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Winter 2024

Table of Contents

Front Cover: *C-47 tows CG-15A over Harris Hill*

Back Cover: *Construction of the Harris Hill Runways*

NSM Journal

Winter 2024

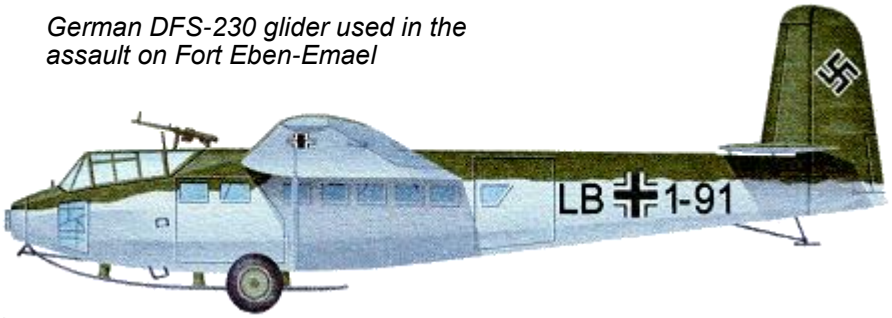
Whisper Ships

Adapted from an article by Monique Taylor

The Use and Development of the WWII Glider

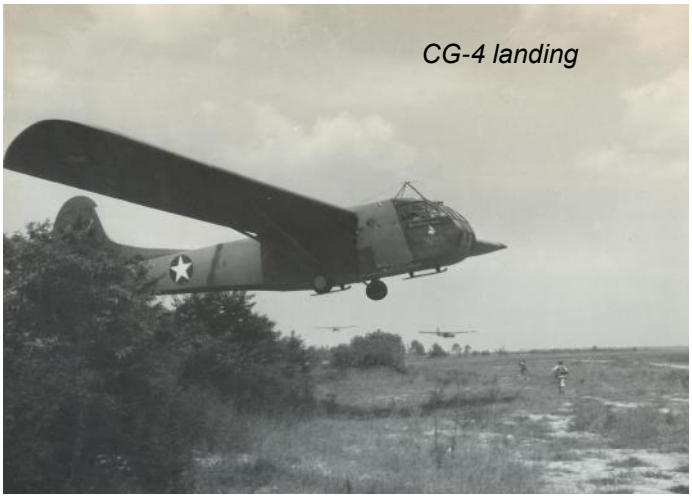
World War II saw the introduction of a number of technological developments in warfare. One of these developments was the use of an unconventional weapon - the assault/combat glider. In a period of intense warfare, the glider was recognized as a stealth weapon that could enable military forces to adapt *ground envelopment* techniques to the air. At the tactical level, *ground envelopment* means focusing on ground forces seizing terrain, destroying specific enemy forces, and interdicting enemy withdrawal routes. This tactic, when applied to air forces, is referred to as *vertical envelopment*. In *vertical envelopment*, troops attack an enemy's rear and flanks from the air. Troops can be air-dropped by parachute or air-landed by helicopters, gliders, or airplanes.

German DFS-230 glider used in the assault on Fort Eben-Emael



Most of the major countries involved in World War II had already experimented with or developed gliders for wartime use to some extent. The glider as a new military weapon was a force to be reckoned with, especially when the element of surprise was successfully achieved with their use. A textbook example of such a surprise was Hitler's successful taking of the premier fortress of the day, Fort Eben-Emael, on the Belgian-Dutch border, in a matter of hours on May 10, 1940. This success introduced a new tactic to modern warfare: the use of the stealth arrival of an armed glider force. The Allied Air Forces took notice, and strategies for the use and development of military glider forces ramped up, both in Europe and the United States.

During World War II, Allied glider forces worked in tandem with the airborne forces on many missions. The usual procedure was for pathfinder units to parachute in first to mark the landing zones and communicate the drop zone locations to the troop carrier pilots bringing in the airborne. Paratroopers then moved to follow a similar procedure for the glider landing zones, marking the fields for the gliders to land in shortly after paratroopers. Once behind enemy lines, the airborne glider infantry and glider pilots - now infantry troops - or any combination thereof, proceeded to cut enemy communication and supply lines, destroy, or render unusable enemy emplacements, impact the enemy strength in any one area by sowing confusion among their forces and accomplish the assigned objectives for the mission.



CG-4 landing

The gliders brought immediate additional strength to the airborne troops with added firepower and ammunition, jeeps, trailers, motorcycles, heavy construction equipment, gasoline, portable communication systems, transport animals, hospital supplies, rations, and water. The delivery of supplies to troops behind enemy lines was paramount to supplement the paratroopers who could only carry a finite amount of equipment and supplies on their bodies when jumping. Their resupply was a large part in a given mission's success. These supplies were largely dropped by parachute. But that could present challenges of its own, with scattered drops, drops in enemy-held territory or dropped supplies made otherwise inaccessible to the airborne troops. Also, items or equipment and supplies were often damaged in the drops, thus rendering them unusable. Other methods of resupply were situation dependent. During Allied bombing raids, railroad lines were destroyed to prevent enemy troops from being resupplied and only select ports were suitable for supply delivery by sea. Once landed, the supplies had again to be transported to the troops behind enemy lines. The use of the tow plane and glider combination made those deliveries possible directly to the landing zones in close proximity to the ground forces and ready for immediate use. However, this was dependent on the successful landing of the glider with undamaged or salvageable equipment.

The American WWII Glider Program was unique in that it had to be built completely from scratch while the country was at war. At its inception, the program was without a glider design, a flight curriculum, a tactical doctrine, training bases, military glider pilot instructors or glider pilot recruits. The military was not too enthusiastic about trained power pilots being pulled from their ranks to supply the glider program, so recruiting became a matter of using a combination of experienced civilian glider pilots and military pilots. Many civilian pilots were drafted, but many also signed up voluntarily.

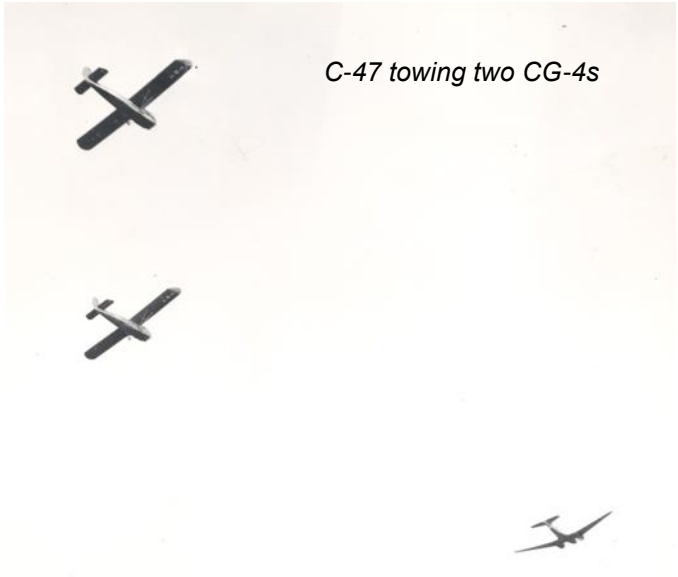
In the meantime, calls were made for glider designs and on June 20, 1942, the Weaver Aircraft Company's (WACO) design for the CG-4A glider was accepted by the military and put into production. Several other companies across the United States made CG-4As: Ford Motor Co. built 4,190 gliders, which was over 25% of the total produced. Ford built the most CG-4As at the lowest cost to the government; Cessna built 750 units; Commonwealth Aircraft built 1,470 units; G&A Aircraft built 627 units; General Aircraft built 1,112 units; Gibson Refrigerator built 1,078 units; and Babcock Aircraft Company built 60 units. In Elmira, NY, the fledgling aircraft company, Schweizer Aircraft, built military training gliders, the TG-2 and the TG-3.

Paul Schweizer, Maj. Frederick Dent and Ernie Schweizer with the TG-2 (Schweizer 2-8)

Although American glider pilots also flew the British Horsa, the CG-4A would remain the main workhorse of the American Glider Program throughout the war. The WWII Glider Program is thought of today as being of short duration, but the military at the time did not see it as such, and continued the further improvement and development of gliders throughout the war.

The WACO CG-4A was widely used in both the European Theater of Operations (ETO) and the China Burma India Theater (CBI). It had a wingspan of 83.6 feet and an empty weight of 3,440 pounds. It could carry a cargo weight of 4,060 pounds for a combined total weight of approximately 7000 pounds. Without cargo it had a troop capacity of 13 troops which were seated on removable plywood benches on either side of the glider behind the pilot and copilot. With the addition of the pilot and copilot it was classified as a 15-place glider. If cargo was placed in the glider the number of troops that could be carried would vary.

CG-4 on tow



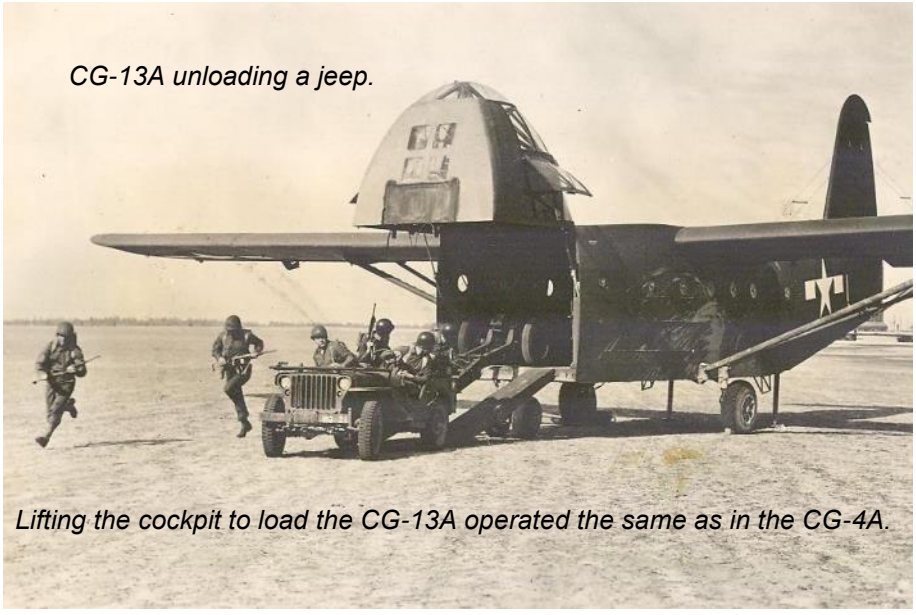
C-47 towing two CG-4s

As way of example in addition to the pilots, the CG-4A could carry a 1/4-ton truck with a radio, driver, the radio operator and one soldier or a 75 mm howitzer plus a crew of three. The cargo the CG-4A carried was limited only by size, weight, and imagination. It had the added advantage in that a single C-47 could tow two gliders, on different length tow ropes; 350 and 425 feet long respectively. This doubled the amount of cargo to over 7000 lbs. or doubled the number of troops or a combination thereof delivered to the landing zone. Gliders were often overloaded so in some missions such as in the CBI 7000 pounds would be a conservative estimate. One of the major drawbacks of the CG-4A was its inability to carry larger weapons to the battlefields. To remedy this, a glider with a larger cargo-carrying capacity was called for.

Two additional glider designs, the WACO XCG -13A and the WACO XCG-15A, each with specific purposes in mind, were eventually accepted for production in 1943. The final CG-13A glider could carry larger equipment that could not be hauled in the CG-4A, while the CG-15A was an improvement on the CG-4A design.

Interior of the CG-13A, showing the increased wind screen size and more capacity for transporting troops.

The military began working on the XCG-13A design in September of 1942. It was to be produced in a limited quantity due to its narrowly defined use to carry larger airborne equipment that could not be carried in the CG-4A. Consequently only 132 were built - a small fraction when compared to the 13,909 CG-4As produced during the war years. The CG-13A had a wingspan of 85 feet and eight inches, a length of 54 feet and four inches, and a tricycle gear for landing. It had an empty weight of 8,400 pounds with production models coming in at 7,600 pounds compared to the CG-4A empty weight of 3,440 pounds. The CG-13A had a normal payload of 7,000 pounds with an emergency payload of 8,000 pounds. For a payload, the CG-13A could carry in one glider - the same payload that would require two CG-4As. In terms of men and equipment it also could do what the CG-4A could not. Its cargo could include a 105-mm Howitzer and a 1/4 ton 4X4 truck, ammunition and gun crew or 40 equipped troops. Other cargo included a 1-1/2 ton truck 6 X 6 or a 3/4-ton truck 4X4 or a 75mm anti-tank gun and 1/4- ton truck. This had the decided advantage of both the tow vehicle and the howitzer landing in the same load versus the CG-4A requiring two gliders to split the load. The increased size and cargo-carrying capacity came at a cost of reduced towing capabilities. The towing capacity of the C-47, the standard tow plane utilized for CG-4 gliders, was marginal with the CG-13A. A CG-13A with an 8000-lb. payload required an empty C-47 to tow it. To remedy the towing strain on the C-47 the military recommended the use of the larger C-54. The CG-13A was designed to meet the increased towing speeds of a number of tow planes being considered for gliders. The increased size and weight capacity of the CG-13A required a longer take-off and landing area with at least a 4000-foot hard surface, plus 50 feet of cleared space. Therefore, it was incapable of landing on the variety of surfaces in small landing fields or jungle areas that the CG-4A routinely landed on. In practice, this was not always the case. Lt. James Larkin of the 84th Troop Carrier Squadron, part of the 437th Air Group, flew the CG-15 in the European Theater of Operations and commented on the landing gear: *"The tricycle gear didn't work very well out in the farms where you had ditches and stuff like that, because you'd lose that tricycle gear right away, the first ditch you come to."*



CG-13A unloading a jeep.

Lifting the cockpit to load the CG-13A operated the same as in the CG-4A.

Per the military, this was not a glider designed to be crash landed or used in the first waves of an invasion. The CG-4A was considered expendable, although during the latter stages of the war, efforts were made to retrieve and repair the gliders from the landing zones. The Army Air Forces Board clearly stated that the CG-13A was not to be considered an expendable glider, nor could it compete tactically with the CG-4A. For these reasons it was not to be considered or designed as a replacement for the CG-4A. Its sole purpose was to haul in larger equipment in later serials. The military testers also recommended that the CG-13A not be towed in the same flight as CG-4As but to have its own formation. However, if it had to be flown with the CG-4A formation, it was to be placed in the lead.

The CG-13A did see wartime use. The CG-13A's only actual combat mission was in the Asiatic-Pacific Theater. On June 22, 1945, one CG-13A and five CG-4As flew from Lipa airfield in Luzon and landed on the Camalaniugan Airfield in the Philippines. The lead glider in the formation was a CG-13A piloted by Major Edward Milau and Lt. M. Cone. This was also the last glider mission in the China-Burma-India Theater. In addition to working on a glider with a larger cargo capacity, the military was also interested in developing a possible substitute for the CG-4A.

The CG-15A was developed with the express purpose of improving upon the CG-4A. Its only use would be for airborne missions rather than routine transport flights that were sometimes performed by the CG-4A. The CG-4A was used extensively during the war resulting in the military being keenly aware of issues in design and performance.

Key among these issues was the CG-4A's lack of nose protection. The gliders had a distinct disadvantage in comparison to power planes in that they could not power up and make a second attempt at a landing. Once released they were committed despite the conditions on the ground. Prior to Operation Overlord (the codename for the Normandy Invasion), plans were made to attach the Ludington-Griswold nose to the CG-4A, a metal frame that attached to the exterior of the glider nose which provided limited protection to the cockpit and pilots inside from obstacles puncturing the canvas exterior. Despite the military's attempts only some gliders were equipped with them by the time of the mission. A streamlined and strengthened nose in the CG-15A would be a decided advantage over the CG-4As. When designing the CG-15A the crash protection portions of it were built into the nose as well as being attached to its exterior. In a further improvement the attachment point for the tow rope was placed more towards the center of the modified nose of the glider. Combined with improved landing gear from the strut type landing gear to cantilever landing gear the CG-15A offered distinct advantages for both its pilots and its passengers.

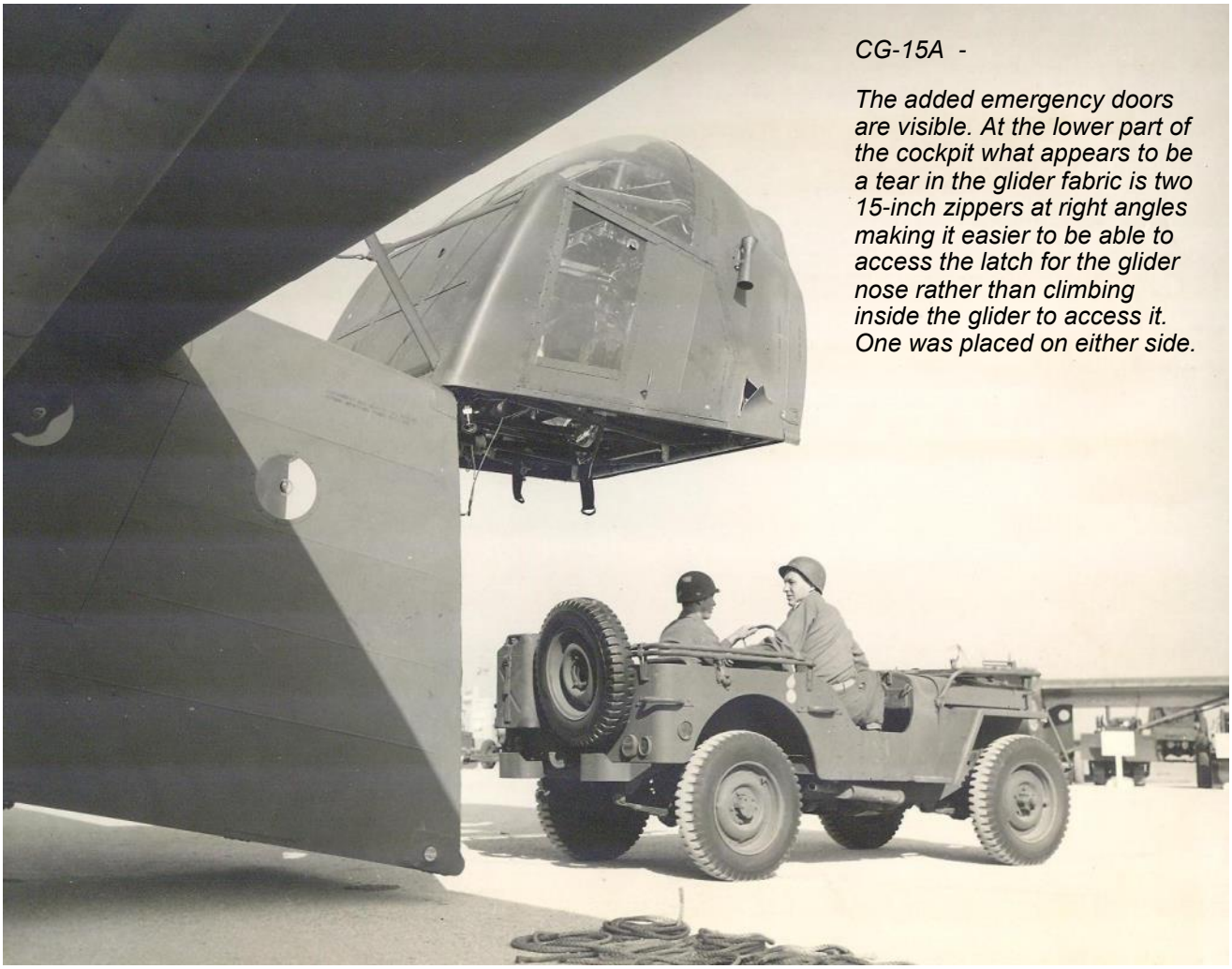
Ludington-Griswold Nose. Note the anti-nose-over skid

CG-15A - Note the shorter wings, emergency doors, and skids on the bottom of the glider. Some CG-4A glider pilots reported that the skids could dig into soft sand on a landing zone and reduce their steering ability.

Modifications were also made to the wings of the CG-15A reducing them from 83.67 feet to 62.2 feet. This allowed for more efficient marshalling of the gliders on the runways for takeoff. This seemingly small advantage was of prime importance on missions where a large number of gliders could foreseeably be utilized, such as in Operation Market Garden. An additional major change was made to the wings by the addition of flaps to aid in takeoffs and landings, a vast improvement over the CG-4A design which had no flaps. Second Lieutenant Keith Smith, who logged about 105 hours in the CG-15A, discussed the wing flaps and an added benefit to them in a letter to a friend. "Instead of spoilers, it had electric wing flaps. This necessitated a wind driven generator and a battery. This gave us cockpit lighting as well."

As an added plus, the CG-15A's cargo carrying capability was increased by approximately 500 pounds, increasing its gross weight to 8,000 pounds. It had an empty weight of 4,140 pounds which compared to the CG-4A's empty weight of 3,800 pounds. The cargo load weight increased from the CG-4A's 3,700 pounds to the CG-15A's 3,860 pounds. Another important addition was made to the CG-15A by adding emergency doors on both sides close to the cockpit. The exit door in the CG-4A was placed at the end of the plywood benches lining either side of the canvas-sided glider, which began directly behind the pilots, making the only exit towards the back of the glider. The addition of emergency doors near the front would increase exits, which was imperative when landing on hot landing zones or in case of an emergency.

With all of the modifications made to the CG-15A, it had to have excellent cargo-carrying capacity to match or exceed the CG-4A if it was to replace it. Like the CG-4A, the CG-15A was capable of carrying a load with a 1/4-ton 4X4 truck, driver and two other soldiers or 13 fully-equipped troops plus the pilot and tow pilot, making it still a 15-place glider. Unlike the CG-4A, it could also haul a 105mm howitzer with a crew. An added advantage is that it could still be towed by the C-47 and had a tow speed range that enabled it to be towed by faster tow planes, including fighter aircraft. Like the CG-4A the CG-15A could be landed in small fields and similar terrain. In testing the CG-15A, it was said to have maneuverability and more responsiveness - superior to the CG-4A.



CG-15A -

The added emergency doors are visible. At the lower part of the cockpit what appears to be a tear in the glider fabric is two 15-inch zippers at right angles making it easier to be able to access the latch for the glider nose rather than climbing inside the glider to access it. One was placed on either side.

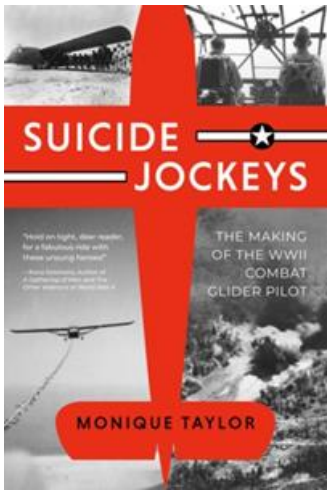
Despite its advantages, the CG-15A was never used in combat. Some of the gliders were sent to the 440th Troop Carrier Group in the European Theater of Operations (ETO). After the war it was used in an attempted rescue of personnel of a downed C-47 and B-17 rescue attempt in Greenland. The military continued in its testing of glider designs and modifications after the war. Gliders were eventually superseded by the helicopter which had the decided advantage of powering themselves in and out of enemy territory.

The glider program did not come to an abrupt halt after the end of the War II. Glider designs continued. The military saw a role for them in the future. They were eventually superseded by helicopters, but it came slowly with time. As Lt. Larkin stated, "Helicopters hadn't come of age yet. They were an oddity, and in order to supply Airborne troops, there were two factions, the jumpers and the gliders . . . We thought that would continue. Everybody did. But little by little, it deteriorated, because little by little, helicopters got better. And sometime about 1951, I think it was, gliders were completely eliminated from the Air Corps as a war plane, you know, as a commissioned plane. They kept a couple of them around a few more years for other purposes."

Military gllider technology did not fade away, but has continued into the 21st century. The well-known space shuttle is a glider and unmanned delivery gliders are currently being developed. In February 2023, the 1st Special Forces Group (Airborne) successfully tested a new unmanned aerial delivery platform: the GD-2000 glider (GD-2000 stands for 'glider disposable 2,000 lbs.'). This glider is an alternative to the current means of supply delivery into diverse environments. Implementation of the glider will result in enhanced capabilities of the Special Forces detachments deployed through varied, and often restrictive, terrain. https://silent-arrow.com/

GD-2000

Although unmanned, the same glider technology developed in WWII under the Glider Pilot Program and pioneered by the WWII glider pilot, though largely forgotten, has continued to today and will have a definite place in the future.



Monique Taylor is a professional historian, the daughter of a WWII Glider Pilot and the author of Suicide Jockeys: The Making of the WWII Combat Glider Pilot which was released in November 2023. She is also a researcher with the National WWII Glider Pilot Association.

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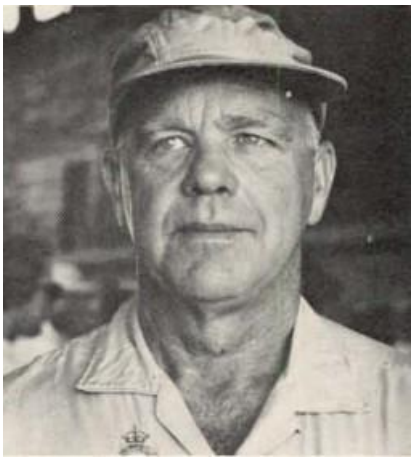
UP, UP AND QUIETLY AWAY

Whispering across the sky went the first continental sailplane race: from sea to shining sea - in short hops

by Richard W. Johnstone

The Story of The First Transcontinental Smirnoff Sailplane Derby - reprinted from Sports Illustrated 6/5/1972



Paul Bikle

Picking their way under black thunderheads that shrouded the serrated ridges of the Alleghenies this stormy afternoon were two of the most unlikely athletes of 1972. One of them was **Paul Bikle**, a bald, avuncular little man of 55, the pocket of his yellow shirt stuffed with cigars, his recently diminished paunch barely supporting the baggiest trousers since burlesque. The other was **Wally Scott**, the straightest arrow ever to come out of Texas, a spare, weathered, 47-year-old Odessa movie house operator whose mysterious maxim was "Mojo all the way!" What they were trying to do was fly the mountains that very nearly stopped the U.S. Air Mail before it started, mountains that old propeller pilots still call “The Graveyard”. They were being very quiet about it, too, and for good reason. Neither one had an engine!

Wally Scott

Wally Scott and Paul Bikle were flying machines that used to be called gliders, and they were heading for Frederick, MD in the climactic last leg of a sporting event as improbable as its participants: the first transcontinental **Smirnoff Sailplane Derby**. Already strewn about the countryside near Latrobe and Ligonier, PA, were their four rivals in the six-man race, crack pilots all, who had not found enough rising air currents to soar beyond the foothills.

Wally Scott’s ASW-12

Scott himself had almost come down at Latrobe. His anxious crew - wife Boots, son Wally Jr. and daughter Dema - were rolling along the old Pennsylvania Turnpike southeast of Pittsburgh when the two-way, line-of-sight radio crackled: "WA to Nan Six. Murky, murky, murky. Don't go past Latrobe." Nan Six - the call signal for the Scott crew - was already past Latrobe by 20 miles. Wally Jr. spun the crew car off the pike at Donegal and hoisted the 30-foot aerial. "Looks like Wally's down," he said, "but we can get a relay from John Ryan (a competitor). He's still up around Ligonier." Ryan reported that Wally appeared to be sinking.

As the crew raced west again, there was gloom but not despair in the Scott car. Unlike a lot of families, the Scotts think Dad can do anything. "We're First Presbyterians," Boots had said earlier, "and we believe in predestination. I know Wally's gonna win". The sublimity of faith has seldom been so quickly demonstrated. "WA to Nan Six!" the radio snapped. "Mojo! Mojo! Reverse course!" As Nan Six fled east again, another message came from the sky: "I am south of Johnstown - and climbing! Mojo!" All doubt disappeared. From that point on, the Scotts knew it would be Mojo all the way, just as it had been across most of the U.S.

If some of the foregoing exchanges seem as hard to comprehend as the sailplane itself (in Odessa, Texas, of all places, a desk clerk had asked nervously: "Is it some kind of a balloon?"), most are easily explained. "WA" is the radio call for Scott's high-performance, German-made AS-W12 fiber-glass sailplane. "Nan Six" is the call for his crew, which tries to keep in constant radio touch during a flight. And Mojo? Mojo is the battle cry of Odessa's Permian High School Panthers, and it simply means "go like hell." Mojo, indeed, is how Scott won six of the eight aerial legs of the derby.

Oh yes - the sailplane. A sailplane is a highly sophisticated descendant of the older gliders that only coasted downhill. The sailplane goes uphill, provided, of course, the pilot can find rising air - an invisible thermal above a hot spot of ground, or wind forced upward by mountain ridges.

The idea of sponsoring a transcontinental sailplane race first germinated in the head of a man named Ben Dunn at Heublein, Inc., makers of Smirnoff vodka, possibly after a long lunch dominated by vodka martinis. The scheme was met with joy by his employers, who have discovered that relatively inexpensive promotions of needy sports are gratefully received by the participants and frequently generate public mention of their product.

The Smirnoffs got hold of Ed Butts, a retired Air Force major who has conducted many soaring meets, and Bikle, who directed development of the X-15, the XB-70 and the Lunar Landing Research Vehicle while head of the NASA Flight Research Center at Edwards Air Force Base. Any interest? The response left Smirnoff breathless.

Bikle, as captain of the U.S. soaring team, was looking for money to finance the team's participation in the world championships to be held in July in Yugoslavia. Butts agreed to round up some top competitors for the derby. Smirnoff agreed to give the U.S. team $6,000 and to pay each derby contestant $2,000 to defray personal and crew costs. Butts and the sponsors worked out an itinerary: Los Angeles to Phoenix, 365 air miles: next to Las Cruces, N. Mex., 313; then Odessa, Texas, 266; next Dallas, 319; Tulsa, 250; East St. Louis, Ill., 353; Joliet, Ill., 230; Bryan, Ohio, 190; Akron, Ohio, 163; Latrobe, Pa., 115; Frederick, Md., 123; and Baltimore, 53.

A. J. Smith

In a world in which the sun always shone, the fields were dry or plowed, cumulus clouds forever ringed the horizon, "dust devils" were always kicking up to show pilots where the updrafts were, and the wind blew neither too hard nor too lightly, all this could be done in 12 days. Even though the course was on the "hot-air line" for May, Smirnoff inserted six rest days to cover tornadoes, acts of God or just plain rain.

Butts wasn't able to recruit all the master soarers in the U.S., but he got most of them. When the contestants assembled May 1 at Whiteman Air Park in the San Fernando Valley north of Los Angeles, the few dozen soaring buffs on hand were dizzied by the celebrities and dazzled by their sleek machines. To begin with, there was Bikle himself, a man who soloed in a glider in 1934 and in 1961 pushed a sailplane up the famous Sierra wave to a world altitude record of 46,267 feet. He wore two pairs of socks, two pairs of pants and a few cigars for that climb, and says now: "I could have gone higher but it got kind of cold up there." It was 65° below zero.

Then there was A. J. Smith, the distinguished Detroit architect who looks like an Ivy Leaguer but isn't, a bachelor of 48. Smith won the world championship in Poland in 1968 and is the No. 1 seed on the 1972 U.S. team. He is famous in the sport for another reason - the obedience and craftsmanship he demands of his crews. "The longest list in the world is people who've crewed for A.J. once," says Wylie Mullen, an old friend and colleague. "The shortest list is those who've crewed for him twice."

John Ryan

And Wally Scott, of course, the Mojo man, who has won two national championships and until recently shared the world distance record with a flight of 717 miles. Most of the contestants wore Smirnoff hats and red jackets, but not John Ryan, a stocky, 47-year-old Phoenix sailplane dealer with opaque gambler's eyes, who doesn't look like an Ivy Leaguer, but is (Deerfield, Dartmouth). Ryan won the national championship in 1962 wearing a pink golf hat given him by his daughter, and has never flown without it since (and never had it laundered, either).

Adding a touch of extreme youth to the roster was Ross Briegleb, a stripling of 33 who has lived on gliderports ever since he was seven years old. Briegleb won the national championship in 1970, and his crew chief, Jimmy Shultzman, was confident he would win the Smirnoff. "The gutsy guy is gonna win this one," Shultzman said, "and we got the gutsy guy." On their records, the first five had to be considered likely to outrun the sixth contestant, Einar K. Enevoldson, a 39-year-old NASA test pilot. Since 1954, Enevoldson has been flying jets at superspeeds, an occupation which has not given him much time to practice flying sailplanes at 140 - or even 75 - mph.

Of course, the planes themselves would be a factor. All but one were foreign designs, pencil-slim, burnished, extraordinarily compact. There was a general consensus that Ryan's German Nimbus II was the highest performance vehicle. Scott's ASW 12, Briegleb's Glasflugel Kestrel and Enevoldson's Swiss Diamant 18 were rated about on a level. Nobody could estimate the prospects of the Italian Caproni A-21, the relatively chubby side-by-side two-seater A.J. Smith had agreed to fly for AviAmerica, a San Francisco importer.

Enevoldson's Swiss Diamant 18

Einar Enevoldson

"Ordinarily a two-seater wouldn't have as good a chance as a single," A.J. said. "We'll just have to see." Moreover, Smith had a passenger - Bob Fergus, a friend from Columbus, Ohio, who had flown out in his Lear Jet to provide A.J. "with laughs and ballast." Bikle's plane, a home-built, all-metal adaptation of a Schreder HP-14, was rated about 15% below the foreign birds, even by its owner. But Bikle, whose name rhymes with pickle, was not dismayed. "Wait'll I get some of these guys back East," he said, his blue eyes rolling with anticipation of those scratchy, often weak conditions.

It was getting on toward noon and the sun was baking through the Los Angeles smog. The crews strapped their birdmen into the tiny pilot enclosures - Scott, for example, flies almost supine - and readied their cars, trailers, radios and codes. The latter were supposed to enable a pilot to talk to his crew men without giving away his position. Everyone had one except Scott. "Mojo's our code," said Boots Scott. "I don't figure to have to retrieve Wally. He's gonna wring the last ounce out of it." (In addition to nurturing pilots and planes while they are on the ground, the crew must follow close enough to find a downed glider, disassemble it and trailer it on to the next stop.) At 12:18 the first competitor, Bikle, was hoisted up and out of sight. At 12:25 the last one, Smith - also vanished toward the San Gabriel peaks and ridges. Crew cars, trailers wobbling, pulled out moments later.

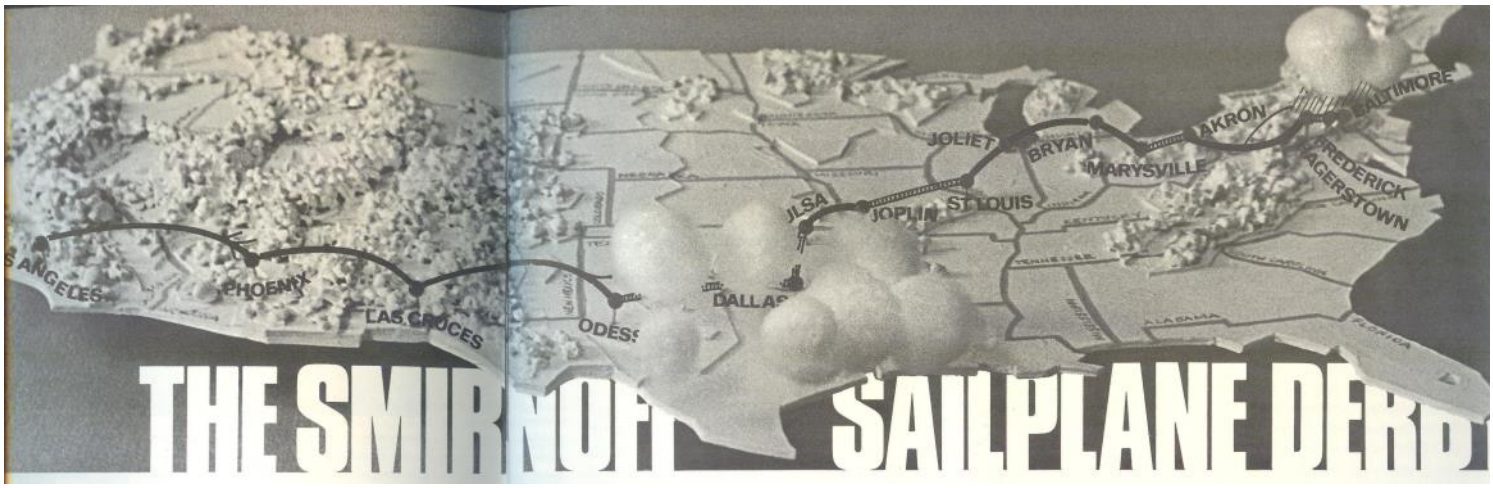
For newcomers following the race there was an immediate revelation: soaring isn't sailing, it's driving. Shultzman, a pretty gutsy guy himself, raced through mountain passes and desert wastes at 100 mph. That first day was a "boomer." with both desert and mountains sending up warm air to support the voyagers. A.J. Smith got up to 16,000 feet before he discovered one of his oxygen bottles had not been hooked up (which list, crew?). John Ryan, appropriately, went to Phoenix like a homesick angel, beating Scott by nearly an hour. A crew hurtling through Blythe remembered only one thing - a motel sign reading HOWARD HUGHES MAY HAVE SLEPT HERE. Smith, Bikle and Einar didn't make it. Einar landed near Salome, Ariz., where nobody dances with veils these days, and Bikle folded near Wickenburg. Only A.J., a man who knows how to cut his losses, really picked his spot. "I looked for the bluest pool and biggest bar," he said after setting down at Los Caballeros, a resort on Vulture Mine Road west of Wickenburg.

Boots & Wally Scott

Next day brought another boomer, with everybody skirting the Superstition Mountains and the Mogollons, then going straight into Las Cruces. The crews had most of the adventures - a little old lady, after studying the big Smirnoff sign on one trailer, asked nervously, "Are you Rooshians?" The codes kept the radio jumping, and everybody suddenly realized that Ryan, with two merry soarers from the Sandwich Islands as crewmen, was communicating in Hawaiian. "Ten Diamond Head Big Island," Nimbus II commanded. Ryan beat Scott into Las Cruces by 10 seconds and it was another pink-hat night.

A. J. Smith's Caproni A-21

Then it was Wally Scott's turn to head for home, and on May 3 he took ASW-12 into Odessa like a bullet to win his first leg. He never lost one after that. Despite the firm belief of most outsiders that Texas produces more hot air than anywhere, it produced none for the Smirnoffs. After a day's layover in Odessa, Butts gave up and the stowed gliders were trailered to Dallas. After three days of rain in Big D, they were trailered to Tulsa. A newspaperman asked a Smirnoff representative: "How can you call it a sailplane race when you keep going by trailer?" A quick thinker, the Smirnoff man said: "Ever hear of a canoe race without portages?"



On Tuesday, May 9, Ed Butts told the pilots: "The goal is East St. Louis. Fly as far as you can and then trailer in. If three of you make 65 miles or over, it will be a contest day." It was a contest day - and the one day that decided the derby. Nobody found much lift in the soft, green hills of the Indian Nation. Ryan came down first, just 50 miles northeast of Tulsa, in a pasture near (but not among) cows. The other planes also dribbled down, but Mojo dribbled farthest - all the way to Joplin. Mo., 95 miles northeast of Tulsa. That meant 1,000 points, and suddenly Wally Scott had a commanding lead of 438 points over John Ryan and more over the rest.

The flights from East St. Louis into Joliet airport and then to Bryan, Ohio were almost sprints. Everybody made it, with Scott first again each time. Smith was met at the Bryan airport by a friend, pretty Sally Hanifin, who had brought down his Cadillac Eldorado from Detroit. The girl, the car and the Caproni were too much for Ross Briegleb. "Hey, A.J., them your wheels?" he demanded. "Yeah - them's my wheels," A.J. replied. "Goddamn," Ross said, "I gotta find me an oil well."

The next day Ross - and all the other disinherited of the earth - got revenge of a sort. On a test hop in the Caproni, A.J. floated gracefully in - and landed with his gear up. The fiber-glass bottom of the sailplane was scraped thin, but tape fixed that. "Will this do you any competitive damage?" Smith was asked. "Only to the laminar flow over my ego," he said.

At this point the Smirnoff suddenly zigged off course to Columbus, Ohio, partly to make up a leg but mostly to accept a party invitation from Bob Fergus. Once again the flight was a zipper. The party was worth the diversion, but by noon on Saturday it was raining. And raining. And raining. On Sunday everybody trailered to Akron-Canton, where it went right on raining. The caravan arrived just in time to see all the restaurants close—at 9 p.m., yet. The bars, of course, had been shut all day. John Ryan walked into a hotel room where three members of the troupe were entertaining a couple of Akron residents. "Is it true the restaurants and bars are all closed?" Ryan asked. "It's always that way on Sunday in Ohio," a local lady replied. "Why don't you burn it down?" Ryan asked darkly, and left.

By Wednesday everybody was ready to burn down Akron and Canton, if only to dry them up. Butts had a proposal: "Are you willing to skip Latrobe and go for Frederick tomorrow?" he asked the pilots. There were a few indrawn breaths. This meant a 240-mile shot across those mountains. In a hangar session before Butts' question, A.J. had reminisced: "I flew down from Elmira to West Virginia once, and the only thing that kept me up the last two hours was sheer fear." Ross Briegleb broke the silence: "I'll go - can't do any worse than crash in the Appalachians." Slowly, all the pilots nodded assent. They had a strong motivation - with skill and good luck, one of them might be able to overtake Mojo Scott, assuming of course that he had bad luck. By now Scott's lead had stretched to 680 points. He had 6,950, with Briegleb second at 6,270, Ryan third at 6,262, Smith fourth at 6,199, Bikle fifth at 6,101 and Enevoldson last at 6,015.

On Thursday, May 18, a day behind Smirnoff's original schedule, the vodka warriors took off after a chilling briefing - "There is heavy ground fog in Pittsburgh. In the west Appalachians the tops are clear; in the east they are obscured." About all any of the pilots could do, Ed Butts said, was "fly over there and eyeball your way through." Most of them, as noted earlier, didn't make it beyond the lower slopes. Crafty old Paul Bikle, working the ridge lifts around Altoona, got all the way to Everett, Pa., far enough to boost him from fifth to second ("Wait till I get these guys back East!"). But it was Wally Scott - flying through thunderstorms that sent bolts of lightning crashing down to the turnpike - who Mojoed his way past the Alleghenies and into the soft, benign hills of Maryland. He came down at Hagerstown airport a little before 6:30 p.m. - the winner and grand champion. When the Scott crew arrived at 7:10, Boots flew into his arms. A minute or two later she was able to say: "This is one retrieval I don't mind makin'."

But the final note of class was given the transcontinental Smirnoff Sailplane Derby by A.J. Smith. When the Caproni sank near Ligonier, A.J. unerringly maneuvered it onto a green meadow flanking a castle of a house. A half hour later he was inside eating duck in black-cherry sauce with one of the heirs to the Mellon fortune.

My Life in Aviation - John “Corky” Gill

When I was a young teenager growing up in Elmira, I was very interested in aviation. I would build model gliders and fly them with my friend, Dick Bacon. In 1946, when I was 13, Dick and I decided to go up to Harris Hill and watch the real gliders fly. There I met Paul Schweizer of Schweizer Aircraft Corp. and he encouraged me to join the Harris Hill Junior Program so I could learn to fly. I joined, and so did my friend, Dick.

In 1946, the club was known as the Elmira Area Soaring Corporation (EASC). The club did not own a glider or a towplane at that time. They would borrow a glider from Schweizer Aircraft and we would fly on the weekends. The club used a winch to launch the glider up to about 1000 feet. We might get a winch flight which usually lasted 5 minutes or less and then it was the next guy’s turn - so I didn’t get much experience back in those days. And, of course, I didn’t have any money to go to a formal school like the Schweizer Soaring School.

During the late 1940s, the Elmira Chamber of Commerce became very interested in the soaring club. The Chamber used to manage a lot of the early contests. They would put a blockade at the end of the road down by the overlook because that was the only way to get to Harris Hill back in those days. They would charge 25¢ to get in and I didn’t have 25¢ when I was a kid, so we used to sneak in through the woods. My mother would always fix me a sandwich and maybe a cookie. I would get a nickel so I could buy a soft drink from one of the concession tents. I would spend the day up there and help out - running the tow ropes and such. Sometimes I could get a flight. And that’s how I got started in soaring. But like I said, I didn’t have any money. I did this for 2 or 3 years.

Corky in 1957

I did get to go down to Texas to a national contest with Larry Gehrlein and his family. Back in those days, they were very big in soaring and they were going down to Grand Prairie, (near Dallas/Fort Worth.) There was a contest down there and I was going down to crew. Their son was flying a 1-19 and the old man was flying a 1-23. I helped wherever I could. We had an old 1936 Ford Coupe which towed the 1-19 down there and I don’t think that car had any brakes, but we managed - and that was my first experience in getting away from home.

In my senior year of high school, I went to work at Schweizer Aircraft in the night shift. All of my time was spent either at school, at work, or flying on the weekend!

In June 1952, I graduated from high school (Elmira Free Academy) and in January 1953, I joined the Air Force. I started my USAF career at Sampson AFB. We were Flight 2265 in barracks E26 upper bay. As all other vets said, it was cold. I am from Elmira, NY, 60 miles south of SAFB, so I was used to the cold, but many in our flight were not. After arriving on the evening of January 16th , we were processed in and then sent to our barracks. We were allowed to sleep a few hours and were then awakened by our Drill Instructor and marched to the chow hall. We were not very good at marching, so we had to run (double time) every place we went - to chow, the PX, to classes and every other place we went. Things I remember the most were guard duty and all the running. Wish I could run like that now!

After basic training, a group of us were flown to Amarillo, Texas for jet fighter maintenance school. We flew on a C46 aircraft. Over the next few years, I would fly on C46 aircraft many times. During school, one of my instructors was my best teenage friend from Elmira, Dick Bacon. It was a nice reunion. We used to build and fly model gliders together when we were teenagers.

Being in the Air Force kept me away from flying gliders for a while. I was in the Air Force for a total of 21 years. I never did fly in the Air Force as a pilot, I was in aircraft maintenance, but I did a lot of flying going here and there with the Air Force. As a matter of fact, I have been in all 50 states and in 18 foreign countries.

I spent three years in Japan and Korea and then seven years at Nellis Air Force Base in Nevada. In February 1962, I went to the NCO Academy. I had volunteered for the USAF Tuhnderbirds team and was accepted. My first air show was March 12, 1962. It was one of the high points of my AF career. On May 25, 1953, just six years after the U.S. Air Force became its own branch of service, the Thunderbirds were born as the Air Force’s official air demonstration team. I spent 3½ years with the Thunderbirds, putting on air shows all over the world. All these different places I’ve been, which never would have happened except for the Air Force. After Nellis, I got a new assignment in Germany at Bitburg AFB. Bitburg Air Base operated from 1952–1994, and was a frontline NATO base during the Cold War.

I took a 30-day leave at home in Elmira before heading to Germany. While at home, I called my old flight instructor, Bernie Carris, and told him I wanted to get back into flying gliders and sailplanes. He told me to come to the Schweizer Soaring School. I did that, and got in a lot of flying before my leave was up.

Once in Germany, I was assigned as a flight chief over six F-105D aircraft. A flight chief in the United States Air Force is a senior non-commissioned officer who manages a flight's activities and personnel.

F-105D

As my time would permit, I started looking for a local soaring club. I found a German club at Dahlemer Binz called the Eifelflug. It was a very good club and had two 2-seat sailplanes for training (Ka-7s), two single seat sailplanes for advanced flying (Ka-8s) and two high performance sailplanes (Ka-6s) and a winch mounted on a big truck and one Tiger Moth bi-plane for towing. During my time in that club, I was checked out on all of their sailplanes. From October 25, 1965 to September 18, 1966, I did 93 flights with the club.


Ka-8


Tiger Moth


Ka-7

In September, the USAF wanted some NCOs to return to the States, so I came back and was assigned to Cannon AFB in New Mexico. On the way to Cannon AFB, I stopped at home in Elmira for my brother's wedding, went to Schweizers, took my flight test and got my private glider license.

I knew there was a soaring club at Schlemeyer Field in Odessa, TX, 205 miles south of Cannon, so I went to Odessa on Jan. 28, 1967 and joined the club. I made 125 flights with that club. One of those flights was cross country to Hobbs, NM. The club also did a few side trips to the Black Forest Club and Marfa, TX for a contest.

I really liked that club at Odessa and met a lot of friends there, like Red Wright, who moved his camping trailer to the airport so I could stay in it on the weekends; Al Parker, who made room for the trailer next to his hangar; and Wally Scott and his wife who had me to their house several times for dinner. I met two young teenagers there who I helped get into soaring: Neil Muxworthy and Bobby Bolton. They got it a lot of flying and both got their private pilot licenses. Bobby died young, but Neil became a pilot for Delta Airlines and a pilot crew training instructor at Southwest Airlines.

In April 1968 I knew I was going to have to go to Vietnam at some point, so I volunteered to go, and they sent me to Korat Royal Thai Air Force Base (RTAFB) in Thailand. There I was in charge of all maintenance on a super top secret aircraft. I had 40 guys working for me. The aircraft was assigned to Detachment 2 of the Tactical Air Warfare Center and was a one-off modified EC-121K known as "Rivet Top". The plane would fly close to North Vietnam and keep track of all the surface-to-air missile sites.

Rivet Top

This was the early days of computers and we had one on board our aircraft. It was a UNIVAC and was made in my home town. We had most SAM sites loaded in it by package number.

When they stopped the bombing up north, our aircraft did not have a mission, so they brought our entire outfit back to the States to Langley AFB. Once in Virginia, I joined the soaring club at S. Norfolk. I had saved enough money while I was in Vietnam to buy my first sailplane, a KA-6E like the one I had flown in Germany. I did some flying there, but it was not great for soaring - too close to so much water! I later flew the Ka-6E at Cumberland, MD - much better weather. I sold the KA-6E and ended up with a Phoebus, which I had when I relocated to Texas.

With no real mission for the Rivet Top at Langley AFB, there was little to do, so I decided to move. I relocated to Dover AFB in Delaware and became an armed forces courier. Over the course of two years, I delivered top secret material to 19 countries and 14 islands: Germany, France, Spain, Belgium, England, Turkey, Crete, Holland, Canada, Mexico, Japan, Korea, Vietnam, Thailand, Luxemburg, Italy, Newfoundland, Sardinia, Philippines, Guam, Bermuda, Azores, Barbados, Puerto Rico, Wake, Hawaii, Curacao and Cuba.

When my tour was over as armed forces courier, the Air Force wanted to send me to the air force base at Lubbock, TX. I called my old buddy, Clare Amos, from the Thunderbirds team, who was stationed at Austin, TX. He was in the 12th Air Force HQ Inspection General Team. I told him I was coming to Lubbock AFB and he said, “Come to Berkstrom AFB and take my place. I’m retiring.” I told him I would love to and he said, “Call me back in one hour.” I called and he said, “Your orders have been changed. You are coming here.”

Before heading out to Berkstrom I sold my Ka-6. I knew there were several soaring clubs in Texas, so I would have sailplanes to fly until I could get another one. My first soaring flight in Texas was August 23, 1971 at San Marcos. It was an old Air Force base - closed, but OK for soaring operations. I flew sailplanes there until January 30, 1972. While in Texas, I heard that an old friend in Odessa, TX, John Muxworthy, was selling his Phoebus “C”, an all fiberglass ship. I met with John and his son, Neil, who I had helped get started in soaring. I flew the Phoebus, liked it and bought it. I then took the sailplane to San Marcos and stored it in a hangar fully assembled and ready to fly. I flew the Phoebus about 120 hours at San Marcos and got my Gold Distance and Gold Altitude while there. While at San Marcos, I flew for NASA, doing clear air turbulence tests in a Schweizer 2-32, carrying 200 lbs. of recording equipment. Later, I sold the Phoebus and bought a Libelle 301 in San Antonio. I flew it cross country a lot and even landed it at Berkstrom AFB on a Sunday.

In September 1973, my mother died and I decided it was time to retire from the Air Force. I did retire on January 31, 1974, and returned to Elmira, bringing the Libelle with me. So now I was back at the Harris Hill Soaring Club, now called the Harris Hill Soaring Corporation. There I met Heinz Weissenbuehler, Sr., one of the club’s pilots. He told me that his son, Heinz, Jr., had just turned 14 and needed a soaring instructor. I said I would be glad to instruct him. I met Heinz, Jr. the next day and that marked the beginning of the greatest friendship pf my life. We did lots of training and he got his private pilot’s license. He went to aviation school and then joined the Air Force for 8 years, flying the U-2 recon aircraft. When he got out of the Air Force, he went to work for American Airlines. Today he is captain of a 777 with more than 30 years experience.

Once back in Elmira, I again went to work for Schweizer Aircraft. We were building sailplanes and Ag Cat crop dusters. Schweizer Aircraft was really a great place to work

I did lots of flying from Harris Hill in the Libelle and took many passenger flights for HHSC. In July 1980, I sold the Libelle. I had flown about 500 flights in it. It was a really great sailplane. On August 8, 1980 I bought an ASW 20A from Karl Striedieck - another great sailplane!

Since then I have owned an ASW27 and a Discus 2cT. When I retired from Schweizer Aircraft, I continued to come up to Harris Hill almost every day and flew whenever I could.

Corky in his Discus 2cT →

What do I like best about soaring? It's a challenge. I kind of like it better than power flying. You are a little more free when you are flying gliders. You have rules that you must go by and you must pay attention to what you are doing when flying gliders. I think you have to know more about your capabilities and what the weather is doing and so forth. You get a little more freedom when soaring. It's really why I like it. It's so nice to get up there and be able to stay up there and climb to higher altitudes and go cross country and see the countryside from that aspect.

You can't do it anymore, but I used to fly from Harris Hill to Watkins Glen to the auto race track when they had a race going, and I could set up over the top of the racetrack if the weather was good, and watch the race from my view of the entire track. The people in the stands could only see what was right in front of them. Today, when events like that are held, there is a temporary aviation restriction in place.

To me, all people in soaring are great people. Of course, in any collection of people you always meet one that may not come up to your expectations. But most of them are really good people and no matter how wealthy they are or what country they come from, they are willing to help you when they can. Even in a competition. You may be in a competition with another guy, but if you've got a problem, he'll be there to help you.

Which was the best of my over 7,500 flights? There are a lot of "bests" - it's hard to pick one. But it's always the best when you have gone out and made a good flight, a good cross-country flight, a couple of hundred miles or even more and you are on the last leg and you can see the airport and know you are going to make it. My diamond distance flight was over 300 miles. When you start to make your final glide and you know you are going to be home soon - and everything is going well. That is probably the most enjoyable time of any flight - whether you are in a contest, a badge leg, or just fun-flying. Aviation has been my whole life and I would not want it any other way.

SMSgt John Gill, Crew Chief

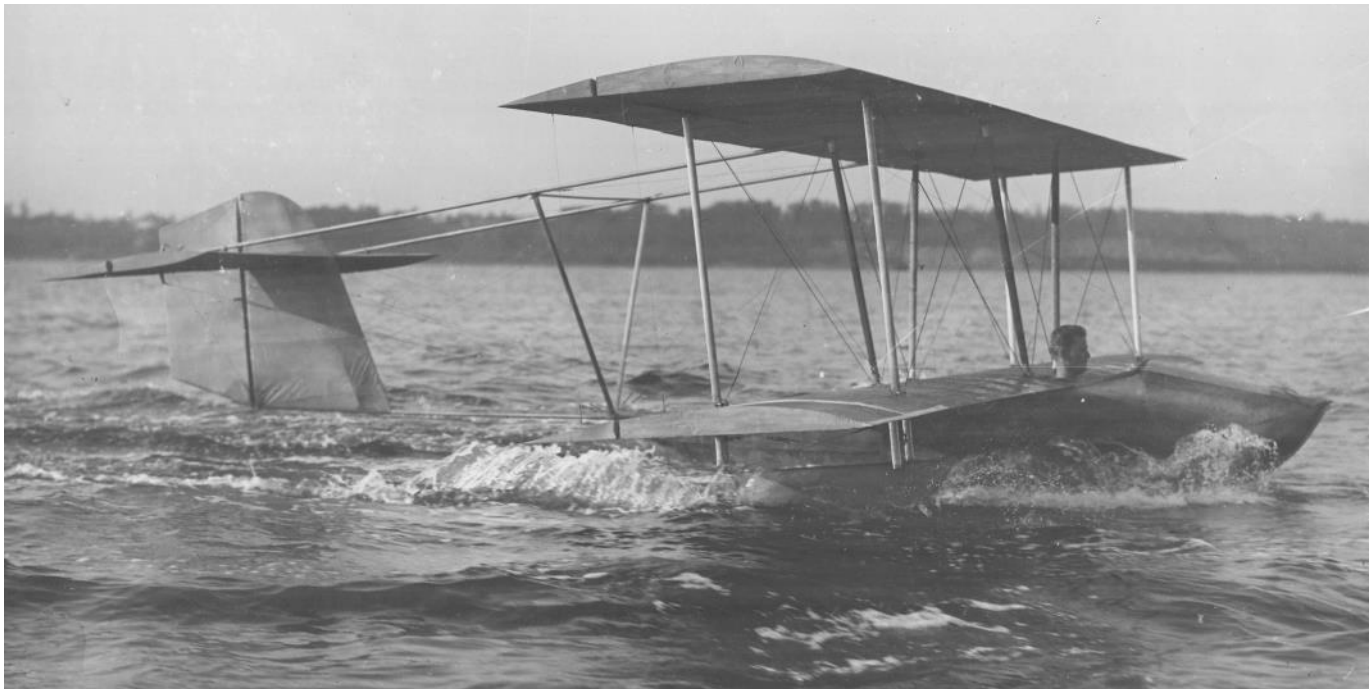
The Curtiss Water Glider

In 1922, Glenn H. Curtiss of Hammondsport, NY, started to build a flying boat glider at his Long Island facility. It was one of the first attempts to produce such a sporting glider in America. In his book, “Glenn Curtiss, Pioneer of Flight”, author C. R. Roseberry wrote that Curtiss had studied the air currents over water and noticed that they did not rise vertically as they do over land; yet an albatross could ascend from a wave and soar great distances.

This was at a time when interest in motorless flight was just beginning in an organized fashion. Productive glider experimentation and meteorological investigations were being held during glider meets at the famous Wasserkuppe in Germany’s Rhoen mountains.

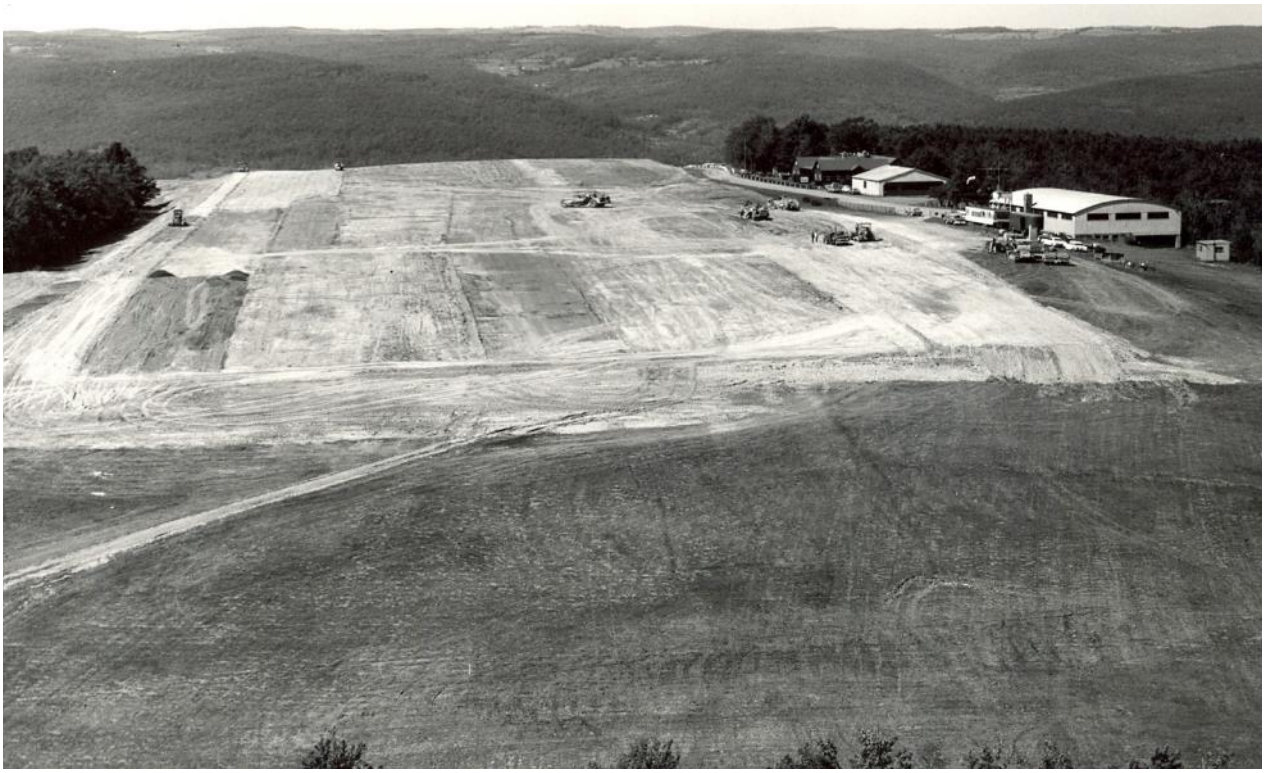
Though he made this ship for his personal use at his recently-built home in Florida, Curtiss envisioned a motorless aircraft that could be marketed as a new method of sport flying. Curtiss realized from his observations that soaring over water might not be practical. But a hydro-glider, part boat and part glider, trailed and airborne behind a fast motorboat, might open a new, quasi-aviation market. The technique involved the glider gaining altitude towed behind a speedboat, releasing, gliding for as long as possible, landing, and then being towed off again.

Curtiss designed a glider that was, in many ways, a micro version of his famous Navy and sport flying boats. Records at the Glenn H. Curtiss Museum indicate that the SX4-1 Model 29 Water Glider was a single seat bi-plane. It had a 28-ft wingspan; a 280 sq.ft. wing area, a length of 22 ft. 11 inches, and weighed 150 lbs. empty. It could be towed at 30 mph.



Curtiss conducted some personal experiments on Long Island’s Manhasset Bay with his new water glider. Acting as his own test pilot, he was towed by a speedboat until his water glider lifted off, then he dropped the towline. Roseberry, in his book, said that so far as soaring was concerned, these experiments were not very successful. The aviation pioneer managed to keep the glider in free flight for no more that 17 seconds. Not easily discouraged, Curtiss came up with the idea of towing the water glider behind a flying boat. He invited Army and Navy officers to witness a demonstration, suggesting that it could be utilized as a flying boat train. **“The officers were more interested in it as a towed target for aerial gunnery practice”,** Roseberry wrote.

Even though the Water Glider was made by a major aircraft manufacturer, the diminutive craft did not catch on. Only one was built. Pete Bowers, in his article for Soaring magazine in 1954, pointed out that while seagoing gliders could doubtless open up many new soaring sites, one major disadvantage of the type must be recognized. It would be helpless and at the mercy of the wind when adrift, ….landings would have to be chosen with great care.



Harris Hill runways under construction - September 1967

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