

Ardmore Innovator Builds Homebuilt Blimp

by Mike Huffman

It has been observed that aviation seems to have more than its share of individuals who, through optimism, enthusiasm, and plain old hard-headedness, come to succeed at tasks others have tried and failed. This is the story of one such man and his homebuilt aircraft.

Of course, aircraft homebuilding is nothing new. Because of the leadership of Paul Poberezny and the EAA over the last fifty years, homebuilding has progressed from its early days when a few highly knowledgeable pioneers built homebuilt airplanes using hand-drawn plans and scrounged parts. Now, we have very sophisticated kits that most anyone handy with tools can use to produce very sophisticated aircraft, using a "Tab-A-in-Slot-B" approach. This is not to detract from those efforts; in fact, aviation and aviators have benefited tremendously from that remarkable evolution.



Marvin Polzien's second blimp design, ready for flight. Note gimbaled pitch/yaw engine on tail.

However, in the early days, the word "Experimental" on the side of an airplane really meant something. First, it meant the builder had gone through that wonderful creative process of desiring an air-

craft, then conjuring up a design, then building, testing, innovating, modifying, and retesting, almost always overcoming limitations on resources such as money, work space, available tooling, etc. Second, as the word implies, it meant the effort was truly an experiment and, as such, might succeed or fail (whether or not the builder realized that from the start). To finally succeed through problems, dead ends, and failures requires the universally-revered human traits mentioned above. Perhaps that is why we love to hear such stories-- we can live the adventure vicariously from the safety of our armchairs, knowing the outcome ahead of time. In the process, we are often encouraged to step out in faith and try our own creativity.

A few weeks ago, Marvin Polzien from Ardmore called and asked if we would be interested in a story about his homebuilt helium blimp. Since *The Oklahoma Aviator* strives to include all segments of sport aviation, we

jumped at the chance. A few days later, Marvin flew in for an interview in his Bonanza, armed with videotapes and photos. The Bonanza is one of five aircraft he owns; the others include:

- A second Bonanza, a V35B with a Tornado Alley Turbo turbocharger
- A Piper Malibu DLX, powered by a PT-6A turbine engine
- A powered parachute
- A hot air balloon

He plans to sell the Malibu. "It's no fun flying way up there at 25,000 ft. I figure if I take my Bonanza it will take me twice as long, so I'll have twice as much fun!"

Marvin, an active 71-year-old who owns Guest Inn hotels in Ardmore, Norman, and Longview, TX, is a guy with a quick smile and an infectious enthusiasm. He talks excitedly about his life and his blimp projects.

His interest in flying began early. "At 5 years old, I was already anxious to get in the air. When I went to our little rural Iowa country

school, the first thing I would do was open the encyclopedia and look at pictures of airplanes. At age 12 or 13, I finally got to fly in a J-3 Cub at a county fair in Spencer, IA. It was windy that day and the pilot would come over the field and just sorta stop in the air. I thought that was the greatest! I told my mother, 'I want to ride in that airplane.' She said, 'Oh, no, you're not!' But since it cost a dollar and I had a dollar, I thought, 'If I get my hind end kicked when I get off the airplane, I just will-- I'm getting my ride!' Just about time to go home, I ran away from Mom and Dad, got to the gate, and paid my money before they could stop me. Oh, was my Mom mad when I came down, but Dad sorta interceded and said, 'Aw, now, that wasn't so bad.'"

That flight began Marvin's lifelong love of aviation and flying.

About four years ago, Marvin and friend Dennis Riley were sitting around talking when the idea of building a blimp came up. Neither of them knew how to do it, but they decided to try anyway. Dennis, a former Uniroyal plant manager, enlisted the help of another former Uniroyal employee, engineer Louie Remondino. Marvin subleased part of a large, high-ceiling former military hangar on the Ardmore airport and the work began, with other volunteers pitching in.

What resulted was their first blimp model, a simple cylindrical bag of aluminized plastic attached along the bottom to a welded-aluminum truss structure. A simple platform suspended from the truss provided a place for the pilot to sit (in a plastic patio chair) and a place to mount the power unit (a hot-air balloon inflator fan).

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Marvin Polzien-- businessman, aviator, and innovator.

The Horizontal Windsock

by Mike Huffman



Phoenix Rising

Most everyone is vaguely familiar with the idea of the "Phoenix rising from the ashes," and know that it has something to do with mythology.

What pilot has not seen the gritty classic movie called *The Flight of the Phoenix*, which stars Jimmy Stewart as the pilot of a twin-engine, twin-tailboom cargo plane that crashes in the desert? In order to save their lives, the survivors, under the guidance of an imperious German "toy airplane designer," reassemble the pieces into a flyable, single-engine, single-tailboom aircraft.

For those of us who dream about building airplanes, the opportunity to accomplish that feat would be the acme of our whole life's experience. (Never mind that movie stunt pilot Paul Mantz got killed flying the airplane.)

It would rank right up there with that other fantasy all pilots dream of (you know the one-- you are riding in the passenger compartment of an airliner when Julie Hagerty comes back and asks pleadingly, "Does anyone here know how to fly a plane?")

But what about the "real" Phoenix? Here's your mythology lesson for the month. The phoenix and similar such birds can be found in the legends of many ancient cultures, including Chinese, Greek, Egyptian, and others. In the Egyptian version, the phoenix is a bird roughly the size of an eagle with brilliantly colored plumage, a mixture of red, gold and blue.

The phoenix is the sole example of its kind. It is closely associated with the Egyptian sun god Ra and is thought to cross the sky from east to west each day. At the end of an epoch, as it feels death drawing near, it builds a funeral pyre of sweet spices. Sitting upon its pyre, it sings the sweetest five-note song we can imagine. The rays of the sun ignite the pyre and the bird is reduced to ashes. From the ashes crawls a worm, which matures into an adult phoenix.

So, the phoenix legend symbolizes the idea of death, resurrection, and rebirth which most every culture on earth espouses in one way or another.

But what does this have to do with my column this month? It is a nice,

flight-related metaphor by which to talk about the transition from 2002 to 2003.

As I write this, Christmas is past and New Year's Day has not yet arrived. Over the decades, I have gradually learned that, come December 1, I should just begin to accept the fact that I am not going to get much done between then and New Year's. This used to be quite agonizing, and I let it tarnish several holiday seasons, becoming listless and depressed, before finally deciding to let go, enjoy the season, and accept the "end of the epoch." Kind of like a mini-death, huh?

If I wanted to wax eloquent, I would say I have learned to let the joy of the season infuse me so much that, like the Phoenix, I spontaneously combust in pure happiness. But, hey, let's not go quite that far, OK?-- we still gotta take the Christmas decorations down and get rid of the tree.

But, fortunately, something magic happens after January 1: I am suddenly alive again, enthusiastic, and ready to go. I feel (dare I say it?) even young again! Some years I expect it, but at other times it surprises me. Where does this feeling of newness come from? I truly do not know, but am always grateful.

So, see the symbolism of death and rebirth in its yearly incarnation? (Actually, we can find it not only yearly, but also monthly, daily, and hourly-- however, that's a whole 'nother story.)

This month marks the start of our fourth year of publication of *The Oklahoma Aviator*. In 2003, our plans involve a slow and easy evolution, with no big changes. We have had enough big changes for awhile; we are now ready to settle in to our new life at the Tenkiller Airpark, get involved in our community, spend more time flying airplanes, and most of all, just be peaceful.

Of course, a good bit of our attention will necessarily be on our new aircraft restoration business, Huffman AeroCraftsmen, but we certainly will not forget the newspaper.

Now that we have showcased the new format, we will continue to improve it and the ways we get it to you.

A subject of conversation that keeps coming up is a website. Actually, we have talked about it for the last three years, but I'm not quite sure how to make the (quite large) effort worthwhile. If you have ideas about that, please let me know.

Although for this column I've chosen the mythological Phoenix as a symbol of hope for the new year, there are many other such traditions from around the world. I hope each of you can find the one that is meaningful for you and that you too will feel enthusiastically "reborn" in 2003.

The Higher Plane

by Barbara Huffman



Aviation Education

These holidays have been rich, so rich. Michael and I have been blessed in more ways than we could count. One of these blessings was in the energetic form of our six year-old grandson, Alex Standley. While Alex was visiting, he and I decided to take a walk and explore the airpark. He wanted to know everything about what he was seeing, so I went into teacher mode. We talked about the difference between high-wing planes and low-wing planes. He was able to point out the difference in no time - and was thrilled when I let him climb up onto a low-wing plane, after showing him the "No Step" areas. He was interested in that and was very careful to step only on the proper areas of the wing. When we got to another low-wing plane, Alex asked if he could climb up and look inside if he made sure he didn't step on the "No Step" parts. I happily agreed, for he had remembered the lesson well.

We learned about planes with tandem seats vs. side-by-side seats, and Alex was interested to know that some planes had one seat, some two, and some four or six! We talked about the windsock and why it was important, the purpose of the rotating beacon, and we had a ball jumping from one section to the other of the segmented circle (for which I was required to provide another explanation.)

On the way home Alex decided we should race. I knew I would hate myself in the morning for the muscles I would feel, yet knew I would hate myself more for not playing with my grandson in a way he wanted. So race Grandma did! After we tied in one race, Alex wanted to beat me on a race all the way back to the front porch of our house. He did - but only by a few yards.

We had had a great time, and when we arrived home, huffing and puffing, Alex was able to teach Grandpa, Mom, and Dad all about the different kinds of airplanes and airport things we saw. I beamed with love and pride, listening carefully to his accurate explana-

tions.

Don't you just love those special times alone with the little ones? I just hope he got as much out of our time as I did!

All this made me think about the importance of aviation education, and the marvelous opportunities we have here in Oklahoma for our children, grandchildren, neighbor kids, and little ones from church and community to participate in aviation summer camps. As we approach summer vacation time, *The Oklahoma Aviator* will publish information about how you can get your young ones enrolled into summer camps and other aviation-related events designed especially for children. In fact, I invite those of you who are now planning such events to call us at the newspaper to make sure your events are not left out. We want all aviation opportunities for children published here.

As much as we all love aviation, seems like one of our main responsibilities is to pass on our interest to the younger generation. After all, there are many skills that can be learned through aviation explorations. And skills lead to further interest, further interest to degrees of competence, and competence to jobs and careers. If you have a younger person in your life who is interested in airplanes, plan now to sponsor him or her for one of Oklahoma's many aviation camps this coming summer. I'm sure you will both benefit from your generosity and mentorship!

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Up With Downs

by Earl Downs



Failure or Success?

The words "failure" and "success" seem to be as opposite as the words "black" and "white" but is that really the case? When Thomas Edison was asked if he became discouraged after so many failures at trying to invent electric light, he replied that each failure only proved what wouldn't work. The Wright brothers experienced numerous crashes in their 1902 glider. These "failures" led them to discover the effects of adverse yaw caused by warping the wings and the need for a movable rudder. Their failure resulted in the creation of the control principles used in modern aircraft today. Many years ago I had the privilege of meeting an aviation legend who at one time was called a failure. I will let you decide if that was the case.

In the fall of 1958 my twin brother Ed and I (at the age of seventeen) made the decision to buy an airplane instead of a car. The airplane was an old WWII surplus 1941 Taylorcraft L2. It set us back \$850, a fortune at that time, which led to us working two after-school jobs to pay for it. On one particularly nice southern California afternoon we decided to play with "the fruit of our labors" and flew our Taylorcraft from Van Nuys airport to the ocean side airport at Oxnard. As we attached the tie-down ropes to our pride and joy, an elderly man approached and started asking questions about the plane and us. In

short order, he introduced himself as C.G. Taylor, the creator of the Taylorcraft. We were a little embarrassed because our T-Craft was not in "show plane" condition; however, we were "talking to history" and we knew it. Mr. Taylor offered to show us his new design and led us to a hangar on the field. It was a beautiful light twin about the size of a Cessna 310. We talked for about an hour and parted company. As it turned out, his new plane was not produced in the United States, but did see some limited production in England. When compared to the production standards of Beechcraft, Piper and Cessna, it was not much of a success. I wish I had learned more about Taylor's "first failure" during our brief meeting but back in those days, I didn't know enough of the story to ask the right questions.

Clarence Gilbert Taylor (always called C.G.) and his brother Gordon were smitten with the thrill of flying in the 1920's. In 1926 they barnstormed the upper New York State area in an old WWI "Jenny." In 1927 they decided to design, build, and market their own airplane and formed the Taylor Brothers Aircraft Manufacturing Company. The Taylor brothers, like many other design pioneers, had no formal engineering training. Their mechanical background seemed to come from their father who was able to fix and build about anything. By early 1928 their first plane, named the A2 Chummy, was ready to fly. The 2-place high-wing airplane flew well enough to attract investors, so construction of a second improved version was started. They intended to use this airplane for certification. Remember, Charles Lindbergh had made his epic New York to Paris flight only a few months earlier and interest in aviation was at a peak. Everyone was interested in aviation and investors were scrambling to become part of the excitement.

In April of 1928 the second airplane flew but then disaster struck. During a demonstration flight the plane crashed

Letters To The Editor



Mr. Huffman,

We just received our bundle of *Oklahoma Aviator* newsletters, and the format change deserves some mention. Your updating and downsizing is probably the best changes you made since converting to spot color. My congratulations to both you and Mrs. Huffman for the wisdom you used in moderniz-

ing the "look and feel" of the newsletter and the attention to detail. I believe that the writing in your columns (Horizontal Windsock, Higher Plane) will set the tone and inspire the kind of excellence you would like your other writers to achieve. Keep up the good work, and thanks for the effort.

Best wishes for continued success and for a very Happy Holiday season.

Mike

Michael E. Wayda

Editor, Federal Air Surgeon's Medical Bulletin

and Gordon Taylor was killed. Stunned by the death of his brother, C.G. Taylor stopped everything for a few months but then continued producing the B2 Chummy. A group of investors from Bradford, PA backed Taylor and production of the newly certified B2 began.

Production and sales looked good but then another crash occurred; this time it was not an airplane, but the stock market. The original investors withdrew their financial backing and Taylor went out of business, but not for long; a Pennsylvania oil tycoon came to the rescue. This new investor knew that the Aeronca Company survived the stock market crash because their very successful Aeronca C2 and C3 airplanes were aimed at the lower-priced market. The new financial backer urged Taylor to come up with a more basic airplane and the Taylor E2 was the result. The little high-wing monoplane was a success and Taylor was back in business again.

Despite the sales success of the E2, things did not continue to go well for Taylor. He and his backer were of different character and it was a tenuous relationship. By 1935, the E2 was out-

dated and the financier wanted the design modernized. Taylor disagreed. A young engineer named Walter C. Jamouneau was brought on-board against Taylor's wishes. Jamouneau made changes to the E2 design and open war broke out between Taylor and the oilman. It was a war that Taylor lost and he found himself out of the company. The oilman, William T. Piper, produced the Jamouneau-revised Taylor E2 under a new name. Out of Taylor's business failure the legendary J2 Piper Cub was born. C.G. Taylor was far from being out of the aircraft business and formed the new and successful Taylorcraft Company in 1936. Throughout the 1930's and 1940's Aeronca, Piper and Taylorcraft produced affordable airplanes. It could be said that they taught America how to fly.

If I could go back to that day in 1958 I wouldn't spend all my time looking at his new plane. I would ask about Piper and about Taylor's "failure." We could all learn that a failure might really be a lesson toward success.

Comments or questions? earldowns@hotmail.com

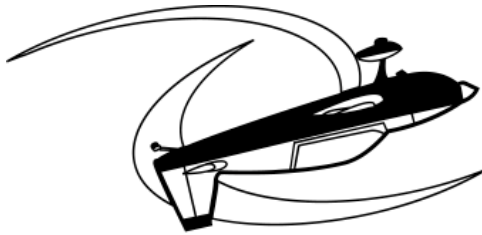
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Fay Gillis Wells, 99s Founding Member, Dies at 94

[Ed: Many people in Oklahoma, were friends with Fay Gillis Wells. Not only was she involved with Oklahoma aviation dating back to the 1930s, she was also a founding member of the 99s, headquartered in Oklahoma City.

Among those who counted Fay Wells as friend were Joe Cunningham and Mary Kelly. We have seen photos of Mary sitting with Fay Wells on our deck.

Although Barbara and I never had the privilege of meeting Fay Wells, right after we took over the paper, she sent us a Christmas card, which read,

"Dear Michael and Barbara,

"Thank you for that very special edition of The Oklahoma Aviator remembering Joe and Mary. What a team they were and how lucky the aviation world had two such dedicated supporters. Also, thank you for continuing to publish their legacy. At least we will have the paper to spark our memories of the good old days. They will be a hard act to follow, but you are heading down the right path. Have a happy holiday and keep your eyes on the stars. Fay Gillis Wells"

The article below is an especially good one, reprinted from the Washington Post.]

Fay Gillis Wells, 94, an aircraft pilot and journalist who bailed out of a disintegrating airplane on Long Island, covered warfare in Ethiopia and politics at the White House, and traveled the world in pursuit of adventure, died of pneumonia December 1 at a hospital in Virginia.

In 1933, when aviator Wiley Post made his first flight around the world, she helped with logistics, met him at a refueling point in Siberia and reported on his progress for the Associated Press. As a stringer for the New York Times, she covered the coronation of Emperor Pu Yi of Manchuria in 1934.

She had arranged to share the aircraft cockpit with Post on another around-the-world flight in 1935, when journalist Linton Wells proposed marriage and asked her to accompany him to Ethiopia to cover the Italian-Ethiopian war for the New York Herald Tribune.

"Did I want to go on the trip with

Wiley or did I want to have my honeymoon in Ethiopia? And I thought about 30 seconds, and I decided I didn't want to substitute on my honeymoon," Mrs. Wells told Karen Schaefer of Ohio Public Radio in a 1999 broadcast. Replacing Mrs. Wells on what turned out to be the ill-fated flight with Post was the American folk comedian Will Rogers. The men lost their lives when the airplane crashed in Alaska.

Mrs. Wells did go to Ethiopia with her husband, where on their honeymoon they covered the Italian/Ethiopian war. He took the northern half of the country; she took the south. On their return to the United States, she purchased two pets - a cheetah and a leopard. She lived with the leopard in her New York apartment for a period, then moved to California with both pets, where she covered the movie industry while her husband worked on a book.

For the next 40 years, Fay and Linton Wells covered a variety of news developments around the world. They came to Washington in 1963 to establish a bureau of Storer Broadcasting service. Mrs. Wells covered the White House for Storer until retiring in 1977. Linton Wells died in 1976.

Fay Gillis Wells, a resident of Alexandria, VA, was born in Minneapolis. She grew up in various parts of the country and attended the University of Michigan, but left in her junior year to live in New York. Her father, a mining engineer, did not want her living alone in New York and ordered her to join him at a mining camp in Quebec, where, she later recalled, she "was the only unmarried girl in a mining camp of 600 men."

She later returned to New York, took flying lessons and in 1929 became a demonstrator and saleswoman for Curtis Flying Service. She survived a crash that September on a flight from a Long Island airport. Her aircraft, she said, came apart in midair when she was flying upside down in an aerobatic show.

"I was thrown out of the plane," Mrs. Wells said in the 1999 interview. "I didn't have my hand on the rip cord, I didn't know where it was. I was tumbling head over heels. Fortunately, my chute opened,

they said, about 400 feet, and I landed. Nothing was right, except I didn't have a scratch, I didn't even have a black and blue mark on me."

That bailout qualified Mrs. Wells for membership in the Caterpillar Club, a group of people who owe their survival from air crashes to the old silken parachutes, before the days of nylon. Decades later, she continued to wear the club's symbol, a tiny gold pin in the shape of a silkworm. She was the first female pilot to qualify for membership in the Caterpillar Club, according to Women in Aviation.

Later in 1929, Mrs. Wells helped found the Ninety Nines, an international organization of female pilots whose first president was Amelia Earhart. At her death, Mrs. Wells was one of four charter members still active. In the early 1930s, Mrs. Wells accompanied her father to the Soviet Union, where she reported on aviation activities for the Herald Tribune and Associated Press and became the first American woman to fly a Soviet civil airplane.

At the request of President Franklin D. Roosevelt, she returned to Africa with her husband in 1941 to investigate possible locations for a Jewish homeland. Later, they headed a U.S. commercial mission in Portuguese West Africa. Their job was to purchase strategic

minerals for the U.S. war effort and to keep them away from the Nazis.

Their only son, Linton Wells II, was born in Luanda in 1946, and they returned to the United States, bought a houseboat in Annapolis and sailed to Fort Lauderdale, Fla., where Mrs. Wells was a stay-at-homeboat mother for several years. She wrote a syndicated column, "Nautical Interiors," for the Herald Tribune and designed yacht interiors.

As the White House correspondent for Storer Broadcasting, Mrs. Wells accompanied President Richard M. Nixon to China on his historic 1972 visit. She also renewed her interest in aviation, supporting the issuance of the Amelia Earhart stamp in 1962 and chairing the first international convention of the Ninety Nines.

Her aircraft pilot's license had lapsed in the 1930s. But on her 92nd birthday, Mrs. Wells landed a small aircraft at Elizabeth, NJ, where she was attending a commemorative ceremony 75 years after her high school graduation. That was her last flight. Last month, shortly before she entered the hospital for the last time, she addressed an audience and received a standing ovation at a ceremony in which she received a Lifetime Achievement Award from American Women in Radio and Television.



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Ask the Doctor

by Dr. Guy Baldwin, AME



Hyperthyroidism

A few weeks ago, I dealt with an unusual case involving an aviator over 40 years of age who wanted to obtain an FAA Class I medical certificate. Class I medicals require each such applicant to undergo an EKG test once a year. This applicant's EKG was normal, except that it showed some tachycardia--increase in heart rate. Normal rates for his age group are 70-90 beats per minute; his was 100 beats per minute.

When I mentioned it, he said he drank a good bit of coffee and caffeinated soft drinks, so I asked him

to return the following morning for another examination prior to having his morning "caffeine fix," thinking the rate would probably have dropped into the normal range.

However, the next morning the results were the same: normal EKG with a heart rate around 100 beats per minute. At that point we decided to take a blood sample and have it analyzed to determine the cause of his tachycardia. The returned lab report showed that he has hyperthyroidism-- an overactive thyroid that produces excess secretions into the bloodstream. We advised him to go to an Internal Medicine specialist, who confirmed the diagnosis and put him on medicine to bring his thyroid function back into the normal range.

With the medicine, I expect his heart rate will also return to normal. However, in order to get his Class I medical, he will have to first reach normal thyroid blood levels and then undergo a waiting period before resubmitting an application for a medical.

If you have any questions regarding this article or any others, please do not hesitate to contact my office at 918-437-7993.

Luscombe Receives Amended Type Certificate for 11E Spartan

ALTUS - On December 17, 2002, the Federal Aviation Administration's Aircraft Certification Office in Wichita, Kansas, today awarded Luscombe Aircraft Corporation the final Amended Type Certificate for the Model 11E airplane. The 11E, an upgraded and modernized Luscombe Sedan, is a 4-place, single engine, high wing, aircraft with new tricycle landing gear, a more powerful fuel injected engine, and state of the art avionics. Luscombe completed and submitted all required flight tests, structural testing, reports and approved drawings, to the FAA on December 2, 2002. In 190 flights and over 160 flying hours on the test aircraft, there were no failures. The aircraft was dispatched on time for every flight during the test period.

Luscombe President John Daniel reports that the design, fabrication, assembly, testing and certification activity leading to the Type Certificate have produced a very reliable, stable, comfortable, and safe aircraft. An Equivalent Level of Safety memo issued by the FAA states, in part: "In spite of

exhaustive attempts, it has not been possible to cause the airplane to enter a spin condition." The FAA further states that (the 11E) "provides a level of safety that is equivalent to, or better than, that provided by compliance with the one-turn spin recovery option..."

The company will now concentrate its efforts toward production readiness in preparation for full-scale manufacturing and marketing of the 11E.

[See our flight review of the Luscombe 11E Spartan in the May 2001 issue of The Oklahoma Aviator.-Ed]



Reproduction ME-262 Flies at Paine Field in Washington

EVERETT, WA - For the first time in 47 years, a German Messersmitt ME-262 jet fighter has left the ground under its own power. The 30-minute shakedown flight occurred on December 20, 2002 at Paine Field in Everett, WA, home of the Stormbirds ME-262 project.

Stormbirds is in the process of building five ME-262 reproduction aircraft to extremely accurate standards of authenticity.

The project is the brainchild of the late Stephen L. Snyder, a legendary figure in 20th-century aviation. Steve began sport parachute jumping in the 50s and, together with Charlie Hillard, performed the second baton pass in free fall. He went on to invent and manufacture

the first square ram-air parachutes, which are now the standard for jumpers worldwide. Later, by installing an engine on one of his square parachutes, he invented powered parachutes.

Along the way, Steve owned and flew many exotic airplanes. He had always wanted to fly an ME-262, the world's first practical jet fighter, but none were available. So, he did the next best thing. In 1993, he made a deal with the Navy to borrow a derelict ME-262, take it apart, document the parts and pieces, and return the Navy a restored airplane. Thus, he would gain the knowledge to build accurate reproduction aircraft.

These were not to be surface look-alikes of the ME-262, but as close to the original design as possible, down to

individual rivet placement. Very few changes were made from the original. The major change was to replace the original Jumo 004 engines (weight- 1900 lbs, thrust- 1800 lbs) with modern GE CJ-85 engines (weight- 395 lbs, thrust- 2850 lbs). However, rather than just mount the modern engine inside the cavernous cowling, Steve designed castings to replicate the outside appearance of the Jumo and put the CJ-85 inside. When the cowling is opened, it looks like the original Jumo is installed!

Unfortunately, Steve Snyder was not around to see the flight-- he was killed in the crash of his F-86 fighter near his home in New Jersey in 1999.

Test pilot Wolf Czaia, a retired Luftwaffe F-104 pilot, made the flight,

and pronounced it "a total success."

This is only a tiny bit of this fascinating story. For more details, visit Stormbirds' excellent website at www.stormbirds.com.



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Marvin Polzien Has Already Built Two

continued from p. 1.

Marvin does not talk much about that model. "It was a total disaster-- the material we used was no good-- it leaked like a sieve. We took it out of the hanger once and I made one tethered trip around the ramp, but that was all. Then we deflated it and put it away."

But in the true spirit of an experimenter, he was not ready to give up. Using lessons learned from the first model, the team spent a good bit of time designing the second model. He adds, "We just made it up as we went-- we didn't know what we were doing. Our learning curve was pretty wide, so we have a lot of junk lying around that didn't work. You can't imagine the hours and hours we spent,

figuring out how to do one thing or another."

The first step was to select a better material for the envelope. Helium is a small molecule that can sneak its way through most materials, so low permeability was a primary requirement. Other requirements included heat-sealing ability, good tear resistance, ready availability, and low cost.

In the end, they selected a .009"-thick white polyester plastic available in 60"-wide rolls. Marvin bought a bunch of it. He says, "I've got enough left over to build two more blimps!"

Heat-sealing ability was thoroughly investigated using a floor-mounted heat-sealing machine Marvin bought. "We ran I don't know how many test trips to finally select the right time, temperature, and pressure

settings. Heat sealing turned out not to be a problem-- we got great bonds!"

To achieve the desired buoyancy, they decided to make the envelope 82 feet long and 20 feet in diameter, tapered to form a streamlined nose and tail-- an estimated 18,000 cu. ft. capacity. A two-place welded-aluminum "car" for a pilot and passenger would be supported from the bottom of the envelope; a system of shroud lines known as a "catenary curtain" would be installed inside the bag to distribute the car loads between the upper and lower surfaces of the envelope.

Two 12-hp engine/propeller units, mounted on each side of the car, would provide the main power. Each engine would be able to tilt up and down to vector thrust for climbing, cruising, or descending-- helium blimps are designed with neutral or slightly negative overall buoyancy, so climbing requires either thrust vectoring or lift provided by the envelope in forward motion.

Pitch and yaw control would be provided by a third engine/propeller unit (24-hp) mounted on a gimbal at the extreme rear of the envelope and controlled from a control stick in the car. Fixed horizontal and vertical sta-



Marvin Polzien getting some "stick time" in the hangar prior to first flight.

bilizer panels would augment pitch and directional stability.

Inside the envelope would be two "ballonets"-- smaller bags inside the large bag immediately forward and aft of the car-- that could have air pumped in or out for trim control. Air would be provided from a compressor mounted on one of the engines.

A total of 13 gores of the 60" poly-



The pilot and passenger compartment of the blimp car. Instruments include compass, altimeter, rate of climb, water pressure gauge, outside air temperature, and temperature inside the envelope. On the right side of the panel is valve handle for controlling pressure in the ballonets. In the center console is a bit of whimsy: a picture of a fancy GPS/MFD unit-- maybe later!

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Blimps and Hopes to Build a Third



Ready for takeoff! Note that the main engines are rotated vertical to produce upward thrust.

ester would be required for the 20-ft diameter. Beginning in January 2002 and using a pattern laid on the hangar floor (with envelope material from the first blimp laid down to protect the polyester), the team cut each gore with scissors and then began the arduous task of lapping and heat-sealing the gores together to form the envelope, sealing

about 8 inches at a time. Says Marvin, "Wow, we really hit it hard to get that done-- 82 feet times 14 seams is a lot! Ten days of hard work!"

Working conditions were quite a bit less than ideal-- not only was there no heat in the hangar, but the roof leaked and everything was always damp.

On February 2, 2002, the envelope was fully sealed and ready for filling with air. Asked what kind of air pump they used, in true innovator fashion, Marvin replied, "Aw, we just used a Shop Vac-- took about an hour and a half!" Once inflated, a team member crawled inside the envelope-- through a hatchway resembling a space shuttle docking tunnel-- for a close look at the seams and other structural elements.

Once the air test was complete, it was time to fill the envelope with helium. The normal internal pressure for flight is very small-- only 0.5" of water. About 75 tanks are required for the job, at a cost of about \$1700. Even with the careful selection of material, the envelope still leaks about a tank a week. Filling the envelope the first time was an adventure. "We were trying to fill it so the middle inflated first, then gradually filling toward the front and



The blimp in free flight at about 75 feet altitude and making about 30 mph.

back. But suddenly, the helium all shifted to the front of the bag and up it went into the rafters! We were lucky we didn't damage it. Now we do it different: since the fill port is at the back end, we put sandbags across the envelope near the back. As we fill, the sandbags just roll toward the front."

Of course, with the opportunity to fill with helium comes the necessity to empty it out. But how does one keep

from losing all that expensive helium? "Simple," says Marvin, "We just built another storage bag using the same material as the envelope and transferred it over!" But, how was it transferred? "Shop Vac," he says proudly. Marvin is a true innovator.

After the first helium fill, the team found that the catenary curtains pulled

continued on p. 8.

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Calendar of Events

For a free listing of your event, email us at OklahomaAviator@earthlink.net or call 918-457-3330. To allow time for printing and publication, try to notify us at least two months prior to the event.

WHEN	WHAT	WHERE	CONTACT	DETAILS
1st Thursday	Dinner Meeting- Oklahoma Pilots Assoc dinner and meeting	Wiley Post Airport, Oklahoma City, OK	Helen Holbird- 405-942-6308	
1st Saturday 7:30AM-10:00AM	Fly-In Breakfast- Ponca City Aviation Boosters Club	Ponca City Airport, Ponca City, OK	Don Nuzum- nuzum@poncacity.net Bruce Eberle- 580-762-5735	Held rain or shine
1st Saturday	Aerobatics	Claremore Municipal Airport Claremore, OK	Sheri McKenzie 918-343-0931	Go to Ponca City for breakfast, then come to Claremore for hamburgers and aerobatics!
2nd Tuesday 6:30PM	Meeting- Women In Aviation	Spartan School of Aeronautics Jones/Riverside Airport, Tulsa	Laura Yost- 918-850-1499	
2nd Tuesday	Meeting- Spirit of Tulsa Squadron- Commemorative Air Force (formerly the Confederate Air Force)	Tulsa Technology Center Jones/Riverside Airport, Tulsa	Jim Dagg 918-224-6293	Restoring 1942 PT-19. Hangar space and workers needed
2nd Tuesday	Meeting- EAA Chapter 24	Aviation Tech Center OKC Airport	Martin Weaver- 405-376-5488 pacer59f@juno.com	Start 7:00PM
2nd Wednesday 7:30PM	Meeting- Tulsa Cloud Dancers Balloon Club	Contact Frank Capps	Frank or Cheri Capps- 918-299-2979 aerosportballoon@hotmail.com	
2nd Thursday 7:00PM	Meeting- EAA Chapter 1005	Ada Municipal Airport Ada, OK	Terry Hall 580-436-8190 or adairprt@wilnet1.com	Call or email for exact location for monthly meeting. We occasionally meet off airport.
2nd Thursday 7:00PM	Meeting- Oklahoma Windriders Balloon Club	Metro Tech Aviation Career Center, Oklahoma City, OK	Ron McKinney- 405-685-8180	For all balloon enthusiasts
3rd Saturday	Meeting- Green Country Ultralight Flyers Organization (GCUFO)	Call 918-632-6UFO for location and details	Bill Chilcoat- 918-827-6566	
3rd Sunday	Tulsa Cloud Dancers Balloon Flight	Contact Frank Capps for time/location	Frank or Cheri Capps- 918-299-2979 aerosportballoon@hotmail.com	
3rd Monday	Meeting- IAC Chapter 10	Contact Joe Masek for time/place	Joe Masek- 918-596-8860 jmasek@tulsacounty.org	
3rd Monday 7:30PM	Meeting- EAA Chapter 10	Gundy's Airport, Owasso, OK	Bhrent Waddell- 918-371-5022 bwaddell@tulsa.oklahoma.net	
3rd Thursday 7:00PM	Meeting- EAA Chapter 323	Sherman Municipal Airport Sherman, TX	Billy Dollarhide- 903-868-7609 dollarhide@ti.com	For more information, visit our website: www.eaa323.org
Saturday following 3rd Monday	Pancake Breakfast- EAA Chapter 10	Gundy's Airport, Owasso, OK	Bhrent Waddell- 918-371-5022 bwaddell@tulsa.oklahoma.net	
4th Tuesday 7:00PM	Tulsa Chapter 99s Meeting	Robertson Aviation, Jones/Riverside Airport, Tulsa*	Charlene- 918-838-7044 or Frances- flygrl7102@aol.com	*Unless otherwise planned. All women pilots including students are welcome to attend.
4th Thursday 7:30PM	Meeting- Vintage Airplane Association Chapter 10	South Regional Library, 71st & Memorial, Tulsa, OK	Charles Harris- 918-622-8400	
Mar 3-Mar 14	Registration for Spring II 2003 Term	Embry-Riddle Aeronautical University- Oklahoma City	Russ Tresner - 405-739-0397 or oklahoma_city_center@cts.db.erau.edu	Call or email for more info or to get your name on our mailing list.

Blimp

continued from p. 7.

the top surface of the envelope down near the front and caused the back to bulge upward. So, to improve the



The gore pattern laid out for cutting.
The Oklahoma Aviator, January 2003, Page 8

shape, they removed some of the envelope material near the top rear and resealed it.

In late February 2002 the blimp left *terra firma* for the first time, with its pilot and passenger on board-- a tethered ascent of a only few feet inside the hangar. Then, by March 23, the blimp had been taken outside for its first tethered flight. The plan had been to perform the first free flight soon after, but "things kept breaking and it took a long time to get them fixed!"

Finally, on August 3, 2002, the first free flight was accomplished. Watching video of the takeoff, Marvin said, "At that point, I didn't know doodly about flying that blimp. I got to fly the Sanyo blimp from Norman to Tulsa last summer-- that taught me a little. Now when I fly, once in the air, I just point the main engines straight ahead and control altitude with the stick."

continued on p. 9.



Looking like some gigantic man-eating bug from a B-movie, the blimp is being filled with helium. This filling was with the improved procedure, starting from the rear and working forward-- a sandbag is visible at the left side of the photo.

Note our new contact info: 32432 S. Skyline Drive, Cookson, OK 74427, 918-457-3330, oklahomaaviator@earthlink.net

Blimp

continued from p. 8.

After a short trip around the airport at about 200 feet at what appears to be about 30 mph, the video shows him approaching to land. He continued narrating, "About that time, I was asking myself how I was gonna do this! I decided to rotate the engines down to pull me downward, but now I know I can just point the nose down a little to descend."

Since then, Marvin has flown the blimp "five or six more times-- I lose count." On one flight he had an engine failure and put the blimp in the trees, punching a few holes in the envelope. "You know the old saying, in an emergency, fly the airplane, fly the airplane, fly the airplane? Well, I didn't do that-- I was busy trying to restart the engine when suddenly I saw trees sliding underneath me!"

Unfortunately, Marvin is now in a quandry. On the one hand, he wants to build a third blimp. "I know how to build a blimp now. I'm gonna dismantle this baby and build another one, to cor-

rect some of the mistakes. I'll use the same material-- it has worked pretty well. I'm gonna get rid of the catenary curtains, attach the car to the truss we used on the first model-- I've already got that part done-- and attach the truss to the bottom of the envelope. That will get rid of the dimples in the top surface and let me mount the gimbaled engine on the rear of the truss instead of on the envelope-- there's not enough stiffness in the envelope back there to support the weight. Also, I've got a mooring mast built for the back of my pickup that I'll use next time around. It will let the blimp weathervane so we can leave it out of the hangar for longer periods."

But on the other hand, he has lost the lease on the big hangar and expects to be kicked out at any time. "I don't know," he says, "Sooner or later, I'll have to deflate it, pack it up, and put it in my hangar." His voice trails off.

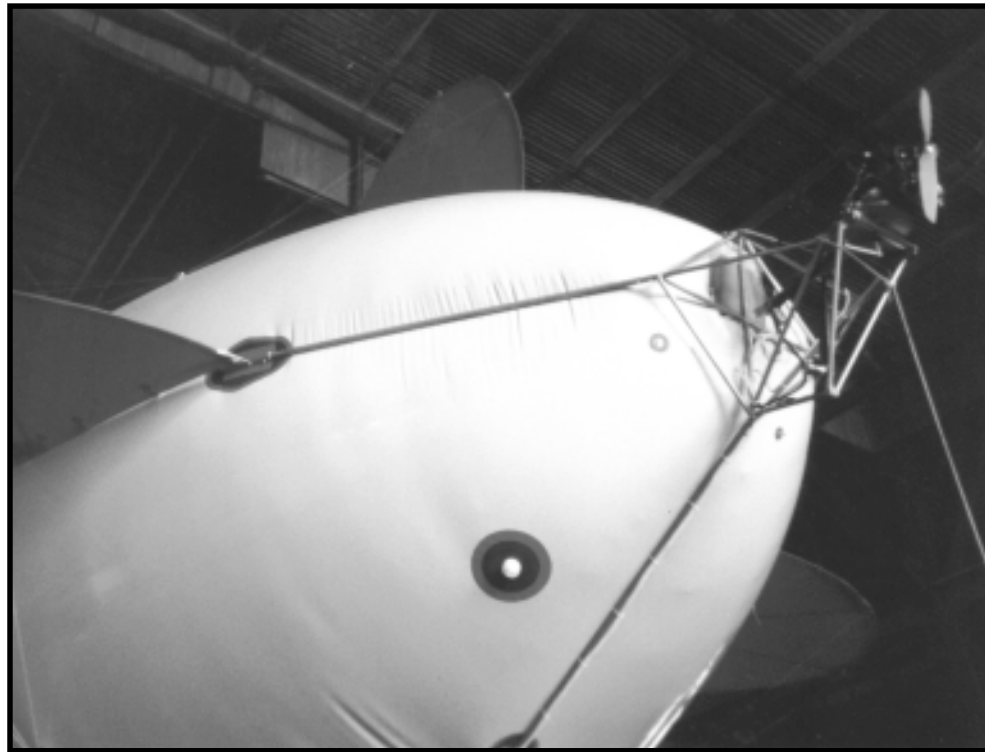
"There are all kinds of guys around the country that have tried to build blimps. Mine is pretty workable now,

but I wanted to get it tested before I made it public. Now, with losing the hangar, I'm not sure how I can do that. Just where this thing's gonna go, I don't know. I'm having a lot of fun playing with it. Even if it doesn't go any further, if I could go back and make a choice, I'd still do it again! Even

though we had a lot of failures, when you succeed, man, that's really good!"

Well said, Marvin Polzien-- spoken like a true experimenter and innovator! Based on past performance, we will not count you out quite yet!

Marvin can be reached at 580 223-3910.




The aft end of the blimp, showing details of the gimbal-mounted rear engine.



Marvin Polzien's first blimp model, on its one and only trip out of the hangar.

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Opportunity to Carry State Flag to Kitty Hawk for OK Pilots

EAA AVIATION CENTER, OSHKOSH, WI - The Experimental Aircraft Association (EAA) and the National Park Service, partners in EAA's "Countdown to Kitty Hawk" program presented by Ford Motor Company, today unveiled the "50 Flags to Kitty Hawk" initiative, in which EAA-member pilots will play a significant role in helping celebrate the achievements of the Wright brothers and 100 years of powered flight.

The "50 Flags" program will select one EAA-member pilot from each of the 50 states to fly their respective state flag to the Wright Brothers National Memorial in

Kitty Hawk, NC, during calendar year 2003. Each pilot will also carry a proclamation from that state's governor declaring the day of their flight "50 Flags to Kitty Hawk Day" for their respective state.

Upon arriving in Kitty Hawk, each EAA-member pilot will be welcomed by the National Park Service and take part in the official NPS welcoming ceremonies. Following the ceremony, the flag of the pilot's state will be raised and flown throughout that day at the National Memorial. Pictures of the pilots, their state flags, and the date of their "50 Flags" flight will be honored on EAA's Count-

down to Kitty Hawk website (www.countdowntokittyhawk.org) and updated reports will appear in EAA's Sport Aviation magazine and weekly E-Hotline updates.

"The partnership between Wilbur and Orville Wright resulted in one of our nation's crowning achievements, controlled powered flight in a heavier than air machine," said Larry Belli, Superintendent of the Wright Brothers National Memorial. "'Countdown to Kitty Hawk' and '50 Flags to Kitty Hawk' are the result of a partnership between the world's leader in recreational aviation and the world's premier

preservation and conservation organization.

"We welcome EAA-member pilots to Kitty Hawk to join the world in a fitting, year-long tribute to two of America's greatest heroes."

All pilots making the flight will also receive a Commemorative "50 Flags to Kitty Hawk" Certificate of Participation from EAA. At the end of 2003, plans call for the 50 flags to be used as part of a permanent EAA/NPS "50 Flags to Kitty Hawk" display at the Wright Brothers National Memorial site.

Pilots wishing to participate in the program should contact EAA by filling out a Pilot Criteria Sheet that will be available on the "Countdown to Kitty Hawk" website after January 1, 2003. Participating pilots will be responsible for securing their state flag and Governor's proclamation, notifying the NPS of the date of their planned flight and coordinating media coverage of the event in their local media. Details and instructions will be provided on the Pilot Criteria Sheet.

EAA's Countdown to Kitty Hawk commemorates the 100th anniversary of powered flight and includes the planned flight of an exact reproduction of the 1903 Wright Flyer on Dec. 17, 2003, at Kitty Hawk, NC. For more information regarding the program check the official Countdown to Kitty Hawk website (www.countdowntokittyhawk.org).

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