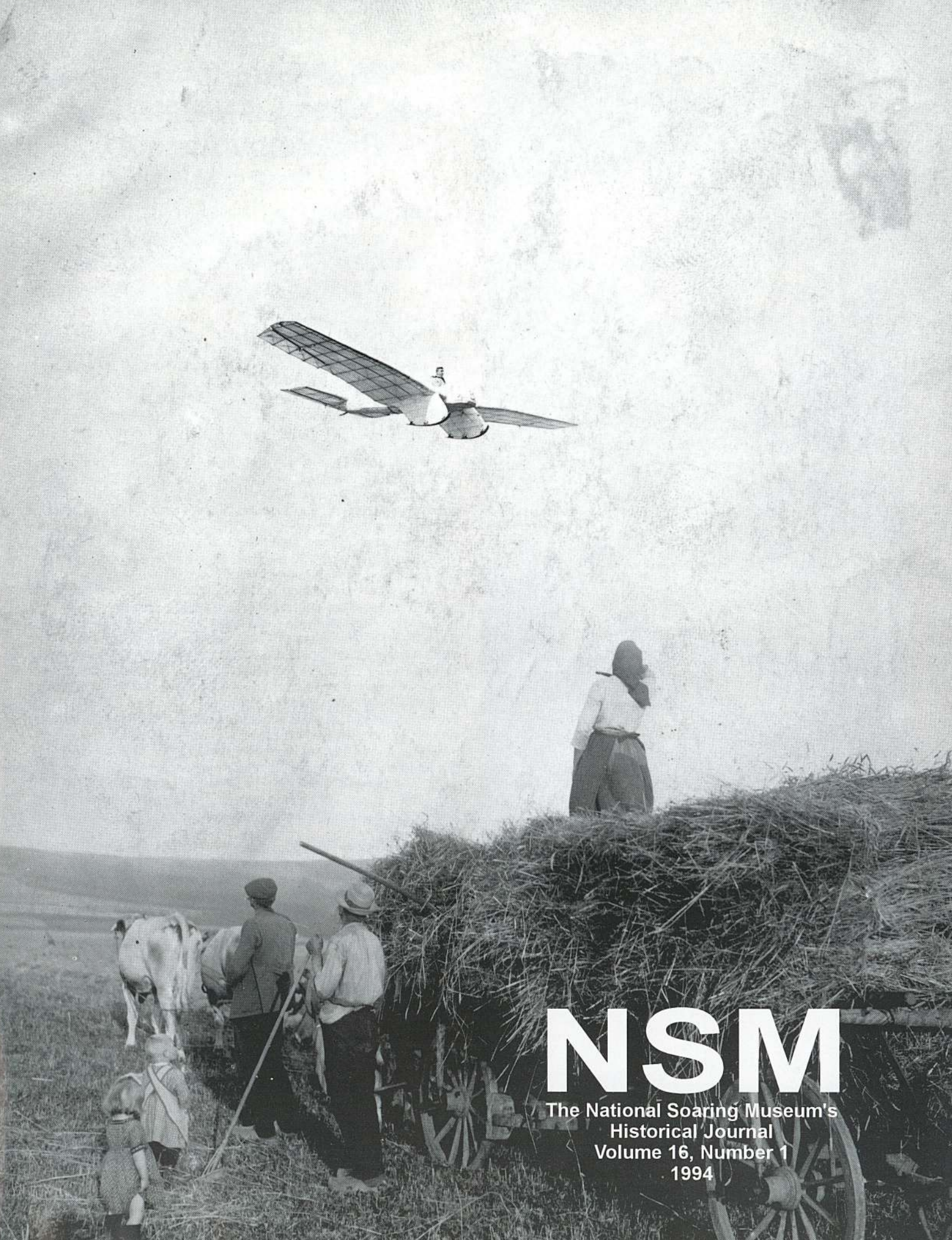




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"Dr. Wolfgang Klemperer 1893-1965 Soaring Pioneer" Recollections by his son, Walter at the 20th Annual Ralph S. Barnaby Lecture October 23, 1993 Los Angeles Airport, Culver City, CA

By WILLIAM GALLAGHER

The 20th Annual Ralph S. Barnaby Lecture was delivered by Walter Klemperer, son of the eminent scientist, Dr. Wolfgang B. Klemperer, a prime mover of motorless flight and one of the founding fathers of The Soaring Society of America.

The lectures, honoring the late Capt. Ralph S. Barnaby, USN, (1893-1986), were inaugurated in 1973 by the National Soaring Museum. They recall historic events and outstanding personalities in motorless flight.

Capt. Barnaby was a naval aviator, author, sculptor, musician, and along with Dr. Klemperer and others, led in the founding of The Soaring Society of America in 1932. Barnaby held U.S. Gliding Certificate #1 and was the first American to break Orville Wright's soaring record with a 1929 flight of 15 minutes and 6 seconds at Truro, Cape Cod, MA, in a Pruefling glider. This was the same glider in which Barnaby was launched from the U.S. Navy airship, Los Angeles in 1930.

Walter Klemperer said that this lecture was particularly significant in that 1993 marked the centennial birthdate of both his father and Capt. Barnaby. He expressed thanks to Paul A. Schweizer for references to Klemperer's accomplishments in his book, *Wings Like Eagles, The Story of Soaring in the United States* and to the National Soaring Museum for the invitation. He further recognized Jeff Byard and the Southern California Soaring Association for co-sponsoring the event.

The speaker said that a great deal of Dr. Klemperer's military and industrial work was classified and was never discussed even within the family. His knowledge of much of the material covering his father's early years in Germany came from Peter Riedel, he said. The 88-year-old Riedel, a younger contemporary of Dr. Klemperer, is a world soaring icon and a veteran of some of the first gliding events held on the famous German Wasserkuppe in the 1920's.

Wolfgang Benjamin Klemperer, or "Klemp" as he was known to his friends, was born in Dresden, Germany, one of seven brothers and sisters. His mother was Dutch and his father, a banker from Prague, was Austro-Hungarian.

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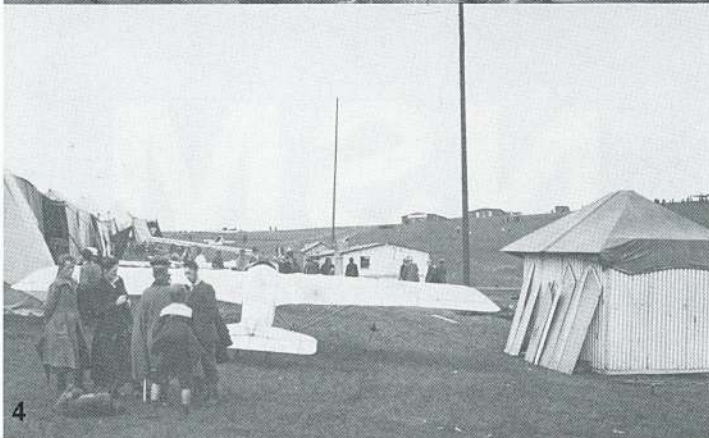
(Top): Pomeroy illustration of Klemperer in the NSM's Soaring Society of America Founding Fathers Gallery.

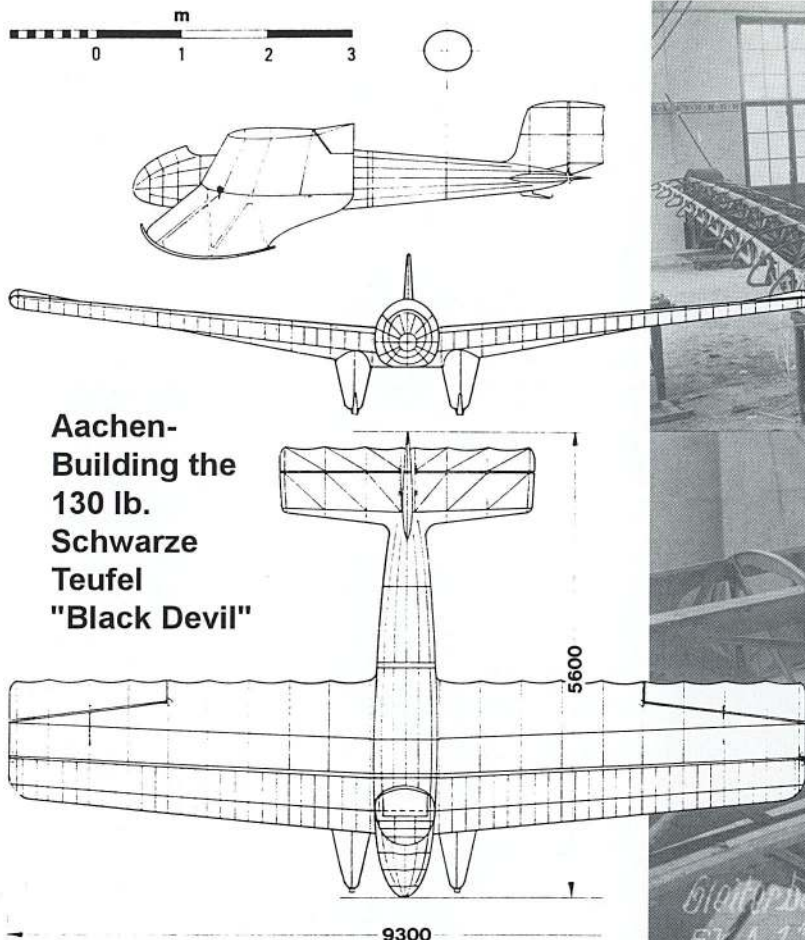
(1). Left to right: E. Meyer, Klemperer, Eugen V. Loessl and Oskar Ursinus. First trip to the Rhoe-n-organizing the 1920 meeting.

(2). Klemperer in the cockpit of the Blue Mouse talking to Anthony "Tony" Fokker, Dutch aircraft designer who was first to put the cantilever wing into practical use in his famous World War I D-7 and D-8 fighter planes.

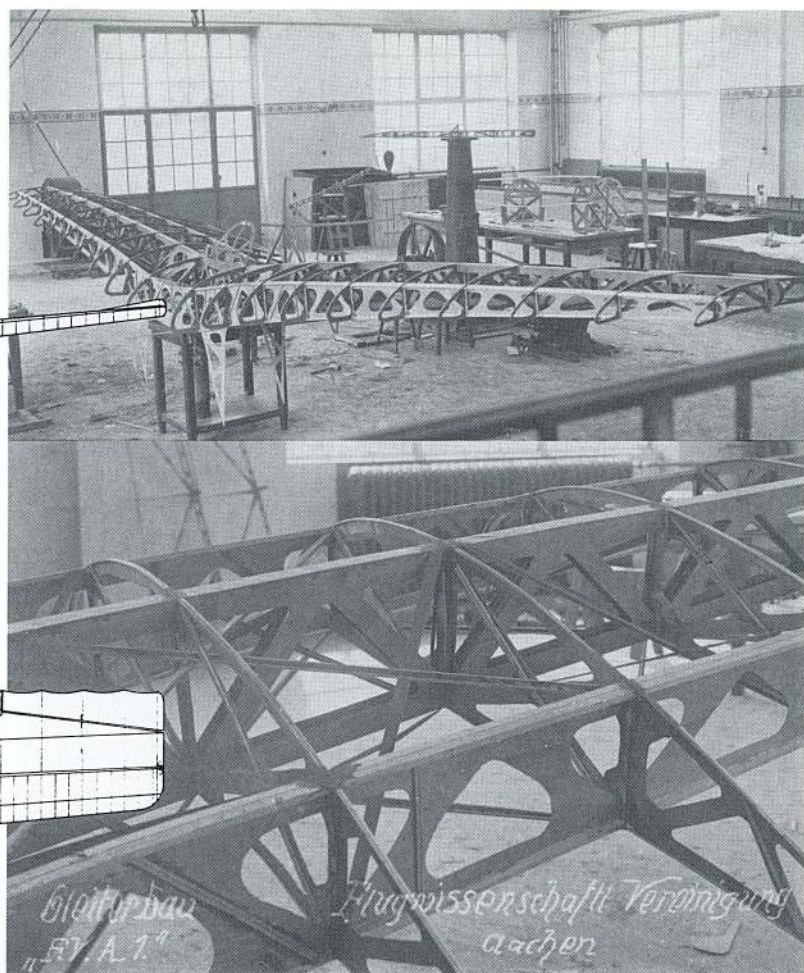
(3). ON THE WASSERKUPPE Klemperer, prone, center facing; Fokker, head down to his right, Peter Riedel to his left in light shirt, facing.

(4). The Rhoe-n 1921 contest





**Aachen-
Building the
130 lb.
Schwarze
Teufel
"Black Devil"**



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Early on, the young Klemperer evidenced a keen interest in flight and by age 17 was chosen by Count Ferdinand von Zeppelin, the German airship pioneer, for special tutelage. Following his apprenticeship in a shipyard and a diesel engine factory, he pursued mechanical engineering studies at the Dresden's Royal Saxon Institute of Technology.

With the onset of WWI, due to his father's nationality, he was called to serve in the Austro-Hungarian army with the mountain infantry. Wolf desperately tried to get transferred to the Air Force. Walter said, "My Uncle Fred recalled the story dad enjoyed telling about how his transfer came through." Klemperer's unit was undergoing intensive training in a remote mountain area. Less than 48 hours before the unit was committed to combat, a bicycle messenger arrived with his orders to report for air force training. Two days later that unit, less Klemp, was completely wiped out in its first engagement. He was awarded several medals as a reconnaissance pilot and instructor on the Alpine front. Later, ordered to bomb Venice, he disobeyed and flew beyond the city, and released the bombs in a swamp. He could not be a part of the destruction of such a beautiful place.

Following the war he returned to Dresden where he completed his studies and later became a doctoral candidate in aeronautical science and an assistant to the renowned aerodynamicist, Prof. Theodore von Karman. (1)

"Dad joined the student glider movement and was welcomed into the Flugwissenschaftlichen Vereinigung Aachen, FVA, founded by Von Karman, the oldest college club still active," Walter said.

The Treaty of Versailles severely limited powered flight in the defeated countries. Frustrated airmen turned to motorless flight. In 1920 a gliding contest was to be held on the German Wasserkuppe, not far from the Czech border and Klemperer submitted a design for his now famous "Schwarze Teufel," Black Devil (2). The younger Klemperer said that this craft was the first fully cantilevered glider ever built. It had triple axis control and instead

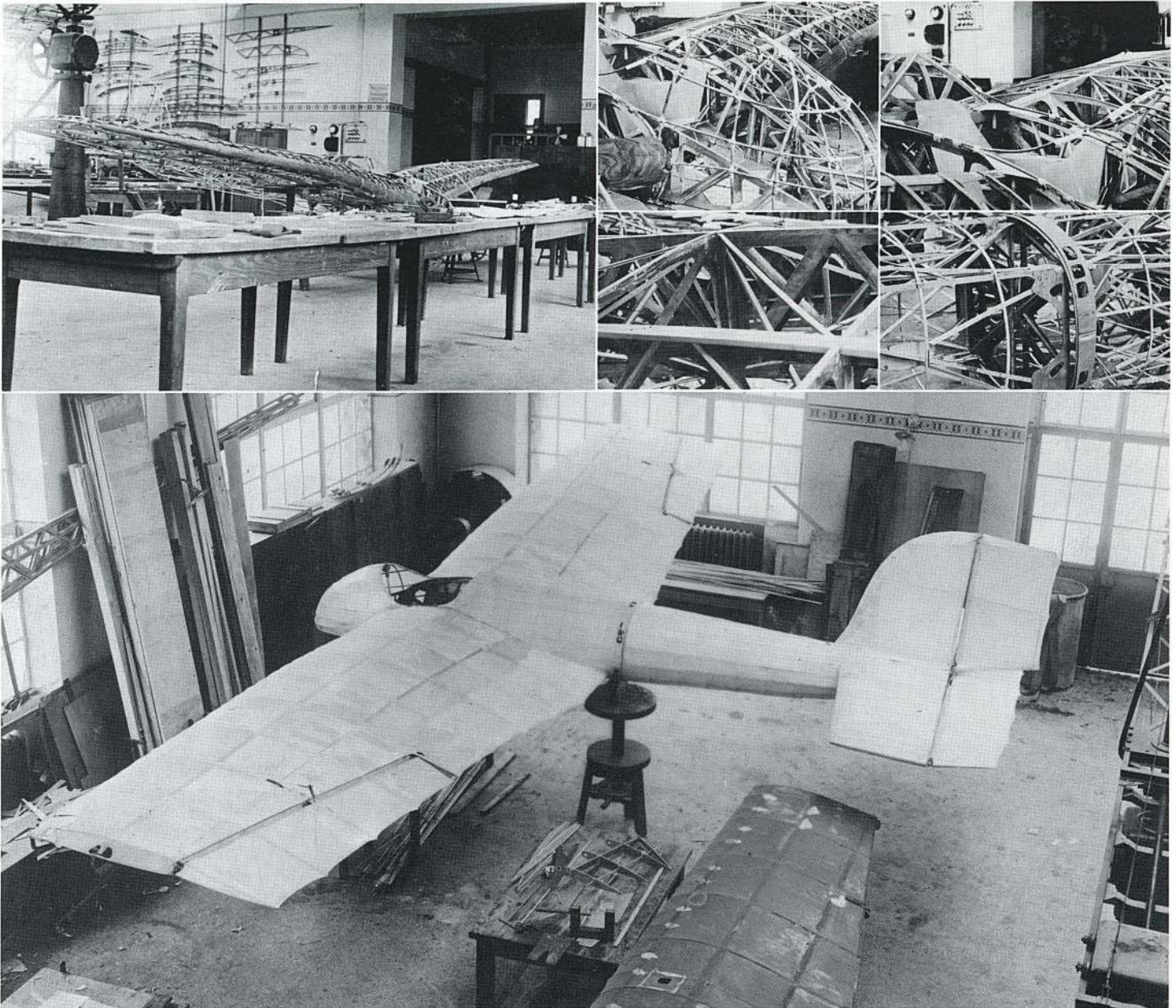
of a center skid, it had two skirts with wooden landing skids. Structural integrity of the wings was assured because they were built into the forward fuselage. The empennage and tail feathers made up the after section attached just behind the cockpit. The cockpit was part of the forward assembly. The ship had to be transported through the Belgian, British and French occupation zones to arrive in the unoccupied German zone. "A student volunteered to ride with the disassembled ship, armed with a box of cigars to bribe inquisitive guards," the speaker said. He added, "Peter Riedel said that the contest officially ended before the arrival of the FVS's Black Devil. However, one of its flights was so clearly the best of any previous, that it was declared the winner." It was here, for the first time, that a glider-launch was made by a rubber line or bungee cord which was designed by Klemperer.

The second Wasserkuppe meeting the following year, 1921, was attended by some of the most outstanding men in aeronautics, including Anthony Fokker, Von Karman, Prandtl, and Handley Page. Twice as many gliders were entered. Klemperer and the FVA group brought a new and lighter ship, "Blaue Maus," Blue Mouse-(3). On Aug. 20, Klemp in the Blue Mouse made a 13-minute flight that beat Orville Wright's duration record. He won the world's first Soaring "C" Award.

Klemp and Von Karman found a local industrialist to back the production of the Blue Mouse. J.T. Jeyes, an Englishman from Northampton, purchased one of the Klemperer gliders and flew it at Aachen. Then, in Baddingham, England, Jeyes flew it in a stiff wind for three minutes and five seconds, then crashed, demolishing the aircraft, but surviving unhurt. The enterprise was terminated.

Two years later Walter said that his father left Zeppelin, in Friedrichshafen, Germany and went with the Goodyear Zeppelin Aircraft Co. in Akron, OH, as Research Chief, working on dirigibles.

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Construction views and final assembly of the Blaue Maus, "Blue Mouse."

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First notice of Klemp's soaring activities in the U.S. came when he flew the Akron Condor, designed by Dr. Frank Gross, to a distance record of 15.7 miles near Uniontown, PA. Next, he was elected to first VP of the National Glider Association. In 1930 he was called upon to survey potential soaring sites for the first national soaring contest, sponsored by the NGA. He selected Elmira because of the surrounding ridges facing many wind directions and the wide valleys of New York's Finger Lake Region. Jack O'Meara, Baker-McMillan test pilot, made several glider flights in the area to validate Klemp's suggestion.

Walter summarized his father's contributions to U.S. soaring and The Soaring Society of America. Klemperer served as an SSA Director from the time it was founded in 1932 until 1957 and served four terms as VP. He was a technical contributor to the Sierra Wave Project and in 1954 was one of the first inductees into the Soaring Hall of Fame. In 1959 he and Ralph Barnaby became the first elected honorary vice presidents of the SSA. He was one of the originators of OSTIV (Organization Scientifique et Technique Internationale du Vol a Voile), the scientific arm of world soaring and became one of its first directors. In 1963 he was awarded the SSA's highest honor, the Warren Eaton Memorial Trophy for "...out-standing contributions to the art, sport or science of soaring flight

in the United States." Walter added that Klemp's portrait with the Akron Condor in the background is displayed in the Founding Fathers Gallery at the National Soaring Museum.

In 1932 after having recovered from intestinal problems that had plagued him for years, Klemp returned to Europe. While passing through Frankfurt, Germany, he met a childhood acquaintance, Maria Nanette Engelman. She was 12 years younger than the visiting gliderman and was studying to be a physical therapy technician. They were married and spent their honeymoon aboard the luxury liner Europa, on their way back to America.

In the mid-30's, Klemp became associated with Douglas Aircraft in Santa Monica, CA, and was elected president of the Southern California Soaring Association. Victor M. Saudek (Hall of Fame, 1980), in a letter to Walter, mentioned Klemp's efforts in staging the pre-WWII West Coast Soaring Championships at Arvin, CA. By the mid-50's SCSA's membership, including world champion Paul MacCready, held two-thirds of the world records and three-quarters of all U.S. records.

At Douglas, Klemp designed cabin pressurization systems and windows for the DC-4. In the early phases of WWII, Klemp's knowledge of optics was utilized in designing bombsights that corrected for drift and other factors. Much of his work during that period is

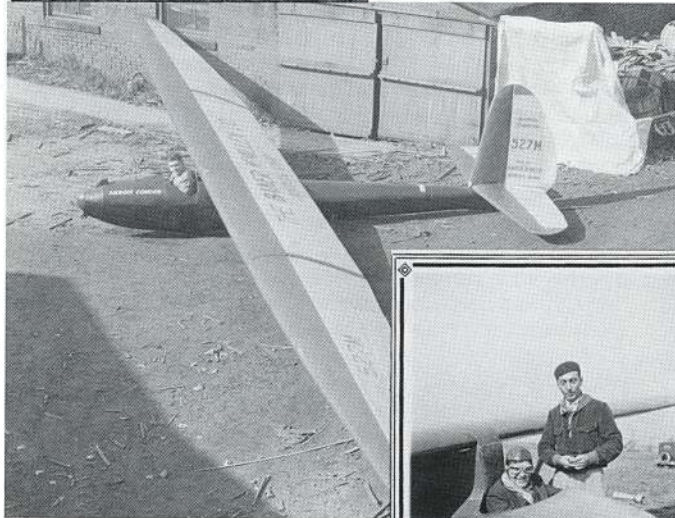
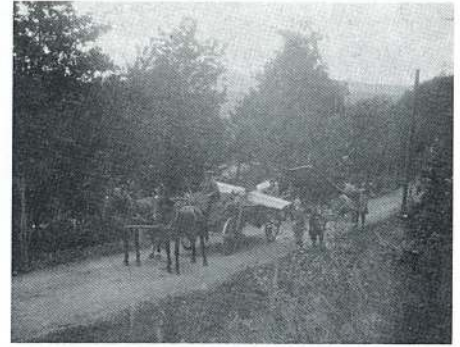
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Left: Anthony "Tony" Fokker taking moving pictures of Klemperer in the Blue Mouse soaring on the Wasserkuppe in 1921. (Note Fokker's billowing shirt indicating wind strength.)

Right: Trailing ships to the Wasserkuppe, 1921.

Below, center: Klemperer in the Baker-McMillen Akron Condor.



Right: Klemperer in cockpit, with Martin Schempp, Akron, Oct. 24, 1932



Left to right - Klemperer, L. F. Ross, Eddie Allen, Jack O'Meara, Albert Hastings and Donald Walker, mgr, National Glider Association. An early 30's photo from the Fred Loomis Collection, NSM Multi-Media Archives.

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still unknown to his family, Walter said. Near the war's end, Klemp was assigned by the War Dept. to the Alsos Mission, tracking Germany's progress in the development of chain reaction and heavy water.

Walter said, "Dad's job was never clear to us. I believe that he was responsible for getting Werner von Braun and many of that team to come to the United States before the Russians got to them." He added that in the years following the war Klemp made many trips to Almagordo, NM and worked with that group firing numerous versions of V-2 rockets.

The speaker recalled, as a child, visiting Theodore von Karman's Pasadena, CA, home with his parents and sister, Eleanor. (Another infant brother, William, died in 1935) "Tudor," as the children called him, had a wonderful assortment of wind-up toys collected from all over the world that kept the youngsters busy for hours while the adults visited. Walter mentioned a 1949 visit to a Hollywood Bowl performance by the great Beethoven conductor, Otto Klemperer, a distant relative. (The eminent conductor's son, Werner, is an actor and played Col. Klink in the "Hogan's Heroes" series.)

"I don't know when the Douglas Missile Division was created at Santa Monica," the lecturer said. "I assume that dad was deeply involved in designing the early anti-missile Nike Ajax series."

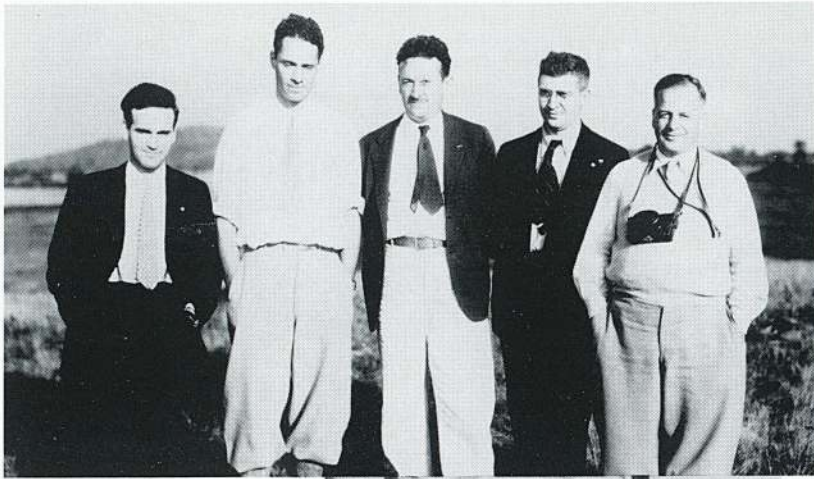
Around this time Klemp became involved in the Sierra Wave Project: the exploration of a high altitude meteorological phenomenon marked by a cigar-like lenticular cloud, on top of which very strong and smooth lift is encountered. (4) Walter quoted excerpts from Vic Saudek's paper, "The Sierra Wave Projects From Beginning to Fruition." It described Klemp's meeting at the 16th Nationals at Harris Hill with Capt. Hutchinson and Dr. Joachim Kuettner. A later series of meetings with the Southern California Soaring Association and the UCLA Dept. of Meteorology resulted in the project's beginning. Klemperer not only helped organize the project then but redesigned a substantial part of the ground tracking system when the Navy withdrew its promise to handle that phase of the project due to the Korean War.

Dr. Klemperer had the highest military security clearances. Walter told the story about a paper that his father had written for the War Dept. After sending it off, Dr. Klemperer realized that some parts needed to be modified and called the proper officials for its return. "He was politely told that his request was denied because he was not cleared to receive said document, even though he was its author," Walter laughed.

In 1952 Klemp took a leave of absence from Douglas and was sent by the Air Force to Europe. Based in Salzburg, his primary assignment was in some secret capacity with the elusively titled "1142 Special Activities Squadron," Walter said.

While in Europe, the Klemperers met Oskar Ursinus and watched Anthony Fokker's movies of the first Wasserkuppe contest. They also met the famous German aviatrix, Hanna Reitsch (5). Walter related her story of what a terrible time she had learning to fly a glider as Wolf Hirth's student. She would sit on her bed at night with her eyes closed, picturing the flight cycle, mimicking Hirth's yelled instructions and attempting to act out the proper responses. In Tito's Yugoslavia they met Boris Cijan and witnessed

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Above: Sept, 1934, left to right, Gus Haller, Lewis Barringer, Earl Southee, Klemperer, Warren Eaton. NSM Multi-Media Archives.



Right: Sierra Wave Project - Victor M. Saudek, left, and Dr. Klemperer in a Pratt-Read LNE-1.



William S. Ivans presenting the Warren E. Eaton Award to Dr. Klemperer. Left to right Jack Lambie, Ivans, John Graves, Klemperer, Ted Sharp and Howard Burr. (George Uveges photo, April, 1965 SOARING, NSM Multi-Media Archives.)

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a water-based glider operation. On one of their tours Walter and his father visited Lake Constance, Friedrichshafen and Klemperer's old friend and mentor, Dr. Hugo Eckener, perhaps the world's greatest airshipman. (In 1929, Eckener flew the majestic 772-foot Graf Zeppelin around the world in a 20-day, 21,500-mile goodwill flight.)

Returning to the States, the elder Klemperer made arrangements for Walter and Eleanor to learn flying with Gus and Anne Briegleb at El Mirage, CA. "Gus and Anne became our surrogate parents," the speaker said. "What wonders they were."

Walter found that going to a movie with dad was not always an easy experience. He particularly remembered a scene in "Rocket Ship X-M," an outer space travel adventure. "...Several people were standing in a circle, holding on to a railing as their ship was hurtling back through the earth's atmosphere...Dad had a ball ripping that one apart," Walter said. "After that we mostly stuck to musicals."

Dr. Klemperer suffered from many ailments that his son felt shortened his life, high blood pressure, sciatica, and later, angina. "Whenever dad traveled, at least one case held his medications," Walter said.

Klemperer's work left him very little time to follow sports activities and he liked to tell what happened when he was questioned during his U.S. citizenship naturalization exam. "...What was Babe Ruth's greatest claim to fame?" Klemperer's answer, "Having a candy bar named after her."

In 1963 he served as Scientific Director of the Douglas-National Geographic project, APEQS, which photographed a total solar eclipse from a high-flying DC-8 jetliner/observatory, an historic first. Astronaut Scott Carpenter was aboard as an observer. An article on the successful mission appeared in the November '63 *National Geographic*.

In 1964, Walter, as an Army Lieutenant serving in Germany, saw his father for the last time. He met the elder Klemperer who was en route home to the U.S. at the Frankfurt airport. Dr. Klemperer was very excited about the new APEQS II Project based in Tahiti. "It was one section of the world that he had never visited," the speaker said.

On Mar. 25, 1965, Walter's sister, Ellie, called with the news that their father had passed away. "His illness didn't appear to be life threatening," Walter said. "But no one could talk to his heart; it just quit."

On his return to Germany Walter had to pass through Ft. Dix, NJ, and called on his father's old friend, Navy Adm. Charles Rosendahl, USN, Ret. The admiral was a veteran airshipman, former captain of the Navy's dirigible, "Los Angeles" and docking officer at Lakehurst when the "Hindenburg" exploded. He was one of America's most vocal advocates of the use of airships.

Condolences came from all over the aviation world, including a note from Britain's Prince Philip.

Ralph Barnaby in the May, 1965, *SOARING*, wrote, "...One of the most kindly, sincere persons it has ever been my privilege to be associated with...His sound analyses and advice did much to bring soaring in this country to its present high standing, both as a sport and as a science..."

Walter said that the NSM's Barnaby/Klemperer booklet is a wonderful tribute to both soaring pioneers.

The Soaring Society of America created the OSTIV Klemperer Award, presented to persons making noteworthy technical or scientific contributions to soaring flight. The award is a cash stipend from a fund administered by the SSA Trustees.

Dr. G. V. Lachman, Director of Research of Handley Page, Ltd., wrote, "...by his numerous publications and lectures embracing a wide field of the aeronautical sciences, he left a memorable mark. He died as he probably wished to die, in harness."

FOOTNOTES

(1) Theodore von Karman, 1881-1963 - Hungarian/American; noted aerodynamicist, effected many aeronautical breakthroughs including predictions on supersonic flight. He directed U.S. wind tunnel tests in 1938. His experiments in jet propulsion and rocketry led to the founding of Jet Propulsion Laboratory.

(2) Schwarze Teufel (Black Devil) - A mythical wolf, said to have prowled the Aachen district at the time of Charlemagne.

(3) Blaue Mause (Blue Mouse) - Not the ship's color (white) but a nickname given by WWI German and Austro-Hungarian pilots to the WWI Rumpler two-seater.

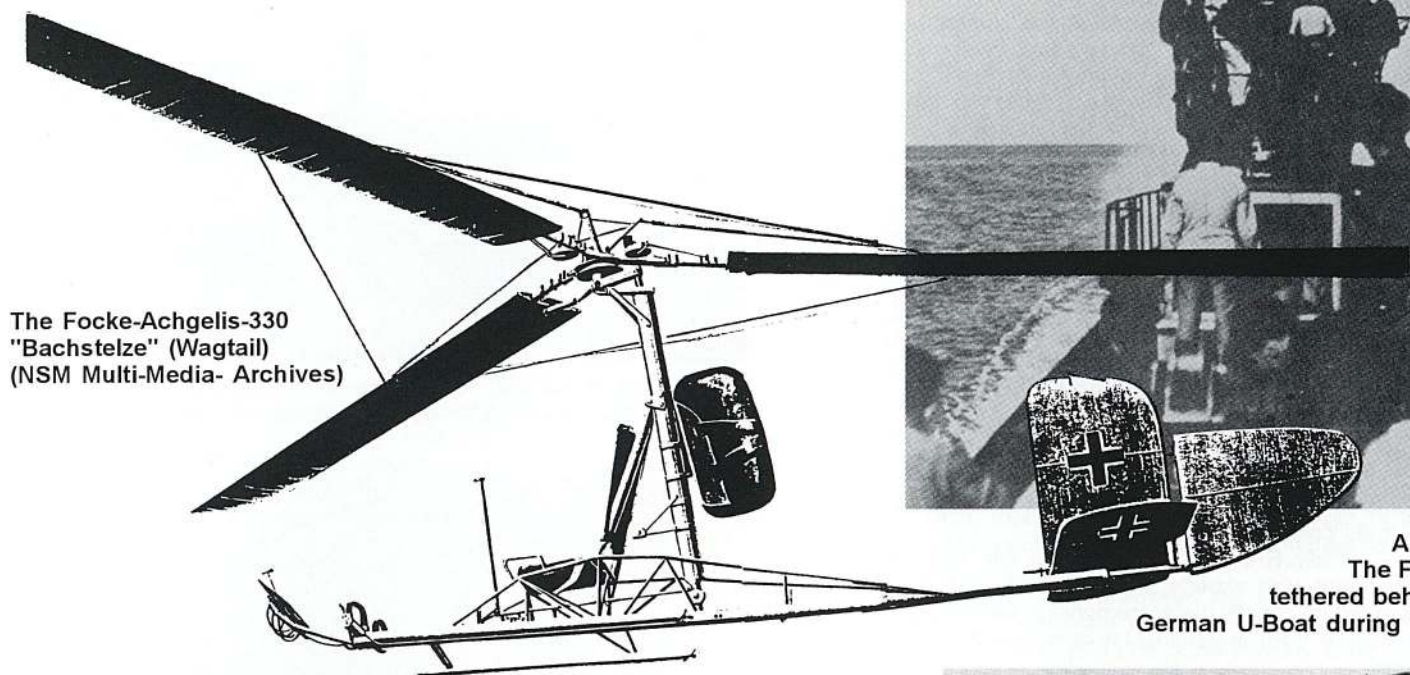
(4) *NSM Quarterly*, Summer 1991, Vol. 13, No. 4, "NSM Wave Symposium - 40th Anniversary of the Mountain Wave Project."

(5) *NSM Quarterly*, Fall 1987, Vol. 10, No. 3, "Hanna Reitsch on the Appalachian Ridge. "The Most Fantastic Flight I Ever Had."

THE GYRO-GLIDER - AN AIRBORNE ODDITY

By WILLIAM GALLAGHER

There were any number of technical oddities ricocheting off the desperate battles of World War II. The useful life of some of these devices was terminated with the end of hostilities; others were adapted to peacetime industrial and scientific use. Still others - such as parachuting, kayaking and aqua-lunging - were snapped up by world sportsmen and modified for recreational use.



The Focke-Achgelis-330
"Bachstelze" (Wagtail)
(NSM Multi-Media- Archives)



Above:
The Fa 330
tethered behind a
German U-Boat during WWII.

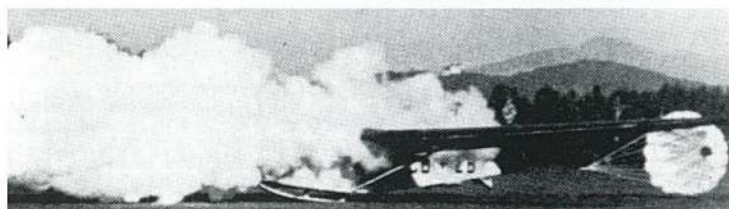
But perhaps one of the most challenging aerodynamic spin-offs was the collapsible, man-lifting autogyro kite. It was perfect for the post-war, do-it-yourself kit-builder who wanted to experience the thrill of flight without the expenditure of too much cash.

By 1943 the fearsome Battle of the Atlantic was slowly shifting against German U-Boat flotillas. New and effective Allied ASW (Anti-Submarine Warfare) tactics were mauling submarine wolf packs roaming the North and South Atlantic. Unless war materiel could be prevented from reaching Britain and Africa, the German High Command realized that the war would be lost. The Kriegsmarine would try anything that might turn the tide.

Enter the gyro kite: Late that year a complex, foldable, man-lifting autogyro kite, the Focke-Achgelis-330 "Bachstelze" (Wagtail) was tested over the Bay of Danzig (Gdansk). The device consisted of a wind-activated whirling rotor beneath which an observer's chair was attached. The kite, stowed below, was brought topside, unfolded and rigged on the sub's afterdeck. The U-Boat turned into the wind at flank speed, activating the tethered kite's rotor and lifting the observer/pilot to a height of two or three hundred feet where he could scan the horizon for enemy shipping and report target particulars via telephone connection to the towing sub.

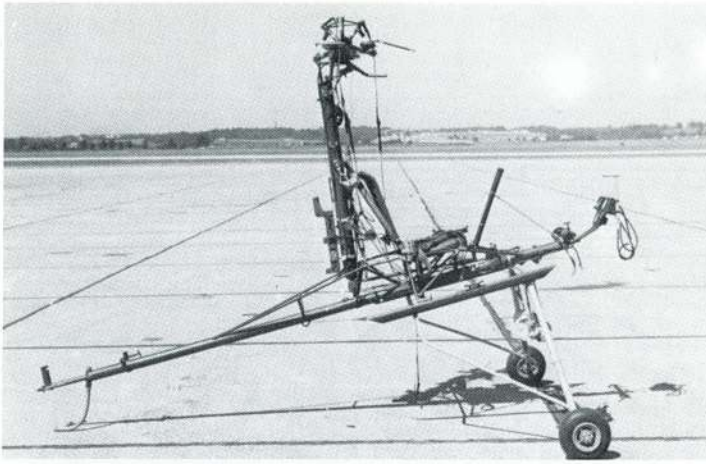


The Focke-Achgelis-Fa255- A converted DFS 230
Assault glider, minus wings, plus helicopter ro-
tor, for short field landing.



A conventional DFS 230, with braking rockets and drag chute
that replaced the Fa225. (NSM Multi-Media-Archives)

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Pilots of these aircraft were U-Boat seamen who had never flown before. They were trained in a wind tunnel at Chalais-Meudon, in occupied France. (1)

One of the first manned gyro kites was combat-tested from a submarine operating north of Madagascar (Malagasy Republic) in the Indian Ocean. (2) After several unsuccessful launches, it was determined that the risk was too great to the sub. Each time the spotter gyro reached a practical height it was quickly observed by patrolling Allied ASW aircraft. The tiny rotorcraft and its pilot had to be frantically reeled in and stowed so the sub could dive and try for the questionable security of the deep. If the attack caused the sub to crash dive, the observer would jettison the rotor blade, deploy a parachute attached to the tubular fuselage and hope that he would be picked up at sea.

The discovery of the gyro/observer system by the Allies caused some concern. Then it was realized that due to more sophisticated radar and air cover, the cumbersome towed spotter represented more danger to the U-Boat than to its targets.

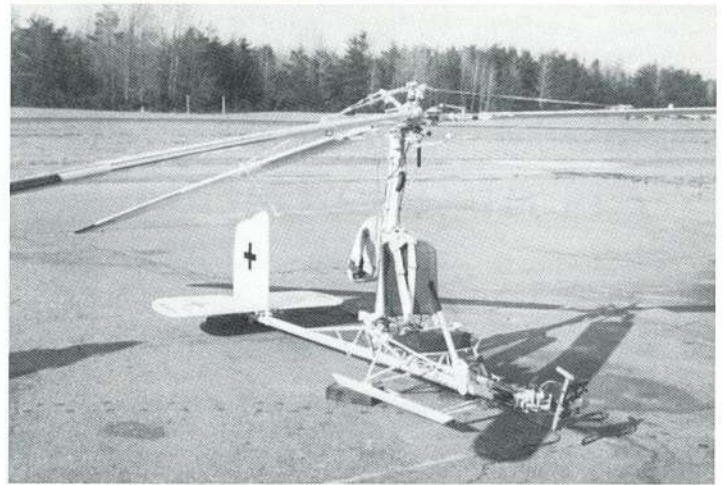
Approximately 200 Fa-330 gyro-kites were constructed by the end of the war. Its rotor diameter was 24 feet; its length 13 feet, 5 inches. The gross weight was 375 pounds; 180, empty. The Smithsonian Institution's National Air and Space Museum has an Fa-330 in its collection.(3)

Paradoxically, RAF Wing Commander Brie, one of England's foremost rotary-wing experts, had developed a toy windmill kite which worked on exactly the same principle before the war. (2) He was prevented from marketing his invention by the opening of hostilities.

Meanwhile, the German Luftwaffe began experiments with a novel modification of its combat-tested assault glider, the DFS-230. (4) The objective was to find means of landing men and materiel in extremely confined spaces. The idea of a cargo carrying autogyro-glider looked promising. In 1942, a DFS 230B, minus wings, was delivered to the Focke-Achgelis organization. It was to be fitted with a simple rotor pylon carrying a tilting rotor head and a 39-foot, 4 3/4 inch diameter, three-bladed rotor from an Fa 223 helicopter.(5) The new pinpoint landing assault gyro-glider, redesignated Fa 225, was cable-towed like the conventional glider at between 115 and 155 miles per hour under its wind activated rotor. Weighing 2,000 pounds and carrying 2,000 pounds of cargo, it could land in a field only 15 to 20 yards long. Severe control problems plagued the Fa 225 which was designed and built in seven weeks. The project was abandoned in favor of the fixed-wing assault glider equipped with sequential firing, braking rockets for short landings.

Post-war interest started with a 1947 **Scientific American** (6) report on an autogyro glider developed by the General Electric Test Flight Center. GE's Gyro-Glider had an 18-foot rotor, weighed 120 pounds and was capable of lifting an additional 300 pounds, including the pilot. It had a tricycle landing gear and a descending speed less than that of a parachute. The blades could be removed

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Above and above left, The Smithsonian Institution, National Air and Space Museum FA-330 in skid-configuration and with wheels.



A 1947 photo of the first Gyro-Glider developed at the General Electric Flight Test Center (NSM Multi-Media - Archives)



Left, the Bensen single-place gyro glider on tow, with bicycle observers following, from a May 24, 1954 Life Magazine story. Above - Bensen B-8W Hydro-Glider with streamlined 9 foot floats. Right - Bensen Model B-8 2-place Gyro-Glider (From NSM Multi-Media- Archives.)



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so that the gyro-glider could be transported in the rear of a station wagon. The wagon could also be used as the towing vehicle. Commercial possibilities suggested by GE engineers included radio control, replacing the pilot with 300 pounds of cargo for deliveries in tight fields, and the inclusion of an engine to bring the rotor up to speed for towless take-offs.

The popular press next recognized the gyro-glider in a 1954 **Life** magazine story captioned, "Whirly Glider Takes The Air. Motorless rotor blades started by hand keep towed contraption aloft." (7) Designer and builder Dr. Igor Bensen of the Bensen Aircraft Company, Raleigh-Durham, NC, was car-towed down the runway. At 20 mph and with an ever more rapid "woosh-woosh-woosh" sound, he was aloft. While top speed was supposed to be 60 mph, the tiny ship couldn't soar and when Bensen released the towline it gracefully "wooshed" down to a gentle landing. Control was with a downward extending handle bar that regulated the pitch of the rotor. Forward pressure tilted the rotor hub back, lifting the aerodyne, while back pressure did the opposite. The Gyro-Glider weighed 86 pounds.

A more detailed **Popular Science** magazine article by Devon Francis appeared later that summer. (8) Engineer-scientist Bensen's invention was described as "an 86 pound windmill built of water pipe and wood...that may hold the answer to cheap sport flying." Dr. Bensen was formerly Chief of Research of the Kaman Company.

Francis reported that Dr. Bensen's "avion whatzit" flew handily at 25 mph and landed at 7 mph. The designer said that practically anyone could build one for an estimated \$100. (In 1954 you

could buy a new car for \$2,000 - Ed.)

With a starting slap of the two-bladed rotor, the gyro-glider was pulled to a height of 150 feet behind a 300-foot line attached to a towcar. Beyond that height the upward pull of the rotor and the downward pull of the tow tended toward buffeting the tiny ship, making control difficult. In the **Popular Science** article, Francis explained that the two-bladed lifting surface was mounted on a single bearing that let the rotor "teeter-totter" while whirling. This "teeter-tottering," in addition to the pilot's manipulation of the control yoke, balanced the increased lift of the blade advancing into the relative wind and the lessened lift of the blade retreating from the relative wind. Without this balancing trade-off, the tiny machine would tend to roll over.

Russian-born and U.S.-educated Dr. Bensen worked for General Electric as well as Kaman and flew his first Gyro-glider in 1945. Author Francis quotes him as saying that the tiny gyro was not hard to fly. There was only the one control column and in the fore and aft (pitch) axis it was quite stable. "Sideways, however, it took considerable practice to overcome the inherent lateral skittishness," Bensen said.

The Gyro-glider was mounted on skids with six-inch ballbearing wheels forward and roller skate wheels aft. Small fins were fixed to the skids to give directional stability. Later modifications included a tricycle landing gear.

A photo in the **Popular Science** feature showed Bensen wearing steel-shod shoes with toe extensions bent upward "so he can use his feet for balance and braking when landing." The diminutive twirling machine pictured was 64 inches high, 50 inches wide, and 80 inches long, with a 20-foot, 2-bladed rotor diameter.

The following month (9) the magazine ran a feature on how to build a flying model of the gyro/glider/kite.

Bensen's original production Model B-7 was described in the 1958-59 **Jane's All The World's Aircraft**. The '62-'63 edition (10) listed the Model M-8, available in either a single or two-place version. Its updated fuselage was lengthened to 11 feet, 4 inches and had a pedal-controlled rudder in addition to the regular hanging-stick rotor control.

The Model B-8W Hydro-Glider and the Model B-8B Gyro-Boat were new additions to the Bensen line of motorless gyros. The B-8W Hydro-Glider was basically a B-8, sporting two streamlined 9-foot floats. It was powerboat-launched and towed. 1956 saw the B-8B Gyro-Boat prototype, a further Bensen twirling-marine inspiration. It featured an attachable free-whirling rotor system called "Rotosail" that could be mounted on any standard small dinghy. The gyro-boat was powerboat-launched and towed airwards. Later versions of the B-8B were fitted with stabilizing pontoons mounted



Peter M. Bowers Interesting Gliders photo in the September-October 1958 SOARING. NSM Multi-Media Archives.

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ATHENAEUM

By JAMES R. MOSER,
Archives

(from the Greek Athenaion: referring to the temple of Athena, Goddess of Wisdom)

Greetings and felicitations! There is a new feature in this quarter's issue of the **NSM Journal**, "Athenaeum." This column will serve three distinct purposes. Initially it will do the following:

- Update the readership on the progress that is being made to improve the condition of the NSM archives.

- Inform the reader regarding sections of the archives that have become available for research since the last update.

- Give the museum's supporters additional information about the happenings at the museum and to document what archival goals are being accomplished with the help of membership support.

As our endeavors reach fruition, I hope to recast "Athenaeum" toward more scholarly enterprises. At that time (forecasted for January 1995) I will begin topical research on individual items from the museum's collection. With this second function, I hope to use the medium for educational ends, both for myself and the readership.

From my brief exposure to soaring history, it is evident to me that profound efforts have been made throughout time to traverse the lanes that only the most adapted creatures of the skies could previously negotiate. I intend to match these ventures with diligence of action and bring the archives of this institution into concert with the most professional of organizations.

If you have questions or comments, please forward your thoughts to me, care of the address that succeeds this column. I look forward to hearing from you.

PROGRESS REPORT

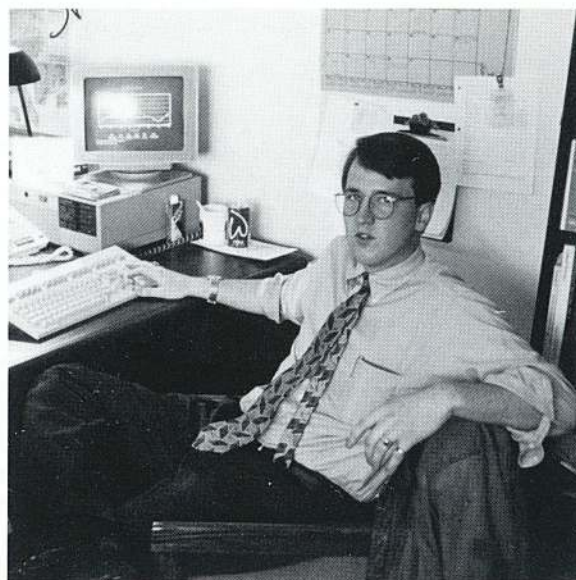
Before beginning, I would first like to recognize some volunteers who have contributed greatly to the NSM archives. They are: Nancy Bedell, Robert Benjamin, Larry Creighton, Barney Daugherty, Bob Oppenheim, Mary Lou Peterson and Clara Schaeffer. These individuals have donated their time and energy to the museum and I would be at a loss without them.

1. Upon accepting a position here at the National Soaring Museum, I was charged with the task of completely restructuring the museum's archives. The long term goal of this project is to produce an organizational structure appropriate to the institution's collections, the needs of researchers and those making inquiries. Ultimately we must provide a protective, yet accessible, format for the museum's collections. In the long term, we will be utilizing a computerized data-base which will help guide the researcher through a germane procedure of source identification.

We have already begun this process and, as some may know, the initial phase (physical relocation and sorting of the collections into basic categories) has resulted in a sea of boxes, filled with the hopes, dreams and accomplishments of many members of the soaring community, scattered all over the museum's library. This represents a temporary state; the long term benefits will more than counterbalance the transient inconvenience.

Some of the museum's collections are, for the moment, inaccessible. I will, however, address our progress and discuss individual resources as they become available.

2. We have recently completed work on the Soaring Club Newsletters. These represent a most fundamental primary resource for discerning the activities and mind-set of the soaring community on the local and regional levels. Further, this is perhaps the only collection of its kind in the world. Most clubs, asso-



ciations and councils do not send their newsletters to the Library of Congress.

These newsletters have been segregated from the rest of the archives, and stored in acid-free folders and record storage boxes. They are now organized alphabetically and chronologically, and are available for public use. To the best of my judgment, these collections are about 70% complete; as time allows I will be contacting each club, association, etc. and requesting that they fill in any gaps that may exist. A computerized list of these publications and their parent institutions is now available through my office.

3. We have also recently completed work on the published periodicals (magazines). This collection (secondary by nature) allows the researcher to identify objectives, trends, accomplishments and failures on a more national and international level.

Consisting of more than 156 separate titles, and arranged in alphabetical and chronological order, the published periodicals will prove quite comprehensive. This collection has also been placed in high quality archival housing. Computerized lists have been compiled to show the holdings and locations of each title. Formal indexing will begin at a later date. Again, efforts will be made to fill in the gaps of this collection, which I estimate to be roughly 80% complete.

4. Work has just begun on the photographic collection. Starting with the loose photographs, we are segregating into the following preliminary headings:

- Personalities/groups/events
- Aircraft/components/tools and equipment
- Overviews/Aerial photography/meteorology
- World War II/Personalities/Aircraft/Overviews

5. In the peripheral, Barney Daugherty has been working on the Fred T. Loomis photographic collection. I am pleased to report that, with few exceptions, this collection is now fully catalogued and remains only to be arranged and entered into a data-base, which is pending.

6. It is also noteworthy that the NSM is in the process of transferring the 8mm and 16mm film collection to VHS format. Mr. Duff Davis of the Sandhill Soaring Club, Inc., Ann Arbor, MI, has generously offered to do a large part of this work. The first set of films has been transferred and the quality of the work was approved by the NSM Board. Thus, we have made a commitment to Mr. Davis to continue our relationship with the Sandhill Soaring Club, Inc.. When this work is well under way, we again will be in a

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Athenaeum - Continued from Page 10

position to start a rental program, which I understand has been very popular.

The purpose of this initial phase is to provide some basic level of accessibility and protection to these collections. Subclassification will commence when time and resources permit.

The current situation is somewhat perplexed. However, I am confident that as time passes, our efforts will become increasingly more visible, and our goals in this matter more attainable. If you have interests in the aforementioned collections or comments with regard to our method, please feel free to contact me at: National Soaring Museum, RD#3 Harris Hill, Elmira, NY 14903; 607-734-3128, FAX: 607-732-6745.

The Gyro-Glider - An Airborne Oddity Continued from Page 9



on outriggers. Under its laboring rotor, the "Rotorsailer" looked like a stunted Polynesian war canoe.

Soaring Magazine's Peter M. Bowers reviewed the Bensen Gyro-Glider in his column "Interesting Gliders" in the September-October 1958 edition. (11) "Or are they?" Bowers queried referring to the spidery airborne interloper. "None of the soaring fraternity took them seriously when they first appeared about four years ago...Now they are appearing in increasing numbers at gliderports, little-used airports with good long runways, beaches and other places where a long smooth auto tow can be had." Bowers raised some questions about whether the CAA (forerunner of the Federal Aviation Administration) would consider them as kites or gliders for licensing purposes. He also reported that the gyro-glider's rate of descent was about 16 feet per second, a bit less than that of a parachute.

So, what happened to the Gyro-Glider? Why don't we see hundreds of the colorful little thumpers, twinkling along behind dune buggies, over bikini-laden beaches or behind pick-ups on deserted country roads?

The same **Jane's** '62-'63 edition gives the best clue. It lists the obvious extension of Dr. Bensen's creative mind: the Model B-8M, powered Gyro-Copter. First flown in 1957, the B-8M was a powered autogyro conversion of the Gyro-Glider. It had an optional mechanical rotor drive that could accelerate to flying speed while the aircraft was stationary. Then, by transferring the power to the pusher propeller it could take off in only 50 feet. The '86 version had a 48 hp Rotax 503 engine with a 2.58-to-1 reduction driving a two-bladed wooden prop and could churn along at 60 to 85 miles per hour.

By this time, it was a buyers' market for relatively inexpensive air thrills with the proliferation of hang gliders, paragliders, ultralights, parawinged trikes and free balloons. All the aforementioned are in addition to the super sailplanes constructed of space-age materials, with gravity defying glide ratios of 50 to 1.

The powered rotary ultralights and home built were spreading like dandelions. The 1992-'93 edition of **Jane's** (12) lists over 15 separate American sport gyroplanes and autogyro models.

Even so, through the years the Bensen Aircraft Corporation sold over 100,000 sets of plans for rotary wing gliders and light-weight autogyros. It is estimated that over 10,000 were built and flown. But the gyro-glider's brief but flamboyant time in the sun was eclipsed by its more exciting and efficient spin-offs.



Calendar of Events for 1994

May 14	NSM Board of Trustees meeting U. S. Soaring Hall of Fame Induction/Banquet
May 21-22	Arts in the Park - NSM Educational Program in downtown Elmira
July 1	NSM hosts Air Show Cocktail Reception
July 2-3	Chemung-Steuben County Air Show at Chemung County Airport
Sept. 24	3rd Annual Community Soaring Day featuring KiteCitement on Harris Hill 25th Anniversary reception - Paul B. MacCready, speaker, at the Clemens Center in Elmira
Sept. 30	Soaring Encampment
Oct 7	Soaring Encampment
Oct 14	Soaring Encampment
Oct 22	NSM Board of Trustees meeting 21st Ralph S. Barnaby Lecture: Stan Hall, speaker
Oct 28	Soaring Encampment
Nov 4	Soaring Encampment
Dec 3	Community Soaring Luncheon

All events above to be held at the NSM except where noted

For further information contact:

James W. Swinnich, Director, National Soaring Museum
RD#3 Harris Hill, Elmira, NY 14903
607/734-3128 FAX: 607/732-6745

ON THE COVER:

From the Klemperer collection of the NSM's Multi-Media - Archives, Woher? - Wohin? ("What is it all about") Wolfgang Klemperer's record-breaking 1921 flight in the Blue Mouse on the German Wasserkuppe. All photos in the Klemperer story are from this collection unless otherwise indicated.

References:

- (1) Aircraft of The National Air And Space Museum - Third Edition, p. 69.
- (2) History of The World Wars - Purnell and Sons, Ltd.; Paulton, Somerset, Great Britain. U-Boats Under The Swastika - An Introduction To German Submarines, 1935-1945, Jack P. Malmann Showell, p. 62.
- (3) Aircraft of The National Air and Space Museum - Third Edition, p.69.
- (4) Deutsches Forschungsinstitut für Segelflug, (German Research Institute for Gliding Flight).
- (5) Warplanes of The Third Reich - William Green, p. 106.
- (6) Scientific American, January, 1947, "Autogyro-Glider," p. 31.
- (7) LIFE, May 24, 1954, "Whirly Glider Takes The Air," p. 153.
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- (9) Popular Science, August, 1954, "Whirling Rotors List This Gyro-Kite," by Roy L. Clough, p. 197.
- (10) Jane's All The World's Aircraft 1962-1963, USA, p. 180.
- (11) SOARING, September-October, 1958, "Interesting Gliders," by Peter M. Bowers, p. 27.
- (12) Jane's All The World's Aircraft, 1992-1993, USA Ultra-Lights.

FROM THE DIRECTOR

By JAMES W. SWINNICH,
NSM Executive Director

Who built the seven towers of Thebes?
The books are filled with names of kings.
Was it kings who hauled the crazy blocks of stone?...
In the evening when the Chinese wall was finished,
Where did the masons go?...

Young Alexander plundered India.
He alone?
Caesar beat the Gauls.
Was there not even a cook in his army?
Philip of Spain wept as his fleet was sunk and destroyed.
Were there no other tears?
Frederick the Great triumphed in the Seven Years War.
Who triumphed with him?...

Every ten years a great man,
Who paid the piper?

So many particulars.
So many questions.

- Bertolt Brecht

As National Soaring Museum Executive Director, I intend to initiate educational programming as a response to the challenges posed by Mr. Brecht. There are two National Soaring Museum programs slated for 1994 which work toward providing youth with an opportunity to learn about the history, science, and sport of soaring. More importantly, perhaps, both programs are participatory and interactive; the subjects being addressed will delve into the physical sciences.

The first program is an outgrowth of events which took place in 1993. On the 2nd Annual Community Soaring Day, we had Chris Chillelli (a school teacher) along with LeAnn Mason and Chris Brazee (two of his students) from Orono Elementary School in Maine visit us with a program on their construction of a full scale 1902 Wright Brothers glider replica. We tried to fly the glider as a kite, as both the Maine students and the Wright Brothers' had earlier, but the glider caught a cross wind and collapsed. The Wright Brothers also failed in a large number of their attempts and the NSM followed in a proud tradition.

Enter a group of enthusiastic students from the Corning School District and organized by teacher Eileen Bowen. Thirty 8-to-10 year old students have committed themselves to construct the same 1902 glider. The intent here is to have the youth attempt to fly the glider they are building on Community Soaring Day in 1994 (24 September). The event will be part of the National Soaring Museum's 25th Anniversary Celebration featuring Paul MacCready, designer and builder of the Gossamer Condor and Gossamer Albatross, speaking at the Clemens Center in Elmira later that evening.

The students love the work. It is probably one of the only times in the day their hands will touch, let alone labor with natural materials. Using rasps, sand paper, and planes, they put a radius on struts and spars, then they use hammers, glue, jigs, and nails

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to generate wing ribs. Most importantly, they are doing the work themselves and sharing the project with one another. There is no competition, only the challenge to do well in order that their creation may fly in September. They will continue working about once a month until the project is completed. To date, they have most of the wood prepared. The fabric must now be applied to the craft. The Corning students will use the rudder from the glider built by the Orono, Maine students as a spiritual tie to the past and those who have come before them.

The second program is an overnight encampment. We will have the inaugural event on 15 and 16 April, with seven others scheduled for October and November. Girl Scouts, Boy Scouts and other organized youth groups will sleep over in the museum. Volunteers working in the kitchen will prepare both an evening and morning meal with youths being chosen to serve the delicacies to their peers. Most of the programming will be based in The Edward A. Mooers Community Room. Restoration will be the site of youths building wing ribs. Participants will learn about aerodynamics and put the knowledge to immediate use in constructing their own paper airplanes for flight in a friendly competition. An astronomy component will be included, and local history and the connection with soaring in the United States will be featured.

Finally, the design, construction, flight, and instrumentation of a modern sailplane will be discussed. Each participant will sit in a sailplane cockpit, and will leave the NSM both educated and entertained. With them will go a wing rib that he or she built, a handout on aerodynamics, a balsa glider, and a paper airplane. What a deal for each of the youths involved!

The encampment events will run from Friday night into Saturday morning and Saturday evening to Sunday morning. We are hoping to host 350 youth and adult chaperons in 1994. If the program generates funding, an expanded version will be offered in 1995. The educational programs are great, but there is heavy investment of time and effort on the part of staff and volunteers. The program must generate funding support, or it will not operate. Although this declaration may seem blunt, we believe the educational programming is of quality.

The National Soaring Museum hopes these educational programs will teach some of the particulars and answer some of the questions posed by Mr. Brecht.

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