



The AMA History Project Presents: Biography of OBA ST. CLAIR

April 5, 1912 - August 14, 1986
Started modeling in 1927



Written & Submitted by CM (1995); Written by MS (01/2013); Transcribed by NR (07/2001); Edited & Reformatted by SS (10/2002), Updated by JS (10/2008), Reformatted by JS (02/2010); Additional information added by JS (01/2013)

Career:

- In 1937, created what was probably the first Control Line model
- Developed first a single line version and worked up to four Control Lines
- Testified in a lawsuit brought by Jim Walker, bringing down Jim's claim of the invention of Control Line flying
- Able to do a flat spin with his Control Line model
- Created a twin-cylinder engine by using two Forsters geared together and auto oil pump gears to increase the power of his model

Honors:

- 1998: AMA Pioneer Award
 - 2001: Model Aviation Hall of Fame (awarded posthumously)
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The following information about Oba St. Clair is taken from two articles that appeared in Model Builder magazine's November and December 1981 issues. Charles Mackey and Dale Kirn wrote the articles. Charles Mackey submitted the information to the AMA History [Project.]

Introduction: Who is Oba St. Clair?

Oba (pronounced Obie) designed the first Control Line/Gas model airplane in 1937. We will tell you about this amazing man and how his thought process worked in developing his invention.

What about Jim Walker?

I always thought he designed the first Control Line airplane! Jim Walker was a great man who did many things to promote Control Line flying. We will give more credit and appreciation to the memory of Jim Walker later in the article, but it was Oba St. Clair who proved in the United States District Court, Southern District of California, Central Division, that he first flew and publicly displayed his Control Line airplane in the court case, American Junior Aircraft Company v. L.M. Cox Manufacturing Co., Inc. In this two-part article, we will explain some of the search and discovery of evidence in the trial, the five times Oba St. Clair saw Jim Walker, the Oba St. Clair/Roy Cox connection and an update on his inventions.

Oba is a person who is very easy to like. He was born in Richfield, Washington, April 5, 1912, but does not remember Richfield because he moved to Idaho Falls, Idaho, at the age of two. His family moved to Dillon, Montana, the following year. Oba has a good sense of humor and pauses to laugh as he tells of his move from Dillon to Orofino, Idaho, in a covered wagon. They covered

700 miles in only 30 days because the wagon was new, the horses were good, and the snow did not come early that year. Oba was only five at the time and can remember vividly how he looked suspiciously at every tree when they passed through Bear Valley. Oba's biggest thrill of the covered wagon trip was the day they came to a nice, flat area in the terrain. Oba was walking with his older brother, who was eight years old, when his father teasingly put the horse team in a fast trot. When the covered wagon started to pull farther and farther ahead, Oba's older brother grabbed his hand to help him run faster. When they realized they could never run fast enough to catch up, the survival instincts overcame his brother and he released Oba's hand and went for the wagon by himself, leaving Oba all alone. Oba can still laugh as he recalls the terror that overwhelmed him when he thought he would be left alone in the wilderness. He thought he was a mile behind but now says it could not have been more than 100 feet!

Oba now lives in Eugene, Oregon, next to his own Control Line flying field. Haven't we all had a dream of our own flying field? Oba built the field by clearing out 50 to 60 foot pine trees and leveling the ground. You can imagine the turbulence Oba must contend with on windy days as the wind moves over the top of the tall trees. The field is fenced to keep the deer from tearing up his wood-chip flying surface.

Oba worked in his father's sawmills in East Lewiston and Orofino, Idaho. He started at the age of 10 as a timber faller's helper, progressed to driving a team of horses skidding logs, then to four-horse team and wagon moving logs to the mill. Oba is a self-educated man. He never reads fiction, but enjoys reading anything he can about engineering. He worked his way into the mill where he became head sawyer and millwright. Oba designed several pieces of heavy-duty equipment that improved the output of the mill and made life much easier. When his father sold the mill, Oba worked for the new owner as a designer of small sawmills and sawmill equipment. Oba could see that the timber would soon run out and he would have to move to a new location or find new work. He chose to become a watchmaker. He finished a one-year course in three months and in 1946, went to work for Skeies jewelry in Eugene, Oregon, and worked there until he retired in 1976.

Just as our country pulled together in a common bond of interest and direction in the early space flights, and more recently in the hostage crisis, so it was in 1927. When Charles Lindbergh touched down his Spirit of St. Louis in LeBourget Field outside Paris in May 1927, the world was turned on to aviation and would never be the same again. Air travel increased 500%. Requests for pilot licenses increased by 300% the following year.

Oba St. Clair was caught up in the excitement of flight; his idol was Charles Lindbergh. To understand how Oba felt about his airplanes and still does, you should compare his feelings with Charles Lindbergh when he spoke of the Spirit of St. Louis as "like a living creature gliding along smoothly, happily, as though a successful flight meant as much to it as to me. We have made this flight across the ocean, not I, or it."

Oba also feels that an airplane is a very personal object – not a thing. This feeling is the basis of Oba's invention of Control Line flying. It is the reason for his extreme safety consciousness and

his thoroughness of thought. He still has every gas-powered airplane he ever built, with the exception of his first biplane, which he gave away for the lack of space!

Oba's first airplane was his own design. It was rubber inner tube powered. It had approximately a four-foot wingspan. Construction was bailing wire, except for the spruce spars that were hand sawed. Oba did not know about soldering, so all joints were crimped together. Covering was butcher-wrapping paper. Oba was about 15 at the time and living in Idaho. It was winter and the airplane was equipped with skis. When Oba tells of the first flight, he says, "I got it cranked up. I was so surprised, I set it down, and that rascal took off, went up about 18 inches, and settled back down. I was amazed and that really stirred me up!"

That winter, Oba built 18-inch span rubber-powered airplane from cardboard, for him and all the neighbor children. He still recalls blowing the dry snow off the airplanes and the many enjoyable flights.

Oba's family moved to Yam Hill, Oregon, in 1932 and he discovered that the hobby of model airplane building existed in the rest of the world. He bought his first strands of model airplane rubber in Gresham, Oregon. He recalls that thrill with a broad smile on his face. The performance of his model was improved by the new rubber and the development of a pendulum control of his own design.

Oba was 17, working in his father's mill, making 20 cents an hour. He had to travel 20 miles to the mill, so he bought a two-cylinder motorcycle, a Harley Davidson, with a sidecar. He could haul his tools in it and save a lot of gas money with which to buy more model airplane supplies.

In the winter of 1933, he learned about soldering and built a replica of his motorcycle without the sidecar. Its power was a clock spring equipped with a governor. You could set it to run in a left or right hand circle or straight ahead. The model looks great today, super detail with working shocks on the front wheel and seat. The rubber tires were from ashtrays.

Oba says the motorcycle model was "the thing that started it all." He was demonstrating the motorcycle at the sawmill, when one of his father's employees asked him why he did not build a large motorcycle with a gasoline engine. Oba had wished many times for a small motor for his airplanes, but did not believe they existed. His friend told him they did indeed make such an engine, and he would bring him a magazine to prove it. He brought Oba two copies of Modern Mechanics and Invention magazine, one dated August 1935. The magazine had an advertisement on page 91 showing a little Brown, Jr., 6-1/2 oz. engine. Oba says, "That really turned me on." (Oba still has the magazines.)

The magazine also featured a construction article for the Berliner/Joyce Fighter (reprinted in February 1977 issue of Model Builder magazine). Oba started construction while saving for an engine. The Great Depression was still keeping money tight. Oba made a trip to McMinnville, checked all the newsstands for magazines, and found his first model magazine, Model Airplane News. It was the first model magazine he had ever seen. It was a thrill he will never forget. The

Brown, Jr. and Forster were advertised with 1/5 and 1/3 hp respectively.

He decided he wanted a twin-engine motor due to his Harley experience. He planned to couple two engines together to make a twin. Bear in mind at this point he had never seen more than a photograph of an engine. Oba chose the Forster Model A because it was advertised as more powerful. He knew he could not buy two engines to make a twin for a long time, so he would have to settle for a single cylinder temporarily. He saved \$12 for the engine and \$3 for the condenser. Delivery took six weeks; the factory sent Oba a postcard every few weeks telling him to be patient and that the engine was coming.

When Oba got his engine, no props were available, but the engine instructions recommended a 16-inch diameter prop, but did not mention pitch. Oba carved an ash prop to 6-inch pitch, which later proved to be a good selection. Construction of Oba's Berliner/Joyce Fighter was well along, ready for covering with engine mounted, when, Oba says, "I was not going to...Oh, look at that picture where it's skinned down. No way can I turn that little fragile airplane loose on its own and even hope to have it come down in one piece. No way! I cannot do that and I didn't!"

There were no fields around where Oba could fly that were larger than a quarter mile diameter and they were full of ditches and hedgerows. He could not take the chance. He said, "My dream would be destroyed." Had Oba had a flying field, he would have flown Free Flight and Control Line might have come much later. Oba reasoned that if he could fly in a circle the wing would always point to the same spot on the ground. If he mounted a fishing line on the left side and set the airplane controls to turn right, he could fly in a circle. He also reasoned that if he had low power it would do some ground hopping. This he thought could be very dangerous, so he designed an engine shut-off that he refers to as "no ground hopping" that worked when he touched down.

Next, he thought that if the nose of the airplane started to turn in to the center of the circle or away from the center, the distance from the pilot to the center of the airplane would get smaller, due to the wing pushing the line in a bend. This, he reasoned, would make a long wing safer to fly than a short wing. His airplane was already built, so he added a long spar to the inboard wing to work as a long wing. His reasoning now told him that all the drag was on the inside so he put a spar on the outside wing to equalize the inside guide spar, then put an air sock on the end of the spar to compensate for the drag of the fishing line. He used a fishing pole to keep the lines tight. The first flight was made in June 1936, and was a total success. The engine would slow down when it was low on fuel and slowly descend until the "no ground hopping" shutoff would take over and cut the engine for a perfect landing. Oba was delighted.

Experimentation soon began by shortening the inboard spars that acted as a fishing line connector and the outboard spar that held the windsock. The process continued until they were shortened to within the dimensions of the wingspan. Everything was working well, but Oba says he was really busy moving his fishing pole around on days that were windy. He mentioned his airplane had a tendency to climb into the wind and descend downwind. He figured that if he had two lines he could change the trim in flight. Then he thought, "Why trim? Why not just operate the elevators

as on the real aircraft?" And so, BINGO! That was the way to go. It was June 1936 and Oba was going to change the Berliner/Joyce Fighter biplane to two lines, but his wife was expecting a child soon. He didn't have time to make the conversion before, so he decided to fly it as it was since he was having so much fun and he would wait to build a new plane that coming winter.

His daughter was born August 12 after much difficulty to all involved.

When things settled down, design work on the new plane began. It was named after his new daughter, Miss Shirley. Although not yet proven, Oba believed if one line worked, two lines must work, and four lines would give him full house control. He had no metal control lines, only fishing line that he found stretched in unequal amounts with equal pressure. To solve this problem, he used a large handle. He attached this handle to four poles to replace the fishing pole he used on the biplane. He had already reasoned that his large control mechanism was not necessary and could never be used commercially, but the name of the game to Oba was safety. No way would he take a chance with his dream. The long poles could take up any slack in a second without running to gain line tension. The system could be improved later as it had been on the single line biplane. Oba was asked how he knew where to place all the four lines. He replied that it just seemed obvious to him that all four lines should be slightly behind the center of gravity.

When Oba was asked if he had a lot of questions about the design, he answered, "Oh, I had lots of questions; when you start designing something like this four-line control system, you want to use every safety precaution you can think of and still have that plane fly. You are going to have a lot of questions that you've got to search out in your mind, don't you see, because you're putting all your eggs in one basket and you are going to send them up into the air.

"[If] you have never flown a plane yourself, you have got to learn to fly that plane and [that] you're not going to crack it up. That is what I told myself. It's got to be able to fly on its own ... hands off controls like we'd be flying a large airplane ... take your hand off the control, the inherent stability is there ... it's trimmed out and, if you've got the motor power, the motor rpm just right for you, trim and all, it will go ahead and fly level."

Oba called the four-line control "full house." His design thought was, "I won't need the rudder, except offset for right hand turn, and, of course, test flights will use plenty of rudder to hold the nose out, but for take off, I will attach another line to that rudder so when I push the stick full forward, it will almost straighten out the rudder. That will keep it from having tendencies of going sideways around the field when I take off."

The control system has two lines for elevator control; the other two lines are connected to the engine throttle and aileron. To lower engine rpm, a quick left aileron control, then return to neutral. For more power, you flip right aileron control then return to neutral. Rpm will increase each time operation is performed until full throttle is reached.

The airplane has an eight-foot wingspan with a 16-inch chord. Weight is 10 pounds. It's covered

with silk and painted blue and yellow. All strength members are spruce and filled pieces are balsa. Oba went out by himself on July 4, 1937, to test his dream, Miss Shirley. He did not want anyone around in case he was not successful, or in case it was, he wanted to protect his idea. He cleared off a circle by cutting and clearing the hay and then driving a company truck around and around in circles until it was smooth. The plan was to taxi around for a few tank-fulls until he got the feel of the controls. There was about a six-foot rise and fall around the circle. Oba released the airplane, turned on the throttle to get up the rise and when the plane came around to the lower side of the circle, it took off. Oba was totally unprepared for flying. He took his hand off the control stick to let the airplane fly itself. It was about six feet from the ground and coming around to the high side when he decided he should give it a little up control, but it was too little too late – the airplane hit the ground and blew out a tire.

The airplane was OK, but Oba was a wreck! He smoked four cigarettes in 30 minutes while he thought about the situation and patched his tire. He fired up the Forster again and this time taxied around properly, decreasing the throttle on the downhill side. Oba then made history that day by putting in several flights. He continued to fly the airplane until 1941, when the war started, and he never had that first crash.

He did install his twin engine as planned (two Forsters geared together, using auto oil pump gears). The airplane had excessive pull downwind, but Oba soon learned to correct for this by feeding a little left aileron into the control. If it felt light on the lines, he would use a little right aileron. When you think about all the problems he overcame – from the control handle to the flying line stretch problems, the airplane design and control mechanism, the twin engine pulling a single prop with throttle control – it is staggering. When you think of how this man, or genius, was able to anticipate all these problems and logically solve them, put the solutions into practice and fly the airplane for four years without so much as a CG adjustment, you begin to get a small glimpse at the creativity and practicable ability of Oba St. Clair.

Oba made his first successful Control Line flight on July 4, 1937. Shortly thereafter, the news was out. On July 15, 1937, the Telephone Register [newspaper] of McMinnville, Oregon, ran a large spread with photographs of Oba's Control Line design, Miss Shirley. Several articles were printed in model airplane magazines and the science magazines.

Union Oil Company came out and took pictures for a monthly employee magazine in 1939. Oba made a newsreel at Swan Island Airport in Portland, but never saw the film. The photographer wanted him to dive his plane at him and come as closely as possible. Oba obliged and did just that. The only problem they had was controlling the crowd. Would you believe it? The world's first Control Line airplane and people were walking on the lines!

In the summer of 1936, after he had flown his biplane on a single line, but before his four-line control airplane, Oba saw an ad in Model Airplane News advertising the Elf Engine. Dan Calkin manufactured it in Portland, Oregon. Calkin made them in his basement. Oba had to make a trip into Portland for supplies anyway, so he thought this would be a good time to see the engines. At that time, Dan was making single, twin, and four-cylinder engines. Dan was kind enough to show

Oba his aircraft, which included a twin-engine design similar to the Ford Trimotor without the center engine. This was quite a thrill for Oba, since Dan was the first model builder he had ever met. Oba can still recall that Dan had cut holes in the basement walls about three feet from the ground to exhaust his engine gases.

Dan told Oba to go to the golf course and he would find Jim Walker flying his gas-powered airplanes. Oba rushed to the golf course and was delighted to find him flying a little airplane. It used about an eyedropper of fuel and would fly 15 to 20 seconds in a small circle about 30 feet high. Jim would estimate where the model would come down and snatch it out of the air before it could hit the ground. Oba did not introduce himself to Jim Walker, he only watched; he had the two-line idea in his head, but had not tested it and he feared that if he started talking about it, he might slip and say something that would give away his idea.

Oba built and tested his four-line control plane. He decided to show it to Jim Walker to see if he thought it had any commercial value. It was October 1937. Oba put his Miss Shirley in the back of the pickup, and, along with his wife, headed for the Junior American Factory in Portland, Oregon. The people at the factory told Oba he could find Jim at Dan Calkin's. Oba found Jim, introduced himself, and told him he had something he wanted to show him. He showed Jim and Dan the airplane and told them it could be flown on one line, two lines or four lines with full house. Jim didn't say much, but did ask a lot of questions. One was, "Do you find your engine speeds up when you're airplane gets in the air? I find these little ones always do." Jim also asked about crashes and slack lines. Oba told Jim that if he had any interest in using the idea, to get in touch with him in McMinnville. That was their second meeting. Oba had planned to fly for Jim, but didn't because it was raining that day.

The following year, 1938, a sawdust-hauling contractor wanted Oba to fly his airplane in Portland in a rented stadium, towing a banner with his company name on it. They made plans, but the flight never happened. Approximately two months later, the contractor came back to Oba and said, "Say, I saw a fellow in the schoolyard flying an airplane a lot smaller than yours and he had just two lines running out." Oba's reply is difficult to put into words.

Oba went to Portland to pay Mr. Walker a visit. Oba cannot remember if it was the fall of 1938 or the spring of 1939. He did not find Jim at the plant, but was told he could find him at the schoolyard. Oba got to the schoolyard just as Jim was finishing a flight with his two-line control airplane. This was their third meeting. Jim asked Oba to carry his airplane back to his starting spot where he had his fuel. When Jim got to the airplane he said, "Hey, I remember you." Oba responded with "Yeah, we talked about my aircraft in 1937."

Jim fired up his airplane and left the motor running a little rich. He told Oba, "When I get to the handle, you tune it in until I signal." Jim then took off and had a ball flying his little airplane, doing loops and figure eights. Oba recalls the engine was an Ohlsson 23 or something similar. The airplane was similar to a Fireball, but wasn't. Oba cannot remember where it differed from the yet-to-come Fireball. After the flight, Jim said, "I've got to get back to the plant," and did.

Oba found himself alone and unsatisfied since they did not talk about the thing Oba had most on his mind. Oba followed Jim back to the plant. When Oba got there, he said to Jim, “Well, it kind of looks like you are trying to commercialize on my idea.” Jim then put his hands in the air as if swearing to God, and said, “We've got proof that we have been working on this system for years before you showed me that ‘thing’ of yours.” Oba was insulted because Jim called his airplane a ‘thing.’ He thought that perhaps Jim had really been working on line control for years, but did not understand why Jim had been flying Free Flight airplanes on all their previous meetings.

Jim invited Oba into the backroom to see his experimental aircraft. Oba recalls that there were about two dozen airplanes, all the approximate size of the Fireball and all had obviously been crashed and repaired – some many times. Jim was quite knowledgeable about the airplanes and explained to Oba how, why each change was made, and how it worked. Jim obviously enjoyed explaining to Oba the design principles. But, in the back of his mind, Oba was wondering if Jim and his workers had time in the year and half since they saw his four-line control to build and test that many airplanes. He concluded they did indeed have enough time.

Oba also reasoned that he still had time to patent his system since Jim had not patented U-Control yet, but a long lawsuit would surely follow. Oba had no money for that. Oba and Jim parted company in a friendly manner.

Oba saw Jim Walker for the fourth time at Mayland Sweed in Oregon in 1948. Jim was scheduled to fly a Radio Control airplane at a Free Flight contest but did not, due to a radio problem his crew could not solve. Oba did not approach Jim that day. He had concluded that, “He's not my friend now.”

The fifth and final time Oba St. Clair saw Jim Walker was in Portland. Oba went to make a deposition for the court case. Jim Walker's Junior American Aircraft Company was suing Roy Cox's company, L.M. Cox Manufacturing Co., Inc., for patent infringements on two counts; one covered the bell crank system used to control the elevator, the other was the control handle, with attached reel. Jim felt that the Skylon Reel produced by Roy was a copy of his patented U-Reely. The first Oba heard of the court battle was in 1952, when Roy called Oba and told him Jim Walker was mad at him and would sue if he continued to produce his ready-to-fly airplanes without a license. He asked Oba to furnish him with a list of all the evidence he could find that proved he was using a line control system to fly his airplanes prior to Jim's patent. The list Roy received must have been a pleasant surprise, because Oba had many dated photographs, newspaper articles, company publications, sets of plans and still had the original plane!

Roy Cox made his decision to produce his airplane and fight the impending lawsuit. Roy felt that the items were not legally patentable and that he could prove that Oba flew his airplane prior to Walker's patent. He was also aware that Oba had shown Jim Walker his Control Line plane prior to the patent date of U-Control.

It took three years from the time Oba received that call from Roy Cox to the start of the trial in 1955. Oba, his wife, father and brother went to Portland to make their depositions for the court.

Jim Walker, his attorney and a clerk were also present. No conversation transpired between Oba and Jim, but Jim's attorney asked Oba if he saw Jim Walker in the room. Oba pointed out Jim. Jim's attorney turned to Jim and said, "Don't you suppose he could have seen you at one of your demonstrations?" This statement led Oba to speculate on the idea that Jim hadn't told his attorney about their prior meetings.

They broke for lunch, the plaintiff and the defendants each going to separate restaurants. Roy's attorney told Oba that it was obvious that, "We have the case sewn up," and they fully expected Jim to drop the case. To continue in the face of overwhelming evidence would surely put his patent in jeopardy. Much speculation has been suggested on why Jim continued with the case, but one point should be considered if you want to speculate yourself. Jim had won a similar judgment by consent against an R.W. Pickney, Case No. 47C458, in the United States District Court of the District of Illinois, Eastern Division. The court had ruled Jim's U-Control Patent No. 2292416 was good and valid and was infringed upon by the defendant. It would seem logical to assume this must have given Jim confidence in the present case against Roy Cox. The case lasted four days.

The Trial

On September 24, 1953, Jim Walker filed his case against L.M. Cox Manufacturing Co., Inc., charging them with patent infringements on two counts, the Bell crank system and the control handle/reel. Jim also charged that the trademark U-Control had been indirectly used by Roy Cox and that constituted unfair competition. Jim offered as evidence:

- Copies of his patents and trademarks
- Several magazine articles and books
- Drawing of his control system and Roy Cox's TD-1 airplanes
- A model of the framework of Oba St. Clair's airplane
- A Fireball and parts
- A Handy Reel, Skylon Reel, and U-Reely
- A letter from W. Elmer Ramsey (one of Jim's attorneys) to Roy Cox
- Several airplanes including, a TD-1, Firebaby, Zing, Monogram Piper Cub kit, Testors wooden model, and a Testors Sophomore 9 kit

The patent infringements were charged by Jim because Roy had been selling his TD-1 airplanes that used a bell crank without a license. He also charged the Skylon Reel was a copy of his U-Reely and also made without a license. He charged that when Roy had his TD-3 airplane boxes printed with the words, "All You Do is Control It," he was obviously cashing in on the trademark U-Control and taking unfair advantage.

Jim's statement to the court said that 90% of all model airplanes flown at that time in the United States used U-Control and that it had grown to a multimillion-dollar business by his hard work, substantial investment, time, and ability.

Roy Cox's statement to the court said that the L.M. Cox Manufacturing Co., Inc. was aware that

the patent had been issued to Jim Walker, but they had been illegally issued because the original inventor named was not the original inventor, that the ideas were known and used by others prior to the patent issue.

Roy challenged the claim that Jim Walker owned the trademark “U-Control.” Roy Cox listed 14 patents that preceded Jim's two patents and listed the following publications:

- Popular Science magazine, April 1939, page 107
- The Telephone Register newspaper, McMinnville, Oregon, July 15, 1937
- Model Airplane News magazine, November 1937 Model Airplane News magazine, January 1938

Roy's evidence included all of the above mentioned, plus his star exhibit, Oba St. Clair's original Miss Shirley airplane, three TD-3 airplanes, two molded from clear plastic to show bell crank action. Altogether, Roy introduced over 50 exhibits of evidence.

On February 11, 1955, Jim Walker and Roy Cox put on a flying exhibition for the court. Jim flew his three Fireballs at once. This may have done Jim's case more harm than good. When he flew his Firebaby with Roy Cox's designed Skylon Reel to illustrate that it performed the same function as the U Reely (lengthening and shortening of the flying lines during flight), the court did indeed conclude Jim was such an expert that he did not prove that the average flyer could do the same thing and Jim lost that point.

Roy Cox flew his TD-3 and believes he did everything Jim did except fly three at once. Roy had one airplane control system set up as Oba's airplane and one set up as manufactured. The flying went well for all. Each flyer surely returned to the courtroom thinking he had proved his points, but the victory for Jim was to be short lived on that day; he lost his first two points. The court ruled the defendant had not infringed on the trademark “U-Control” and had not engaged in unfair competition.

Roy's attorney asked for a judgment in favor of L.M. Cox Manufacturing Co., Inc., at that time, but didn't get it.

The case to follow was equally interesting. Roy produced a list of 15 people who could testify to prior use of the control system invention in question. They had all seen Oba fly his airplane more than a year prior to the issue of Jim's patent.

Roy or his attorney somehow had found an ad in a January 1938 issue of Model Airplane News listing for sale, construction plans and specifications for building a Miss Shirley” Control Line airplane. They came up with a modeler named Wilbur Hahn, who purchased a set of drawings and built and flew the Miss Shirley in 1938. There was little doubt as to how the case would come out – only a question of whether or not Jim would win any points. He did win two points: the trade name “U-Control” was declared his, plus the court referred to him as “Super Expert.”

The court ruled that the control patent was void and invalid. The court also ruled that Jim Walker had seen Oba St. Clair's airplane in the spring of 1937, although Jim testified he didn't remember. The court ruled that the control handle patent was valid only on the points that related to reeling the control lines out and in during flight.

The decision was all in Cox's favor. It must have been hard for Jim to take, but the worst was yet to come. The judge began to lecture Jim – scolding him for not keeping records of his testing, comparing him unfavorably to Oba, who was a mill worker and had complete documentation and proof of everything. The judge sent a letter to Oba St. Clair (Oba only testified by deposition; he did not go to the trial) naming Oba as the “father of Control Line flying.”

Model Aviation Hero: Jim Walker

There are no villains in this story, only heroes. Jim Walker is certainly a hero in my eyes and I am sure most Control Line enthusiasts feel the same.

I can recall Jim Walker putting on his exhibition at the annual Fort Benjamin Harrison Contest in Indianapolis and again at the East-West Meet held in sportsman's (Baseball) Park in St. Louis. Jim would fly his three Ohlsson 23-powered Fireballs all at the same time, while his pants fell down around his ankles. You got the idea it was a gag when you saw “Eat at Joes” on the back of his shorts. He used another gimmick to please the audience. While his assistant bent over pretending to start an engine, Jim would taxi his two-speed ignition point Fireball in a manner that would indicate he was having trouble; when he got it lined up, the full speed would kick in and the airplane flew into the rear of his assistant. The crowd would scream, and then change to laughter when they realized it was an act. After the show, I asked his assistant if he used padding. He said he it did not hurt much. Those Oregon people are tough!

Jim always had time for inquiries and would answer all my questions. The late Dean Hawkes, a friend of mine, would get tears in his eyes when he told the story of when he was a small boy, he asked Mr. Walker how he got such a nice finish on his airplanes. Jim put his hand on Dean's shoulder and said, “Son, the only difference between a good finish and a bad one is a little piece of sandpaper.” Bernard Ash has written about seeing Jim Walker at the Kentucky State Fair and how “Jim always took time to give a helping hand when it was needed.” I am sure that we three Jim Walker fans are but a few of the thousands out there. Whether Jim did or did not use Oba St. Clair's idea for line control really is not that important. The good things Jim did for the hobby, the design and developmental work, the salesmanship, showmanship and promotion, make Jim Walker a hero.

Model Aviation Hero: Roy Cox

Roy Cox is also a hero in this story. If Roy had not had the courage to follow his beliefs and fight the lawsuit, he would have gone into another business and we would not have the benefit of the millions of Control Line airplanes Roy shipped around the world. Roy and Jim had one brief meeting after the trial. They briefly discussed the trial, shook hands, and parted without any hard feelings.

Prior to the lawsuit, four other model airplane manufacturers told Roy that if he would fight the case they would share the expenses; they obviously had much to gain if he won the judgment. The cost to Roy Cox was around \$7,000. At that time, his company was new and the sum put the company on a much tighter financial restraint than they preferred. One of the four companies sent Roy a check for \$50, which he never cashed. He never heard from any of the other companies until a few years after the trial. One of them needed engines. Roy said he would build their engines if they would pay their share of the court cost. They left to consider the offer, but he never heard from them again. Roy is now retired, with his wife, Mary Bell. They spend their winters in Palm Springs and the rest of the year in a beachfront home in Corona del Mar.

Roy still has much respect for Jim Walker, and considers him as the man who did the most to promote Control Line modeling. Roy is too modest to mention the millions of good airplanes he gave to the world.

Model Aviation Hero: Oba St. Clair

Oba St. Clair is alive and well, living in Eugene, Oregon. If you see a black Vega wagon with model airplane paraphernalia in the back, you had better get out of the way. That is Oba and he drives like Art Scholl flies. Oba lives alone, next to his flying field and over his workshop where he has designed and built his own machinery to produce “stooges” (they hold and release your Control Line airplane).

Oba has invented a control handle that allows him to do spins – yes, you read it right – he does flat spins with a Control Line airplane. The handle is a converted U-Reely that automatically winds in when line tension of the airplane decreases. If the wind were to blow the airplane towards the pilot, the handle would pull the lines in without any movement required by the pilot. The way Oba does spins is to loop the airplane until it stalls overhead. He holds the up control as the reel automatically winds in the line and the airplane does a flat spin. When the airplane gets close to the ground, Oba gives a little down control, the airplane levels off and picks up speed. Oba designed the handle in 1949. He claims it has saved him at least 1,000 crashes.

Oba does not fly much competition, but when he does, he never places higher than second if the kids are flying. He has designed and built a flight stimulator that is used to train prospective pilots at the local contests.

When the Prop Spinners of Eugene, Oregon, set their world record of 64 hours and 33 minutes of sustained flight on September 3, 1957, Oba was club technical adviser and one of the 13 pilots.

Oba has all the gas airplanes he ever built except for his single-line biplane he gave away for lack of space. Most seem to be ignition, with his own designed, and built magnetos. A few glow plug designs are around. All were original airplane designs. The P-40 in the photograph was built in 1949 and is powered by an Atwood 60. The fuselage and fin are aluminum and the shock gear works.

When Oba was asked how he feels when he looks back on what happened, if he has any regrets. He replies that he does regret not having money to patent his system, because he always

recognized the potential of Control Line flying. He said he recognized Jim Walker as a great promoter of Control Line flying and has great respect for his coordination and dexterity. His only regret is that Jim did not cooperate with him. Wouldn't they have made a heck of a team! We asked Oba what was the biggest loss – the lack of financial gain or the lack of recognition. The reply was financial; he did not need recognition. The money was the true loss. The money would have given Oba the time to do more inventing and this was his life.

Conclusion

This story was made possible by Dale Kirn's interest in a mystery airplane. Dale was employed by Roy Cox and saw an airplane in the model shop being repaired. (It was Oba's and had suffered damage during shipping and court proceedings.) He couldn't get anyone to tell him about the airplane, so he copied the address from the shipping crate before it was sent back to Oba St. Clair after the trial. Dale called Oba and Oba told him the story.

Next, Dale did some research in the court records and obtained more information. He wrote to the Smithsonian Institute, in September 1969, outlining Oba's story and suggesting they consider putting the Miss Shirley airplane in the museum. The assistant director of aeronautics, Louis S. Casey, checked with the AMA, who verified Kirn's story, and they accepted the airplane in a letter to Kirn dated October 1, 1970.

The airplane is still in Oba's workshop, hanging on the wall. Oba never sent the airplane because the engine cowl, wheel pants, and engine drive connectors were stolen from his garage.

The following was written by Michael Smith, featured on page 31 in the February 2013 issue of Model Aviation magazine.



Written by Michael Smith

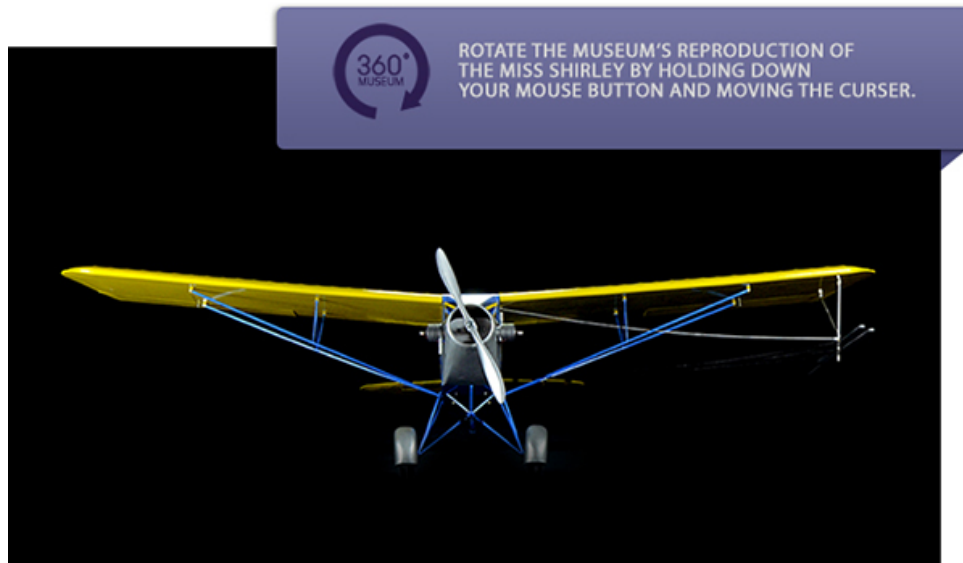
As featured on page 31 in the February 2013 issue of Model Aviation.

As featured in the Model Aviation tablet app.

Museums are treasure troves of amazing, and often unique, pieces of our cultural heritage. They preserve these pieces so that we might learn how the world has developed and changed.

On rare occasions museums get the opportunity to share these fantastic items with visitors, as well as provide a venue so that those originally involved can share their experiences.

On July 20, 2012, the National Model Aviation Museum in Muncie, Indiana, held the first of what we hope will be many such events. A reproduction of the first documented CL model airplane to be built and flown, Miss Shirley, was unveiled.



Go to our website at <http://www.modelaircraft.org/museum/missshirley.aspx> to view this picture as an animation.

On hand for the event were Shirley St. Clair, daughter of Oba St. Clair, the original designer and builder; CL world champion, former MA editor, and editor of Stunt News, Robin “Bob” Hunt; and well-known CL builder and manufacturer, Tom Morris. Noted CL historian, Charles Mackey, joined the program via Skype and offered his unique perspective about Oba St. Clair as highlighted in his book, *Pioneers of Control Line Flying*.

The presentation is available for viewing on the museum’s website, listed in “Sources.”

Born in 1912, Oba, like so many others of his age, was inspired by Charles Lindbergh’s flight. Aviation excited him and at the age of 15 he built his first model, a rubber-powered airplane covered with butcher paper.

Other models followed, but it was an advertisement for a Brown Jr. engine and a construction article for a model of the Berliner/Joyce fighter in *Modern Mechanics and Invention* magazine (August 1935) that really excited him. Plans for the Berliner/Joyce were reprinted in the February 1977 issue of *Model Builder* magazine.

Oba started construction on the model immediately, while saving money a Forster Model A engine. As he neared completion, the realization of his project hit him: he was building a FF model in the woods of Oregon. His creation would most certainly not survive.

Feeling that the solution was to fly the model around in a circle, Oba attached a fishing line to the left wing and set the airplane's controls to turn right. He also designed an engine shut-off system that would cut the engine upon landing.

Oba cleared and leveled an area next to his home, creating his own flying field. Using a fishing pole to keep the line straight, he made his first flight in June 1936. Although the flight was successful, experimentation led to improvements. Oba noticed how the airplane climbed when it flew into the wind and descended as it flew downwind. He determined that the solution was adding more lines, allowing him to actually operate the model's control surfaces, just as on a full-scale airplane.



The Miss Shirley with a very young Shirley St. Clair.

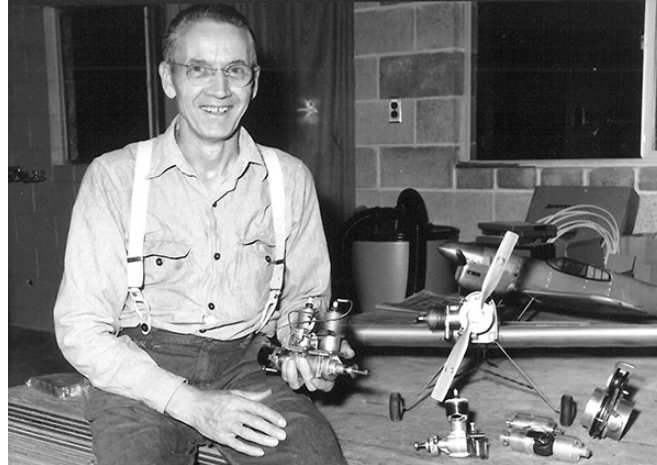
At first Oba was going to modify the Berliner/Joyce, but as it neared winter he decided to continue to enjoy flying his model and construct a completely new airplane. The new model had an 8-foot wingspan, weighed 10 pounds, and was constructed from spruce and balsa and covered in silk. Named Miss Shirley after his newborn daughter, it first flew on July 4, 1937.

Miss Shirley featured ailerons, rudder, elevator, and throttle control and was flown using a four-line system Oba called "full-house." He had no metal lines, only fishing line, which he found stretched in an uneven manner.

Oba's next step was to devise a control handle that would eliminate the uneven line slack. The result was a rather large and cumbersome handle with four poles and a joystick. The poles took up the uneven line slack, yet still allowed Oba to control the aircraft. He knew that this system would have no commercial applications; safety was his main concern.

Word of Oba's airplane quickly spread and on July 15, 1937, the Telephone Register newspaper

of McMinnville, Oregon, ran a large spread with photographs of Oba's CL design. Several articles also appeared in model airplane and science magazines. In 1939, the Union Oil Company came and took pictures for a monthly employee magazine.



Oba St. Clair in his shop in 1960.

Although Oba's achievements with the model are significant in their own right, Miss Shirley also played another significant role in the history of CL models.

In 1952, Jim Walker (whose company, the Junior American Aircraft Company, played an important part in the development of CL models), filed a patent-infringement lawsuit against the L.M. Cox Manufacturing Co., Inc. over the use of a bellcrank. Roy Cox heard about Oba's flight and refused to pay royalties to Walker when he began to produce his COX TD-1 model airplane, believing that Walker's patent on the bellcrank was not legal.

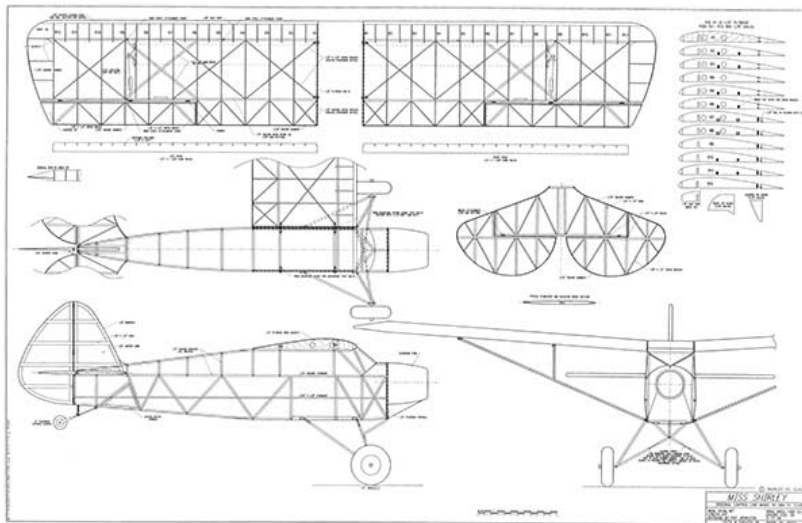
In 1955, the case was finally heard and Oba supplied Cox with dated pictures, newspaper articles, and even Miss Shirley, as evidence. The judge's decision ruled in favor of Cox, and with Walker's patent ruled null, the marketplace was quickly flooded with a wide variety of new CL aircraft.



(L-R) Bob Hunt, Tom Morris, Michael Smith, Shirley St. Clair, Scott Cheslik, Don Sanquetti, and Alan Hokenson at the Miss Shirley presentation. Photo by Gene Martine.

For the National Model Aviation Museum, this important milestone in the history of CL aeromodeling had to be documented for visitors to see. With the help of Shirley St. Clair, museum volunteer Scott Cheslik accepted the challenge of building a reproduction.

Shirley supplied some construction drawings along with photographs of the original model, which proved extremely valuable as Scott strove to duplicate the original as accurately as possible. As construction neared completion, additional assistance was provided by museum volunteer Don Sanquetti, who constructed the main landing gear and tail wheel; Alan Hokinson, who assisted with the dummy engine; and Gary Bussell, who lent his painting expertise.



If you are interested in learning more about Oba St. Clair and Miss Shirley, Oba's biography is available online as part of the Museum's History [Project]. The link is listed in "Sources" or [click here](#). Additional information about Oba is also available on Shirley St. Clair's website. The drawings that Scott used to build the Miss Shirley are available through the AMA Plans Service.

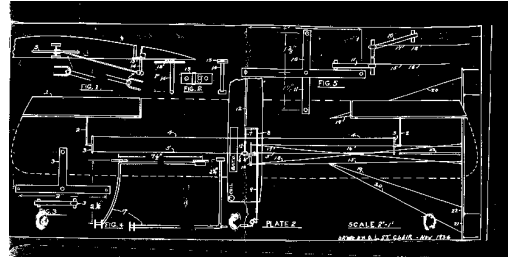
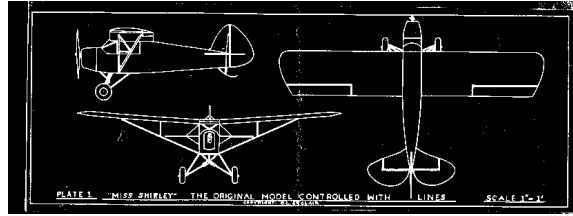
—Michael Smith
msmith@modelaircraft.org

*More information about Oba St. Clair can be found in the chapter about him in the book *Pioneers of Control Line Flying* written by Charles Mackey. The book can be found in the Lee Renaud Memorial Library at the National Model Aviation Museum.*





Miss Shirley



Plans for the Miss Shirley

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