A Quarterly Journal
of the National Soaring Museum
Spring, 1979 Vol. 3, Number 2

From the Director

First of all, I would like to apologize to our readership for the long delay in publishing this issue of NSM.

The summer of 1979 was a very difficult one for the museum. The energy crisis of the late spring had a significant and negative impact upon the number of visitors who came to Harris Hill to see the museum. This in turn produced serious shortfalls in projected museum revenues. In light of this difficulty, the museum was forced to cut expenditures. Dalayed publication of this magazine was one of the unfortunate results of our difficulties as well as was a major reduction in the size of the museum staff. It was a painful time for the museum and I hope that our members will understand the situation and forgive our delinquency. I might note here that the museum's financial position has been improved markedly since this past summer through efforts to cut expenditures to the bone and due to generous financial support of several individuals and, most especially, the Frank E. Gannett Newspaper Foundation, which made a substantial grant toward the operating expenses of the museum.

The difficult time that the museum has gone through has made ever more clear the importance of a vigorous and generous membership group for the museum. It would appear that the energy problems of the last year will be with us for a long time to come and that the museum will need to continue to rely upon the support of its membership for the major share of its support. I would like, therefore, to take this opportunity to once again stress the importance of membership for the museum and to encourage as many people as possible to join.

Aside from the financial difficulties imposed upon the museum, 1979 was an exciting and productive year for the museum. In January, the museum staff began the stimulating task of planning the permanent exhibitry of the museum. By March, the staff was assembling material that we thought would help us tell a coherent and stimulating story to our audience. By the middle of May, exhibits had been constructed and installed.

Those attending the annual Hall of Fame Banquet at the museum were able to examine the results of that effort. Indeed, it was very gratifying to see the enthusiasm of the membership for the museum. For the first time, we were able to host all the weekend's events at the museum itself, including the banquet for two hundred people at which George Moffat was the featured speaker and Bill Coverdale and Chet Decker were the honored inductees.

Another event of great significance to the museum was the Labor Day Weekend get together of the Vintage Sailplane Association and the 1st SSA Homebuilders' Conference. Both affairs, which were run simultaneously, were great successes.

By the time this article is published, most of our members will have learned that I have resigned my post as Director of the National Soaring Museum. Having become associated with the museum in order to help get the organization started, I feel that it is time for me to move on to other pursuits. It has been a magnificent experience for me to have worked with so many fine people to help realize the dreams of a museum especially for soaring. I owe a great debt to many for the help and encouragement that they gave to me during the six years I spent at Harris Hill, but perhaps most especially I am grateful to Bernard S. Smith and Paul Schweizer, who, as Presidents of the Museum's Board of Trustees, gave me never failing support and help. I shall be always proud to have been associated with the museum and the sport of soaring.

I am very pleased that Shirley Sliwa, my close associate at the museum, will be taking over the museum as Acting Director. Shirley has done a magnificent job of keeping the museum's day to day operations functioning smoothly for several years and I know will continue to provide the kind of leadership that the museum needs.

William D. English, Jr.

Help Support The National Soaring Museum

- Membership
- Capital Program (Building & Exhibits Funds)
- Artifacts
- Collections
- Archives
- Participation
- Attendance

ON THE COVER:

1-34 wing identifying that you have arrived on Harris Hill, NY, home of the National Soaring Museum.

From the Editor

No, you haven't gone through a time warp machine, nor are you living in the past. The National Soaring Museum is trying to bring the NSM, the museum's quarterly membership Journal up-to-date. The trustees deemed it historically important to keep the Journals in chronological sequence, therefore, it is planned to publish the 1979 issues as quickly as possible.

I would like to take this opportunity to thank the members of the National Soaring Museum for being so patient and for maintaining their membership with so little communication. This source of revenue is important toward the museum's operating expenses and your support is greatly appreciated.

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 — Shirley Sliwa

1979 United States Soaring Hall Of Fame Ceremony

On May 19th, William H. Coverdale, Jr. of Naples, Florida and Chester J. Decker of Franklin Lakes, New Jersey were inducted into the Soaring Society of America's U.S. Soaring Hall of Fame by newly elected museum President, Floyd J. Sweet of McLean, Virginia. The ceremony was the highlight of the National Soaring Museum's spring weekend celebrating the exhibit hall's first season. The banquet was held this year for the first time in the museum's community room.

Bernard S. Smith of Fremont, CA receiving richly deserved accolade for his 3-1/2 years of Presidency of the National Soaring Museum; through the inception, the fund raising campaign, and the construction of the new Museum facility. Left to right: William D. English, Jr., George and Suzanne Moffat, and B. S. Smith.

Bill Coverdale entered his first Nationals at Elmira in 1947 and continued as a serious competitor until a few years ago. He was on the SSA Board from 1948 to 1971 serving four terms as Vice President. Since it's founding in 1948, Bill has been a most active member of the Soaring Society of Dayton and was instrumental in obtaining its private field in Waynesville, Ohio. Bill has been an active promoter of soaring wherever he goes and especially in Ohio and Florida.

Bill told stories about staying in the cabins during his early contests on Harris Hill. I believe that I saw young soaring enthusiasts smiling and taking notes as he related about Paul Bikle once attending a contest with a three drawer wooden chest and the difficulty he had one morning trying to get his underwear out and finding the drawers nailed shut.

Bill Coverdale receiving his certificate from new museum President Floyd J. Sweet.

Chet Decker was one of the outstanding young pilots during the early days of soaring in Elmira. He won the National Soaring Championship in 1936 flying the Bowlus duPont Albatross and again in 1939 flying a Minimoa. During World War II he was an Air Corps pilot stationed with the Glider Branch at Wright Field, Ohio. There he tested most of the training and cargo gliders, helped develop the glider snatch pick-up equipment, piloted cargo, fighter and bomber aircraft in experimental towing tests and played an important role in the development of the glider conversion of the C-47. Chet's interest has not waned. He has given generous financial support to the National Soaring Museum and after it's painstaking restoration, donated his Bowlus duPont Albatross to the National Soaring Museum where it is prominently displayed.

Chet noted in his remarks that his induction into the U.S. Soaring Hall of Fame on May 19th, fell on his 36th wedding anniversary. He and Bette received warm congratulatory applause.

Chet Decker's enthusiasm was contagious. Left to right: Chet, Ted Sharp, and Floyd Sweet.

George Moffat, twice world soaring Champion, was the speaker at the banquet. The topic he chose was his experiences with the HP-8 designed by Dick Schreder. He reminisced about his HP-8 in contrast to modern ships and competition. To set the tone, he asked the group if they, "would like a sailplane, that seemed happier going backward instead of forward?" He then related that one time he landed and "suddenly found himself rolling out at 180° from his original landing direction"; obviously the ship, in it's glory.

He described, tongue-in-cheek, the handling characteristics of the ship, his ailerons freezing shut at 15,000 feet at Mt. Livermore, Texas and his four hours of filling and sanding for every hour of flight. Yet, he and others won approximately a half a dozen Championships with this ship.

(Editor's note: I'm very pleased to announce that this "personality", HP-8, N34Y was donated to the National Soaring Museum on June 2, 1980. Presently, it is being stored at El Mirage on its trailer with the hopes of being delivered to the museum by someone coming through. We feel that when this ship arrives it will compliment the other "personalities"

(continued on Page 4)

. . . Hall of Fame Ceremony

(Continued from Page 3)

on display. And they ask if we mind working nights or "**alone**" on the Hill? Please contact the Museum if you are interested in helping us to secure this ship.)

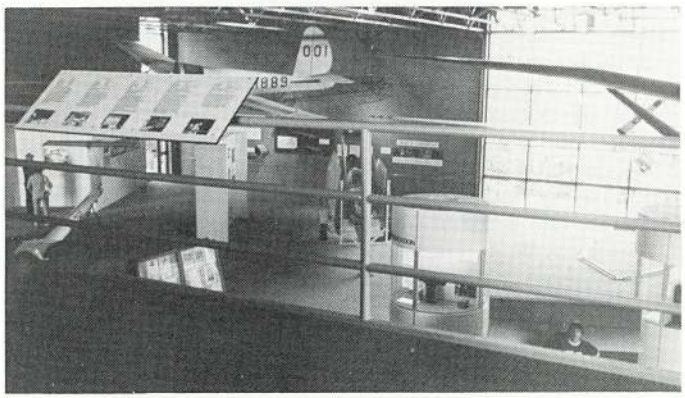
HP-8 "Personality" awaiting delivery to its new home. (Donated to museum by Fred A. Hefty of Santa Monica, CA and John S. Elizalde of Pacific Palisades, CA.) Photo: George Uveges.

Another highlight of the weekend was that Ray Parker and Bill Bowmar had made a sentimental trip back to the Hill for Bill to present the Rigid Midget, N90871 to the museum. Ray Parker modified the Rigid Midget, designed by Irv Culver, to create his famous Tiny Mite.) When the ship was temporarily positioned in the main exhibit hall for the weekend, it was cordoned off by stancheons and tow rope. One afternoon Ray slipped under the ropes and sat in the cockpit for a few minutes, reminiscing, . . . I'm sure! The museum lobby staff, not recognizing him, immediately and brusquely ushered "this man" out of the restricted area explaining the significance of the ship and how dare he . . .. etc. All the while, Ray beamed . . . "his ship had found a home, where it will be protected."

Note RIGID MIDGET below the BOWLUS duPONT ALBATROSS. (Midget is now suspended against the south wall of the main exhibit hall.)

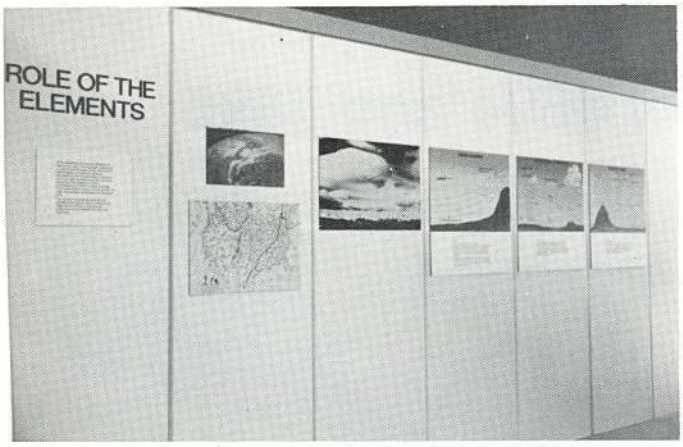
Prototype SGS 1-26

PHOTO TOUR: Phase I Exhibit Program

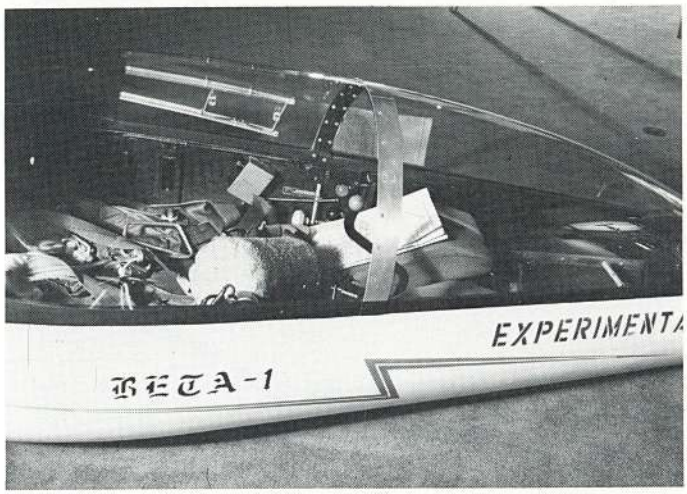


View of the Main Exhibit Hall from the Museum's Gallery.

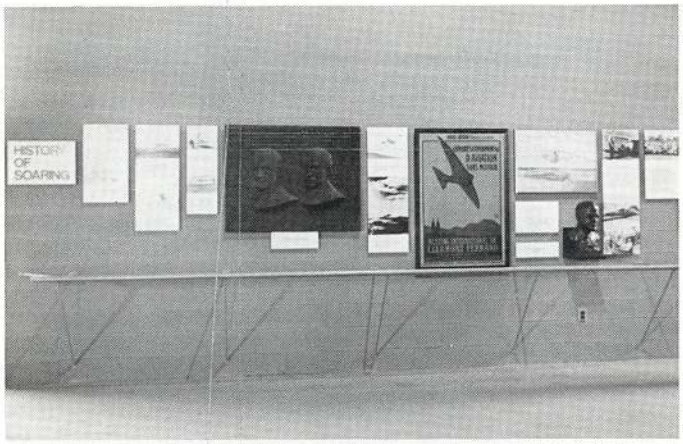
Subject matter in Kiosks include SAFETY, COMMUNICATIONS, GETTING THERE, INSTRUMENTATION, MODELS, TROPHIES, and PATCH COLLECTION.



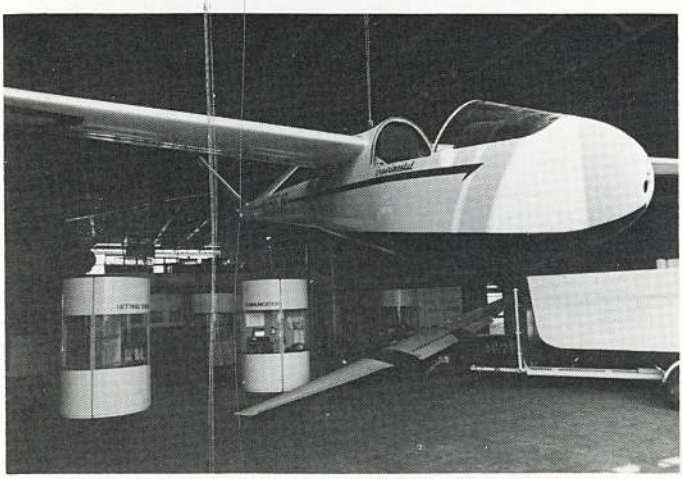
Panel subject matter includes WHAT IS SOARING, HOW DO THEY STAY ALOFT, ROLE OF THE ELEMENTS, LAUNCHING AND LANDING, and THE HISTORY OF SOARING AT HARRIS HILL an exhibit largely funded by the New York State Council on the Arts.



Fiberglass ship BETA donated to the museum in May 1979 by designer and builder Hans Luenger of Cleveland, OH. (The article "Project Beta" in the June '72 issue of SOARING tells in part of the construction period.)



Wall exhibits include A MATTER OF CHOICE (in types of soaring focus preferences), SAILPLANE DESIGN and CONSTRUCTION, HISTORY and a photo collection entitled SOARING FEVER.



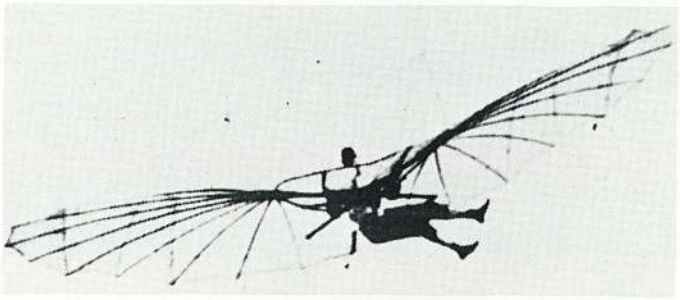
Sailplanes on display include the SISU 1A, SGS 1-26, BOWLUS du PONT ALBATROSS, DAGLING PRIMARY, SGS 1-19 on trailer, BG-12BD, BETA and now the RIGID MIDGET.

Would you guess that this 1-34 cockpit is a favorite exhibit?

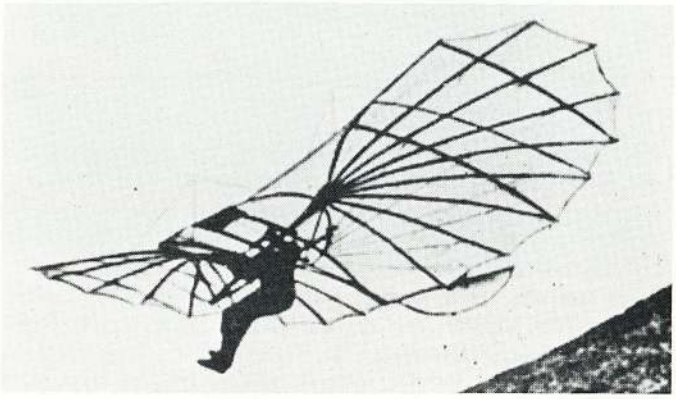
Photo credits for TOUR: Tony Fusare, Gannett Newspapers, and museum collection.

Shirley Sliwa

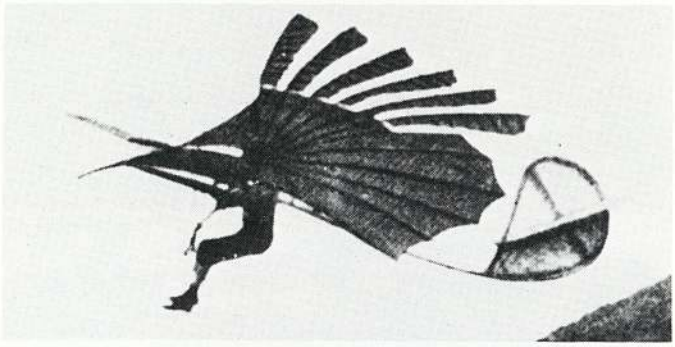
A FORERUNNER:
Lilienthal Designs of 1894 and 1895



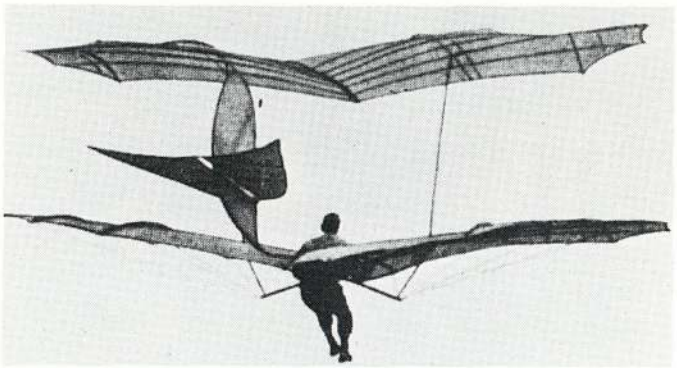
A. Lilienthal standard glider: 1894



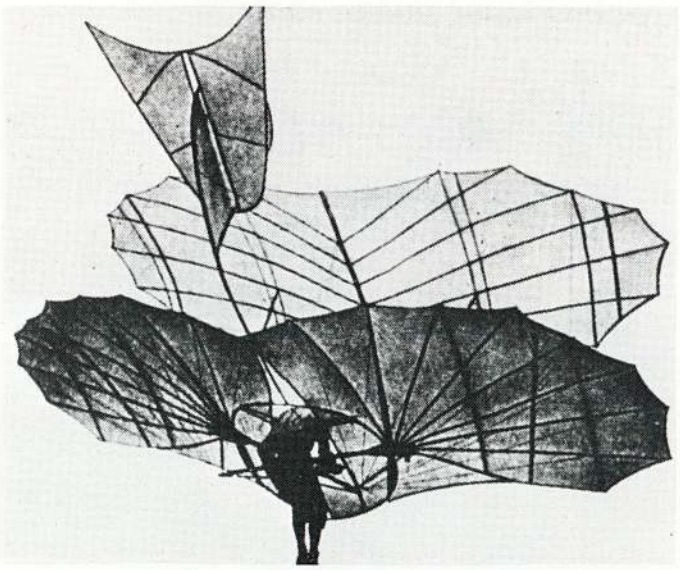
B. Standard glider 1894



C. Lilienthal powered machine flown as glider: 1894



D. Biplane glider: 1895



E. Lilienthal biplane glider: 1895

F. Biplane glider 1895

(Lilienthal is piloting in all the above photos.)

PRACTICAL EXPERIMENTS IN SOARING

By Otto Lilienthal

(Editor's Note: Reprinted from Smithsonian Report 1893 and Translated from PROMETHEUS No. 220, Vol. V.)

My own experiments in flying were begun with great caution. The first attempts were made from a grass plot in my own garden upon which, at a height of 1 meter from the ground, I had erected a springboard, from which the leap with my sailing apparatus gave me an oblique descent through the air. After several hundred of these leaps I gradually increased the height of my board to 2-1/2 meters, and from that elevation I could safely and without danger cross the entire grass plot. I then went to a hilly section, where leaps from gradually increased elevations added to my skill and suggested many improvements to my apparatus. The readers of **Prometheus** have already been informed of the selection of a piece of ground which enabled me to extend my flights over a distance of several hundred meters. The remainder of the summer since my last publication (in Nos. 204 and 205 of this journal) has sufficed to bring these experiments to a termination and to dispose of some important questions as to the possible results.

Indulging in subtle inquiries and theorizing does not promote our knowledge of flying, nor can the simple observation of natural flight, as useful as it may be, transform men into flying beings, although it may give us hints pointing towards the accomplishments of our purpose. We see buzzards rise skyward without any motion of their wings; we observe how the storks intermingle in the flock with outspread wings and in beautiful spirals; we see, high up in the air, the piratical falcon in quest of booty remain stationary in the wind for minutes at a time. We recognize every spot on his brownish plumage, but we do not preceive the least exertion of his wings to maintain his stationary position, and this small bird of prey is not in the least concerned at our presence. He reciprocates the protection secured for him since Brehm and other naturalists have pointed out his usefulness by undisturbedly precipitating himself to the grass before our eyes, and, seizing a grasshopper, we again see him meters above our heads without having detected the least flapping of his wings during the entire performance.

We notice that constant changes are going on in the force of the wind, but the falcon does not alter his position by a single inch, although having already begun devouring his prey, he can give but divided attention to his flight. Now he bends his head downward and backward, so that the world below must appear to him diverted, and evidently enjoys eating the insect as his talons leisurely pluck it to pieces. In the position in mid-air (which is maintained even during this employment) he appears like an automaton rooted in the wind. Just the faintest balancing motion, apparently serving to compensate for the irregularities of the wind, is perceptible in the extreme points of his wings, which are slightly inclined backwards.

This poise of the falcon in mid-air, which appears to us as a defiance to the law of gravity, may be considered not only the most remarkable, but also the most instructive example of flight.

In observing the majestic, circular soaring of other aerial travellers, one can readily believe that these skillful wing artists understand how to profit by the periodic currents of the air, and in describing spirals instinctively transform the force of the opposing current of air into lifting or suspensive power; but when the bird, without the least movement of his wings, remains stationary in one point of the sky, we are led to infer the existence of a peculiar form of surface which may be held suspended by the application of a uniformly moving wind.

While the existence of this possibility may be demonstrated by elementary experiments, this does not discover the secret of soaring, and though nature conclusively demonstrates that it can not be the want of power that prevents our flying, that knowledge alone does not provide us with wings. Furthermore, while nature points out how it is done, that does not necessarily imply that there may not be found other ways or means of doing it. However we may theorize on the subject, without a practical application of the theory, things will remain unchanged and our flight will only be in imagination or in dreams.

My experiments, then, should form the transition, the first step from theory to practice. Like others, I too have, in the beginning, attempted using machines with movable wings, but this does not apparently aid in the development of an art of flight. The mark is too high and not immediately attainable, and one's ambition should be fully satisfied by withstanding the wind with wings of the size adapted to flying men. Each flight demands a rising from the ground and a landing; the former is as difficult as the latter is dangerous, and regardless of the most ingeniously constructed apparatus, the art of both will have to be acquired just as the child learns to stand and to walk. Anyone desirious of exposing himself unnecessarily to danger and of ruining in a few seconds the carefully constructed apparatus need only expose his machine to the wind without having familiarized himself with its management, and he will soon know what it means to control an apparatus of from 10 to 15 square meters in area, where other people can but with difficulty manage an open umbrella.

In continuation of my formerly published experiments, I endeavor with every new trial to gain more complete control over the wind, and without disregarding any necessary precaution I have already succeeded in at least temporarily retaining a uniform level and even in remaining stationary in the wind for a few seconds. The simplicity of my flying machine, which is controlled by shifting the center of gravity, has compelled me to avoid strong breezes, which however might presumably have aided in securing a stationary position. During my continued flights, however, I have been at times surprised by a sudden increase in the force of the wind which either carried me upward almost perpendicularly or supported me in a stationary position for a few seconds to the great delight of the spectators.

The freedom from accidents in these apparently daring attempts may be considered proof that the apparatus already described offers ample security in carrying out my plan of investigation.

To those who, from a modest beginning and with gradually increased extent and elevation of flight have gained full control over the apparatus, it is not in the least dangerous to cross deep and broad ravines.

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Practical Experiments in Soaring

(Continued from Page 7)

It is a difficult task to convey to one who has never enjoyed aerial flight a clear perception of the exhilarating pleasure of this elastic motion. The elevation above the ground loses its terror, because we have learned by experience what sure dependence may be placed upon the buoyancy of the air. Gradual increase of the extent of these lofty leaps accustoms the eye to look unconcernedly upon the landscape below. To the mountain climber the uncomfortable sensation experienced in trusting his foot into the slippery notch cut in the ice or to a treacherous rubble above deep abysses, with other dangers of the most terrifying nature, may often tend to lessen the enjoyment of the magnificent scenery. The dizziness caused by this, however, has nothing in common with the sensation experienced by him who trusts himself to the air; for the air demonstrates its buoyancy in not only separating him from the depth below, but also in keeping him suspended over it. Resting upon the broad wings of a well-tested flying machine, which, yielding to the least pressure of the body, obeys our directions, surrounded by air and supported only by the wind, a feeling of absolute safety soon overcomes that of danger.

One who has already practiced straight flights for some time will naturally endeavor to next guide his apparatus in a lateral direction, and indeed there is nothing easier than the guiding of the aerodrome, which is accomplished by shifting the center of gravity. The steering blades have nothing to do with this, their function being to keep the machine facing the wind.

Flight against the wind is slower. The distance to be accomplished may be extended by a carefully determined and properly maintained inclination of the wings; in fact, by careful observation of this the soaring may be extended over a distance equal to ten times the height of the starting point.

During a strong breeze a sinuous line of flight results from the temporary support given by the wind at times. The indefinable pleasure however experienced in soaring high up in the air, rocking above sunny slopes without jar or noise, accompanied only by the aeolian music issuing from the wires of the apparatus, is well worth the labor given to the task of becoming an expert.

It does not seem at all impossible that the continuance of such flights may lead to free, continuous sailing in agitated air.

The results of our present experiments already furnish an indication of the degree of mechanical energy that must be added to that involved in oblique soaring to enable us to gain independent horizontal flight.

The solution of this problem, however, would exceed the purpose of the present article, and I content myself by stating that the conditions of a motor can easily be met, supposing that the propelling mechanism has been properly chosen, and that extraordinary lightness is not even essential.

The interests of the professional flight-essayer demand further experiments in practical flight and the gain of further efficiency. But even to those who only desire to utilize, as a means of sport, the results already obtained, opportunities are offered to promote the interest of the problem of flight and the way for a more ready prosecution of the subject.

The time has passed when every person harboring thoughts of aerial flight can at once be pronounced a charlatan. If we may hope that our aeronautic publications are eventually to be taken seriously by the majority of those skilled in allied subjects, it is important at the outside to awaken the interest of those whose natural concern this great problem should be, but who now shrug their shoulders. We shall then at least be able to show some practical results, and towards these ends we here take the first step.

Otto Lilienthal