

"THOSE MAGNIFICENT MEN AND THEIR FLYING MACHINES . . .

Joe Pfeifer FOR INSTANCE"



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(Bill Turner Photo)

THERE ARE JUST not too many places one can go in this world today, open up a hangar door and be face to face with a Nieuport, a Sopwith and a Pfeifer Sport, to say nothing of more modern aircraft such as a Funk and a Pitts. One of the rare spots where this bit of nostalgia can be experienced is the Industrial Aircraft Company in Columbia, California, less formally known as Joe Pfeifer's place.

My reason for this particular visit to Joe's establishment was the promise that I would be given the opportunity to fly the Pfeifer Sport. I was to have the pleasure of drifting back over the years and enjoying the hum of wind over wires.

A great many of us in this hobby of airplanes have a deep reverence for that which has gone before. Not, of course, to the exclusion of the present and all the comforts with which we are surrounded, but rather with an understanding that we would not be at our particular level of technology were it not for the rugged pioneers

who, with an intuitive knowledge of aerodynamics and a lot of guts, laid the ground work for our modern aerial transportation devices today.

Such a man is Joe Pfeifer. Born as World War I began in Europe, Joe grew up in an era of exciting advances for man in his attempt to leave his natural habitat and journey into the ocean of air. It was a time of trial and error mechanics and engineering, for how was a designer to know if his theories were correct other than to try them. It was a time of dreaming, a time of doing, a time of courage, a time of giants.

At twelve years of age, Joe scratched out the design for his first airplane. Not just a doodle, but workable drawings from which he slowly pieced together a flying machine. By the time he was fourteen, the craft was ready for flight and, with a self confidence which has carried him to the peak in all of his chosen endeavors, Joe decided to see just how good his engineering was. Only one small obstacle stood in the way of carrying out

the test program — Joe didn't know how to fly. He had read about it and talked to people who could pilot a plane and the whole thing sounded pretty simple. After all, he had designed his own airplane, so it was logical to him that the pilot might just as well be equally as virgin. Sort of plane and pilot starting even.

The series of events which followed are best described in the words of Joe's oldest son, Richard "Butch" Pfeifer:

"The ol' man used to tell my brother and me this wild tale about his learnin' to fly. We sorta took the whole thing with a grain of salt even tho' he never really has been given to much exaggeration. Then one night one of his ol' buddies he grew up with stopped by and they started reminiscin'. Sure enough, his friend came up with the same story in every detail.

What happened was, the ol' man, then a young kid of fourteen, climbed into this damned airplane he designed and just took off! He made one pass around the farm then headed for the ground. Now, unfortunately, in all his listenin' to stories about flyin' airplanes, no one had ever mentioned about the flare, so he just kept comin' right smack into the ground without breakin' his glide any. He and the ship got dented up some, but both were soon ready for another try. Same results as the first time. After the second repair someone must have mentioned about flaring or else he was gettin' smarter from bangin' his head into the instrument panel so many times. The third effort ended in success, if not finesse, and he's been flyin' ever since."

Joe went on to design and build more airplanes while working and learning to be a machinist of exceptional skill. In 1930 he designed the "Pfeifer Sport", with, as he puts it, "Apologies to my lifelong friend, Bernie Pietenpol. I wanted to get the homebuilt aircraft builder to lay down his hatchet and come out of the woods. In other words, build with steel tubes."

The airplane business occupied Joe's efforts until World War II, when general aviation dried up due to wartime restrictions and gasoline shortages. Because of his legendary skill as a machinist, he was able to secure contracts to produce 50 caliber machine gun barrels and so began a new career. When the war was over, production switched to high quality guns for the competition target shooter and the "Pfeifer Rifle Company" employed 300 workers. By 1950 Pfeifer guns held about 75% of the world marksmanship records, some of which still stand today.

In 1952, Joe made an about face and went back to his first love, airplanes. He has made his living ever since building replicas, flying for the movies, barnstorming and just about everything else connected with aviation. Thirteen years ago, he moved his base of operations up into the beautiful foothills of the Sierras and is the happy owner of the aforementioned aircraft which so graciously reside in his hangar at the Columbia Airport.

About four years ago, Joe gave in to a desire to investigate various forms of replacement for the rapidly diminishing supply of 65 to 85 hp aircraft engines. He also had a longing for his old 1930 "Pfeifer Sport." The original long since went off to the scrap yard so to once again experience the pleasures of a "modernized" Pietenpol, there was only one course of action open — build a replica. Two Pfeifer family characteristics made the project feasible: (1) They never throw anything away and, (2) it wouldn't really matter if they did because they never forget anything, so drawings were not an essential anyway.

It awakened many a long forgotten memory as Joe shook the dust off of old notes and began cutting tubing. Work doesn't progress as rapidly today as it did in years gone by. A stroke left physical evidence of its presence



(Bill Turner Photo)
The smaller wheels and longer nose make the new Pfeifer Sport appear more lean and nimble than the original version built in the 30s.



(Courtesy Joe Pfeifer)
The original Pfeifer Sport. Looks like "Beautiful Downtown Burbank" had a little smog even in 1937.

but in no way impaired the computer-like mind. Joe still performs a share of the work, but not without the assistance of Johnny Parsons and an omnipresent labor force of workers, eager to help and thus learn from the master craftsman.

The original airplane had gone through a series of powerplants over the years from Model A Ford through radials. Joe consulted with his friend Pietenpol regarding Bernie's developmental work on the Corvair engine. After much research and computing, Joe elected to build up one of these engines for testing in the "Sport".

"You ask why I am using a modern engine on a replica," states Joe in his inimitable style of posing a question as introduction to a statement he wishes to make. "Because this puts the old design right back to work doing what it did forty-five years ago — acting as a test

bed for developing a reliable, relatively inexpensive method of propelling an airplane."

By August of 1975, the reproduction of the 1930 Pfeifer Sport was ready to try its wings — and motor. "Nobody worried over the airplane — I knew it would fly. The unknown quantity was the engine. That's what makes this business interestin'," was the typical Pfeifer reaction to moving on into new areas of exploration. And fly it did, and run the engine did, and happy was everyone.

The day chosen for me to ride about the heavens in the Sport was one of those lazy fall days when the sun shines through a blue haze and casts long shadows even at noon. It was warm and still. High up in the mountains cool nights had colored the Aspens their soft yellow and it was a great day to fly an open cockpit airplane.

Preparation — thorough preparation — is another Pfeifer trait, so it was not just a matter of jumping into the rear cockpit and taking off. I was given condensed courses in aerodynamics, powerplants, aerology, aircraft design, physics, psychology and philosophy. Even then I was not considered ready.

"I'm gonna send that kid of mine — Butch — out first just to make sure everything's workin' O.K. Now, I don't mean for you to do it like he does. In fact, you'll probably be better off if you do everything opposite from what he does. Y' know, I won't let him do any real test work for me anymore. He just won't do what he's told. The last time I let him try that sort of thing I told him to climb up to 3000 feet at 70 mph, level off, fly around close to the airport at 85, then land. Well, he climbed at 70 alright, but doing slow rolls all the time, flew at 85 — inverted — gave us a buzz job that blew our hats off and disappeared over the horizon. I told him once when he was flyin' the Nieuport in an air show to stay above 50 feet. When he landed he had grass stains on a wing tip. I don't know what United Airlines is thinking of letting that kid of mine fly one of their 727's." Joe has an inverse way of expressing parental pride.

After Butch had flattened me on the ground trying to avoid one of his fly-bys, he returned and we began the process of fitting my 6' 5" into a cockpit laid out for a more normally proportioned individual. By removing all seat cushions, I was able to wedge myself in with both knees rubbing the instrument panel. If I flew only airplanes that fit me, I'd never get to fly. As with the original, there is a rudder bar instead of pedals and heel brakes which, I was warned, had very little effect. This was purely an academic point with me since my number twelves could not be maneuvered onto the brake arms anyway.

"You didn't have brakes on the original, did you, Joe?", I wrongly quipped.

"Sure we did. The tail skid," corrected Joe. "Don't forget now, the prop turns the opposite direction to what you're used to. Offset the pull with left rudder, not right."

The Corvair engine started right up. If it had not been for the breeze and the sound, I wouldn't have known it was running. There's absolutely no vibration. I checked the two Bendix S6LN21 mags and gave the carb heat a good chance to thaw out any ice accumulation that might have built up during idle.

"Watch the heat on this baby," Joe had advised, "she's an icin' son of a gun. Anytime you reduce the power from cruise setting, have that knob pulled out." Advice I was soon to forget — much to my embarrassment.

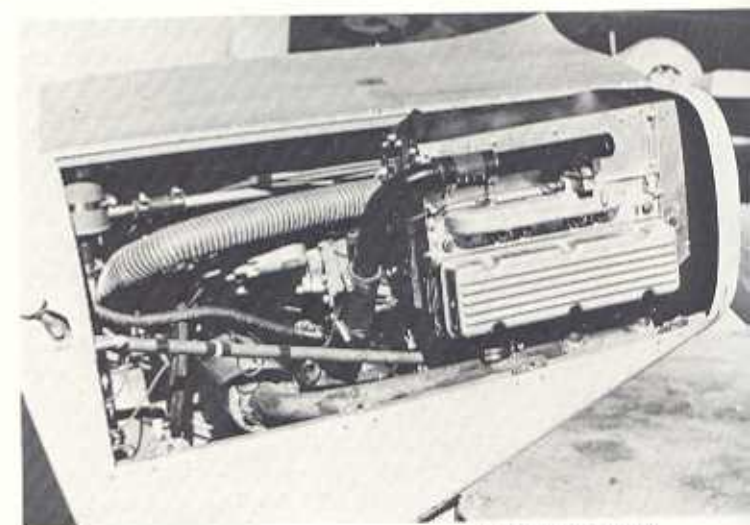
Just before pushing the throttle forward I glanced over at the anxious owner and he had an expression on his face about like a father watching his only daughter go off on a date with Jack the Ripper.

The Sport gets off the ground real quick due to that



(Bill Turner Photo)

He's cranking it backwards!



(Bill Turner Photo)

Corvair engine installation.



(Bill Turner Photo)

Joe Pfeifer and his Pfeifer Sport. Joe is famous for his beautiful World War I replicas, several of which have appeared in movies.

(Courtesy Joe Pfeifer)

The Pfeifer Sport in its original form. This picture was taken in 1937 in Burbank, California. That's Joe Pfeifer at the right. At this time the airplane had a Model A engine, but during its existence a number of engines were used.



great old Pietenpol airfoil and 150 square feet of lifting surface in the 30' 5" wing span.

"After you get airborne, level off 'til you pick up to about 70 mph and you'll climb better than if you stay behind the power curve at a lesser speed," was some of the "ground school" information given out prior to climbing aboard. I tried it both ways and, as usual, the oracle was right.

Again the smoothness of the engine was most impressive. The Corvair used was rated 110 hp by G.M. at 4300 rpm. The beautiful Ole Fahlin wooden prop limits revolutions to 3000 rpm which allows about 85 hp. It is, of course, direct drive. At best climb attitude, the Sport goes up at 500 fpm with full throttle.

There's no experience in this world akin to sliding along in an open cockpit at a leisurely speed with the happy hum of wires in your ears. The autumn landscape moved majestically below. I glanced up at the new snow on the Sierras towering above me to the east and reveled in the sheer joy of fun flying in the nostalgic tradition of the early days.

Handling the Sport is a simple matter for the design is straight forward and unsophisticated, a plus when pleasure is an aircraft's chief reason for existence. It takes considerable stick movement to induce the wings to bank. Joe had pointed this out in advance, stating that the ailerons were of the very simple piano hinge type and could not be expected to produce an effect similar to more intricate designs.

The elevators and rudder need considerably less travel, but the pressure required to accomplish a change in attitude seems to be about equal to the ailerons.

I tried a stall and, as with any good flying aircraft, it was a very uneventful experience. With all of the

clutter required to attach a parasol wing to a fuselage, there is always considerable drag and the Pfeifer Sport is no exception. When the power is cut, there is an abrupt slow down and the stall comes quickly. Joe had previously discussed the fact that he rigged the wings perfectly flat, but if he so desired, he could produce a combination of warp and elevator travel which would prevent an actual stall, producing a series of porpoising ups and downs when the stick reached full back. He, however, prefers the clean break and intends to leave things as they are.

I noted that cylinder head and oil temperatures remained fairly cool. At no time did head temp exceed 300° F during prolonged full throttle climb, while at cruise, the figure steadied at 280° F. The oil operating heat level stabilized around 180° and didn't vary appreciably under changing power settings. On early tests, using only the integral oil cooler which is standard with the Corvair Spider, temperatures rose above an acceptable level. This problem was solved by adding a second Spider cooler on the firewall with outside air routed to it.

At 2450 rpm I was cruising along at 85 mph indicated and burning, according to Joe's previous tests, a little less than five gallons per hour. The sixteen gallon tank, mounted in the wing center section, allows about two and one half hour cruising range with sufficient gas left on hand to see a pilot through a weather emergency situation.

The best combination of airspeed, rate of descent and maneuverability on base and final pattern legs, seems to fall at 60 mph, with all power off. When the flare is set up, there is only a short period of float before the touch down. Roll out is really a roll out at Columbia on a light



(Bill Turner Photo)
The author's wife, Gail, with the Pfeifer Air Force — a Nieuport, Sopwith Camel, the Sport, plus parts of others are visible here.

wind day. The runway slopes down hill and, since the brakes didn't work so hot, and I couldn't have gotten on them even if they had, I ended up with a long taxi back to the head of the runway where all of the hanger-arounders were evaluating my performance with shaking heads and clucking tongues.

The carb heat lesson was learned while idling for several minutes behind a line of aircraft waiting to take off. I neglected to pull on the hot air and the Corvaire stopped abruptly when I applied throttle to move out, an accomplishment which the pilots waiting behind me did not consider the cleverest scene they had witnessed that day. "Butch" trotted to my aid, leaned on the prop and I taxied out of the way of the muttering aviators.

"For my nexta tricka," I managed to wedge my oversized shoe up against a corner of an aluminum channel with the rudder bar deflected full left as I turned on to the runway. The ship continued on around in a 360° circle and I ended up right back off the runway sitting where I began. Mr. Pfeifer and his entourage had a few choice comments to make about that.

But I wasn't quite finished covering myself with glory. On the landing approach, I glanced over and smiled at the group assembled around Joe just as I passed by, trying to convey a relaxed and cavalier attitude in spite of the take-off incident. I looked forward just in time to observe that the runway was at hand and ready to receive me, but I was not ready for it. I yanked back on the stick and popped up at least twenty feet in the air. I decided to try and appear to the onlookers as if I were involved in some sort of intensive testing program, adding just enough throttle to maintain slow, nose high flight down to the end of the field, before increasing power for the climb out. Somehow, nobody was fooled, particularly the owner of the Sport who, I was told later, verbally burned my tail.

Obviously, it takes a pretty well engineered airplane to absorb such inattention to the task at hand. If I ever allow myself to relax to a similar degree while flying my Brown racer, "Miss Los Angeles", I won't be around to write about it.

The Pfeifer Sport does what it was originally intended to do. It provides two place fun flying, is easy to build, is stable, strong and the design most certainly is well proven. I have looked over the plans which Joe has decided to make available in the near future. They are well drawn in a very factual, concise manner. I would say that anyone with sufficient experience to do safe welding and with enough manual dexterity to get the drawings out of the mailing tube, should be capable of reproducing a copy of the Sport. By building this aircraft to plan, one can beat the FAA to approving the use of only the small registration numbers on the tail. You will have a replica of the original 1930 prototype and can, consequently, duplicate everything, including the placement of the N numbers.

The Pfeifer Sport faces a homebuilt market today dominated by aircraft which offer high performance at low cost, coupled with bolt together components sold in kit form. Joe is well aware that his flying anachronism will not send Jim Bede or Burt Rutan or Ken Rand scurrying back to the drawing board to meet the challenge of a new competitor in the field. This great old parasol design was primarily returned to life to act as a stable test bed for Joe's continued search into different ways to approach the aircraft powerplant needs of the homebuilder. Joe is making available the airplane drawings for those wanting to build a replica and for those who want an aircraft that will provide safe, pleasant fun flying. Its docile handling characteristics should appeal to anyone, from novice to expert, who wants to fly for the pure joy of being up there on a beautiful Sunday afternoon. But, over and above the rewards related to the aircraft itself, will be the establishing of a bond between the builder and Joe Pfeifer. Under a seemingly gruff exterior, a facade which is not too difficult to penetrate, lives a man who is representative of the spirit of aviation. All of us are in the debt of men such as Joe who pushed back the frontiers so that all of us today can enjoy the fruits of their accomplishments.

For details more accurate than I can give you, call or write Joe: Industrial Aviation, P. O. Box 866, Columbia, California 95310. Telephone 209/532-7541.