity so the EASC took over the little gliding field at Wurtsboro, New York. Under the leadership of Robert Taylor, a number of glider pilots were trained to instruct. As the volume of work increased, Harris Hill was not large enough for everything so arrangements were made with the Town of Dansville, New York, to use their airport for some of the training.

About the middle of June, Capt. Butcher was called to Washington and when he returned late one afternoon, he telephoned all of us who were concerned with the management of the school and we met that evening.

His story went like this, "I have been instructed to tell you that it will be necessary to move this glider training school to some place in the south. Obviously the facilities here are not adequate. This whole program is going to continue through the winter which will be impossible here so

you are requested to get ready to move. We realize this is a big undertaking and if you want to drop out of the program now, the Air Corps will understand but we hope you choose to carry on."

After a thorough discussion we felt we must stay with it. One of the reasons was that at the moment our operations were in the red, and of course "there was a war on." So we asked how to find a place to operate and were told that no one in Washington knew anything about where to go but that we should contact the Southeastern Training Command at Montgomery, Alabama, and they would tell us.

So Art Mann and I arrived at four o'clock one afternoon at Maxwell Field and met with four Lt. Colonels.

They said, "We know something about this but we have no information about a place for you to go. However, the CAA Office in Atlanta should be able to tell us. We will put you in an automobile right now and take you to the railroad station so you can catch the six o'clock train to Atlanta, and we will make an appointment for you for tomorrow morning. One of our officers will meet you there."

So the following morning we met with one of the top CAA people. One of the specifications for a proper location was that it be 150 miles from the Atlantic Ocean because of the submarine activity there. After quite a study it appeared that the only good sized airport not already involved in war-time activity was at Mobile, Alabama. The following morning Art and I appeared at Warner-Robbins Field, were each put as a passenger in a BT-13, flown back to Maxwell and with our Colonel advisor on to Mobile. A beautiful, new, large airport had just been completed but a group from the Bomber Command had been there the week before and wanted to use it. We said this is the place for us. To settle this it was necessary to communicate with General Arnold, who was in Europe. Within two days the word came back from him, "give it to the gliders."

Arrangements were made to set up a "tent city" and start moves to construct permanent barracks and other buildings at the edge of the airport.

On the July 4th weekend 1942, the entire personnel at Elmira, officers, students, instructors, mechanics and equipment formed a caravan and moved to Mobile. Actually only three days of instruction time was lost.

Now a frantic time began, arranging with architects and builders for everything needed. The Air Corps contract included housing and feeding everyone, for example finding beds and mattresses by the hundreds. I can remember composing a small contract with a barber to operate his shop at the field. There was much more to all this than just flying. Gliders, mostly Aeronca and Piper, began to flow in as well as tow planes, BT-13 and L-1-A. The acceleration was terrific.

We eventually had about 100 gliders and 50 tow planes. There would be as many as 30 tow planes and 60 gliders in the air at one time, because much of the training was using double tow. We had 140 glider instructors and a total of 535 people on the payroll. With top administration from Elmira it meant a sort of commuter operation for some of us. The biggest difficulty was getting enough people to do all the many things necessary. Many of them seemed to just come out of the woods around Mobile and didn't want to wear shoes so that with broken pop bottles on the runways and no shoes, the doctor was kept busy. Eventually 180 students were graduated every two weeks.

Another problem was living up to the "technical orders" from the Air Corps in view of the lack of skilled mechanics.

Neither the Air Corps or we had a very good idea of what the charge should be to the government for instruction, but we settled on \$17.50 per student hour in the air. We told Col. Valant, the Contracting Officer in Washington, that we were a non-profit corporation with no financial backing and just couldn't afford to lose money. He assured us that if the rate turned out to be inadequate he

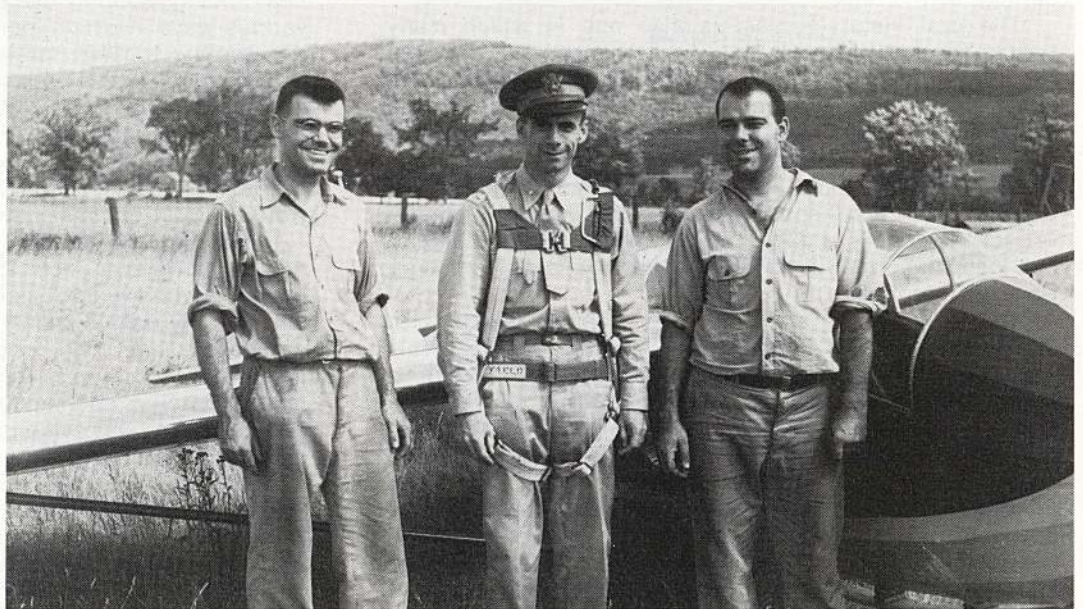


STUDENTS AND TEACHERS:
Parker Leonard (left) and Bill Putnam (right), EASC instructors, with three unidentified Army glider students on Harris Hill.

Photo from the museum's collection.

WORKING TOGETHER:
Paul (left) and Ernest (right) Schweizer with Maj. Fred Dent during the EASC's Army glider training school on Harris Hill.

Photo by Fred Loomis from the museum's collection.



would see to it that we were properly reimbursed.

Art Mann was the General Manager succeeded later by Bob Taylor.

On January 14, 1943, we were notified that our contract was cancelled effective February 4. It was necessary not only to stop operations but to sell at the best price we could get, all the equipment, furniture, etc., to liquidate. We had sizeable bank loans having discounted our contract to borrow. When we finally disposed of everything and totalled our debts we had more than a \$50,000 deficit. This was pointed out to Col. Valant with a request for renegotiation of the contract and reimbursement. I know he did his best to accomplish this but he finally notified us that the government attorneys said it would be illegal to pay us anything, because the only reason for renegotiating a contract upward was "for the benefit of the war effort." Since they

were all through with us, how could any additional payment be for the benefit of the war effort?

The story has a happy ending but it took time to bring it about. We found the only way EASC could be paid was by act of Congress. Art Mann, Whitney Iszard as our accountant and I appeared before a House subcommittee, sitting across the table from three Air Corp Officers who opposed any payment. With the help of Senator Lister Hill of Alabama, and Congressman W. Sterling Cole of our district, Private Law 538 of the 79th Congress was passed on May 16, 1946, more than three years after cancellation of the contract, for the full amount we requested — \$53,046.86. When all bills had been paid the Soaring Corporation had a \$6,000 balance, precisely the assets we had started with at the beginning of the experience.

From the Director

Donations Expand Museum Activities

by William D. English

In the day to day operations of the museum, we are constantly having to deal with the question "what is a museum." Answers are critical and form the basis for everything that we do here at Harris Hill.

At the museum, the board has long taken the view that a museum ought to be involved with the business of inspiration and the gathering and interpretation of information, as well as a place where valued artifacts and documents of the past can be safely stored. Consistent with this view, the staff and trustees constantly explore ways in which the museum can expand its services and activities. Because the present facility is limited in size and because the museum considers itself to have a national constituency, we are planning and sponsoring many activities that can be conducted in various locations around the country.

The museum has undertaken an oral history project. Veteran soaring enthusiasts have been asked for their recollections of significant events. From time to time, we plan to run excerpts of these recollections in NSM. While this program has been limited, we plan to expand this activity in the months ahead as time and finances permit and regard it as one of the most important the museum can undertake at this time.

The oral history project is also one in which many people can participate. If any of our members wish to help us out by conducting tape recorded interviews with local people whom they believe to have been important in the development of motorless flight in an area, I hope that he or she will contact us so that we can coordinate our activities. Throughout the United States there are many people who possess much first hand knowledge that should be preserved for the benefit of glider pilots to come. With the help of our members, we will be able to develop a rich treasure trove of information to pass on.

The museum has also begun to organize meetings of soaring people in various parts of the country. This "soaring evening" program has been described in a previous issue of NSM, but for the benefit of newer members of the museum, we hold regional meetings featuring well known speakers who can share their knowledge and expertise with their audience. An important benefit of this program is that it gives people the chance to get to know other soaring enthusiasts in their own area thus enhancing their own enjoyment of the sport. The museum stands ready to help organize such programs upon request.

Through the generosity of P. J. Baugh, Lexington, Ky., the museum has acquired Joe Lincoln's Schweizer 2-32 "Cibola". Plans are being made for the active use of this fine aircraft in several projects that we hope will benefit to the soaring community. We invite the members of the museum to suggest ways in which we might make maximum use of the aircraft.

We will anticipate that in the course of the next few months we will begin the publication of material that can be used to stimulate interest in soaring. These education kits will be aimed at first at two distinct groups, adults and young children, and will be available at a low fee. With these education kits, soaring pilots and teachers can help to spread the good news about soaring.

All of us associated with the museum are eager to provide more effective and worthwhile services. With the help of our membership, we will play an ever increasing role in the development of our exquisite sport.

I want to thank Max Grassfield and all the organizers of the 1976 Soaring Convention in Denver for their magnificent gift of \$1,000.00 to the museum. The interest on this gift will be used to help underwrite future museum participation at the annual soaring convention. I am pleased by this expression of support for museum activities.

The President Speaks

Museum's Reputation Becomes Nationwide

by Ted Sprague

Every endeavor has its landmarks. These may appear insignificant when they happen, afterwards they emerge as important: indicating an acceleration of effort, a shifting of gears, a deeper understanding of purpose and goal.

I believe that the National Soaring Museum recently passed one of these landmarks. It was evident to me that at the Denver meeting of the Soaring Society of America people no longer thought of the museum as being a regional institution of little impact. Instead, in the minds of many, it had become an important part of the soaring scene nationally. Wherever I went at the convention I talked to people who were well informed about the museum and who seemed genuinely excited by its activities and future prospects. Many spoke of the ways in which the museum could help the SSA promote soaring and develop closer ties among soaring people. Several people suggested various ways in which individuals and the SSA could help the Soaring Museum grow and expand its activities.

Throughout all my talks with people in Denver I was impressed with the widespread enthusiasm for the museum. I believe that a large part of this enthusiasm stems from the publication of this magazine. Editor Meta Levin has insisted that this publication be a quality one as well as one that would inform our members of the museum's activities.

The trustees were so impressed by the first issue that they authorized a second printing to be sent to all SSA members. This was done last fall and resulted in a substantial increase in the number of museum members. Of perhaps greater long term importance was the fact that many soaring people were brought up to date on the museum project and liked what they read. I think receiving a copy of NSM was evidence that the museum is a viable institution and one that is on an accelerating path toward excellence and national influence.

The museum operation's growth in the last few years has been remarkable, particularly in the face of the difficult economic climate which began in 1974. I expect that this acceleration and expansion of activities will continue in the years ahead. Two recent developments seem to be particularly portentous in this regard. The first is the recent election of Bernald S. Smith of Fremont, Calif., as president of the National Soaring Museum. Bernald is an ex-President of SSA and is widely respected for his thoroughness and leadership ability. As publications chairman for SSA, he has had an important role in making *Soaring* magazine the finest of its type in the world. As SSA Director for Region 11, Bernald has consistently represented all of his constituents fairly and articulately. Bernald will be the first President of the National Soaring Museum to live outside the Elmira area. As trustees, we look forward to his leadership.

A second development of great importance is the generous gift to the National Soaring Museum of Joe Lincoln's Schweizer 2-32 "Cibola" by a museum member from

(Continued on page 16)

Spring Weekend Planned May 22

This year the museum's annual spring weekend beginning May 22nd, will mark the transfer to the museum of the United States Soaring Hall of Fame. The Hall of Fame, which has been administered for the SSA by the Citizens-Savings Athletic Foundation of Los Angeles, Calif., will be an important part of the National Soaring Museum.

The museum has commissioned Frank Hurtt, Ithaca, N.Y., to design and have executed new membership certificates which will be awarded to all honorees in the Soaring Hall of Fame. At this year's induction ceremony, Tom Page, Urbana, Ill., a long time SSA Director and a distinguished soaring pilot, and Gustav Scheuer, Toms River, N.J., founder of Aeroclub Albatross, the oldest soaring club in the United States, and still an active East Coast soaring leader, will join this select group of soaring pilots.

In addition, Karl Striedieck, Roy McMaster, and Tom Knauff will present a program on Flying the Bald Eagle Ridge. On March 17, 1976, Striedieck and McMaster flew an 807 mile out and return along the ridge, thereby providing the basis for a new world's record claim. This flight, incidently, is the second longest flight ever made in a sailplane. Tom Knauff, operator of Ridge Soaring Inc., Julian, Pa., and author of *Ridge Soaring the Alleghenys Bald Eagle Ridge*, has made some remarkable flights down the ridge.

We hope to see as many museum members as possible attending this great weekend, which also will feature flying contests, and, for those in the family who do not fly gliders, a kite contest.

Thanks Expressed For Museum Aid

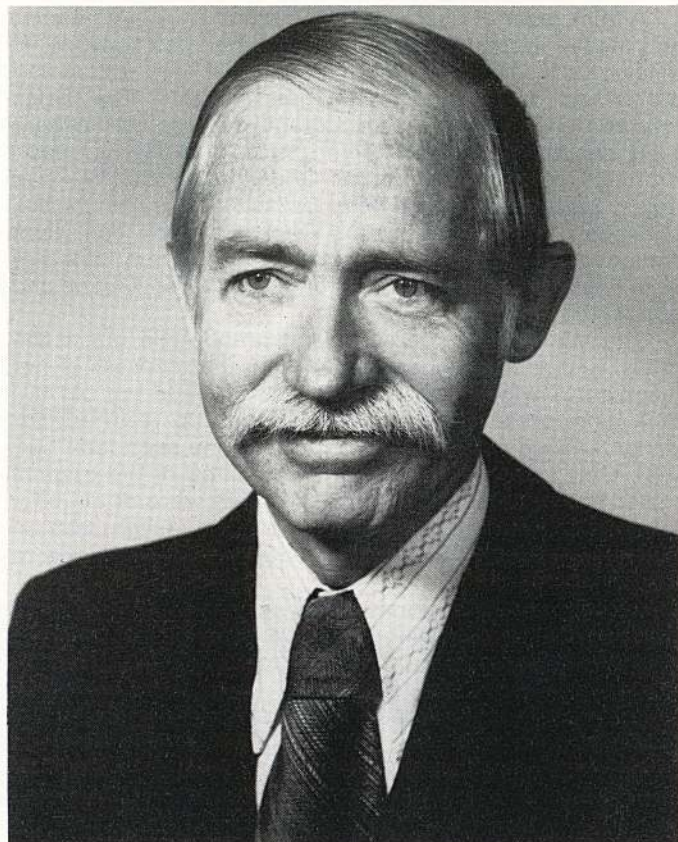
Editor's Note: This letter was received by museum director William D. English. It illustrates the aid available through the museum and NSM.

Dear Mr. English,

Please accept my apology for the tardiness of my reply to your letter to me of 30 December 75, concerning my search for plans for a Wolf Hirth Glider.

Your letter has been the source of unbelievable American Soaring history trips via phone conversations with the people you referred me to. Even more fantastic were the people they put me onto. I have in the past 3 weeks spoken with the "Who's Who" of American soaring, been advised of all kinds of pro's and con's of the *Wolf*, and heard comparisons of the *Wolf* with other similarly fascinating machines of the era. I could almost write a short treatise on the "History of American Soaring 1935 - 1939" as the result of this project. I cannot thank you enough for the help you have been.

You will find enclosed herein a check for five (5) dollars for my SSA membership in the National Soaring Museum. I would like to request the 1st Quarter issue if I have missed it (for 1976) as I have received a very informative letter from Mr. Nathan Frank, Star Route, Great Mills, MD 20654,



Bernald S. Smith

B. Smith Elected President

Bernald S. Smith, Fremont, Calif, is the newly elected president of the National Soaring Museum. Bernald is a captain for United Airlines and a former president of the Soaring Society of America. He has been a SSA Director for Region 11 for many years and serves as SSA publications chairman.

Active in developing soaring in the San Francisco Bay area, he was the chief organizer for the 1975 Soaring Convention and has been a long time supporter of the Air Sailing soaring site.

The Board is pleased that Smith has agreed to serve as president and is looking forward to his leadership.

referring to a notice about my project he apparently saw in this issue.

As the owner of "Son of Mo-13d," a Bergfalke II/55 I again wish to thank you for your help and request you to keep watching for a set of "Wolf" plans as I have not yet found any.

Sincerely,
Stewart M. Crane

ON THE COVER: Maj. Fred Dent and a TG-2 during the EASC World War II Army glider school. See page 3.

A thick layer of dust made the maroon paint even darker and mouse droppings rattled against the birch plywood as Minimoa's fuselage was lowered from the barn rafters and gently laid on its side in the grass outside. The wings followed and the survey for storage damage was begun.

It was Thanksgiving morning, 1955, at Walter J. "Pop" Krohne's seed farm north of Orlando, Florida. We had driven straight through from Dallas 1100 miles to buy Minimoa. Army Signal Corps Capt. Bob Johnson, then stationed in Fort Worth, had offered to help me fetch her from Florida after I had corresponded with Pop Krohne and negotiated a price.

The Minimoa looked somewhat grubby laid out in the grass, and a musty odor seeped from the recesses of her fuselage. A wipe-down with seed bags made the old girl look more presentable and we set about to resurrect her trailer — used most recently in the Krohne seed farm harvest. Only the wing root mounts remained of the original trailer hardware and the chassis timbers were of doubtful integrity. A few nails, some webbing and a taillight lash-up by late afternoon had the rig ready to roll westward to Texas.

I suspect it was a case of the sailplane supporting the trailer rather than vice-versa, for I cringed every time I glanced in the rearview mirror and saw Mini-bird's gyrations as the trailer flexed and wobbled.

Restoration took me until the following summer. The fuselage was in my father's garage in Dallas and the wings were on sawhorses in Grand Prairie Airport's fire station.

The glue joints along the keel were gone, and several frames in the cockpit area were broken. Bob Brown coached and encouraged me in resorcinol glue and tacking-strip technology. Wally Wiberg taught me the fine points of scarfing thin plywood.

I was fortunate in finding a local supply of 1.5-mm aircraft-grade Finnish birch plywood. A good portion of one side of the horizontal stabilizer, including the spar, had to be rebuilt and re-skinned. A new skid was laminated from three layers of white oak planed to 1/4-inch thickness and clamped over a curved gluing form.

The rubber skid shock donuts were virtually petrified from age. I finally turned up an ideal substitute at a shop specializing in oil field rubber gaskets and packings.

The wings were in much better shape than the fuselage. A general clean-up and several coats of bright red Woolsey's yacht enamel on the plywood surfaces readied them for flight. Tap-tap-tapping along each wing rib and along the spar, I detected no hollow sound of separated glue joints. The wings were built like the proverbial brick outhouse, with 15x15-mm rib members and laminated Norwegian pine spars steam-bent for the Minimoa's distinctive gull and swept-back outer panels.

Minimoa designer-builder Wolf Hirth has admitted that the gull wings probably contributed nothing to performance, but "they did sell a lot of Minimoas."

A total of 115 Minimoas were built between 1936 and 1940 at the Schempp-Hirth Sportflugzeugbau in Goppingen. Production was halted in 1940 when a Norwegian carpenter at Schempp-Hirth took a dim view of Germany's invasion of his country and set fire to the shop. All Minimoa tooling and drawings were destroyed.

Under several layers of color schemes and decorations of previous owners, I discovered serial number 56 lettered on the stabilizer pylon of my Minimoa. The original finish when Dick duPont imported No. 56 Minimoa to the US was natural varnish woodwork and clear-dope-and-varnish fabric.

My first flight in Minimoa N16923 was on June 23, 1956 at Grand Prairie. It was difficult at first to get accustomed to the near-vertical angle of the inner wing panel in a turn; the outer panels are not visible from the cockpit. I was amazed at her gentle handling characteristics and stability. She

would hang in a tight spiral while thermalling with controls neutral. My previous soaring experience had been in a TG-2, in Othmar Schwarzenberger's LK flat-top *Chartreuse Goose*, and in a DFS *Weihe*.

As I grew more familiar with Minimoa's ability to soar in spite of its pilot, I recalled Mom Krohne's comment that "the Minimoa will fly on a whisper." On marginal winter days when thermals were narrow and weak, Minimoa often stayed airborne while other sailplanes were gliding down to the field from release altitude.

All of her natural soaring ability went for naught that August when I attempted a 200-mile goal flight from Grand Prairie to Quanah. Her newly refurbished cockpit was sullied as the small, choppy late morning dry thermals (coupled with first cross country jitters) overcame my gizzard. Sweating and gagging as I lined up to land on a bare hilltop near Roanoke, 25 miles out, I could see cumulus clouds beginning to pop another 10 miles down track.

It was two summers later, after I had flown the numb-rump hover for Silver C duration, that I again struck off cross country. This time my goal was Sweetwater, Texas — 204 miles to the west. My low point was the 2000-foot release altitude, and I never got below 4500 feet as I worked every third thermal along the ground track. My retrieve crew, Othmar "Oats" Schwarzenberger, and I kept each other in sight as I smoked across the West Texas mesquite country at an average ground speed of all of 36 mph.

I arrived over Sweetwater Municipal Airport at an 11,300-foot cloudbase, from which with three more hours daylight, I could have easily added another 80 or 90 miles. But I was unwilling to jettison that goal diamond and I felt rather extravagant while dumping 11,000 feet with spoilers to land after a 5 hr 40 min flight.

I was certain that the cloudbase altitude over Sweetwater had given me Gold C altitude, but after Schwarzenberger witnessed and sprayed the barogram, we measured that I had been 90 lousy feet short of the required 9842 feet gain. Still, I was not so put out over that 90-foot shortage that I could not spring for filet mignons at Sweetwater's White Elephant Restaurant (We assume the filets were beef — not elephant.).

The following weekend I headed west again as a contestant in a little Gypsy Tour contest of speed tasks from Grand Prairie to Ranger, Ranger to Sweetwater, and back to Grand Prairie through the same stops — with local tasks the following weekend. The weather was almost non-soarable and a far cry from the super conditions the previous week.

Minimoa and I floundered around getting lower after we crossed the Brazos. We got lost in the Spanish land survey country where section lines run catty-cornered NW-SE and NE-SW. Over a settlement consisting of a store, a service station and a few houses which I later determined to be Lipan, we ground around at 600 feet in zero sink without a landing place in sight among the mesquite trees and rocks. I was certain I was going to end the flight breaking my beloved Minimoa.

By clinging onto the zero-sink, Minimoa and I finally drifted northward out of the Lipan hole and I regained my bearings. A scraggly little thermal near the coal-mining ghost town of Thurber buoyed us up to a more comfortable 3000 feet. We tippy-toed westward from one midget thermal to another until I could see the sun glinting on the Ranger Airport hangars.

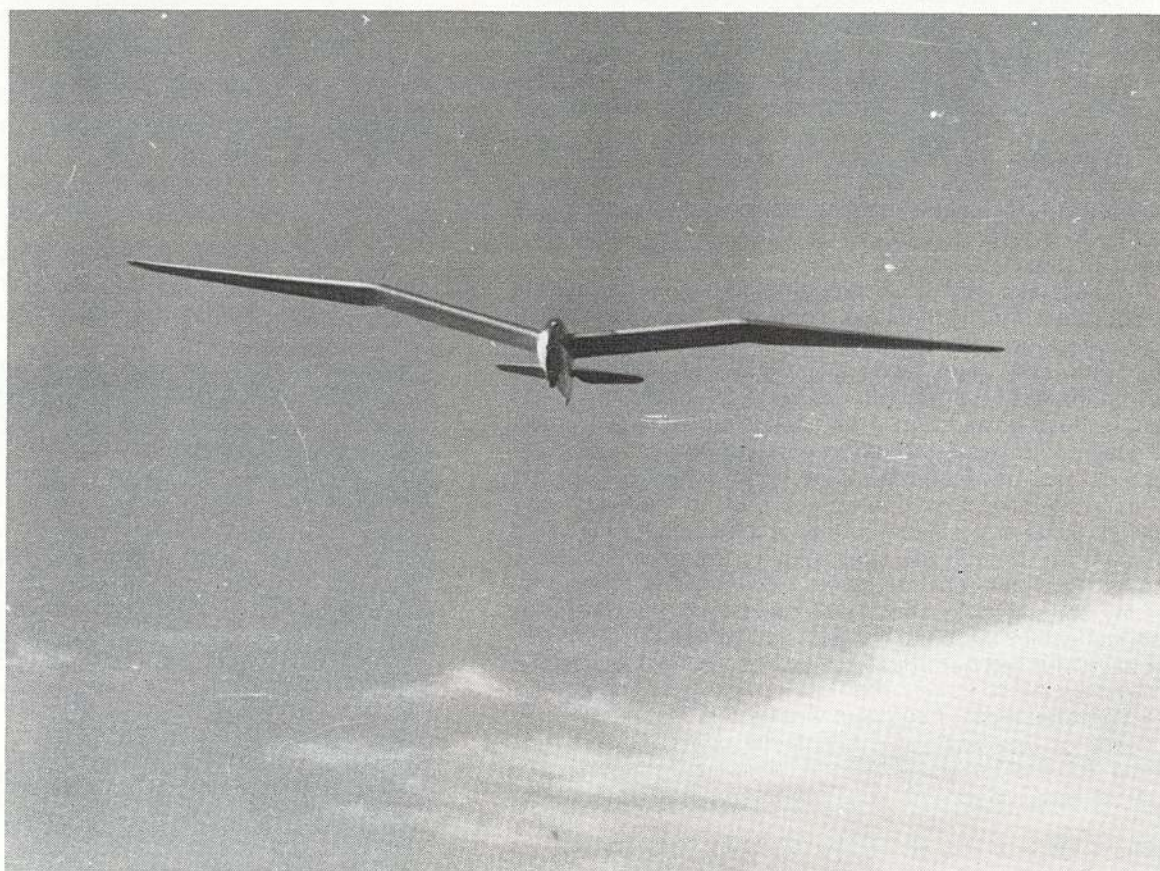
Those hangars stayed at the same angle through Minimoa's canopy as we hoarded our altitude at best L/D airspeed. We crossed the airport fence down among the bushes on a straight-in approach.

I was both dumbfounded and delighted when towpilot Marion Griffith, who had flown the Waco UPF-7 on to

(Continued on page 10)

My Love Affair With Minimoa N16923

by Terry White



Editor's Note: Minimoa N16923 now is owned by the
National Soaring Museum.

Minimoa N16923

(Continued from page 8)

Ranger, ran out to tell me that I was the only one to reach the goal. Pat Mulloy and his 1-23 were down somewhere back along the route and Al Backstrom had put in at Weatherford in the Pratt Read.

My first and only 1000 points caused my cap to fit somewhat tighter that evening as we all quaffed beer in June and Wally Wiberg's motel room.

The Gypsy Tour went downhill for me from there on. Conditions were so poor the following day that after several starts, everyone trailed to Sweetwater where I introduced them to the White Elephant's filet mignons.

I came close again to scuttling Minimoa on the Sweetwater-to-Ranger leg when I glided in no-lift dead air across town to land at the city limits on a highway right-of-way under construction. I thought I had the landing sewed up as I turned on final along the roadbed. A single telephone cable stretching across the highway swept over Minimoa's canopy and I tensed to wait for her rudder to be snatched out by the hinges. Fortunately the full-spoiler sink rate dropped us safely under the cable. Mulloy made it to Ranger.

The next day was not a whole lot better. On the final tour leg from Ranger back to Grand Prairie, Minimoa and I made it on a flat-turn fence-skimming downwind approach into Weatherford Airport — about 55 miles. Mulloy made it to Grand Prairie.

I finally succeeded in pranging Minimoa during the second weekend of the local contest in which triangular tasks were flown from Grand Prairie. Conditions were still way below par, and I made the mistake of launching too early in the day for a 100-km triangle. A likely-looking green pasture near a road and a farmhouse turned out to have terraces about two feet high undulating across it, and the terraces cast no shadows in the noon sunlight. Poor old Minimoa bounced from one terrace peak to the next. I saw daylight come through the bottom of the cockpit as the skid punched up through the keel splitting the lower fuselage.

I had Minimoa repaired by the following soaring season, but my soaring enthusiasm was dampened meanwhile by disputes within the club. My decision to sell Minimoa was not easy. But sell her I did to Chuck Lewis, who proceeded

to fit her out with gyro and oxygen and soar to 24,000 feet for his altitude diamond. I am uncertain to Minimoa's ownership succession from Lewis to Rev. Carl Groom of Tucson who donated her to NSM.

Other Minimoa N16923 owners and pilots that I have been able to determine have been duPont, Lewin Barringer who flew her in 1938 to a briefly-held US goal/distance record with a 212-mile flight from Wichita Falls to Tulsa from a winch launch; Ted Bellack; Chuck Kohls and Lyle Maxey; Pop Krohne, and perhaps others.

At one point in my Minimoa ownership, I had the notion of organizing an informal club of Minimoa owners around the world. In correspondence with Wolf Hirth, I learned that one Mini was in the hands of Heini von Michaelis, a South African wildlife artist; Philip Wills' old Mini had migrated from England to Iceland and was owned by Magnusson; Hirth kept his personal Minimoa at the Hornberg (she is now Harold Palmer's N2664B); Shelly Charles' N18163, also imported from England and later owned by Bill Coverdale — present owner unknown; Chet Decker's G-1306, fate unknown; a Minimoa that had been delivered to Chile slung between the hydrogen calls of the *Graf Zeppelin*. Many others of the 115 Minimoes built no doubt were "liberated" or used for machinegun practice after the collapse of the Third Reich.

One fond memory I have of my Minimoa was when I urged the late Karl Baur to fly her at Grand Prairie one Sunday afternoon. Baur had worked with Hirth at Goppingen in Minimoa production flight test in the thirties before going on to Messerschmitt-Regensburg, where he flew Me109s and the M163 rocket-powered interceptor.

After a two-hour flight in the Minimoa, Baur was exhilarated at meeting an old friend again. He expressed his gratitude by giving me a German book on soaring meteorology in which he signed the flyleaf, "... for a fine flight in the good old Minimoa."

My bachelorhood ended the following year and I gradually lost touch with soaring and soaring people. In the four years I had Minimoa airworthy, I logged only 88 hrs 29 min flight time, and many times that in the shop making repairs. But I would not trade that four-year love affair with Minimoa for the slickest glass supership going.



GOAL DIAMOND: Author Terry White with the Minimoa after a 205 mile goal flight from Grand Prairie to Sweetwater, which earned him a Gold C distance with a goal diamond.

DONATION:

P. J. Baugh (left), museum member, and Jim Short, museum member and Schweizer Aircraft Company employee, discussed the Cibola's future after Baugh donated it to the National Soaring Museum. The aircraft is at the Schweizer factory where it will be repainted and readied for use by the museum.



Recent NSM Acquisitions

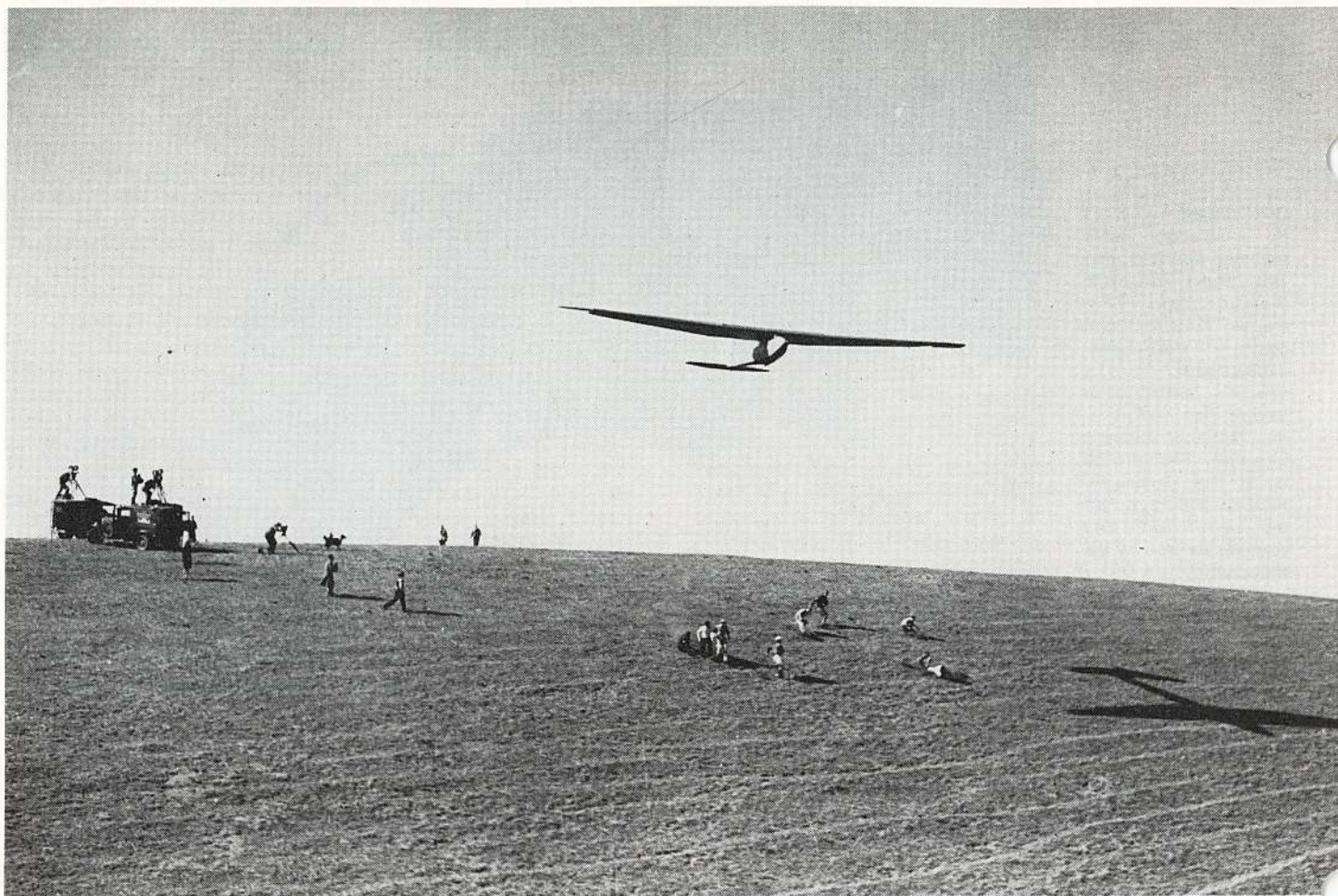
In one of his last acts, Joseph C. Lincoln, Phoenix, Ariz., long time museum supporter and benefactor, gave his Schweizer 1-23 sailplane "Cirro-Q" to the National Soaring Museum. Through the generosity and good offices of Ron Gregg and Leonard and Barbara Sharpe of Calage Soaring, this significant aircraft in which Joe Lincoln achieved all of his diamonds and which figured importantly in the book "Soaring for Diamonds", arrived safely in Elmira. At present the ship is in storage until such time as our new facility is built.

Dr. Dorothy Lincoln, widow of Joe Lincoln, recently presented the museum with her late husband's aviation library. This extensive collection is available for use by museum visitors on application. The Lincoln Collection will provide researchers with valuable material.

P. J. Baugh, Lexington, Ky., has made several major contributions to the museum. In addition to a number of aircraft instruments in mint condition and a bound set of *Soaring* magazines going back to 1957, Baugh has given the donated Joseph C. Lincoln's Schweizer 2-32 "Cibola". This well instrumented aircraft will be used by the museum in several projects of interest to soaring enthusiasts.



THE CIRRO-Q: Joe Lincoln's 1-23 which he donated to the National Soaring Museum was brought to the museum by Leonard and Barbara Sharpe of Calage Soaring.



THE FLIGHT: Lindbergh soars in Southern California.

Lindbergh Flies The Albatross

Editor's Note: The following is a portion of the "Spirit of Lebec," which first appeared in Westways Magazine. Copyright 1974 Automobile Club of Southern California. The Lindbergh story was reprinted in the Winter, 1974 edition of the American Aviation Historical Society Journal. Photographs are courtesy of Martin Cole, AAHS Journal editor, and were taken by Howard Joe. They were made available to Westways and AAHS by the author and the Hatfield Institute of Aeronautics. This plane may also have been known as the "paperwing" Bowlus.

by Bob Meakin

It was Saturday morning, January 25, 1930. A small monoplane sped down the runway at San Diego's Lindbergh Field and climbed steeply into the sky. At the controls was Charles Lindbergh; his companion, Hawley Bowlus, was America's leading sailplane designer, builder and pilot.

Having recently completed a number of successful soaring flights at San Diego's Point Loma, the two friends were off on a mystery flight — made in secrecy to avoid publicity — searching for a suitable location somewhere in the mountains of Southern California from which to expand their gliding activities.

Three years earlier, in 1927, during the design and construction of Lindbergh's transatlantic airplane, *Spirit of St. Louis*, the flyers had worked together closely. At that time

Bowlus was shop foreman at the Ryan-Mahoney plant in San Diego, where the famous monoplane was built.

Lindbergh steered the red and white Lockheed Vega north into the more arid Antelope Valley, just across the mountains northeast of Los Angeles, then westward toward the main Los Angeles-to-Bakersfield highway through the Tehachapis. Soon the topography became more interesting to the flyers — rugged terrain with deep valleys surrounded by tall mountains. Lindbergh pushed the plane's nose down, rolled into a descending turn and circled low over the cluster of unusually smooth, rounded, almost treeless mountaintops rising high above the small communities of Lebec and Gorman.

Since there was no place to safely land, the survey was

(Continued on page 13)

continued from the air. Both flyers agreed that the area would fill the bill as an experimental soaring site; grassy hilltop knolls for launching and landing, unobstructed flying space in three directions, passable access roads, sheltered and secluded campsites nestled in the oak-lined arroyos, groceries and supplies available in town and a government weather station located at Lebec.

On the return flight to San Diego plans were made to bring a sailplane to the mountains for a few days of experimentation, sport and relaxation. Both flyers, long accustomed to a wide spectrum of flying weather — from the fury of great storms to the pleasant smoothness of fair skies — were looking forward to sampling the early spring weather of the Tehachapis. Motorless flight was still a primitive science, particularly in America; and it loomed as an aeronautic challenge even to Charles Lindbergh. So right then and there it was decided to begin the Lebec adventure the following weekend. During the discussion, Bowlus mentioned that a group of flying enthusiasts in Bakersfield had recently acquired one of his big, new Albatross sailplanes. "Invite them to come along," Lindbergh replied.

At 5:30 Saturday afternoon, February 1, 1930, Hawley Bowlus and public relations manager Phil De Mandel, pilots Jack Barstow, Bill Van Dusen, Bud Perl and Forrest Hiett, and official expedition photographer Howard Jope drove north out of San Diego headed for the Tehachapis. A large folded-wing Albatross, on its specially constructed trailer, was hitched behind Bowlus' Studebaker sedan. The other automobiles, loaded with equipment and pulling the tent-trailer, rolled along behind. (Another glider came later.)

At about 8:30 that evening the flyers drove into the quiet little town of San Fernando. So far there had been no sign of the press but, as an extra precaution, Bowlus decided to park the trailers at the nearby home of friends and then, according to plan, rendezvous with Lindbergh at a local cafe. Lindbergh had arrived in town earlier that evening, driving a new air-cooled Franklin sedan, and he joined the others for sandwiches and coffee.

The first time any of the gliders realized that the newsmen had them covered was when they trooped out of

the cafe. The sight of several carloads of reporters, photographers and Movietone News crews sitting there cat-and-mousing their every move was quite a jolt. The names Charles Augustus Lindbergh was still a very powerful publicity magnet in 1930, three years after the thrilling New York-to-Paris solo flight. The public's admiration and interest in this man's every action was unrelenting and universal.

Monday, February 3, 1930, dawned clear and bright in the Tehachapis. A week of thrills, companionship, humor, successes and some disappointments was beginning for the enthusiastic flyers who had pitched camp the day before.

Over a fire a breakfast of flapjacks, fried eggs, bacon and coffee was prepared. After mixing the batter himself, Charlie, as Lindbergh preferred to be called in camp, cooked a batch of flapjacks and some bacon, and ate heartily.

With breakfast over, the time had come to do some soaring. As this was the first time any of the pilots had attempted flying off the top of a high mountain, and with so much still to be learned, it was decided to fly only one sailplane that day. Excitement mounted as the Albatross was towed slowly into takeoff position. A Studebaker convertible, connected to the sailplane's nose-hook by a short rope, did the pulling; a crewman walked along at each wing tip, balancing the aircraft on its single landing skid. Wheels were not required.

A slingshot launching technique was to be used. An elastic rope, called a shock cord, was laid out on the ground in a V — fanned out downslope ahead of the sailplane — with its apex at the ship's nose. Ten determined onlookers were recruited to generate the energy required for stretching the 150-foot shock cord just prior to launch. The musclemen, spaced evenly out along each leg of the V, picked up the shock cord and waited for the signal to run.

Charlie and Hawley tossed a coin for the first flight, and Bowlus won. After a final inspection, he seated himself in the narrow cockpit, fastened the safety belt, tested the con-

(Continued on page 14)



PREPARATIONS: Phil DeMandel and Bill Van Dusen attached a shock cord to the plane after Lindbergh won a coin toss for the flight.



COOKING: Lindbergh shares cooking chores in camp.

(Continued from page 13)

trols, then shouted, "Ready for takeoff!" The launching crew lunged ahead in unison with all their might. Each downhill stride stretched the elastic rope more and more.

Suddenly the Albatross shot ahead a few feet, as force overcame deadweight, and was catapulted into the air. It sailed over the heads of the spent launch crew, leveled off, then flew away from the crest as beautifully as any bird. The Albatross handled well and, following a couple of gentle turns, the pilot brought her right back in for a smooth landing. Taking the next flight as well, Hawley was forced to make a rather hot landing after dodging some power lines running through the area, dragging a wing tip in the dirt. An inspection revealed no damage.

Lindbergh tossed a coin with Jack Barstow, chief instructor at the Bowlus school, for the next flight. Charlie won this time. Climbing into the cockpit, he got set, then shouted, "All right. Ready anytime. One — two — three — go!" Again the Albatross accelerated rapidly and lifted some forty feet into the air. At just the proper instant the shock cord slipped off an eagle-beak hook under the nose and the ship gained a few additional feet of altitude from its own momentum. For several moments everything appeared normal. Suddenly, at an altitude of about 300 feet, something tore loose at the left wing tip. As the Albatross veered to the left, Lindbergh's head jerked from side to side as he looked around in an effort to determine what was happening.

"There goes an aileron!" Bowlus shouted.

Charlie's friends groaned and yelled warnings, which he could not hear at the moment. The next instant the left aileron (a control surface used for leveling the wings) flew completely off and fluttered toward the ground.

"He's giving it hard **opposite** aileron!" someone else yelled.

Instead of attempting an immediate landing, the experienced pilot took his time, realizing that a sudden turn

back toward the takeoff area could mean loss of control and a crash.

The direction of flight did not falter now. Gliding on down through an arroyo, Charlie hedgehopped over another ridge, toward the valley, and was gone.

Momentarily stunned by it all, those on the ground sprang into action. Automobile rescue parties sped downhill, threading their way along random, roadless paths in the general direction taken by the Albatross.

The leaders of the rescue pack, pilots Van Dusen and Perl, bumped and careened down the mountainside. Attempting to find some usable route over the crisscrossed livestock trails and oak-filled arroyos tested their persistence and endurance, but they roared on.

Then a more formidable obstacle loomed up — a barbed wire fence. Van Dusen leaped from the car, jumped the fence and ran on, shouting back instructions to cut the wire and drive on through!

Other cars raced up. While Perl and a couple of volunteers struggled with the wire, Van Dusen had reached a vantage point and was able to catch the first glimpse of the downed Albatross. The sailplane was spread out on the hillside some distance below.

Back up the mountain, the newsmen had reached the point where they too could see the grounded Albatross. They were shocked! Parts of the sailplane were indeed scattered around on the ground, at odd angles. Lindbergh, the press immediately concluded, had crashed! The news was relayed back up the mountain, and a telephone stampede began.

Bowlus, Van Dusen and Perl arrived at the landing site first. Some sailplane parts were lying about, but it had been evident to their experienced eyes that there was no cause for alarm. Charlie stood there uninjured and enjoying a hearty laugh.

By this time the first reporters were pulling up displaying visible relief at finding Lindbergh uninjured and far less excited than his associates. "My land," he greeted them, "this thing controls almost as well with one aileron as it does with both of them."

Subsequent news reports stated: "Lindbergh escaped unhurt in a landing crackup two miles from Sandbergh, according to a report brought in by runner this afternoon." The final editions would state: "Lindbergh succeeded in landing the sailplane safely without further damage." The record had been set straight.

Back at camp, repairs were begun. The broken aileron had been retrieved, and a close examination revealed that it could be repaired.

As the gliding gang stood around a roaring fire, relaxing and letting the feel of another beautiful night in the mountains soak in, Lindbergh and Bowlus agreed upon when the flying would be resumed. Then, as he would do each night during the coming week, Charlie said goodnight and began his return trip to Los Angeles where he and his wife Anne were guests of Jack Maddux, founder of Maddux Airlines.

Some time before noon on Wednesday, the Lindberghs, accompanied by Helen Maddux and six-year-old Jack Maddux, Jr., drove to Lebec. While the two women and the boy made themselves comfortable in camp, Charlie pitched right in helping on the aileron repair job.

Lindbergh elected to make the test flight. The shock cord was laid out and the launch crew took their positions. During these preliminaries the guests stood by watching, clustered to one side out of the way. On an opposite knoll, the Movietone trucks and reporters were lined up. No one dared miss any of the action.

Charlie shouted that he was ready to go. From the ground, as the big Albatross shot skyward, everything about the takeoff looked smooth and effortless.

In the cockpit, the pilot simultaneously saw, felt and heard a series of the most pleasant sensations. Bareheaded

TIME OUT: At the Lindbergh camp. Charles is on the steps and Anne is wearing a white head band.



and without goggles or windshield, Lindbergh maintained perfect

control by attuning his responses to the sounds of the wind whistling past the cockpit, and also by adjusting the position of the plane's nose against the distant landscape. With no instruments of any kind, as was the case with most motorless aircraft in those days, Charlie was flying by the seat of the pants — and loving it.

The Albatross soared farther out away from the mountains at about forty-five miles an hour. Strikingly beautiful in flight, and a tribute to the designing skills of Hawley Bowlus, the sailplane's delicately shaped wings had the graceful lines of those of a soaring gull. Backlighting by the bright sunlight, each wing and tail rib was visible through the almost transparent fabric covering. Charlie soon turned left and flew parallel to a ridge for a ways, then wheeled out toward the valley and reversed course.

The next thing Lindbergh knew, the Albatross began losing altitude, which meant he'd flown into a downdraft or that the wind had died down. Unfortunately, it proved to be the latter, so a forced landing was made. The plane touched down safely on a knoll about a mile away, some 500 feet below the takeoff point.

It was not quite daylight on Thursday when Lindbergh returned to camp. Never one to pass up an opportunity to play a practical joke — a devilish Lindbergh talent — the flyer switched off the Franklin's engine and headlights and coasted noiselessly downhill into camp, stopping within inches of the tent-trailer. Then he cut loose with both air horns! The sleeping beauties inside leaped from their beds, wide awake and running! Lindbergh remained safe behind raised up windows and locked doors, smiling at the positive reactions to his early morning overture.

The morning air remained frustratingly calm. For awhile the pilots just stood around, gazing out over the vast panorama of the Tehachapis. Finally, as the windless day wore on, Lindbergh decided to make the first flight, despite the lack of the usual ridge-soaring breeze. At 4:40 P.M. he strapped himself into the cockpit and was catapulted northward. After leveling off and establishing a steady glide, he turned right and flew eastward on silent wings. Finding no lift in that direction, he again swung northward, gliding down Bear Canyon and out over the valley floor toward Castiac Lake. By then the sailplane had lost about half its takeoff altitude; Lindbergh already had an eye on an open field off to the left, near Lebec, in preparation for the inevitable landing.

The next instant the Albatross flew into a moderate late

afternoon updraft which was exactly what the pilots had come to the Tehachapis to find, and which had proven so elusive until now.

With a whoop, Lindbergh banked smoothly into a turn and patiently began maneuvering the sixty-two-foot wing into the thermal's center of lift. Around and around the sailplane wheeled, in lazy, graceful, upward spirals, continuing its soaring flight above the lake shore, probing for an indication of the invisible thermal's shape. After some twenty minutes of the most stimulating flight, the updraft mushroomed out at the top and lost its lift. Turning westward, the pilot glided reluctantly toward Lebec and landed on what turned out to be a flat, dry, bean field.

Charlie was jubilant. Back in camp he excitedly related the details of his pioneering flight — the best yet at Lebec — and received a round of compliments. Here was a first stolid step toward getting into competition with the European soaring pilots. Although the landing point proved to be only five miles from takeoff, the Albatross had covered some fifteen wandering air miles during the flight. So enthusiastic was Lindbergh that he ordered a new Albatross of his own from Bowlus right on the spot. "Flying a sailplane is about as good a sport as there is in the world," said Lindbergh.

On Friday Charlie pulled into camp a little later than usual. His companions were already out of bed, full of breakfast and moving about, making themselves less vulnerable to another broadside of Lindbergh's practical jokes. At about 3:30 Lindbergh took off into a light breeze, on a final flight, gliding downhill, probing each arroyo for lift, putting known methods into practice, experimenting with new techniques.

The mountain holiday was drawing to a close. In a gesture of appreciation to his companions for their days of waiting for the wind, running shock cords, handling sailplanes, washing dishes and otherwise making the Lebec expedition possible, Charlie invited them all to a late dinner down at Sandberg's Lodge.

In his final statement to the press, Lindbergh said, "Further soaring will probably be done in the San Diego area. We plan to carry on at Point Loma, due to the steadier winds necessary for endurance soaring. But we will still further explore California for promising soaring sites of the future."

The Lindbergs departed for home on Easter Sunday, April 20, 1930, flying their gleaming new orange-and-black Sirius and setting a transcontinental speed record — Glendale, California, to Long Island, New York, in 14:23 hours.

The President Speaks

(Continued from Page 6)

Lexington, KY., P. J. Baugh. In giving this famous ship to the museum, Jack Baugh has provided the museum with a tool with which to grow and develop. While our plans for the ship are not yet complete, we intend to keep this fine aircraft in license and use it for various projects throughout the country. Having this aircraft will allow the museum to play an ever more important and significant role in the soaring community.

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Memberships Important

Remember memberships keep the museum going. The National Soaring Museum is a tax exempt institution chartered by the University of the State of New York to further the development of motorless flight and to collect data and artifacts of significance. In addition to earned income and grants from foundations, private industry, and governments, the museum depends upon its membership to carry out its day to day activities. Membership categories are as follows:

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