



NSM Historical Journal

Volume 28

Number 1

2006

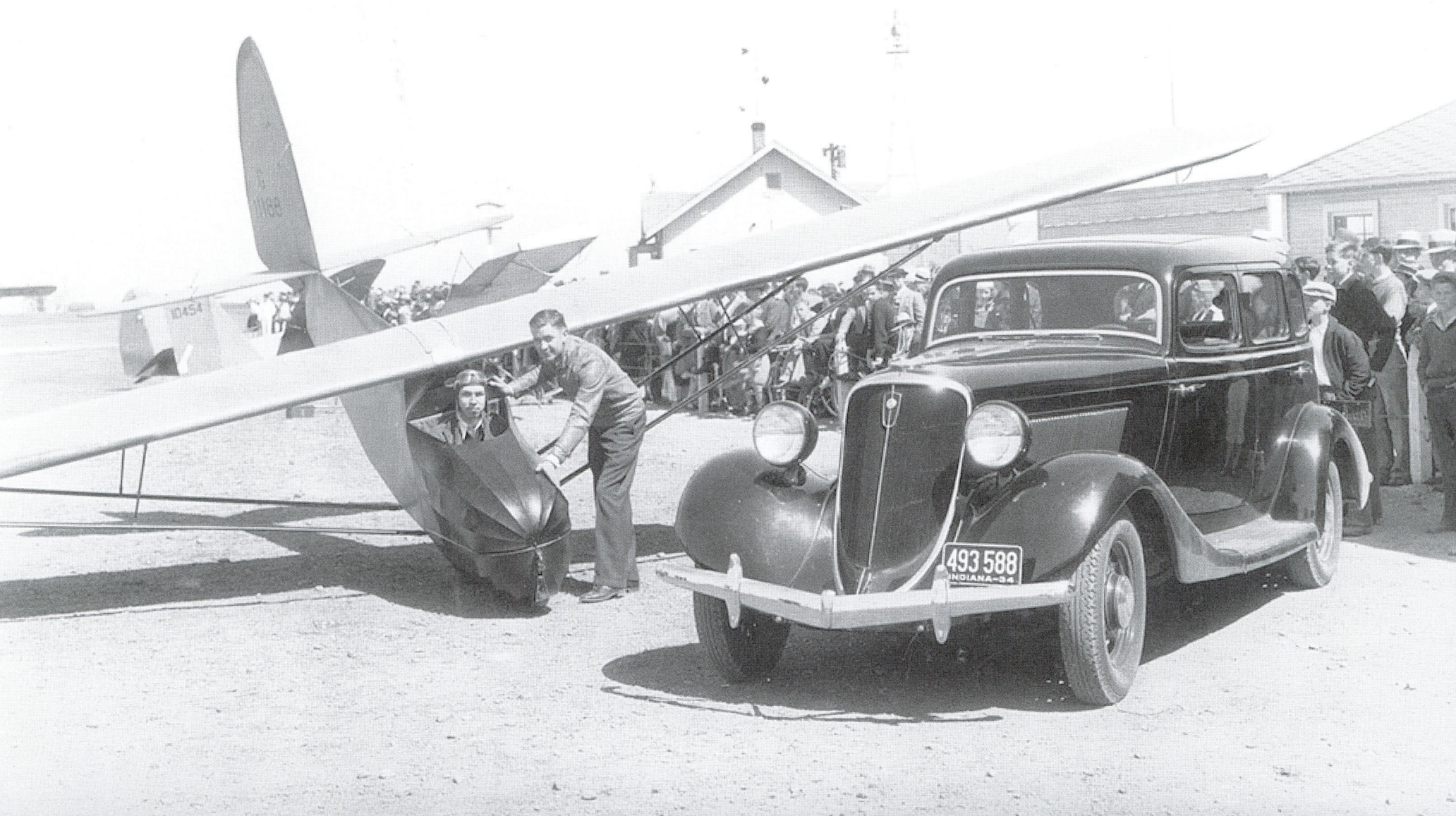


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On the cover

Stan Smith, president of the University of Michigan Glider Club, in a Franklin PS-2 awaiting an auto tow from a new 1934 Studebaker.

The April 27, 1934 South Bend Indiana Tribute story read, "Bucking a strong headwind over their 150 mile course from Ann Arbor, Michigan, Homer Stockert arrived over the Bendix Municipal Airport towing a motorless plane piloted by Stanley Smith, 1933 gliding champion of the United States. At an altitude of 1,200 feet the glider cut loose. Stanley Smith maneuvered his craft over the field for a short time, then descended to a perfect landing."

Smith spoke that evening at a dinner in his honor at the American Legion Hall. The following day he was auto-towed by the 1934 Studebaker in this Franklin PS-2 and gave a demonstration of "glider manipulation with general stunting, looping and spins," the Tribune reported. Taking no chances the Studebaker Company had Smith sign a release absolving "the company, their successors, assigns, officers, representatives, employees, etc." from any liability arising from "said glider flight either caused by negligence or otherwise."

DATE OF FLIGHT	MAKE OR TYPE OF GLIDER	TOTAL TO BE CARRIED FORWARD		FLIGHTS	HOURS	MIN.
		IDENTIFICATION OR LICENSE NO.	NO. OF FLIGHTS			
54				736		
Apr. 28	Franklin PS-2	11188-Y	5			
" 29	" " "	" "	4			
" "	" " "	" "	1	30		
June 24	" " "	11188-Y	3			
TOTAL NUMBER OF FLIGHTS, AND TOTAL TIME IN HOURS AND MINUTES TO BE CARRIED FORWARD ON NEXT PAGE.				749		

LOCATION OF FLIGHTS AND ANY REMARKS SUCH AS UNUSUAL DISTANCE-ALTITUDE-WEATHER	FLIGHT CERTIFIED BY SIGNATURE OF PILOT
Auto Tow. South Bend Airport	
" " " " "	
Airplane tow to 3000'. 3 Loops.	
Ship would not spin. Towed by Warner Fleet, Homer Stockert pilot.	
Bendix Airport So. Bend. Auto Tow	
ATTESTED BY _____	

Stan Smith's 1934 logbook showing details of the aero tow and South Bend Saturday and Sunday flight demonstrations at the Bendix airport.

33rd Annual Ralph S. Barnaby Lecture The Horten Flying Wings by Jan Scott

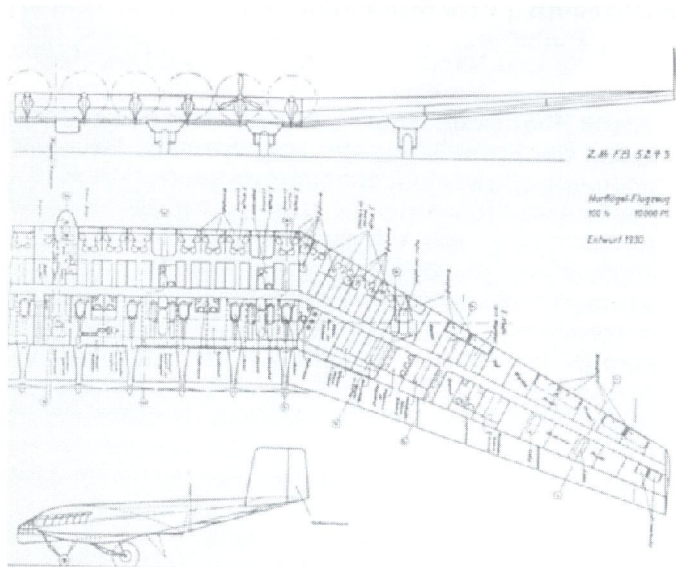
All photos provided by Jan Scott.



The 34th annual Barnaby Lecture was delivered by Jan Scott, Lovettsville, VA, probably America's foremost authority on the innovative Horten Flying Wing designs of Germany's Horten brothers, Walter and Reimar. The PowerPoint-assisted presentation was given October 1, 2005 at the Marriott Downtown Hotel in Memphis, TN, in conjunction with SSA and NSM Board meetings.

The first of these annual lectures was given in 1973. They are named in honor of Capt. Ralph S. Barnaby, U.S.N. (1893-1986). These talks cover a wide spectrum of historic or noteworthy achievements in motorless flight, and are delivered by aviation pioneers or recognized authorities in some segment of flight development.

Before discussing the Hortens and their flying wing aircraft, Scott mentioned another German aircraft designer, Hugo Junkers, who thought in terms of flying wings as early as 1910. That year Junkers filed the so-called Volume Patent. This revolutionary proposal called for the elimination of the aircraft's fuselage empennage, and carrying all fuel, cargo and passengers inside the wings. "Plans were actually drawn up for a 100-ton monster in 1930," Scott said, adding, "at the time stability and control problems of a tailless aircraft had yet to be resolved. It was never built."



The 100 Ton Junkers Flying Wing

In 1980, Jan Scott visited Dr. Reimar Horten (1915-1994) at his home in Argentina. Walter had (1913-1998) remained in Germany. "Each morning during my week-long

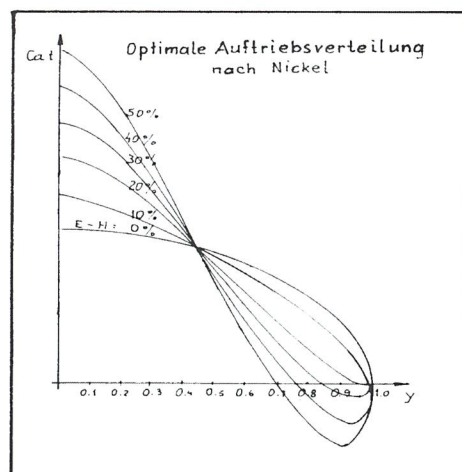
visit he would patiently explain his theories to me while also providing some very interesting background information."



Dr. Weimar Horten and Jan Scott, 1980.

Dr. Horten asked, "Does an aircraft need tails? A pheasant has a very long tail. It does not fly very well; it prefers to walk or run on the ground. It flies mainly straight ahead. Its long tail makes turn in flight difficult. My designs have no tail surfaces. They are almost impossible to over-stress: no adverse yaw. They will not stall or spin; the pilot is flying in a prone position." Scott showed a photograph of a Horten flying wing sailplane designed in 1940. Quoting Dr. Horten he said, "Performance was similar to competition sailplanes of the 1950s."

Scott showed a diagram of the Half Wing Lift Distribution. The bell-shaped lift distribution curve, in contrast to the elliptical curve present on conventional wings, was the secret of stability and maneuverability of the Horten wings.

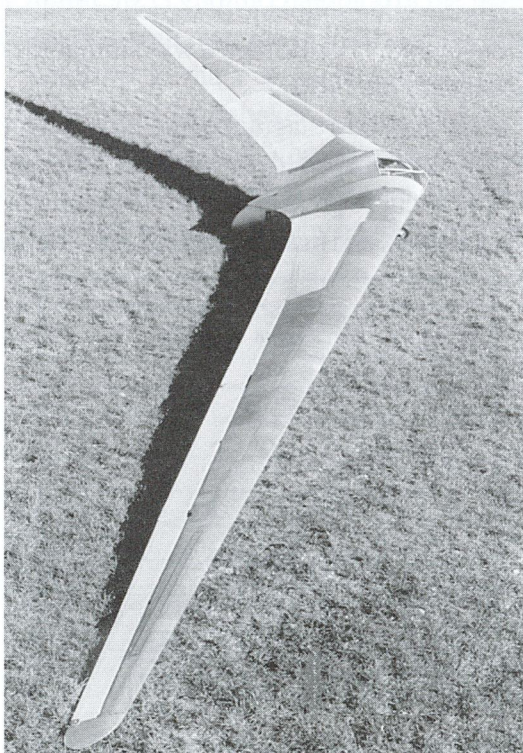


Half wing lift distribution.

With parental consent, the brothers Reimar (age 15) and Walter (age 17) built their first flying wing glider, the H I at home. Even though it was displayed that year at the 1933 Bonn Air Show, the elliptical lift distribution of the H I made it nearly impossible to turn due to the adverse aileron yaw.

Undeterred, in 1935 the brothers proceeded to build the vastly improved Ho II. It was constructed at home, testing their parents' tolerance level. The Ho II had much longer wing tips that now extended into the family dining room. The motorized "Habicht" version of the Ho II had a 60 hp Hirth motorcycle engine. The engine was borrowed from friends and installed because the Hortens couldn't afford aero tows. Initially clamshell type drag rudders were used for directional control. These were later replaced with Schempp-Hirth type brakes. Later models featured a raised canopy for pilot comfort. The NASM Paul E. Garber facility's Horten II was shipped to Germany for restoration. The glider is now on display at the Deutsches Technikmuseum in Berlin.

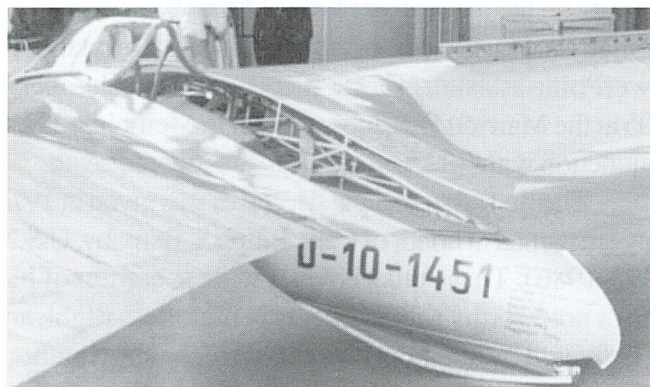
The slightly larger Ho III appeared in 1938. It had segmented elevons and ball bearings in the control system for improved handling. Over 100 were built, in 16 various configurations. 50 Ho III's were scheduled to be used as ammunition carriers for the planned invasion of England (Operation Sea Lion). Only one was so modified. The semi-prone (praying mantis) pilot position used on later Horten sailplanes was first tested on the Ho III. In 1944 the Ho IIIe was fitted with a Volkswagen engine and a folding pro-



The Horten Ho IVa.

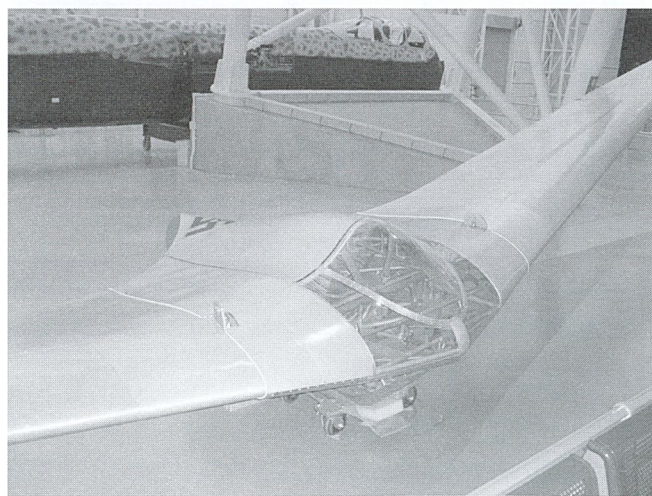
PELLER. It became a successful self-launching sailplane.

The Ho IVa and b, built 1941-1944, followed. The "b" used a laminar airfoil copied from a downed American Mustang P-51 fighter. "The IV proved to be one of the best-performing sailplanes at that time," Scott said. A restored Ho IV is in the Deutsches Museum near Munich; another is on display at the TAM Museum in Chino, California. None are flying, but a couple of replicas are under construction.



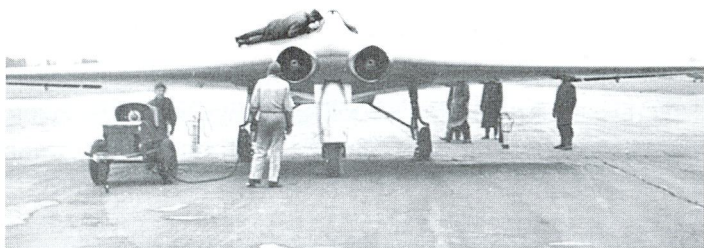
Note the pilot's chest pad and shoulder restraints. His knees fit into a well above the skid, and his toes into a pair of pedals that operate the drag rudders.

The Ho Va had an aspect ratio of 21 (ratio between the glider's span and the mean chord of its wings) a 20 meter span, and a glide ratio of 37:1. Four were built in 1941. The Ho VI, one of only two built in 1944 had a glide ratio of 42:1. One was destroyed in a bombing raid and the other (ser. no. 34) was shipped to Northrup for studies in 1946. After unprotected storage at Silver Hill, MD, it was sent to Germany for restoration, and is now on display at the new Udvar-Hazy Center at Dulles Airport in Virginia.

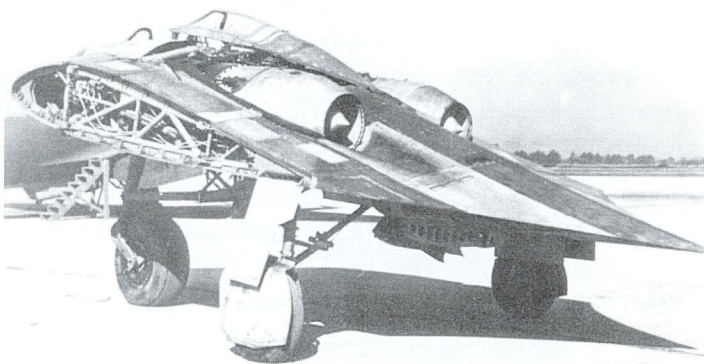


The Ho Va.

The Ho VII was intended as a test aircraft for the Argus pulse jet engine, and later as a training aircraft for the H IX jet.

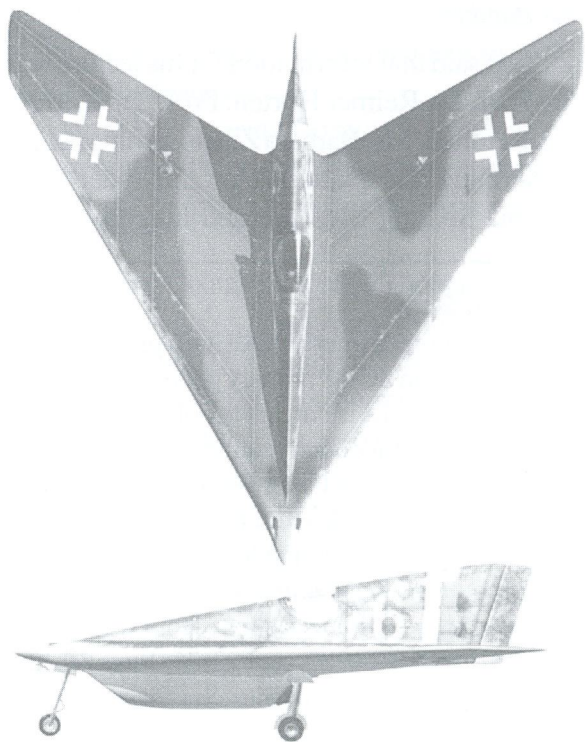


The Ho IX V-2. It flew four times during the winter of 1944-45 and crashed on its last flight killing the pilot, Lt. Erwin Ziller.



The Ho IX V-3 in Germany in 1945.

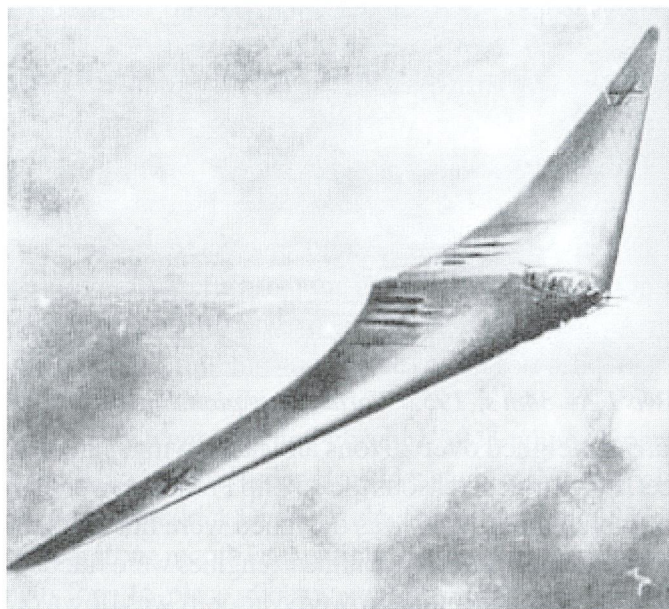
The Ho XIIIb was a proposed swept-wing fighter (60 degrees) that awaited fitting of a Walter rocket engine. The cockpit was in a gondola behind the trailing edge. The control was attached overhead. A full size glider version was being assembled when the war ended in 1945. It was destroyed to keep it from falling into enemy hands.



The Ho XIIIb.

The Ho XIV was the last Horten design to be completed during WWII. Based on the Ho IV, but with a shorter span, the glider was completed just hours before the Allies overran Göttingen. The glider was hidden in an attic, but was found by advancing troops and was ordered destroyed.

The Ho XVIII, a six-engine long range bomber was under construction at a Junkers facility near Weimer in 1945 when WW II ended.



The Ho XVIII.

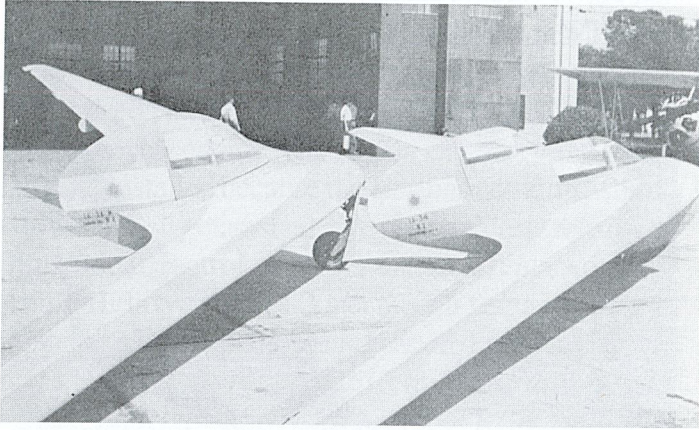
The Ho XVc was built in 1952 by a club in Tübingen and was considered unstable. It was later sold to a Swiss purchaser who added a 60 hp engine. Another, the "Pappenheim," was built by members of the local gliding club. It was left to deteriorate and was later burned.

The post-war years

Unable to find work in the European aircraft industry, Reimer left for Argentina while Walter remained in Germany. There, Walter supervised the construction of four club-built, two-seater gliders based on the Ho III design. The gliders, designated Ho XV had undesirable flight characteristics and were not flown extensively.

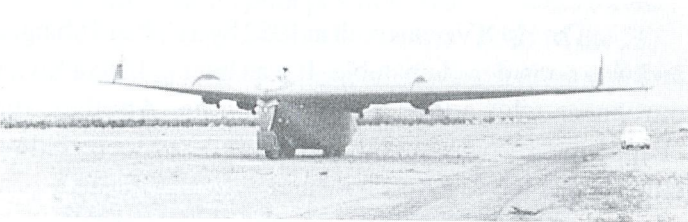
Dr. Reimer Horten went to work for the Aerotechnico Instituto de Argentina in Cordoba in 1948. Working conditions in Argentina were even more difficult than in Germany during the war. Spruce and thin birch were not available, and inferior materials were substituted. Reimar reported that glue was the major problem. To save expense, the general in charge of the Aerotechnico Instituto ordered that the glue be prepared in the chemistry department. "By the time it reached us," Reimar said, "it had started to harden, and was mostly spoiled. Several aircraft were lost to glue

failures.” Nine sailplanes based on the Horten XV were produced there; three tandem two-seaters (IAe34m), four side by side two-seaters (IAe 41), one supersonic research glider, and one large transport. In addition, two sailplanes and two hang gliders were built by clubs. Two IAe 34m’s were flown by the Argentinean team at the 1952 World Championships in Spain. The giant IAe 38 four-engine cargo



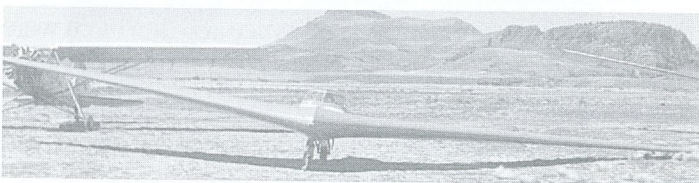
Two IAe 34m’s, 1952 World Championships.

carrier weighed over 20 tons and had a wingspan of 100 feet. For political reasons the 750 hp French power plants for which the IAe 38 was designed were not available. Much smaller 320 hp Argentinean engines were fitted. After completion the underpowered aircraft was flown only once before being scrapped.



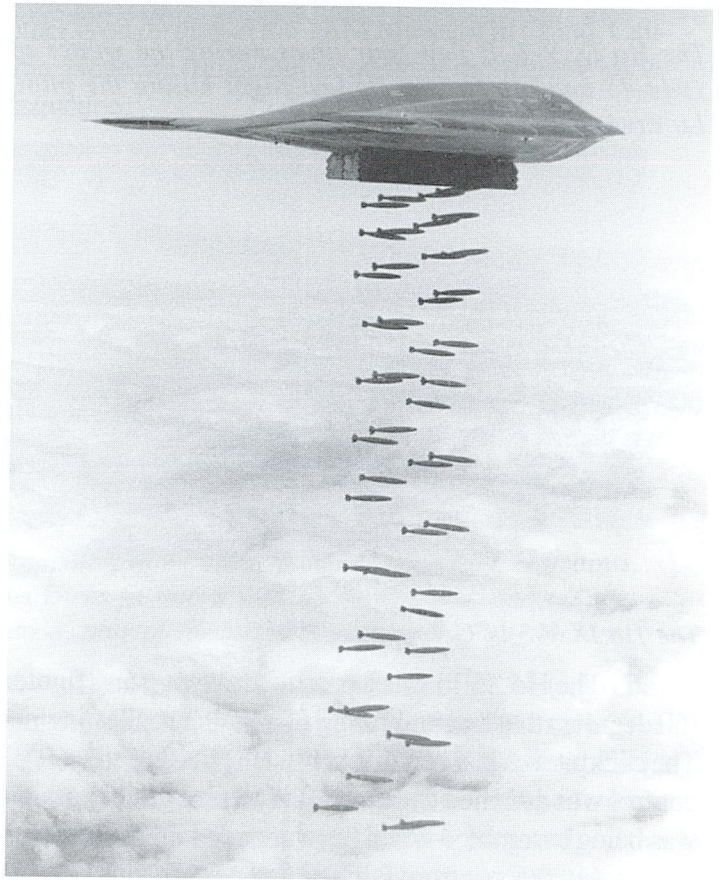
The IAe 38.

Four IA 41 “Urubu” with two-abreast seating were built in the early 1950’s. The 18 meter span sailplane featured a fully retractable landing gear and had a glide ratio of 24:1. It was the best performing Argentinean sailplane. It had an 18 meter span, retractable landing gear and a glide ratio of 24:1. In October 1956, Heinz Scheidhauer became the first to soar across the Andes Mountains to Chile in the “Urubu.”



The “Urubu.”

Scott said that the American Northrup B-2 design, contains a number of Dr. Horten’s ideas. Northrop bought several copies of Horten’s book, Nurflügel Die Geschichte der Horten-Fludzeuge 1933-1960 by Reimar Horten and Peter F. Selinger, three years before the B-2 appeared.



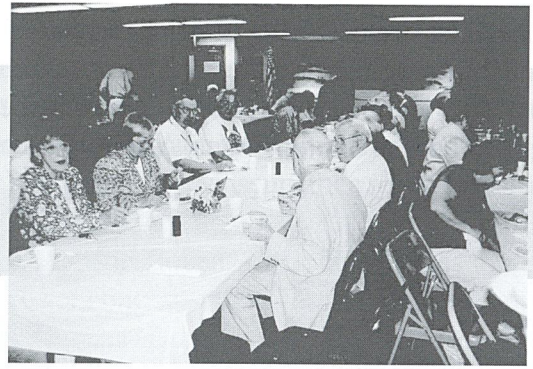
The B-2 Bomber.

Scott said that information for his lecture was provided by Prof. Dr. Reimer Horten, Prof. Dr. Karl Nickel, Mrs. Gesla Horten, Ms. Barbara Ziller Harding, Dipl. Eng. Peter F. Selinger, The National Air and Space Museum, The National Soaring Museum, and his personal files.

About Jan Scott

Jan Scott is a retired American Airlines pilot, and began flying in 1948 in an SG-38 primary glider. He later served with the Norwegian Air Force. He holds license #2, the second issued in that country, and was chief instructor for the Norwegian Aero Club. He is a past president of the National Soaring Museum and past president and sole remaining founder of the Vintage Sailplane Association. Scott interviewed, translated and reported on several meetings with Dr. Reimar Horten for SOARING magazine (Aug. 1980, pgs. 22-35; June 1981, pgs. 40-42). He has been a flight instructor for over 50 years and along with his wife Astri Mai owns and operates Scott Air Park, in Lovettsville, VA.

NSM's 3rd Annual Soaring History Symposium & Community Soaring Luncheon



NSM Director Peter Smith welcomed more than 130 guests to the National Soaring Museum's annual Community Luncheon Friday, May 12, kicking off a weekend program highlighted by the Third Annual Soaring History Symposium. Participants came from as far away as California, and from within sight of Harris Hill.

Members of the United States Soaring Hall of Fame honored at the luncheon were Virginia Schweizer (1971), Bertha Ryan (1972), Dick Johnson (1956), Bill Schweizer (1984), Doris Grove (1988), and Tom Knauff (1997). Smith reviewed outstanding events of the past year: the NSM sponsored NASA walk-through Space Shuttle and NASA floor exhibits, the Eileen Collins Aviation Camps, the weekend aviation camp sleepovers, the Second Annual Soaring History Symposium, and the 14th National Landmark of Soaring at Mt. Washington, New Hampshire.

He previewed some of the upcoming NSM specials such as the NASA Hubble Space Telescope Exhibit in the Blossom Gallery, currently through September. The 2006 Eileen Collins Aerospace Camp, the on-going weekend camps and a new panoramic-view, three-axis moving simulator will also be featured.

Harris Hill Soaring Corporation President Steve DeMartino outlined club activity and mentioned that the Harris Hill Junior organization was the largest in the country.

Chemung County Executive Thomas Santulli spoke of the County's on-going relationship with Harris Hill Soaring Corporation and the National Soaring Museum. He lauded our promotional efforts, pointing to the Harris Hill recreational facility as being one of only four New York State locations chosen to highlight the TV "I Love New York" promotional campaign. "We have something of great value here, and it brings people to Chemung County. We're going to continue to invest in it. Keep up the good work!"

Smith then moved to the Howard Blossom Gallery, opened the Third Annual Soaring History Symposium, and introduced the first speaker, Charles Day of Lambertville, MI, whose talk was,

US Military Glider Development, Engineering and Testing Symposium Session #1: Charles Day

Charles Day, a recognized authority on the World War II glider training program, is the author of Silent Ones: Invasion Glider Test and Experiment - Clinton County Army Airfield, Wilmington, Ohio. He has written several magazine articles on the subject.

Day went back to February, 1941 when General Henry "Hap" Arnold ordered a glider study at Wright Field, OH. Major Fredrick Dent was chief of the Dynamics Laboratory, and one month later preliminary engineering requirements for a 15-place glider were sent to eleven companies. There were stipulations however; no manufacturer then involved in power plane production would be eligible, and aluminum was reserved for power planes.

Of the eleven companies only Franklin Sailplane, WACO, Bowlus Sailplane Company, and St. Louis Aircraft Company responded. Despite incomplete requirements, Wright Field was ordered to place static article contracts with these companies. Meantime, 12 USAAC officers received training.

The XCG-3 was delivered in late 1941, and the XCG-4 in May, 1942. The WACO XCG-4 disassembled to its designed components required five large crates for overseas shipment. The largest was 25 feet-5 inches. This length was determined by the size of a Liberty ship's hold.

Wright Field was the flight test base of UAAF. By the spring of 1942 the field was buzzing with so much power plane, glider and ground activity that it became imperative to move the glider test operation to another relatively nearby location. Col. Dent considered Piqua, Troy and Wilmington, Ohio. The latter was chosen, and it became Clinton County Army Air Field. Previously it had been an emergency landing field between Cincinnati and Columbus. Glider training operations began in 1942.

As each manufacturer got into CG-4A production. Glider Branch Engineering pilots such as Chet Decker (US

Soaring Hall of Fame-1978) Fred Dent, Bruce Price, Robert Cardenas and other engineering officers would fly to the various factories, run engineering tests, and fly the production gliders back to Clinton County AAF for further testing.



Charles Day speaks to the Symposium audience.

By the middle of 1943 many shortcomings of the CG-4A became apparent. 45 significant add-ons or deletions were made. There were as many as 7,000 changes made mostly at the request of manufacturers to facilitate production. Despite the fact that components of one manufacturer were not interchangeable with similar components made by another builder, all manufactured parts had to meet USAAF standards, and had to satisfy the resident AAF engineer.

In early December 1941, Col. Dent showed Jack Laister (Hall of Fame-1969) plans for a British Horsa glider and asked him if he could build one as big. Laister said that he could do better than that, and came up with the giant back-loading XCG-10, the Trojan Horse.

From the US Army Air Corps first cargo glider to the XCG-3, to the engineless Douglas DC-3 transport that was converted to the XCG-17; Day covered them all in his review of the wartime glider effort. And for good measure he threw in plow devices, rockets, Bazookas, undrawn nylon and drag chutes as some of the novel methods used to slow them down during landing.

Some Answers on Gliders in World War II

Symposium Session #2: Michael Samek

Michael Samek of New York City, president of the WW II Glider Pilots Association, spoke of his wartime experiences.

He said that first he wanted to debunk a few glider war myths. The first was the undeserved reputation that the WACO CG-4A had as being flimsy, unsafe and unreliable. "It was a very good airplane; it was sturdy and it flew well. It wasn't the best, but that's another story." Another myth was that the CG-4A was a combat glider. It was not. It was a cargo glider. Samek said many people think that we were the first to use military cargo gliders, but we weren't. The Russians were the first to use them, in the mid 1930s. The Germans started an assault glider program somewhat later when the German Air Attache in Moscow witnessed aero-towed cargo gliders during the huge May Day parade and fly-over.

Samek graduated from the U S Army Air Corps glider training school at 29 Palms in 1942. "I flew Schweizer TG-2s there, and I loved it." Later that same year he was sent to Port Said in Egypt and others in his group were suddenly dispatched to Casablanca (French Morocco) to await shipments of CG-4As and supervise their uncrating and assembly. After testing, the gliders were then flown to bases in Algeria. Before the final jumping off point for Operation Husky, the invasion of Sicily, Samek had been dispatched to Accra (present Ghana) Oran (Algeria), Marrakech (Sultanate of Morocco) and finally Sfax, Tunisia. Due to an oversupply of CG-4As, and a dearth of American pilots to fly them, many of these ships were flown by the British. They made the transition from flying the larger Airspeed Horsa to the smaller, lighter WACOs.

At exactly 6:40 June 9, 1943, the lead airplane at



Michael Samek, with Waco CG-4A glider model.

each Tunisian airfield gunned its engines and roared down the runway with its heavy glider in tow, bound for Sicily. Once the flight leaders thought their units were in good shape, the Operation Husky glider trains dropped to 200 feet over the water to avoid radar detection. While Sicily was only 250 straight miles from Tunisia, they flew a complicated dog-leg flight plan that extended 450 miles: Tunisia to the Chergui Islands, to Malta, and a left turn approaching Sicily. This was at night, with low visibility compounded by sea spray. The glider armada was being towed against a stiff wind, which meant excessive fuel consumption for the tow planes. Samek said that 350 gliders started; 135 gliders made it to Sicily, 67 landed in the drink, 10 aborted, and 8 were never heard from again.

Samek landed in the drink. "I stayed afloat holding on to the wing for six hours at night before I was finally rescued. A couple of small boats passed; even elements of the invasion fleet, but no one stopped. So, I'm a member of the Goldfish Club."

Aircraft Restoration and Preservation Techniques and Philosophy

Symposium Session #3: Russell Lee

Russell Lee opened his presentation explaining that the National Air and Space Museum takes a team approach to restoration and preservation. "The team consists of a curator, a conservator, and a restoration specialist. The three of us have an equal say." The curator is responsible for the history of the aircraft, the final markings and configuration. The conservator tells what can be done and what can't be done to protect from loss or depletion. The restoration specialist suggests a broader range of treatment choices in bringing it back to an original condition to keep the artifact as authentic as possible.

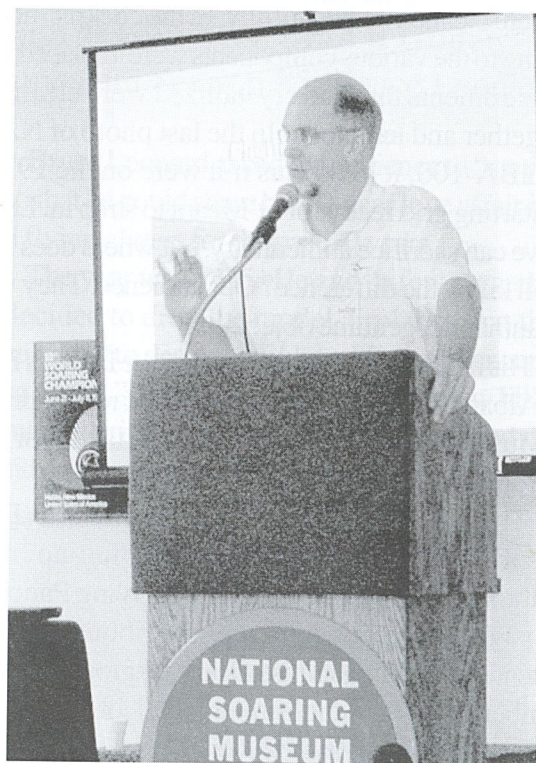
Lee acknowledged two of his colleagues, Jeremy Kinney, a curator at the National Air and Space Museum, and Ed McManus who is a conservator. "Their advice was invaluable to me."

Lee showed a photo of Bob Odegaard's Goodyear F2G-10 Super Corsair. The aircraft was found in a derelict condition behind a restaurant. Lee said that at this point the pilot had to make a tradeoff to get a higher level of conservation and preservation: restore it to factory condition, or to its racing condition. Noting that he was a curator, not a treatment specialist, he showed the Corsair that Odegaard and his team got flying and fully restored with a special finish "through a lot of blood, sweat and tears." In 1999, the F2G-10 Super Corsair was selected for the highly respected

Rolls Royce Aviation Heritage Award. He continued, "that kind of restoration we frequently see at places like Oshkosh where the restorer/pilot has to make a tradeoff to get this higher level of conservation and preservation." He said that now that he's been at the Museum for a while, he can really appreciate what he sees in these types of restorations.

He then mentioned "flight line bias" as something that must be of concern when working with restorations. "It's the feeling that all of us, pilots, flight crew and enthusiasts have when we see an airplane in a museum." They begin with a collection plan: what is wanted and what it means for the restoration process. They search for an exact specimen of what is being looked for; something that has a significant history. "That's something that we are incorporating more and more in the collection," he said.

He said that the focus is on that "royal road" approach to preservation that is the area between when the artifact rolled off the production line and when it was found



Russell Lee, Curator of the National Air and Space Museum.

in near-derelict condition. As an example he mentioned the Bowlus BA-100 Baby Albatross sailplane flown by Jack O'Meara in 1938 at Elmira. "Fast forward to 1994 and see what sorry condition it was in at the Garber Facility's Building 20." He mentioned the missing wing fabric, the dust, rust and pieces. Lee said that some choices had to be made. The next slides showed the cleanup: some minimal repairs were made to the stabilizer to maintain the aesthetics, and a small crack in the canopy was stop-drilled, but the entire section was not replaced.

He said that although hidden, a cracked spar should be repaired only if it threatens integrity or visitor safety. If not incurred operationally, it would be left as is. The right aileron control rod was bent and not repaired. He said that these are decisions that you make as you go, chances are that they occurred in service. He emphasized that whatever is done, try to leave the aircraft as nearly as it was found, not specifying treatment until a complete research is done. It should not be repaired beyond where it breaks the impression of the visitor.”

Who is the museum’s audience? “They are pilots, crews, enthusiasts, but mostly regular folks. They are our bread and butter and are not satisfied with a photo, model, or book. They want to see the authentic, genuine object,” he said. “Don’t threaten the integrity of the structure. Whatever we do, we want it to be reversible. To be able to take away, even to small details.” Lee flashed a slide of the Baby Bowlus after cleaning. The wood came to life. The instruments were cleaned up beautifully. In the cockpit rubber air lines going to the various components were replaced. Some of the instruments that had crystallized were cleaned, put back together and left alone. In the last photo of NASM’s finished BA-100, it looked as if it were on the 1938 Nationals starting grid ready for O’Meara to strap in. Lee said, “Sure, we can sacrifice authenticity, but where does it stop? Who will know the difference? Our audience. They want to see the authentic, genuine object.”

His next series of slides were on the Bowlus DuPont Senior Albatross, detailing the treatment report prepared by the Museum team. He reviewed steps taken for its restoration and preservation at the Garber Facility.

The NASM curator followed the Bowlus DuPont Senior Albatross with a discussion of the “full-up” restoration of the U.S. Navy’s Vought V-173 Flying Pancake. A twelve page footnoted report was distributed to Symposium attendees detailing its historical background, first flight (November, 1942) and the monumental job of restoration and preservation that was involved.

Next came the work-in-progress restoration and preservation of the Horten IIIh, a German WWII sailplane. He said that treatment choices involved are on hold until more is learned about this specific ship, documenting what was done and why it was done.

He showed photos of other famous aircraft being processed at the NASM. They included; the WWI Caudron G-4 French bomber; the sleek, circa 1933, Northrup Polar Star; and Major Bong’s WWII Lockheed Lightning P-38J.

He closed saying, “Resist ‘Flight Line Bias’. These are no longer just aircraft but rare, valuable, historic artifacts. While there are more choices today, no restoration

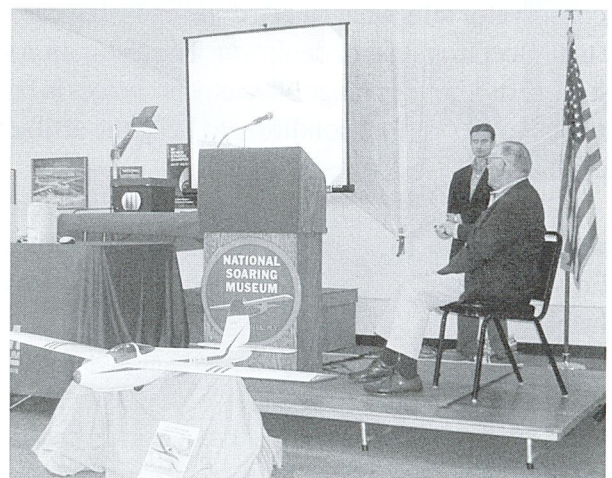
can substitute for authenticity.”

Early History of Gliding and Soaring, and How It Got Started on Harris Hill Symposium Session #4: William Schweizer

Bill Schweizer, co-founder of Schweizer Aircraft Corporation with late brothers Paul and Ernest, opened the Saturday morning session of the 2006 Soaring History Symposium with a talk on the early history of gliding and the development of Harris Hill.

He said that there was very little glider development during the first two decades of the twentieth century. It was after the Treaty of Versailles ending WWI that things changed in post-war Germany, where strict limitations had been placed on power plane flight. Gliders were exempt and German technical schools developed three axis glider control and shock cord launching.

With the pervasive interest in gliding there, aviation magazine publisher Oskar Ursinus invited Germans to a glider competition in 1920 on the Wasserkuppe in central Germany. It was won by Wolfgang Klemperer, who made a downhill glide of 1,830 meters (1.25 miles) and a duration flight of 2.23 minutes. The following year, Klemperer came back to the second Wasserkuppe contest with his famous Blaue Maus. After a straight launch, Klemperer decided to turn the Blaue Maus along the face of the mountain and soared along the ridge for 13 minutes. He beat Orville Wright’s 9 minute and 45 second record that had stood since 1911. Schweizer mentioned that Paul and Ernie, to-



William Schweizer (right), assisted by grandson Peter Schweizer (an NSM Trustee). In front, a Schweizer 1-26.

gether with the help of several NSM volunteers built the only known full-scale replica of Orville’s 1911 No. 5 glider. It is on display in the Museum’s main gallery.

Schweizer said that not much happened in the United

States until 1928, when interest in aviation mounted following Lindbergh's solo trans-Atlantic flight the previous year.

When the great depression hit in 1929, WACO, Cessna, Northrup, and other power plane manufacturers started to build gliders to stay in business. Ready-to-fly gliders sold for \$395 at that time. There were new companies, Mead, Detroit Gull, Bowlus, Franklin, and Baker McMillan. Schweizer said accidents were numerous, "50% of the gliders crashed in the hands of airplane pilots." (1929-1930)

J.C. Penney, Jr. became interested in the movement as a business venture after he visited the Wasserkuppe in 1927. He financed the transportation of gliders and equipment from Germany to Cape Cod, MA, where he established The American Motorless Flight School. Navy Lt. Ralph Barnaby took a two week course there and in 1929 became the first American to break Orville's duration record as well as becoming the first American to earn a "C" certificate.

Edward S. Evans's attention turned to gliding in 1927. He saw it as a way to promote aviation and supported it financially by organizing the Evans Glider Club of America, that later in 1929, became the National Glider Association. He financed the Detroit Gull glider operation and offered a \$2,500 prize for the first 10-hour glider flight. He also sponsored the \$5,000 silver Evans Trophy. When the NGA collapsed financially, it was replaced in 1932 by the Soaring Society of America.

In 1930 Klemperer was asked by the NGA to find a site suitable for hosting the first National Glider Meet. On the basis of Jack O'Meara's 1 hour-15 minute ridge flight off Elmira's South Mountain, plus encouragement by Sherman Voorhees of the Association of Commerce, as well as its central location, Elmira was chosen.

Al Hastings won the 1930 contest in which 14 ships participated, three sailplanes and 11 utility gliders. Every morning the contest manager picked a launch site depending on the wind direction, from the ridges surrounding the Chemung Valley. Wolf Hirth in his Musterle sailplane made the first thermal cross-country flight, spiraling 33 miles to Apalachin, NY. He used a secret rate-of-climb indicator that only he and Robert Kronfeld, the world's two top soaring pilots had access to. (A replica of Musterle's rudder is on exhibit in the NSM.) Hastings made a duration flight of 7 hours and 34 minutes, and Warren Eaton reached 2,400 feet. The following year the contest boasted 5 sailplanes and 21 utilities.

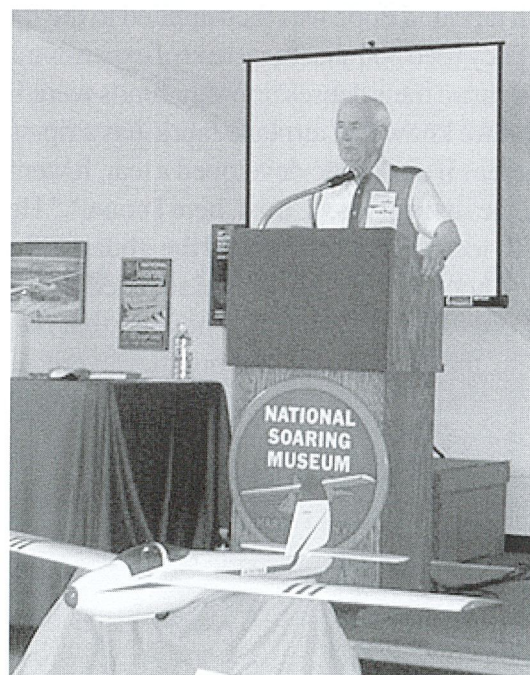
Schweizer said that the 1932 National Meet was the first national competition organized by the newly formed successor to the NGA, the Soaring Society of America. During the 1934 Fifth National Glider Meet Richard DuPont

set a world distance record of 158 miles from Elmira to Basking Ridge, NJ, while his wife Alaire broke the women's national duration record, staying aloft 4 1/2 hours. Unfortunately she did not have a barograph with her so the flight was not officially recognized. Most importantly, work began on the Harris Hill WPA (Works Progress Administration) Project. Now glider pilots would have a single ridge-top site that could accommodate launchings by shock cord, auto or airplane tow. In addition the Harris Hill facility offered a spacious administration building, cabins, a pool and picnic facilities. "And" he said, "in 1937, it's where we brought the first Schweizer competition ship, the SGU 1-6 'Boom Tail'." Senators, generals, governors, ambassadors, icons of the aviation industry, rocket scientists, movie stars and thousands of others from all over the world have visited "the Hill" through the years.

If God Had Meant Man to Fly, He Would Have Given Man a Glider Symposium Session #5: Bruce Leonard

Bruce Leonard asked his audience to "step back in time" so that he could share his 70-year love affair in building and flying gliders for the past 70 years.

The year was 1935. He and "a few raggedy-assed kids" decided to drop the model airplanes that they had been building "to design, build, and fly a glider capable of carrying a man." It mattered not that they knew little about aerodynamic principles—wing loading, induced drag, aspect ratio span/average chord, laminar flow, static stability.



Bruce Leonard.

They did know about such instruments as variometers, pitot tubes, bank and turn indicators and altimeters. But none of the gliders on the flight lines of the day had these instruments. Instead, he said, they had what they called “singing wires” that ran from the fuselage to the underside of the wing to support the wing during flight and from the cabane on top of the fuselage to the top of the wing to provide support during landing.

The wires were tightened with turnbuckles to set the dihedral and during flight vibrated like the strings of a Stradivarius violin. When the wires quit “singing,” the pilot knew he was on the edge of a stall, Leonard said.

The lack of design experience was solved by obtaining the plans for a German Northrop primary glider, designed to be launched from a hill with a hand-pulled shock cord. With brothers Arnold and Carmen Carson as the driving force behind the project, they had obtained the plans and instruments and were ready to gather material to build the glider.

“All that was required was a box of tacks, a pot of glue, some bed sheets to cover the wings and dope to cover the fabric,” he said.

Instead of today’s aluminum and fiberglass, they used straight-grained knotless spruce because “a crack would not chase a wandering grain line and there was no knothole to weaken the spar,” he said.

Then it was time to build the glider: gussets, used to hold the wing ribs together, were tacked in place until the glue set; bed sheet fabric was sewn to the ribs with a U-shaped needle, pushed through fabric, curved around the rib and pulled back through the fabric. The thread was covered with tape and dope was then applied to the fabric.

They used bed sheets, instead of expensive airplane fabric, because their depression-day funds were limited. “Little did we know that airplane fabric has a rip-stop feature, whereas if our fabric developed a tear, it went all the way and the saying was, ‘Christ, here I come’.” He said.

To learn to fly, they towed the glider with No. 10 fence wire hooked to the glider and attached to their 1929 Model Ford. Flying was such a novelty that they drew crowds to the abandoned airport they were using in Lyndhurst, Ohio. Since he was a kid, he said he couldn’t provide any technical specs for the Northrop Primary. Instead, he offered data based on their operational experience. It took about 12 tows to solo. Average altitude gained with a winch tow was about 300 feet, and maximum altitude was 500 feet.

There were no crashes and no injuries in their perilous endeavor, he said.

Listing some of his credentials gained after those

initial efforts, Leonard said he was co-president of the Purdue University Glider Club in the first quarter of his freshman year and a glider flight instructor until he graduated. Among the gliders he flew, in addition to the Northrop Primary, were the Cadet Secondary, the Webster Moore two-place, the Schweizer 1-26 and 2-22, the Bowlus Baby Albatross, and the Gross five-place, designed and built by Dr. Gross in Akron, Ohio, and believed to be the largest glider in the world at the time.

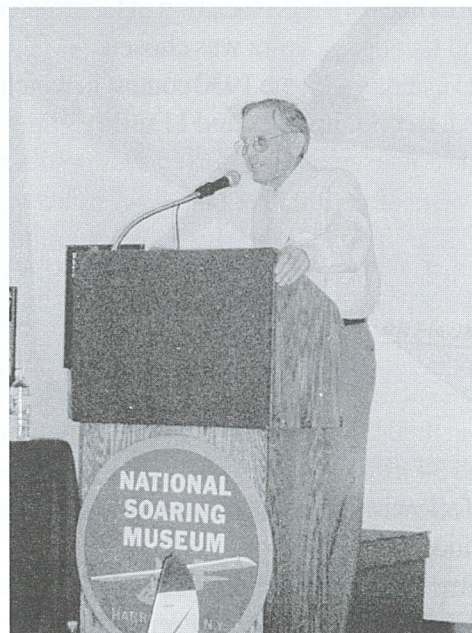
In conclusion, Leonard read a poem composed by John Gillespie Magee, a World War II combat pilot who was killed in a mid-air collision when he was 19.

The poem began: “I have slipped the surly bonds of earth and touched the face of God.”

Leonard added: “There is not one of you who have circled a graceful sailplane in a rising thermal who could not have written the very same thing.”

Reflections on the RJ-5 Symposium Session #6: Richard H. Johnson

For those who like their technical and historical information delivered plain and simple, Dick Johnson of Dallas, TX, is the man. Speaking at the May 2006 Soaring History Symposium, he traced the development of the RJ-5. Johnson is eminently qualified to discuss all aspects of this wondrous sailplane. He commissioned what was then known as the R-5 in 1948. He had a hand in its design, helped build it, then flew the renamed RJ-5 to a series of world and national records. The RJ-5 was one of the first



Dick Johnson speaks on the development of the RJ-5.

sailplanes to use a laminar flow airfoil, achieving a glide ratio of 40 to 1. (Laminar flow is the smooth uninterrupted flow of the boundary layer or the air in contact with the wings.)

Richard H. Johnson started flying gliders at 16, in 1939. He built a Bowlus BA-100 Baby Albatross and soared to a third place finish in the 1940 Nationals at Elmira, NY. He was a glider instructor and tow pilot at the Army's Twenty-Nine Palms glider school, a Pan American copilot on Trans-Pacific flights, and later worked in Pan Am maintenance. As a test pilot he has evaluated almost every type of sailplane currently flying in the United States for SOARING magazine and authored several technical papers and critiques on competition soaring.

The Harland Ross series started with the R-1 (Ross Stevens-1). This ship was designed with Harvey Stephens, and placed second in the 1937 Eaton sailplane design award after the Art Schultz "ABC." The RS-1 was the first clean-lined, high wing loading sailplane designed for cross-country speed. Known as "Zanonia," in the hands of sailplane champion John Robinson it became a record breaker, winning consecutive national championships. The 1938 R-2 ("Ibis") was the sailplane used by Lewin Barringer in his lenticular wave flights over New Hampshire's Mt. Washington that year. Only the plans were drawn for the 1939 R-3, as the ship was never built. Ross completed the R-6 in 1956 with the same wing design as the RJ-5, giving it one of the heaviest wing loadings for a two-place sailplane in the world at that time. The passenger sat aft of the spar under a removable bubble.

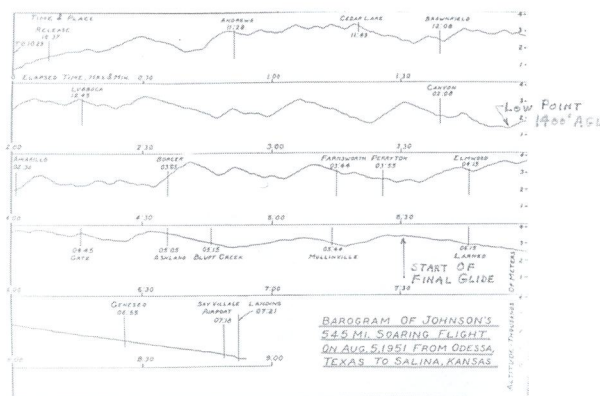
Johnson traced the development of the Ross-Johnson-5 sailplane from 1948 when he commissioned its construction. The principal designer and builder was Harland Ross (d.1977). Wing design assistance was by two aerodynamicists, sailplane builder Stan Hall and Dick Lyons, who did the airfoil (NACA 63(2)615). No sailplane had used such an airfoil before. The laminar airfoils were developed in secret during WW II and were only released post war to the public. Testing and design was carried out at the University of Mississippi Aerophysics Research Laboratory under Dr. August Raspet (d. 1960). Johnson designed the controls and fittings and Dr. Raspet insisted that henceforth the R-5 be referred to as the RJ-5.

The contract called for metal wings with fabric covered ailerons and trailing edge, plywood covered fuselage with covering, spruce and plywood with fabric covering and water ballast in each wing with dump valves. It was to have a landing wheel with brake, a wheel control column with ankle-type rudder pedals, and dive brakes on the upper surfaces of each wing. It was to have flaps to the inboard end of the ailerons.

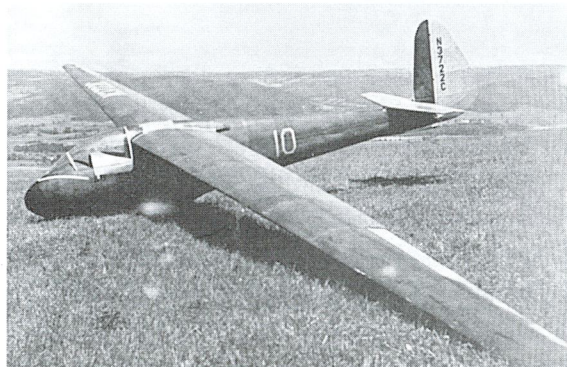
The RJ-5's design and construction as well as family and business responsibilities took more time than Ross expected, so at the end of 1949 Ross and Johnson agreed to move construction to Mississippi State College, where Johnson was enrolled in the Aeronautical Engineering School. At MSC six major changes were made with the assistance of Dr. Raspet to improve flight performance. Among others, the wing was raised from mid to shoulder height for better lift efficiency, and the outboard spoilers were coupled to the ailerons to improve roll control.

Johnson said that the first flight on 29 July 1949 yielded a disappointing L/D (Lift over Drag) of 30.3 at 53 mph. The L/D increased to 33.3 at 64 mph after sealing the flaps at 0 deflection. Flying the RJ-5 he won the 1950 U.S. Nationals at Grand Prairie, TX. The following winter wingtip spoilers and fixed aluminum wing flaps were removed to improve performance. Other adjustments upped the L/D performance to 33.9 at 50 mph. In 1951, he won the Nationals for the second time at Elmira, and set a new World Distance Record with a 535 mile flight from Odessa, TX, to Salina, KA.

After some further modifications, final flight testing at MSC in the Summer of 1953 indicated an L/D max of about 40.7 at 50 mph. Johnson won the Nationals for the third time at Grand Prairie and competed in the World Championships in Spain. Unfortunately, a fuselage bulkhead was broken during an off-field landing. Taking several days to



Barograph trace of Aug. 5, 1951 flight, 545 miles.



The RJ-5 at the 1951 Nationals, Elmira, NY.

repair it resulted in a low final score.

By 1952, development and testing of the RJ-5 was completed. He and Alice were married, and Johnson did not compete during 1953. He won the 1954 Nationals at Elsinore, CA, and the following year sold the RJ-5 to Graham Thompson.

Dick Johnson ended his talk by saying, "The RJ-5's World Distance Record held for 12 years. It was exceeded by Al Parker's great 612-mile flight from Odessa in 'Sisu,' a new laminar flow wing sailplane."

"With the introduction of RJ-5's low-drag airfoil, designers world-wide started using the low-drag airfoil. It began with the WWII NACA series 6. Then clever aerodynamicists like Wortman, Eppler and others designed even better ones. Thus, the WWII airfoils soon became obsolete for new sailplane designs."

Note: *The RJ-5 is now part of the Museum's collection. It is currently being restored.*

Reminiscences by Three Women Soaring Pioneers

Symposium Session #7: Bertha Ryan,
Doris Grove, and Ginny Schweizer



L-R: Bertha Ryan, Ginny Schweizer, Doris Grove.

Three women soaring pioneers, Doris F. Grove, Bertha M. Ryan, and Virginia M. "Ginny" Schweizer, all members of the United States Soaring Hall of Fame, met for an informal get-together during the Saturday afternoon session at the Symposium. Sometimes serious, sometimes hilarious, a lot of the time historically significant, and always interesting, the trio kept their audience's attention far through

the questioning that followed.

Doris F. Grove

After all she had been through, Doris Grove, Julian PA, was greeted with, "We don't teach women to fly" in 1972, when she called a local grass strip airport for an instructional flight. Recovering from a life-threatening stroke and lying in bed for a year, she spent a lot of time thinking, "If I ever get up, what do I really want to do?" Even with six kids, that something she promised herself was to learn to fly. She said, "OK, this is it. After my youngest went to kindergarten I called a local flight service and was given the brushoff." "Go to college, take some courses in aviation and aerodynamics," the brusque instructor advised. End of conversation.

During a Penn State term break she went to her mother's home in Stuart, FL, which was conveniently located near the Stuart airport. Grove went there for instruction, and it was a replay of her first experience. "I'm not going to teach another woman to fly, I just came back from one, etc. etc." "Don't cry, don't cry," I kept telling myself, "and I just stood there." He looked at me disgustedly and said, "Aw...all right, c'mon." They went up in a Cessna 150. The instructor did wing tip 360s, aerobatic maneuvers, and inverted flight; Grove was thrilled and on landing went right back up for more instruction. While there, her brother asked a friend to take her up in a Schweizer 2-22, and she was hooked. Returning to State College, she took more flying courses, joined a local soaring club and soloed in 1972. Before long she was skimming along cross-country from Bald Eagle Ridge. In 1980, she became the first woman in the world to fly 1,000 kilometers. There were only 23 men to do it before her. She said that "records are nice, but I just like to go further and see more." In 1982 she received the Soaring Society of America Exceptional Achievement Award.

Bertha M. Ryan

All of Bertha Ryan's three brothers were in the service during WWII. One, a B-24 bomber pilot home on leave in the Spring of 1945, was asked by her mother to take Bertha to this little airport out-



side of Boston and cure her of this foolishness about flying. It was Bertha's first ride, her first instructional flight and she loved it. Tongue-in-cheek, she said that she got a high-paying wartime job at \$.50 an hour. It was summer and she was making \$21 a week, all of which went into flight lessons. She soloed that October in a Taylorcraft, "and the day after they closed the airport and made it a prison," she said. Next came college, then graduate school at Massachusetts Institute of Technology. In 1950 she joined the M.I.T. Aero Engineering Society and the M.I.T. Glider Club, where she became a tow pilot and flight instructor.

In 1956, she purchased a Schweizer SGS 1-26 kit, built and flew it until she moved into the high performance PIK-20B sailplane. She regularly flew her Piper Cherokee. Ryan, a retired aerospace engineer, related some of her experiences working as an aerodynamicist on the lifting body program in the early 1960s and other space-related projects. The M2F1 lifting body evolved as a proof of concept vehicle at the NASA Dryden Flight Center. It explored the feasibility of lifting body flight and the shape's general landing characteristics. The plywood-hulled M2-F1 made nearly 500 captive and free flights towed first by a souped-up Pontiac convertible and in August 1963, by aerotow flight behind a Douglas R-4D (C-47). Ryan said that the little craft, built on a shoestring budget, led to more advanced lifting body designs. The research gleaned from the project contributed directly to the Space Shuttle in the following decade. She also worked as an aerothermodynamist on the National Aerospace Plane Program in the late 80s and the early 90s.

Ryan earned her Silver C in 1958. She was an SSA Treasurer, Smirnoff Contest Scorer, Record Homologator, SOARING magazine columnist, author, and is a National Soaring Museum Trustee. In 1996 the International Gliding Commission of the Federation Aeronautique Internationale (FAI) named her the first American to win the Pelagia Majewska Medal for remarkable performance in gliding and eminent service to gliding over a long period of time. She won the Eaton Trophy in 1996 and the SSA Exceptional Service Award in 1967 and 1980.

Virginia M. (Ginny) Schweizer

In the early days as a teenager Virginia Mayer, later Virginia Schweizer, heard about famous pilots like Wiley Post, Earhart, and Lindbergh flying into the Hicksville Aviation Country Club, nearby on Long Island. She soon became in-



involved with the Long Island Air Hoppers Soaring and Gliding Club, whose members were using the vacant lot adjacent to the family farm weekends for flying. "At that time you learned by the single seat training method," she said. In late 1940, she started out in a single seat Franklin PS-2 being towed behind a flat bed vehicle for a straight ahead tow, with the instructor sitting on the back of the vehicle shouting instructions, waving his arms and giving hand signals. "Your first glider flight was your solo flight." She said that this single seat training generated confidence at the beginning. The student had to react quickly, correctly and do landings at the very start of training. She said that the vacant lot was sold so the Long Island Club moved to a sod field on Helms Farm that later became the Wurtsboro Airport outside of New York City. With the coming of WWII all soaring activity ended and Ginny took a job at Republic Aviation Corporation. Postwar she had her first aero tow in a single place Kirby Kite behind a Stearman. By 1946, she had soared to a National Woman's Championship. The following year she became the first American woman to earn a F.A.I. Silver C Award. That same year she set national records for both altitude and distance-to-goal flight.

Prior to WWII, most glider and flying operations were centered at clubs. After the war, Ginny became a founding partner in one of the country's first commercial gliding schools. Located in Sanford, FL, it was also one of the first GI-approved soaring instructional centers. The school introduced a combination of single place and two-place glider training. That technique proved to be a broader and less expensive method of instruction for students.

During the late 1950s she became a partner in a Middletown, NY glider operation which was appointed as one of the first Schweizer glider dealerships. In 1962, she joined the "Ninety-Nines," the world's oldest and largest women's pilot organization.

At the Schweizer Soaring School she met and later married Paul A. Schweizer, co-founder of the Schweizer Aircraft Corporation. She assisted him in his efforts to form the National Soaring Museum in 1969, and was involved with its development and expansion thereafter. In the 1980s she helped Paul as he was writing *Wings Like Eagles: the Story of Soaring in the United States*. She sponsors the Virginia M. Schweizer Award, given to the highest scoring woman in the annual 1-26 Sailplane Championships.

In 1996, she won the esteemed Katherine Wright Memorial Award, for providing encouragement and support for her husband, and for personal contributions to the advancement of the art, sport, and science of aviation.

She closed by saying, "for most of my life flying was what I lived for. Once the bug bites you it never leaves you."

The First Overseas Glider Sky Train: To Cuba, 1935

Miami, FL, May 15, 1935: The Waco J-5 biplane shuddered at full power, streaming a 400-foot towline to the first of two Franklin PS-2 Utility gliders, the second in tandem 200 feet behind. Slowly the combination gained air-speed and lifted off the Miami Airport runway bound for Cuba in what was supposed to be the first overseas glider mail train. In a last-minute decision, the Post Office Department withdrew permission. The mail already signed as glider mail was flown privately to Havana. No matter, the flight proceeded as scheduled as a demonstration of the practicability of glider trains in aviation. New York tug pilot Elwood Keim and glider pilots Jack O'Meara of Bradford, PA, and E. Paul duPont of Wilmington, DE, would make a re-fuel and customs stop at Key West before they set off on the first international overseas glider train: 90 miles across the Straits of Florida to Havana.¹

The course was set to follow the island chain southward about 150 miles to Key West. The glider train was accompanied by Augustin Parla and Charles Clements in a separate plane. In 1913, Parla was the first Cuban to fly from the United States to Cuba.

Glider sky trains seemed to be another aviation phenomenon of the 1930s. This was a decade when the aviation world was expanding with all sorts of aerodynes designed to fly higher, faster, farther, and/or cheaper. Carrying the mail was always a time-critical operation from the colonial post coach, the pony express, the railroad, now the airplane, and even a more imaginative suggestion, the glider sky-train. Simine Short's book, *Glider Mail: An Aerophilatelic Handbook*, examined its history. As Paul A. Schweizer pointed out in the book's Forward, "Staging a glider mail flight for a special event adds attention to that event and establishes another permanent record."²

As a practical matter, gliders by themselves even without the expense of engines and attendant maintenance problems would not be efficient mail delivery systems. But, to innovation-minded Russian and American glidermen, the idea of multiple gliders laden with mail or supplies and towed behind a single powerplane deserved investigation. With each glider in the train releasing at a specific terminal along a prescribed route, the glider train might be an efficient and relatively inexpensive method of delivery.

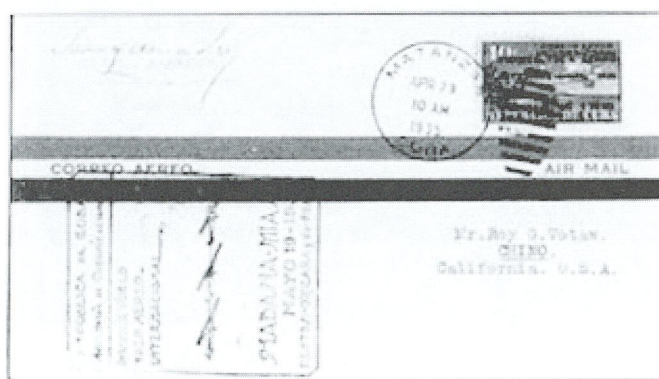
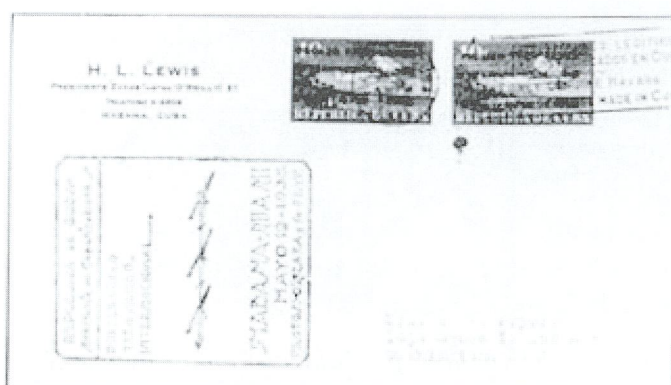


L-R: Jack O'Meara, E. Paul duPont, Jr., and Elwood Keim, one hour before their takeoff from Miami; photo from a Pittsburgh newspaper, 1935. NSM Archive.

Faced with the vast distances within the former Soviet Union and with a road and communication infrastructure decimated by revolution, neglect, and environment, the glider train concept was tried in May of 1934. A three-glider train (probably Groschev GN-4s) took off from Moscow routed via Kharkov to Koktobel on the Crimean
(continued on page 19)



Aerial view of the 1934 Lustig Skytrain. Photo from Paul Schweizer archive.



Havana to Miami flight, May 19 1935, on card or envelope (4,979 produced). From Simine Short's Glider Mail: An Aerophilatelic Handbook, page 41.



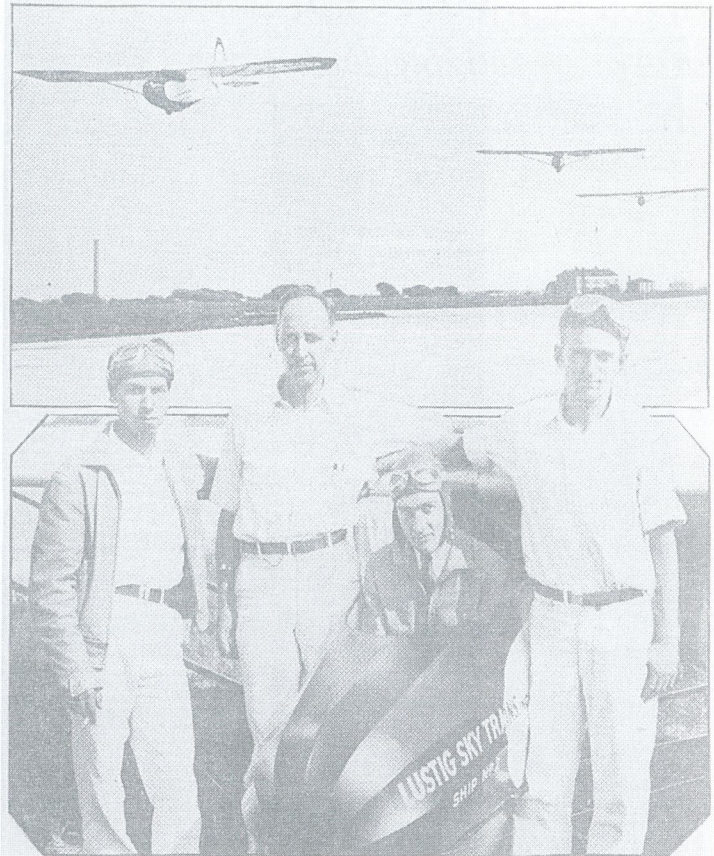
Times Wide World Photo.

AN OFFICIAL SEND-OFF FOR THE "SKY TRAIN."

Mayor LaGuardia handing a sack of mail to Pilot Jack O'Meara for delivery in Washington, while Mrs. Floyd Bennett looks on, as the gliders left Floyd Bennett Field yesterday morning. The "train" got as far as Philadelphia, where it was forced down by head winds.

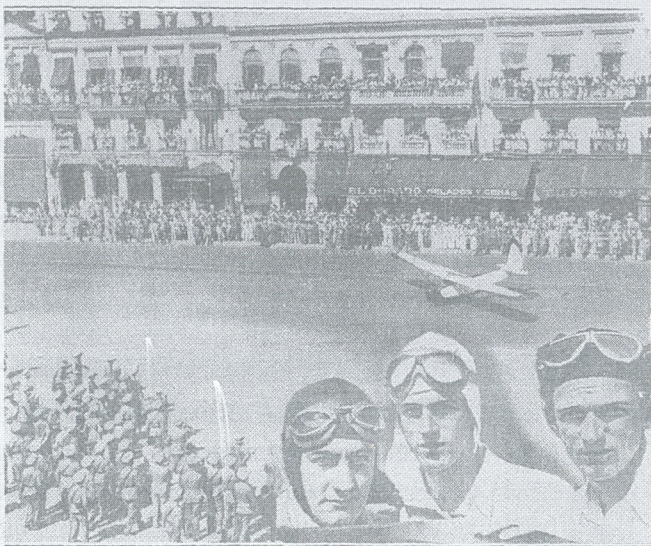
L-R: Mrs. Floyd Bennett, New York City Mayor Fiorello LaGuardia, and Lustig Skytrain pilot Jack O'Meara. From The New York Times, August 3, 1934. From Stan Smith archive.

Lyndonville Pilot Flies in First Air Train



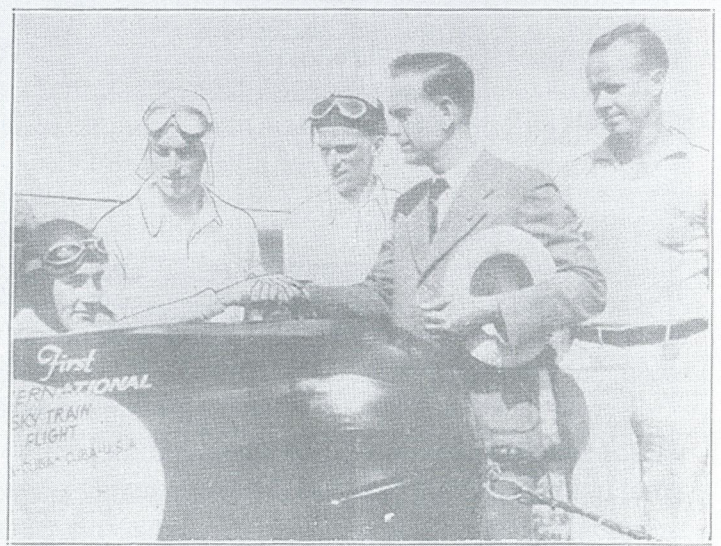
Composite photo featuring (L-R:) Stanley Smith, Prof. R.E. Franklin, Jack O'Meara, all pilots, and Elwood Keim, tow pilot, from the 1934 Lustig Skytrain flight, shown at top. From The Rochester Democrat and Chronicle, August 3, 1934. Stan Smith archive.

Where United States-Cuba Air Train Started Riot

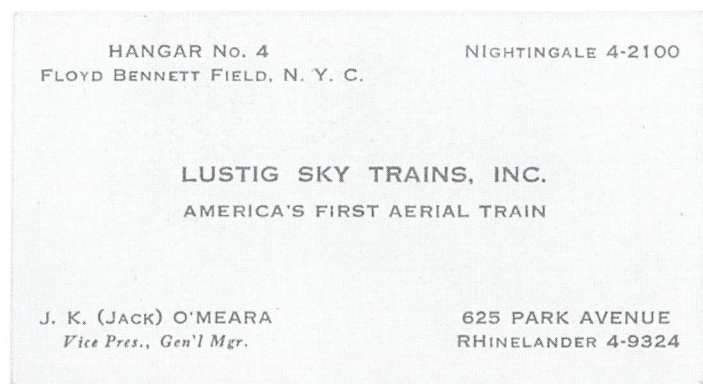


Havana, Cuba, just prior to a near-riot of the landing's spectators. From The Butler Eagle, Butler, PA, May 18, 1935. NSM Archive.

Skytrain Success in Flight to Havana From Miami



L-R: Jack O'Meara, E. Paul duPont, Elwood Keim, Augustin Parla, and Charles Clements. AP Wirephoto from The Buffalo Courier Express, Buffalo, NY, May 15, 1935. NSM Archive.



Business card from the Lustig Sky Train flight. Stan Smith archive.



Newspaper writeup on the first international sky train flight, Miami to Havana. NSM Archive.

(continued from page 16)

peninsula, 800 miles to Tbilisi in the Georgian Soviet Republic. The following month, a two-glider train made a flight of approximately 800 miles over the northern section of the Caucasus Mountains to Batisk. In August 1934, a three-glider train was reported to have flown from Moscow to Samarkand, north of Afghanistan. Ms. Short, in the Russian section of her book, cautions that details of these flights are sketchy and await more intensive investigation. The July 24, 1934, *New York Times* reported, "Last June, the German aviator Boenig made a successful flight at Halle with a train composed of 120 horsepower sports plane 'locomotive'

and four glider 'cars'." Destination and other specifics were not given.

Meanwhile, preparations for the first American glider mail effort began with the Lustig Sky Train. On the morning of August 2, 1934, at New York City's Floyd Bennett Field, amid cameramen and photographers, Mayor Fiorello LaGuardia distributed 75 pounds of mail to three Franklin PS-2 utility gliders that comprised the first Lustig Sky Train. Planned glider mail deliveries were for Philadelphia, Baltimore and Washington. The three utility gliders towed in tandem at 200-foot intervals slowly gained air speed behind Elwood Keim's Eaglerock towplane. (See *NSM Historical Journal* Vol. 22, No. 2, 1999.) The "train" encountered considerable turbulence over the Poconos but chugged on. The first glider, piloted by PS-2 designer and builder and University of Michigan professor R.E. Franklin landed at Philadelphia with the rest of the sky train following. The next day the two remaining gliders towed off on their appointed rounds. Stan Smith landed in Baltimore, MD, and the last, Jack O'Meara, popped down on the White house lawn in Washington.

Fast forward to Sunday, May 19, 1935: The *New York Times* reported that the two glider-train gliders released from the towplane and landed in Havana before a riotous crowd of 50,000 persons in front of the Cuban Capitol. There, President Carlos Mendieta stood waiting to receive them. The trio made the flight from Key West in one hour and forty-five minutes. O'Meara said their average speed was sixty-four miles an hour.

The train left Cuba early morning on May 19 with about 450 pounds of mail. "The bags were accepted by the U.S. postal authorities in Miami and forwarded to their destinations in the United States."³

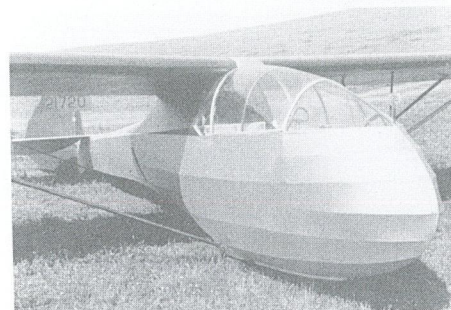
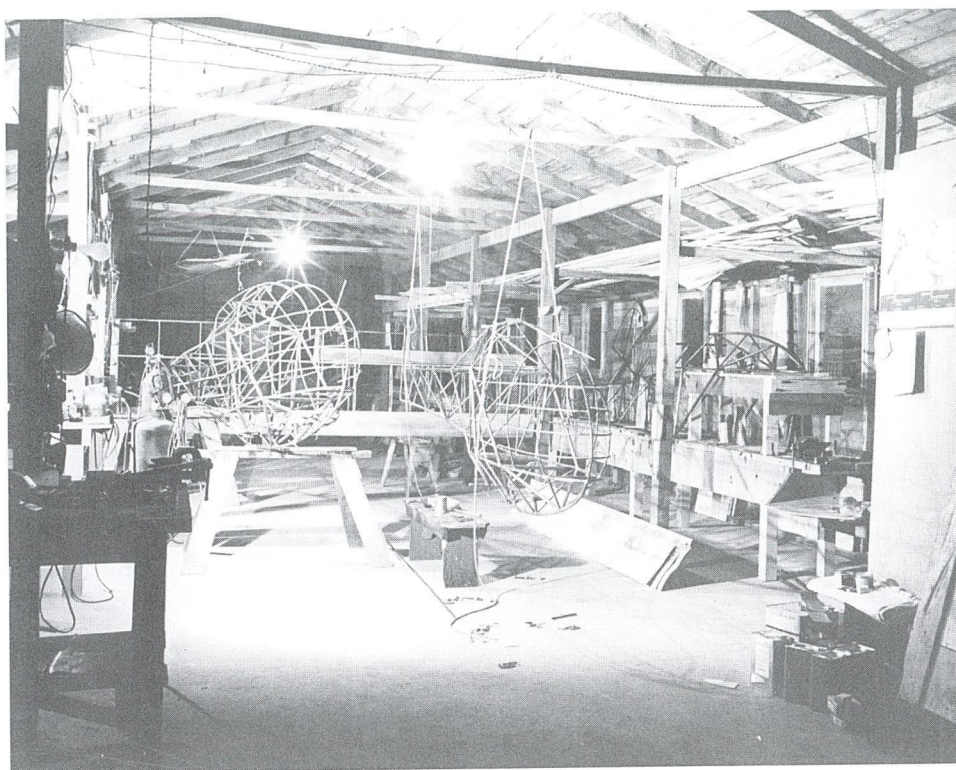
Today these glider mail train ventures make up an almost forgotten segment of glider lore. Were glider sky trains ever really practical? Probably not because of the warp speed development of fast and efficient air freight transport.

But weren't the projects' entrepreneurial boldness and the pilots' daring great fun to recall?

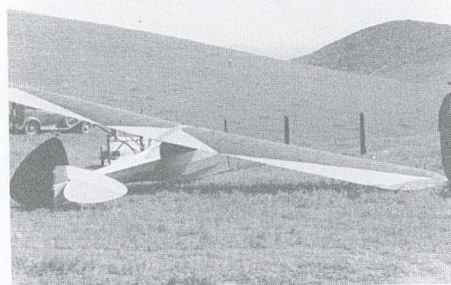
References

1. Short, Simine. *Glider Mail: An Aerophilatelic Handbook* (American Air Mail Society, 1987), page 205.
2. Ibid 1, page 5.
3. Ibid 1, page 41.

From the archives...



BG-6, front view.



BG-6, rear view.

A 1940 photo of William "Gus" Briegleb's Briegleb Aircraft Co., Inc. sailplane factory at 16005 Bassett St., Van Nuys, CA. From a comparison of pictures, the fuselages shown are probably for the Briegleb Utility Glider Model BG-6.

The BG-6 catalogue said that this model (Civil Aeronautics Authority Type Certificate No. 6) was "designed for student training, airplane tow and soaring, and for the past year has exceeded all expectations in these operations. It has excellent control at slow speeds, and is exceedingly stable and the visibility is exceptional... Standard equipment consists of: Airspeedometer, 'GENERAL JUMBO JR.' wheel, tire and tube; brake; adjustable elevator trimming device, auxiliary wing tip skids and safety belt."

The Briegleb Aircraft Company also furnished complete kits, which contained "every bit of material needed to complete the ship," the catalogue said. "The lumber and plywood is of 'Aircraft Quality,' every piece selected and re-checked by the Briegleb Aircraft Company experts. The tubing and profile steel meet all standards of the aircraft industry. All castings are X-rayed." Complete kit, plans and instructions - \$415. *Photos from NSM Archive.*

ISSN # 0892-0516

NSM Historical Journal is a publication of National Soaring Museum
Harris Hill, 51 Soaring Hill Drive, Elmira, NY 14903 / Phone: (607) 734.3128 / Fax: (607) 732.6745
E-mail: nsm@soaringmuseum.org / Website: www.soaringmuseum.org

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 the NSM. Material that is to be returned must be accompanied by a self-addressed stamped envelope. No compensation other than credit will be given.

Publisher: National Soaring Museum / **Director:** Peter W. Smith
Editor & Layout: William E. Gallagher / **Production & Layout:** Julie Munson

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