

# Falco Builders Letter



Jurgis Kairys does the bridges in Lithuania.

## The Ten Bridges of Vilnius

by Jonas Dovydenas

One thing about travelling in my other country, Lithuania, is that it's so small sooner or later I run into everyone I know—friends from America, Vilnius friends, distant relatives, and occasionally someone who asks me if I'm the photographer Dovydenas (nobody in Lithuania asks me about my Swing-Wing Falco, except Gandanauskas whenever I run into him, usually at McDonalds in Vilnius).

So I was not really surprised when I noticed Jurgis Kairys standing next to me at the luggage carousel after coming off a plane in Vilnius recently. A week later I ran into the President of Lithuania at a reception in a small town a hundred miles from Vilnius, who, as it happens, is an old friend from my Chicago days.

And—one more, then I'll get on with my story—my mother needed a serious operation, so I had to find the best doctors in Lithuania. Out of the team of six, I discovered I am related to four of them. It's like going to the Urbanna Oyster festival wondering if you will find Alfred Scott slurping his way through a bushel of oysters. You certainly will.

As I started to say, I bumped into Kairys and he tells me he will fly under all ten bridges of Vilnius tomorrow. And he gives me a big, folded invitation with a picture of him in his Su-26. Then he introduces me to the person he's meeting—Jean Monnet, the former jet jockey, and his lovely assistant Lynda Renwick. They are from Switzerland and maybe Kairys can talk them into organizing a world cup event next summer in Lithuania.

But at the airport I'm thinking, why does this guy, who was the world's champion freestyle pilot in 1990, who was number two in the 1994 Breitling Cup, number three in 1995, number two in the WAC 4 minute Free Style in Oklahoma in 1996,

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### In This Issue:

- 3 Falco Finale
- 7 Only from Jonas
- 8 What Are You DOING?
- 10 Thinning West System Epoxy
- 12 West Coast Falco Fly-In
- 14 Goings On at Sequoia
- 14 Susan's Corner
- 15 Sawdust
- 15 Calendar of Events
- 16 Mailbox

need to fly under bridges? Jeez, I could do that in my ratty Falco.

Of course, Kairys did a bit more than just fly under a bridge: he had a permit to fly under ten bridges, an almost unimaginable achievement. (The average permit if you want to do anything in Lithuania, like, say, borrow a friend's car for the day because yours was kidnapped and you need to collect some money to buy it back, requires 7.4 rubber stamps. A recent experience with remodelling a house in Vilnius has shown me it takes 2.33 days to get one stamp out of one beurocrat, though once, in Haiti, I spent three days chasing a single stamp for my visa. So there are worse places in the world for red tape, but not many.)

Kairys didn't have problems getting a permit—the Prime Minister of Lithuania was on the Soviet aerobatic team with Kairys, back in the days when the Empire was administered in Moscow, not Brussels. And before he was PM he was mayor of Vilnius and flew wingman when Kairys flew under the White Bridge in '96. With the right connections the rise and fall of empires is but a momentary inconvenience.

"My '96 flight (under the bridges of Kaunas) was a surprise (gift) to the people of Kaunas. The following year my flight was for the capital city Vilnius. This year I want the world to see what the people of a small country are capable of.... In other countries no one has to fly under bridges... they already have their place in the sun." Kairys' obvious sincerity struck a rusty chord in me. Patriotism is a fine thing, but in America it's either a perversion (like Ted & Jane) or a joke (like Perot). So it's a pleasant surprise finding someone promoting not just himself but something else worthwhile, too.

Like every other private pilot in the world, Kairys has airplane bills to pay. He can't just check his Sukhoi when he travels to compete. His Su-26 is not quite as plastered with logos as a NASCAR Chevy, but it's getting there.

His flight was on Channel Three, live. Sony used the flight to publicize three new, compact video cameras—one on the



*Kairys hangs on his prop and helicopters down the river Neris.*

fin (which is where I put a Nikon on my Falco), one on the wing tip and one in the cockpit. And to re-broadcast the flight in Japan, where Kairys has a following.

An Audi dealer put a big banner and the new TT Coupe on a high trailer on the White Bridge, the one Kairys flew under four times. The VW logo and cars were glistening on the Green Bridge. Vilnius Savings Bank was one of the sponsors, as was West cigarettes, a Phillip Morris brand. Their banners were tied to the railings. A radio station set up its mobile studio in the middle of the crowd. Its cleverly designed trailer scissored up fifteen feet into the air, unfurling two big banners.

The river Neris winds through Vilnius, its banks about thirty feet deep. The Saturday afternoon was beginning to chill in the pale northern sun. The sloping banks of the river were lined with people, like a stadium built for a contour plowing contest. The staff of a hospital were on the roof in their white garb. Guests of the high rising "Lietuva Hotel" were crowding the balconies, a camera crew was on the roof. They would see a rare sight—an airshow from above.

About a hundred thousand people were

waiting for one man in an airplane—and that man, one of the best pilots in the world, crashed his car on the way to the airport. Pilots say any crash you walk away from is a good crash. Kairys had the best. The cars were totalled—everyone walked away. He continued to the airport in one of the escorts. Judging by his flying, a brush with death on the highway does not distract him in the slightest.

Kairys is an important pilot. Patty Wagstaff once said his style was worth studying, but she's only ten or twenty places behind him. Though I'm a pilot I could no more productively study Kairys' flying than understand how gliders work by reading Frati's fascinating articles in the back issues of this newsletter. It's a mystery. I know a lot of work and practice goes into four minutes of free-style acro flown to music, but what does Kairys actually do to achieve his result? I have no idea. He told me once that before you can do what he does, you have to learn to disregard going from  $-8$  to  $+10$  g's every few seconds. Then you can think about your flying. Oh, I'm glad he told me.

I flew the Falco down to Orlando in '94 to watch him compete in the Breitling Cup. All I can say is that it was beautiful and

different. The only other pilot whose flying struck me as having a recognizable style was Nikolai Nikitjuk, the Ukrainian. Perhaps that is why Kairys does not do well in standard aerobatic competition. He's different, and you get points off for that. Or maybe he's just bored with repeating more perfectly a figure that has been done close to perfect a million times. The Russians once wanted him to fly with a military aerobatics team. He said no, that's just too boring, turning a jet in ten-mile circles.

**The Falco Builders Letter** is published 4 times a year by Sequoia Aircraft Corporation, 2000 Tomlynn Street, Richmond, Virginia 23230. Telephone: (804) 353-1713. Fax: (804) 359-2618. E-mail: seqair@aol.com Publication dates are the 10th of March, June, September and December.

**Subscriptions:** \$16.00 a year, \$20.00 overseas. Available only to Falco builders and Frati airplane owners.

**Articles, news items and tips** are welcome and should be submitted at least 10 days prior to publication date.

The first bridge of Vilnius is about five miles away from the last. Kairys flew under the downriver-most bridge first. Then he flew back and forth, out of sequence. This way he appeared the most number of times over the biggest crowd, which was in the center of the city. In between flying under the bridges he would put on a display of aerobatics. Nothing extreme, but nice enough. He was building suspense for his best shot, billed in the press as the Jaketori Maneuver.

I was standing on the White Bridge, in the center of Vilnius. Monitors were set up to show the views from the cameras on the plane. Apparently there was too much vibration or something, because the Sony cameras would cut in and out. The wide angle close up inside the cockpit showed Kairys intensely scanning and turning, the deadpan expression on his face moving up and down, from side to side as the constantly changing g slammed him around. It was a very special-effects, Hollywood-moment, only it was really happening. Then the screen would fill with snow and shimmering scan lines. Then the view from one of the wing cameras would appear. I think when Sony gets it all together we are going to see Oshkosh playing on national TV.

Radio controlled model airplanes have been hanging by the prop for years, but Kairys was the first to show that it was possible in a Su26. It's a strange sight. The airplane is not flying, not even moving. I

saw him in Orlando, in '94, just hanging there, taking a break in the middle of his four-minute routine. Now he would demonstrate a further refinement—the Cobra, which is what Jaketori means in Japanese. The Russians did it with one of their variable exhaust nozzle MIGs, but no one thought of trying it with a propeller plane until Kairys did it.

He came in slow over the river at an altitude of about thirty feet. The pitch-up was sudden and the plane ran out of momentum almost immediately. Although it was not rising, it was still slowly moving forward along the original line, only at a 90 degree angle of attack. Then it stopped for a few seconds, hanging there. Slowly it went on its back and flew away at a steep angle, going in the opposite direction. I think the crowd clapped. I don't remember. I was trying to figure out what control inputs would get the plane to do that.

Then Kairys was gone and the smoke started to drift away in the darkening silence. A few days later I spoke to him on the phone about what's next. Well, he said, I'm going to Japan for six weeks. I asked him about the mysterious prototype model MAI90 which he picked up in Moscow. What's going on with that? I don't want to talk about it too much, he said. But you have it, right? and are you flying it to find out what it can do? No, I'm flying it to find out what it can't do. I suppose we will



*When he's not designing swing-wing mods for the Falco, Jonas spends his time raising money for his favorite political candidates.*

never know what the MAI90 can't do, but if we're lucky and there is a World Cup Competition in Lithuania next summer we may see what it can do.

P.S. If any of you Falco builders think now that you know where Gando hangs out you can go buy a Swing Wing Falco Conversion Kit on the cheap directly from him—forget it. I lied about McDonalds. □



## Falco Finale

by Stephan Wilkinson

This article will appear in *Pilot magazine in England and Air & Space Smithsonian* (along with Richard Thompson's cartoons, which nobody should miss.)

My wife's Christmas present to me was permission to build an airplane. In April of 1991, I flew that airplane for the first time. In July of 1999, I flew it for the last time.

My Falco was part of the family for thirteen and a half years. First there were pieces scattered throughout the cellar, barn, kitchen and even livingroom—where the engine took up stylish residence as aluminum sculpture for six months—and then, finally, I owned a satisfyingly intact vehicle. The airplane was painted in Italian *Aeronautica Militare* insignia, gray and brilliant red, which caused one angry Brit rec.aviation internetter to flame me as a *poseur* for my presumption. I'd had the temerity to declare his favorite airplane, the Antonov An-2 biplane, the worst airplane I'd ever flown.

I carried a photo of my arrogant, sleek, Frati-designed speedster when sometimes I didn't even have a picture of my daughter in my wallet. More surprisingly, my wife was never without her Falco photo in her purse. (My daughter carried neither a photo of me nor the airplane.) For 450 hours, I flew N747SW—a *poseur* tail number that was granted by the FAA after it was suggested by *Air & Space Smithsonian* Editor George Larson as appropriate for "the world's smallest widebody"—and kept a map of the United States with red lines tracing the course of every cross-country flight that I made.

The plot of those flightlines became a starburst of bright red that arced in every direction from the Hudson River Valley of New York. The Falco visited Massachusetts, Nova Scotia, Maine, New Hampshire, Arkansas, Texas, Wisconsin, Michigan, Virginia, Florida, Georgia, Delaware, Connecticut, Pennsylvania, North and South Carolina, Alabama... pretty much every state east of the Mississippi and a few beyond, many of them several times. I chased Nascar Winston Cup teams, aviation archaeologists searching for wrecks, Detroit and foreign manufacturers introducing new-car models to the world's automotive writers (of which I am a minor one), MIT professors and aircraft-engine overhaulers and classic-car restorers who I decided needed to be interviewed.

I gave a ride to author, pilot and former Metropolitan Museum of Art Director

Thomas Hoving, a gangly six-and-a-half-footer who filled his side of the Falco and half of mine. Unable to come to grips with the Falco's featherlight controls, he proclaimed the otherwise windless day "too turbulent." I was ready to share the cockpit with JFK Jr., with whom I had a mutual friend who insisted that he would get us together, but it never happened. I took weekend houseguests for the classic down-the-Hudson-and-around-the-Statue-of-Liberty lark, went with my wife on a bicycling weekend in Canada, the Falco bearing our folding bikes, and posed in the airplane with helmet, goggles and four leggy models for a *New York Times* fashion photo.

The Falco became my aerial Interstate cruiser, my long ranger. Cruising at 202 mph and able to fly as high as 22,000 feet, it was, for me, indeed the world's smallest widebody.

The 22,000 feet is a real number. Flying atop an increasingly solid undercast one day, the rising clouds forced me up to an altitude where I realized that I'd better file an IFR flight plan or I'd be in the clouds illegally. "Stand by," said a busy Boston Center after copying my hastily radioed request. Meanwhile, the clouds continued to rise. Befuddled and obviously getting too little oxygen from my simple mask, I climbed with them; 18,000, 19,000, 20,000... I was already above the altitude where I automatically needed to be declared IFR even if the sky was clear.

"Seven Sierra Whiskey, cleared as filed, climb and maintain flight level one-niner zero," Boston finally said.

"Uh, Center, I'm already at two-two zero."

"Seven Sierra Whiskey, what are you doing up there? Don't you know that's positive-control airspace? You're illegal."

"Well, the clouds kept rising, and I needed to climb to stay VFR. It's real clear up here..."

"Did it ever occur to you to turn around? Or maybe hold?"

No.

That did it. I was no longer flying enough to remain skilled, safe, even marginally competent. Doctors talk about gomers, an acronym for "get outa my emergency room"—hypochondriacs, drunks, terminal ancients and charity cases who waste their time. To controllers, I was a gomas: "get outa my air space."

So it ended. After 32 years and 3,000 hours of flying, I was condemned to life as a fair-weather fun pilot, a role for which I no longer had any desire. Once I was like a 16-year-old with a new driver's license begging for every opportunity to drive to the 7-11 or post office. I was ready to jump into an airplane at even the slightest excuse. Now I saw the airplane as an expensive distraction, costing me considerable hangar rent and insurance money every day it sat unused.

The first response to my *Trade-A-Plane* ad for the Falco was from a United States Senator. At first, I didn't recognize the name. "What's a Falco? Is it the kind of plane my kids could fly?" he boomed. "They're both pilots."

I explained that first of all, it was made of wood. He needed to understand that, if he didn't even know what a Falco was, and yes, his "kids" would be able to fly it as long as they were competent pilots accustomed to relatively high-performance aircraft.

"Just lost my plane, so I need another one," he said. "Prop came off. Totaled it in the crash landing. Send me some photos and we can talk." When he spelled out his name and the Washington address, it dawned on me, and I made a weak joke about the election. "Anybody but Gore," he growled.

"Dear Senator," I wrote a few minutes later, "You're 1/a high-visibility individual, 2/ assumedly a lawyer and 3/a father who wants his children to fly an airplane that I personally built, repaired and maintained. Sorry, but there's no way on earth I'd ever sell it to you, and it's not because you're a conservative Republican. Don't feel bad. I wouldn't have sold it to John Denver either."

The Senator's legislative assistant called several days later to say that his man was not a lawyer. Yeah, but....

Liability—the fear of a destructive suit—is the most troubling part of selling a home-built airplane. No homebuilder has yet successfully been sued for workmanship or errors that caused a fatal crash, but someday it'll happen. Somebody who built an airplane as a well-meaning hobby will see his or her life become a shambles because a buyer did something dumb and died in an airplane the seller had built.

John Denver's estate is suing the builder of the Long-EZ in which Denver perished after the engine stopped at a very low altitude and the airplane plunged into the

Pacific off Monterey, California. At least as I understand it, the builder of the airplane had made a perfectly reasonable change in the fuel system and placed the tank-switching valve on the fuselage decking behind the pilot rather than on the floor in front of the seat. The amateur builder felt it was risky to have fuel lines snaking around the cockpit floor. But he never intended for the valve to be operated at 200 feet above the water after a pilot forgetfully ran a tank dry. One supposition is that Denver, in a desperate effort to get the engine running again, pushed the delicate control stick forward, nosing the airplane rapidly downward as he hastily swung around to try and turn the valve.

The liability was a problem I'd wrestled with, initially boasting that I'd take a chainsaw to the Falco before I sold it. (Inconceivable? I have an acquaintance, a well-off doctor, who did exactly that to his own kitplane.) Then I decided to donate it to an aviation museum of some sort and take a huge deduction for the contribution, but it turns out that unless you're Warren Buffett, you can't get tax credit for a one-time gift of that size. I considered spending thousands of dollars to have the engine overhauled long before it was due, thus transferring the liability for that vulnerable component to a professional shop. (I'd partially overhauled the engine myself early in the Falco's career, so I was the mechanic of record.)

Finally, I simply contented myself with having a lawyer draw up a complex, 12-page hold-harmless paper, filled with boilerplate, for a new owner to sign. It may ultimately be of little legal consequence, since such documents have no real validity, but at least I felt better. I would have an initialed and signed document in which a buyer affirmed his or her awareness that, "the seller is the builder of this aircraft and has no training or experience in building the aircraft... the seller repaired, maintained and inspected the aircraft but has no expertise, training nor prior experience as an airplane mechanic," and the like. But who would buy such a pig in a poke?

Meanwhile, I needed to do the annual inspection, so that a buyer would take over an airplane that could legally be flown for another 12 months before having to find a mechanic willing to do the same job. A homebuilder can inspect, repair and service the airplane he built, but only that airplane. A buyer has to either persuade the original builder to continue doing the annual inspections or find a commercial shop willing to take the responsibility of servicing a strange machine of un-

known quality. Some professional mechanics won't touch a homebuilt, since it's *their* name that goes into the logbook to approve it for another year's flying.

Annual inspections are the bane of low-utilization airplane owners. Fly an airplane 300 hours a year and an annual is done after the equivalent of roughly 60,000 miles of travel. Fly 25 hours a year, as I was, and the poor little airplane is stripped bare and laid open, its innards poked and manipulated only 5,000 miles after the last examination. Sometimes more damage is done by an annual than is uncovered during it.

One thing I did every year was check the timing of the engine's magnetos, a simple operation that involves carefully moving the propeller to a predetermined position and listening to the change in tone, like an apartment-door buzzer, of a little battery-powered box hooked to the mags. Standing by the prop spinner, I reached across the horizontal prop blade to switch on the squawk box. Somehow the propeller, whether it actually briefly fired or was driven by the built-up compression in one cylinder perched at top dead center, swung swiftly through a quarter-turn, catching me under my arm near the armpit.

Damn. Ouch. Uh-oh, more than damn-and-ouch. There's blood on the prop blade and more pumping all over my pants leg, from what will turn out to be a nicked artery inside a deep gash in my arm. The Falco, obviously aware that it was about to be disposed of like a hound dog gone songless, had bided its time and bitten me when I wasn't looking.

Could have been worse. "Saw a guy lose his arm once," a mechanic at the airport excitedly tells me the next day, after I have been bandaged and allowed to drive myself to an emergency room for stitches, narrowly avoiding the enthusiastic use of the expensive medevac helicopter that happens to be stationed at our airport. "He was standing on a ladder, working on the left engine of a Beech Baron, and the engine was just lumpin' along, barely idling. Someone asked him for a tool, and without thinking, he pointed to where it was, right through the prop arc. Flang his arm right up against the hangar wall, WHACK, 30 feet away. We put it in ice and brought it to the hospital, but it never did work right again."

If this was the worst the Falco could do, I'd consider it a deal. For there was another awkward, unspoken reason why I was cashing in my airplane chips. I had become increasingly afraid of the consequences of flying.

It all happened within a surprisingly short time. First to die was a good friend whose single plunged into a river on short final. The poor man achieved *USA Today* notoriety when the feckless FAA investigators found Viagra in his overnight bag and blabbed that they'd sure be looking into its possible role in the crash.

A science writer I read and respected, a friend of my editor at *Conde Nast Traveler*, crashed his two-seat homebuilt not 30 miles from my home and lost a leg. And worse, his nine-year-old son.

A test-pilot acquaintance suffered a jammed aileron in a prototype lightplane that must have seemed like a kiddiecar compared to the F-16 fighter that he normally flew. It killed him nonetheless, and he left behind a wife and infant child.

Coming home from a trip one lovely Sunday afternoon, I watched in horror as a push-pull Cessna Skymaster struggled into the air on one engine while I was turning downwind to land. By the time I touched down, the pilot was dead, hanging upside down from his seatbelt in a swamp a mile from the end of the runway.

The most experienced Falco pilot in the world, Italian air racer Luciano Nustrini, inexplicably dove straight into Auckland Harbor while watching the start of an around-the-world yacht race, killing himself and his wife.

Of every 500 piston-engine lightplanes in the United States, many of them flown only occasionally, at least one would kill somebody this year. I no longer liked those odds.

My ad for the Falco said, "Will deliver." So do I get lucky and find a buyer in next-door Connecticut, or at least New England? No. I find Bob Hendry, a delightful Australian marketer and one-time semi-pro footballer who works for an Internet-miracle company in Portland, Oregon.

Alone among major cities in the Lower 48, only San Francisco is slightly farther from my New York home. Even Seattle and San Diego are closer than is Portland. At least I specified, "Will deliver in the continental United States." Hendry will be disassembling the Falco and putting it on a ship when he returns to Melbourne.

Bob and his young, enthusiastic wife, Theresa, a landscape designer, come by airline all the way to New York to try out the Falco. They arrive at the hangar to find me sweating over the airplane in shorts and





*It's hard to imagine the world of the Falco without Steve Wilkinson out there doing something and writing about it, but we're going to have to get used to it. What a wonderful experience this has been. Thank you, Steve, for all you've brought into our lives.*

sandals amid a July drought, but Ozzy's don't stand much on ceremony. Hendry spends the rest of the day helping me button up the airplane after the annual, since I've left it as disassembled as possible to allow him a good look at the interior of the hull and wings, and I'm relieved that he seems impressed by the workmanship. (I think he's in fact attracted to my compulsiveness—lists, papers, records, research, documents, as my mother used to say a place for everything and everything in its place. You don't become a success in the computer business by being disorganized.)

Bob is a bit challenged by the light-handling, fast-landing little ship, but Theresa takes a ride with me over the Hudson Highlands and is thrilled by the speed and the bubble-canopy visibility after having known nothing but passengerdom in narrow-windowed Pipers, Cessnas and an occasional Mooney. She compliments me on the smooth landing, which at least proves to her that the Falco can be brought home gently even if her husband will at first have to work at it a bit.

It's hard to put a specific value on a commodity that has virtually no market track record, an airplane of which there are only a global 200—counting both the 50-odd homebuilt Falcos and those made during the 1950s and '60s in Italian factories—few of which ever change hands. I've come up with a number based on... well, terminal optimism and a WAG (wild-assed guess). Says Hendry, "I've always wanted a Falco." Well, he's got one, since his reaction to my asking price is, "Sounds fine to me." It's nice to negotiate with Internet-stock millionaires.

Somewhere over Ohio, westbound toward Oregon atop a cottony layer of broken clouds, I tilt my head back and look up through the clear canopy at a thin layer of stratus scudding past just above, as though I were flying fast over an inverted ocean. I'm giving this up forever. Moments later, well below me a long line-astern of four C-130 Hercules cargo planes groans eastward like placid milk cows heading back to the barn, another sight I'll never see from such a vantage point.

Do I mind? No, not really. Once upon a time I skied often and thought nothing was more glorious than a cold morning atop a mountain, the world spread out below and the first run of the day awaiting. Haven't done it in years and haven't missed it. Life is a series of stages, and I'd rather be open to new experiences and projects than become obsessed with old ones.

Never has the Falco felt so vulnerable. I'm over ground new to it—Iowa, Minnesota, South Dakota—and for once, I'm aboard what suddenly seems to be a huge flying banknote, its value declared as never before. Did I get too much of a magneto drop at that last runup? Is that alternator charging rate too low? The oil temperature a bit too high in a hot Midwestern July sky? What if the GPS that I so lazily depend on fails? Do I really know exactly where I am with only 45 minutes fuel left and empty spaces below that seem vast and friendless to an Easterner? I want very much to land in Portland with the same airplane that Bob Hendry bought.

Over western Iowa, I dip a wing into the

top of a small cumulus cloud like a boater trailing an arm in the water, the Falco banking and jinking as though it were a Star Wars racer. Illegal, yes, since I'm VFR and am supposed to stay well clear of clouds, but I can see for 75 miles... and will never do it again. Massive afternoon buildups are starting to tower all around me, and the clear air under the growing canopies blowing off the cumulonimbi is bumpy, playing with the Falco as a spiteful kitten might. In the distance, the clouds take topiary shapes—here a rearing Ferrariorhorse, there a sphinx, next to it a camel.

Over Wyoming the next morning, it is a stifling 85 degrees even at 4,500 feet under a sky silver with heat. The ranches on the brown earth are half a horizon apart, and I land to refuel at quiet, parched Riverton. As I sign the gas receipt in the cool office, there is a bang from the big hangar attached to it. The lineman and I look at each other and walk out to see a wounded Cessna Citation, its nose in the air and tailcone touching the ground. The tug driver pulling the bizjet out of the hangar never noticed that the door wasn't raised high enough and whacked the vertical fin right into it. The damage will cost more to fix than my entire airplane is worth.

The Rockies loom just to the west, and there's no getting around them. The Falco struggles to 16,500 in the hot air over Jackson Hole and punches through the turbulent air surfing over the mountains, and I'm very lonely. I *made* this airplane, and it is surmounting the biggest physical barrier in North America. How strange it is to be so close above clearly seen rocks, tiny lakes and summer snow-puddles even though the altimeter insists I'm well over three miles high. It's the first time I've ever tackled such a challenge in a machine of my own making. And the last.

As I descend several hours later into the incredible Columbia River Gorge east of Portland, idling downward a few wingspans away from lacy waterfalls plummeting hundreds of feet, Portland-Troutdale Tower responds, "Seven Sierra Whiskey, make a straight-in approach to Runway 25, call a three-mile final." Fuel pump on, front tank selected, mixture rich, gear down, green light, flaps 15, landing light on for traffic... it's a litany I'll never repeat.

Hendry is waiting on the ramp as the Falco, now *his* Falco, taxis in. He leads me to his new tee hangar in a nondescript pickup truck. I wheel N747SW into the gloom, help him trundle the doors closed and walk away. □



**Only from Jonas**

The enclosed photos reveal in graphic detail, for the first time, what the Oyster Fly-in is all about. I think they will substantially increase reader awareness, especially in the children who may pick up a dog-eared copy of the Falco Newsletter in the barbershop or dentist's waiting room (I might even venture the thought that a good primer on oysters and how to eat 'em might be an excellent alternative to sex education). These photos break new journalistic ground. They may even persuade Monica Lewinsky to come out next year on a sort of sentimental journey down memory lane, if you get the picture. I am so excited about them I am going to waive my usual fee for you. Of course, copyright is retained.—Jonas Dovydenas



## What Are You DOING?

by 'Anonymous'

Yesterday finally after twelve years my Falco took off for the first time, and worst of all I cannot say this because I was not allowed to do so, having not yet received the necessary and usual paperwork from the various aeronautical administrations. The report of my first flight will not be about speeds or handling of my Falco which perhaps are very good, but about the adventure itself and about a special man who came along with me.

It's essentially a bureaucracy problem, but as you know airplanes, especially Falcos, are very good at flying, but they have not learned to read yet and thus mine was totally unaware of the missing documents.

Yesterday as today, and probably tomorrow was a foggy winter day in my area. The Falco sits in a country airport quite far from my city, at an airport I've chosen as her base for the nice people who go there, quite different from the ones of my city airport where I still go for the good location practically inside the city, but where a plane like the Falco is not welcome. You cannot drill holes in the sky over the runway, the hangars are dirty, and the people are too jealous.

So I drove there in the morning fog, listening to the music on the radio and dreaming of air adventures while watching the gray sky in the long line of cars ahead of me.

I was not nervous, the night before I slept quite well although I had a temperature. I was not really supposed to fly, and the weather was not that good.

The inspector arrived. He carefully checked the aircraft, and then he asked me to perform a few runway tests.

As a courtesy I offered him the left seat. At first he said "Yes" but then he refused. So he sat in the right one which has no controls, and for the first time I fired up the engine. For the last two months, I had avoided the airport because I knew that as soon as I saw the Falco I would have also flown it regardless of the bureaucracy.

The engine fired up immediately. It was as if my hand were acting disconnected from my brain. I had been sitting there forever. I knew where all the switches were located. My eyes were pointing at the instruments automatically.

Engine temperatures were good. We released the brakes. He asked "Are you



Top: The inspector. Above: 'Anonymous' Falco builder.

insured?" I answered a firm "Yes" (liar) and we started moving. We had no radios, and I left the headphones at home. Really I was not supposed to fly.

I went through the takeoff checklist, and I entered the runway. We taxied down the runway twice, with full power to 55 knots and then brakes. The third time I lined up the Falco, I asked him "Do you want to close the canopy?" He said "Yes."

Takeoff flaps? "Yes."

What About the fuel pump? Again "Yes."

What would you have done in this case?

At this point I was sure he wanted to fly, but he couldn't say so because of his job. I gave it full power, the aircraft accelerated quickly and in a few seconds we reached rotation speed. I applied the necessary pressure on the stick and WOW the Falco after twelve years and 250 meters was finally airborne.

Two seconds, really two seconds, and the inspector turned his face shaking his hands. "Put it down!" He said. I kept my eyes straight ahead, pretending that I was not paying attention to him. He was astonished. He said again "Put it DOWN!!" I answered "Let it fly," and I started laughing in a satanic way. I didn't move my hand one inch from the throttle and at that point the runway was far behind.

He started to become very upset, and nervous. He said he was not supposed to make the test flight. This was very dangerous. He searched for the safety belt. He said that if the authorities hear about this, he would be fired.

I raised the gear and the flaps. The Falco accelerated. Again he asked "What are you doing?" I answered "I'm cleaning it up. We cannot fly at 130 knots with the gear extended." I said I was not able to maintain the speed. He started screaming to put it down. I left the circuit and did a few turns.





**Top: The two mechanics. Above: The first flight, with the inspector screaming.**

The Falco was flying beautifully—I was showing him my hands. I was very emotional. We were in the same tiny cockpit, and I told him that we were sharing the best experience of a lifetime. He was not as happy as me. I wanted to start laughing, but I couldn't. Once again I was asking myself why I was not doing this the normal way.

I was flying. I was overwhelmed by emotion. I was making too many inputs. I was happy with how the Falco was flying, and I was trying to detect any defects. I was scared of the inspector's reaction because I was not following his directions. All this at the same time.

The Falco did not have any permit to fly, nor the insurance. I was not allowed to be seated there. The displays on the radio stack although very nice to see in the late afternoon darkness were useless, and we were not talking to the tower. But anyway the Falco was flying. How many laws had I broken?

The inspector was insisting that I had done this on purpose. He was constantly asking why I had not landed immediately, and I said that I did not feel safe doing so. The aircraft was flying too fast, and I was not sure I would have been able to stop it safely. He answered that with 6,000 ft, we had plenty of runway. Really it seemed to me that Falco wanted to fly, and it flew.

So I entered the circuit, extended the gear and the flaps and prepared the Falco for landing. I visually checked the pattern it seemed nobody was in. Turn final on runway 16, checked again the landing gear, fuel pump, one more notch of flaps, switch on the landing light.

At that point an aircraft in the opposite direction switched his landing light on, so it was go around, full power and up again, with the inspector asking what the hell was I doing. I pointed out the Cessna on the runway, I did a tear-drop turn and safely landed on runway 34.

We slowed down, opened the canopy, and raised the flaps. It was silent in the cockpit except for the engine. The wind was in my hair, and now I was thinking of the inspector. What would he do?

He was not speaking anymore.

I rolled to the FBO. All the mechanics who did the final checkout of the plane were there. I stopped the engine, and then there really was silence.

I started laughing again. I was too happy, but who cares what would have happened? The Falco flew beautifully. For this, there's no need for documents.

He remained seated for a while, and then we went to the bar to drink something. On the way, he asked "Tell me truly, did you do this on purpose?" He wanted to hear "Yes" but really, believe me or not, I didn't.

I said once again "No".

My legs were barely sustaining me. I was too emotional.

We entered the small club bar. The woman who serves at the bar is the wife of the mechanic who did the final inspection. She kissed me with arms open.

She exclaimed "My husband told me that you would fly it today, he was sure. While you were flying I phoned him. Come here and call him again. He wants to know how does it fly."

At this point I had no courage to look the inspector in the eye. He said "I was sure you did it on purpose. You didn't put the stick on the right side to be sure I would have not aborted the takeoff."

I said "No really, I was not prepared to fly." I woke up yesterday very happy and relaxed for the final inspection. I was waiting for this day since a month now.

At the end this inspector didn't take any action. He's too passionate about flying, and he followed every step of my construction. He's young, and he really likes the Falco.

And he admitted too that although he was scared while flying and that I should have not flown under such conditions, he was glad we were safely home.

I'm the happiest man on earth, but I can't tell anyone why! □

# Thinning West System Epoxy

by Brian Knight

This article appeared in the Fall 1999 issue of Epoxyworks, published by Gougeon Brothers, manufacturers of the West System epoxies. Our thanks to Gougeon for permission to publish this in the Falco Builder Letter.

A question frequently posed to our technical staff is “can I thin West System epoxy so it will flow or penetrate better?” The answer to that question is “yes, but not without consequences.” Many of the advantages of thinning epoxy are offset by disadvantages in other areas of epoxy performance.

Thinning epoxy means lowering its viscosity. Low viscosity epoxy flows better, is easier to roll or brush, saturates fiberglass fabric quickly, and penetrates more deeply and more easily into porous surfaces like partially rotted wood. There are two methods of temporarily thinning epoxy. One is to heat the mixture and the other is to add solvent to the mix. The goal of both methods is to reduce the epoxy’s viscosity. This article explains what happens to West System epoxy when it is thinned either by heating the components or adding solvent to the mixture.

Through knowledge gained from our comprehensive test programs and from 30 years of practical experience, we have learned that epoxy formulation is a balancing act. When one characteristic is altered—e.g. changing handling attributes by adding a volatile solvent—other characteristics like moisture resistance and strength are also changed. Our chemists formulate a well balanced, versatile epoxy that provides excellent structural strength and moisture resistance. If you elect to modify it, you become an epoxy formulator and need to understand the effects of your changes.

Armed with the information in this article, you can decide if thinning epoxy is worth the tradeoff in performance.

## Is thinning necessary?

There is a perception that epoxy needs to penetrate deeply into wood to be effective. Sometimes this is true, but most of the time it is not. Some common misconceptions are that deep penetration of epoxy 1) makes rotted wood as strong as new, 2) increases adhesion, and 3) makes wood more waterproof. The following is a brief discussion of these points.

1) Rotted wood impregnated with epoxy does not make the damaged wood as good as new. Deep penetration of epoxy into rotted wood will make the wood hard but it will not restore its original strength. This is not important if the rotted material is non-load bearing. A rotted door threshold does not need to be strong, just hard. However, when the wood fiber is damaged, wood loses its ability to carry loads and unless the fiber is replaced, it will not regain its full strength. A rotted deck beam or sailboat mast needs more than epoxy consolidation to return the wood to its original load carrying capacity.

2) Adhesion in all but the highest density wood is not enhanced by deep penetration of the glue into the wood. Research performed at the Forest Products Laboratory showed that adhesion to birch was increased slightly by using thinned epoxy. In lower density wood species like Sitka spruce or Douglas fir, the weak link is the cross grain strength of the wood. It does not matter if the epoxy penetrates 1/4” into the wood or 0.005”. The strength of the wood, the amount of surface area and the adhesive ability of the glue determine the strength of a glue joint. Most types of wood glue do not penetrate deeply, yet, if used properly, they can exceed the grain strength. Epoxy is no exception.

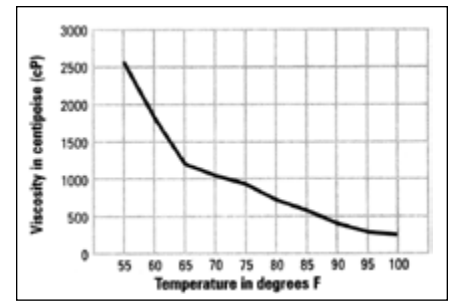


Figure 2. Viscosity of 105 resin vs temperature. Resin viscosity is reduced as the temperature is raised.

3) Water resistance of a piece of wood is not enhanced by deep penetration. Wrapping wood in plastic makes a pretty good waterproof seal without any penetration at all. Likewise, an epoxy coating on the surface is more water-resistant than a thinned epoxy coating that has penetrated deeply into the wood because, in most instances, the epoxy thinned with solvent is porous.

The USDA Forest Products Laboratory developed the Moisture Exclusion Effectiveness (MEE) test. It is a measure of how much moisture is absorbed by wood when it is continuously exposed to 100% humidity. Higher numbers mean the wood has absorbed more moisture while lower numbers indicate less moisture is absorbed. You can see that epoxy with solvent added is not nearly as moisture resistant as unthinned epoxy (Figure 1). However, if you need an epoxy coated surface that is less of a vapor barrier, thinning West System epoxy with solvent is a valid way to achieve this.

## Thinning epoxy with heat

Heating the resin/hardener components and then mixing them together results in a thinned epoxy mixture that, when cured, retains all the characteristics of epoxy cured at room temperature. The viscosity of epoxy is very sensitive to changes in temperature, and warming the components (resin and hardener) and/or the substrate substantially lowers its viscosity (Figure 2).

With wood, the best method of thinning epoxy with heat is to warm the wood and have the resin and hardener at room temperature. Mix the components and apply the mixture to the warm wood surface. Remove the heat source just before the epoxy is applied. When the epoxy mixture comes in contact with the warm wood, it gets warm and its viscosity becomes lower. As the temperature of the wood falls, the thin epoxy is drawn in deeply before it begins to gel. By heating the substrate instead of the components, you get the best of both worlds—low viscosity epoxy on the work surface and longer working time in the mixing pot.

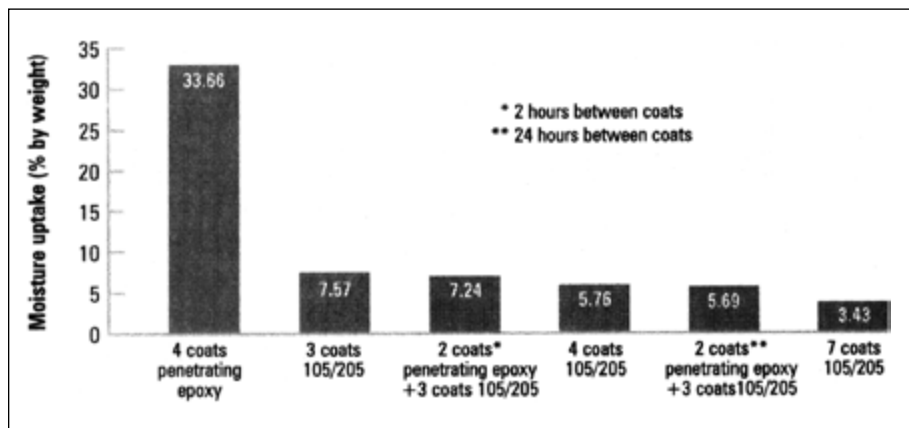


Figure 1. MEE of various combinations of thinned and unthinned epoxy at six weeks exposure to 100% humidity.

## Potential Problems

Thinning epoxy with heat can create problems, however. Warm epoxy cures much more quickly than you may be accustomed to. Have things organized before you mix the resin and hardener and move quickly. Use one of the slower hardeners—206, 207, or 209—to increase the working time.

How warm is warm? You should be able to comfortably touch the substrate or the component containers when they are appropriately warmed—about 115°F maximum. Excessive heat will cause the epoxy to harden too fast, especially in thick applications. Very rapid cure will overheat the epoxy. If smoke rises from the curing epoxy, it is likely the epoxy is damaged and should be replaced.

## Thinning epoxy with solvent

Adding solvent is a quick, simple method of thinning epoxy, but unlike using heat to thin it, the strength and moisture resistance of the cured epoxy are drastically affected. Below are some of the effects adding solvent has on West System epoxy. While there are a large number of chemicals available to thin epoxy, we selected acetone, lacquer thinner and denatured alcohol for this discussion because they are commonly available and do a good job of reducing viscosity. Additionally, these solvents evaporate quickly and are less likely to be trapped in the cured epoxy—an important characteristic. For a variety of reasons, fast evaporating lacquer thinner appears to be more appropriate for thinning purposes than acetone or alcohol.

- Adding a small amount of one of these solvents has a significant effect on the viscosity of the epoxy. For example, adding 5% lacquer thinner makes about a 60% reduction in viscosity (Figure 3).
- Adding 5% lacquer thinner to epoxy reduces the epoxy's compressive strength by 35%—a big hit in the mechanical properties of West System epoxy (Figure 4). The addition of more than 5% solvent results in an excessively flexible cured-materi-

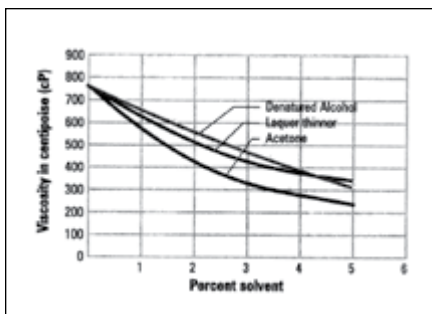


Figure 3. Viscosity of 105/206 epoxy vs percent of solvent added.



Jacob Brouwer's Falco is moving to a new home in France.

al. Thinning epoxy with solvent causes enough loss of strength that we (and most other reputable epoxy formulators) cannot recommend using it as a structural adhesive.

- Adding a volatile solvent extends the pot life and cure time of epoxy and jeopardizes the reliability and predictability of cure. Additionally, with slow rate of cure, it takes longer before work can be sanded.
- Adding volatile solvent may cause shrinkage of the cured epoxy. Applying thinned epoxy in large, confined areas (like consolidating a large pocket of rotted wood) is likely to trap some of the solvent. In thick applications, the epoxy cures very quickly and not all of the solvent has time to evaporate before the epoxy hardens. Over time, the solvent works its way out and as this happens, the cured epoxy shrinks and in many instances cracks.

Shrinkage also causes print-through. You may have a surface sanded smooth only to have the resin shrink. This shrinkage often reveals the texture of the substrate. Shrinkage can continue to be a problem until all the trapped solvent works its way out of the cured epoxy.

- Adding solvents, especially acetone, alters the color of the cured epoxy. While the effects are not immediate, adding acetone to epoxy causes the color to change from slightly amber to very dark amber.
- Adding solvent results in a temporary reduction in viscosity. Volatile solvents evaporate quickly as they are agitated during brushing or rolling, causing the viscosity to continually change as time passes.
- Adding solvent to epoxy may damage the substrate. Many materials (Styrofoam for example) are not attacked by epoxy but may be attacked by the solvent used to thin the epoxy. Be certain to test the substrate with the solvent before using it to thin the epoxy.

- Adding volatile solvent to West System epoxy has some adverse health and safety

effects. West System epoxy components are nonflammable but the chance of fire or explosion goes up in proportion to the amount of solvent you add. Also, the vapors of many volatile solvents are hazardous to your health and proper ventilation is mandatory to prevent inhaling harmful quantities of them.

- Adding volatile solvent to epoxy which is then applied as a coating may cause problems with various regulatory agencies. If your business is inspected for air quality, adding volatile solvents to West System epoxy may make your business noncompliant.
- Adding solvent to epoxy to enhance fiberglass wet-out will result in more “drain out” of the resin on a vertical surface. The fabric will wet-out quickly but it may become resin starved when too much epoxy runs out of the fabric.

Does thinning epoxy make sense? In some situations, thinning is appropriate. In others, it is not. We feel that in most circumstances using heat to thin epoxy is preferred to using solvents. As long as the epoxy does not overheat during cure, the full physical characteristics of the cured epoxy remain. Adding solvent is a quick, simple method of thinning epoxy, but the strength and moisture resistance of the cured epoxy are significantly reduced.

We will continue to research this subject and publish our findings in *Epoxyworks*.

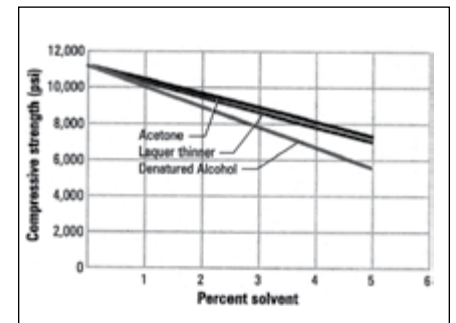


Figure 4. Compressive strength of 105/205 epoxy vs percent of solvent added.



## Reflections on the West Coast Fly-In

by Cecil Rives

September in Colorado is a wonderful experience. (Most anyplace would be wonderful compared to Houston in September!) Karen and I arrived in Durango Wednesday evening after experiencing weather delays in Lubbock, Texas, and one as we approached Durango. We diverted to Farmington, New Mexico, and waited about an hour before continuing on to our destination. A transponder problem added to the frustration but, all in all, not a bad trip.

These Falco fly-ins just keep getting better and better. Nine Falcos gathered along with Bill Russell's Beech SNB(Small Navy Bomber)-1, Pierre Wildman's Cessna 421 and Fred Doppelt's Bonanza. These aircraft were destined to participate in what will be entered into the annals of aviation as the "Great Farmington Falco Fracas."

On Saturday morning the pilots assembled in the lobby of the Quality Inn and were informed of their mission for the day—a flight to nearby Farmington (Four Corners Regional) for the purpose of traumatizing the tower controller and to overload the wait-staff and kitchen at the airport restaurant.

The aircraft scrambled at eleven hundred hours with the Falcos flying cover for "Hawk-eye" Russell's Bomber and "Golden Buzzard" Wildman's Cessna. Through a clever bit of navigation Hawkeye's co-pilot, Dan "What's-a-Whiskey-Compass?" Dorr, guided Hawkeye away from the Falcos and entered the airport area from a completely different direction. What a diversion!

As the Falcos in rapid succession called the tower it became quickly evident that this mission would be a piece-of-cake. First, Dave "Fogbound" McMurray was cleared to land and instead did his death-defying tailwalk down the runway. At this point the tower instructed the remaining aircraft to stay clear of the airport and circle. The controller's voice had increased three octaves and was beginning to become increasingly incoherent.

As the crescendo of this drama reached its peak a lone clear voice was heard over the radio. It was that of that of the Scandinavian ace Per "Thor" Burholm. A string of Swedish expletives (which his wife refuses to translate) proved to be too much for the controller. With his radio silenced our fearless commander, Fred "Braveheart" Doppelt, declared the area secure and all

aircraft landed safely with no further interference from the tower.

As we sat in the restaurant (one waitress for about 25 of us) a plea came down from the tower that we not all take off at once. We decided to grant this request and left in orderly fashion for our return to Durango.

That night the participants all assembled at Ken and Sue's restaurant to celebrate our successful mission. The Air Force's "Alzheimer Airmen" attempted to sing their

"Off We Go" thing but it proved to be too much for their numbed neurons. Then, to close the festivities on more somber note "Hawk-eye" Russell and John "Iceman" Harns flawlessly sang an old Navy hymn entitled "Let Her Sleep Under the Bar".

The trip back to Houston the following day left us with the feeling we always have—it was just too short. Good food, great fun and wonderful friends and airplanes! Thanks, again, Ruth and Fred. It was really a good one! Semper Falcos! □





## West Coast Falco Fly-In

by Fred and Ruth Doppelt

How about gorgeous weather, a beautiful place, 47 Falco-crazed people, nine gorgeous Falcos, a warbird, and a twin Cessna people mover, and you have the 10th annual West Coast Falco Fly-In. Was it successful? You bet! Unfortunately, the Kennedy's were unable to come due to the hurricane in Florida. Some came a day early and a few stayed a day or so after, all had a great time.

The place was Durango, Colorado, the time was 16-18 Sept 1999. The Durango Air Service opened up their large hangar for all the Falcos, free of charge! As you can see from the lineup of aircraft we had two brand new ones (the Nason's and the Mitchell's, all the way from Washington and Oklahoma). The yellow one (Richard Clements) was fresh from Oshkosh '99 with a Champion award in the best of plans-built category. The red one (Dave and Tamera Nason) had a beautiful Falcon painted on the belly. The warbird (Bill

Russell) shot up the airport and nearly dropped bombs all over the place. You should see how the inside is appointed! Of course, the best time was looking, touching and flying as many Falcos as possible. As expected, John Harns was still wiping everyone out with his wonderful acrobatic maneuvers. Lots of first timers as well, some starting to build, some hoping to.

We even had three eventful 70th birthdays, Cecil Rives, Per Burholm, and John Harns. Happy Birthday! Besides the obvious airport stuff, railroad buffs enjoyed day trips on one of the last coal burning railroad runs left, the Durango-Silverton RR. Some went to Mesa Verde and climbed through the remarkable ruins built into the sides of canyon walls. Others went on shopping trips around Durango and Silverton.

On the last day, besides lining up for the airplane, airplane and pilots, and airplane and all pictures, 12 airplanes (my Bonanza was included) took off and blasted into Farmington for a great lunch at Senior Pepper's (one of the last great small airport restaurants). You should have heard the tower when we all descended, almost at once and then took off in line!

We had a super time at our house cutting the cake and looking over my building progress. As can be seen, I'm getting loads of advice from the pros. I was more nervous than at our wedding!!

The last evening we had a terrific meal at a very special place in Durango, topped off by a great pictorial travelogue by Howard and Marty Benham of their flying trip through Alaska. It was a thrill and great pleasure for Ruth and me to have hosted this fly-in. There's no better group anywhere, any place! Come join in next year, week after Labor Day hosted by Dave and Tamera Nason. Happy dreaming, happy flying, happy building! □



## Goings On at Sequoia Aircraft

Last year I planned to go to the West Coast Falco Fly-In with Jonas Dovydenas, but at the last minute the trip was canceled when his sister entered the final stages of a losing battle with cancer. This year, Meredith and I were going to be in Jackson, Wyoming, visiting with our daughter, who has flown the coop and was working there for the summer. So this year Jonas was going to meet me in Jackson and we would fly down to Durango.

But just in case Jonas had another emergency, I had a 'Plan B' in place—Cecil Rives was going to fly to Jackson and pick me up. So much for planning. The weather on the east coast was IFR and Jonas's mother took ill in Lithuania, so off he went in the opposite direction. Then Cecil's transponder went on the fritz, and he couldn't make it either. Sheesh! Sorry folks, I really did want to make it.

A couple of Falco builders have reported a problem with some of the 1/4" poly-flo tubing that we have sent out with the kits. The first problem was reported by George Richards. He said that the tubing broke of its own accord in several places. We then took all of the tubing off our shelves, and pulled on each end to assure that the tubing would not break. In doing this, we found a few pieces that had 'weak' sections in them. These stretched down to a dramatically smaller diameter when you pulled on it. We threw the offending pieces in the trash and thought we had the problem solved.

Then Fred Doppelt reported that when he installed the tubing for his pitot tube, the tubing broke overnight into seven pieces. He simply uncoiled the tubing, put it in the wing, under no particular stress, and the next morning it had broken into pieces on its own. I could not understand this. Then Jack Lange reported essentially the same thing. I asked Jack to look at the tubing and see if it had a batch number on it. It did and the batch was "01C".

We then went through our inventory and found all of the tubing of that batch. You could uncoil it and pull on it, and it all looked fine. But then we put it on a flat table and taped each end down. Within a few hours it had snapped. When we taped the remaining pieces down, then they broke. I've never seen anything like it. It seemed to be a bad batch that was very brittle and did not like to be straightened out.



**Bob Bready at the Great Oyster Fly-In.**

We did not have many pieces of the "01C" batch. Not all of the pieces from that batch broke, but we have thrown all of them in the trash. We are in the process of testing all of the other pieces of tubing that we have here, and none of them have exhibited this unusual behavior.

Please check your 1/4" poly-flo tubing and if you have any marked "01C", just throw it away to be on the safe side, and we will be happy to replace it.

This has been an exceptionally busy year for us, and I have rarely had a greater workload, and this is the reason we missed the September Falco Builder Letter. We are going through a massive restocking of inventory, I've had to spend about a month programming on WildTools, and my little sideline music project turned out to take an enormous amount of time. The music project is now done. It's an incredible thing, and if you're interested in hearing what I sound like with guitar in hand, then check out [www.Talkeetna.com](http://www.Talkeetna.com). You'll hear me on *Hard Times in the Country*. As you'll discover, my brother-in-law, Peter Stanley, is one of the best folksingers you'll ever hear, and I'm just part of the band.

*Alfred Scott*

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### Susan's Corner

Whew! The holidays are over, and we're finally trying to get back to normal... whatever that is!

I guess the big thing I have for you this time is Oshkosh 2000. The Paper Valley Hotel where we always book our rooms is under new management (Ugh!) and they're doing things a bit different this year.

I'm not sure exactly how many rooms I can get—they're suggesting that 10 might be the best they can do, but I already have requests for 14. They now require a four-night minimum and confirmation of at least that with a major credit card well in advance of the event. So, the bottom line is that if you're going to attend Oshkosh 2000 and will want a room, you need to call me NOW and give me all the details. I'm hoping that by getting my bid in as early as possible, perhaps they can be a bit more accommodating. And if you've already called and told me you want a room, please call or e-mail me again so I can confirm that I have all the information that I need, including your credit card number and your arrival and departure dates.

That's really all I can take time for right now. Alfred is waiting to get this to print before Y2K happens and the world turns to a pile of mashed potatoes... with no running water.

We've been busier than a one-armed paper hanger the past several months, but as soon as I'm done with this, I'm outta here for another long weekend. I hope the New Year smiles brightly and favorably on all of you. Barring a world catastrophe, I'll see you all in the spring.—*Susan Stinnett*



## Sawdust

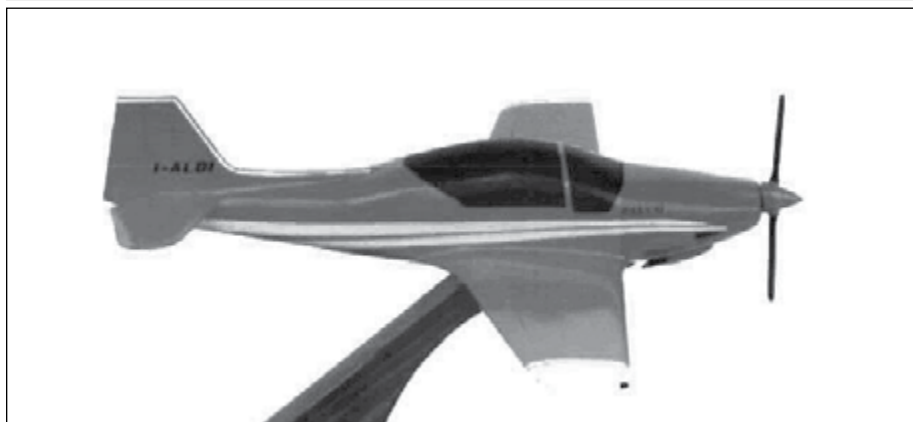
- Good name for a car. Toyota has named its new sport-utility vehicle the Sequoia. You may remember some years ago Piper made the mistake of changing the name of the Aerostar to the 'Sequoyah', and thus set off a legal dispute between Sequoia and Piper Aircraft. But in this case, there will be no dispute because you can have the same trade name for an airplane and a car, as in the case of the Ford Aerostar. So please tell Toyota for us that they've got good taste in names.

- Three new Falcos have flown recently. André Bauby is now flying his Falco, the first homebuilt Falco to fly in France. Since André speaks only French, we have few details other than the airplane flies beautifully. There's another Falco flying somewhere (see "What Are You DOING!" elsewhere in this issue). Fanie Hendriks just got his Falco into the air and thus becomes the first homebuilt Falco to fly in South Africa. We'll have a full report in the next issue. And Xavier Beck now has his Falco back in the air in France after a complete rebuild following a takeoff accident that essentially destroyed the airplane. The two French Falcos are the subject of a lengthy cover article in the September/October 1999 issue of the French magazine, *Experimental*.

- A lady needs to know when to leave a party, and a pilot should know when to hang up his wings. Larry Wohlers, who built the first homebuilt Falco, is finally calling it quits. He's 90, and he took the Falco to the Copper State Fly-In for one last trip. The Falco is now for sale, and it's listed on our website.

- Syd Jensen was one of our earliest Falco builders, and he built his Falco in Keri-Keri, New Zealand. Even in the late 1970's, the telephone exchanges were manual, and when you called, chances were that the operator knew if Syd was at home when she rang for you. Just as he was ready to fly, Syd developed heart problems and had bypass surgery. It was a new procedure at the time and the authorities did not want to give him a medical.

After all we had been through to get the Falco finished, I was haunted by the thought that he might die before the airplane flew, so I wrote Syd and suggested that he just go out to the airport one day and fly the plane. About a month later, Syd wrote me that on a quiet Saturday, he had taken the Falco up for three times around the traffic pattern. "Now, please



*Top: André Bauby's Falco is now flying in France. Center: The latest addition to the Falco collection. The khaki bucket hat is \$15.00. Heavy weight Falco sweatshirts are available in mocha and charcoal for \$38.00. Long sleeve Falco shirts are 100% cotton blue denim and khaki twill, and they are available for \$45.00. Visit the Falco store at [www.SeqAir.com](http://www.SeqAir.com) for full details. Above: Davide Aldini is offering a 1:32 scale resin model of the Falco for \$220.00 each. Contact him at [l.aldini@ri.tws.it](mailto:l.aldini@ri.tws.it) or visit his website at <http://utenti.tripod.it/aldini>*

destroy this note." I did, and he later got the plane flying through the normal, legal channels. Syd died this summer, and I suppose even the New Zealand aviation authorities who get this newsletter will appreciate this story.—*Alfred Scott*

## Calendar of Events

Oshkosh 2000. Plan now to attend the 45th Birthday Party for the Falco. Expect a massive turnout—Stelio Frati says he will be there.

## Mailbox

I just had to take a break from working on the Falco to say thanks for all of the hard work you had to put into the wiring kit. There is only one word for it and that is *awesome*. I've been working on the wiring now for the past couple of weeks and things keep getting better and better. The quality of the parts, the detail of the schematics, the number of color coded wires included and the great instruction books that come with that kit are all superb!!

You have even planned for optional equipment, i.e. the Davtron OAT and clock and the Century 1 autopilot. When I did the original inventory of the wiring kit some years back I knew that it would be a time-consuming, task but you have made it a very enjoyable endeavor.

Thanks again for putting so much thought and effort into it. I would not have wanted to tackle it from scratch.

All of the instruments and radios, including a new Garmin 430 GPS/COM have been ordered. I only need the engine and prop and a little paint to get it airborne. See you at Oshkosh 2000.

Bob Brantley  
Santa Barbara, California

This has little to do with a Falco, this has little to do with airplanes, this is all about a fright I got, and terrible, terrible pain, and some indiscreet language.

My friend of many years, the bugger, left the tow bar on my Falco and, Sods Law, this tipped my Falco on its nose and cost my insurance £18,000 plus for propeller, engine shock test, new crank shaft, and engine cowl, February '99. I thought the insurance assessor was being generous but he was not, not when you consider the work I put in on the engine cowl. Nevertheless the pilot is responsible, I've been told *ad nauseam*.

There were minor holes knocked in the fuselage by the tow bar which I repaired, sanded, prepared for primer, painted and sanded with an orbital. For unexplained reasons, I got a severe pain in my right arm for two or three days which I put down to the strain caused by the instrument but this might have been the first signs of the alien.

By June I was ready to sally forth to the rally at Cranfield. I did not have time to finish the unpainted aircraft. The cowling was unfinished, but it had been such a delight to fly, and who wanted to waste time painting.



*Fred Doppelt's Falco gets a close inspection at the Durango Fly-In.*

I had one or two instances of severe, gasping pain in the interim, and being a very cautious pilot due to a previous experience, I decided to back up navigation by using a commercial 757 captain, should things go wrong. Of course, the first thing these chaps do is dive into the VORs and DMEs, never lifting their heads till we got to our destination. Truth to tell, that's all I wanted, any way.

We got to Cranfield and I tried to park some distance from Stuart Gane's and Neville Langrick's Falcos but the marshalls seemed to be unable to understand my reluctance. G-CWAG was nestled next to its prettier siblings. On the way down, the LH exhaust had charred through cowling that was too close. We explained that

this was due to the proximity of English fire on Scots machinery as we entered English air space yet decided to return North in this condition, perhaps unwisely but it turned out, safely. I had a nagging pain at my chest and felt unable to adequately view the exhibits at the rally.

Some weeks later, my doctor suggested a heart condition, incredible, no results at my annual ECGs, then the dreaded cancer was thought of but not spoken. An appointment was made at the local private health facility. Again a breathtaking half hour attack of pain before what I considered an idiot consultant showed me a minor unimportant shadow on the lung or something. Considering that I had smoked like a Siberian chimney extract-



**Top: Every hangar should be like this. Above: Only Falco builders do this.**

ing gold for many years I was skeptical. A second consultant poked his finger in the gravy pot and suggested an MRI, magnetic resonance something or other.

We found cancer tumours, not one but two. In the full flush of health I had believed that when they diagnosed the dreaded C—clap as your American hero, John Wayne, believed that to be—you dropped dead shortly after being given the news. I waited fifteen minutes and went to “His” toilet while my wife wept and went to “Hers”. We had been stricken. A leiomyosarcoma, a tumour they see in the west of Scotland three times a year, not smoking induced.

Chemotherapy, an operation, then

radiotherapy were recommended and approved. After two weeks of ineffectual chemotherapy, pain and an operation were abandoned without explanation. That was Plan A and Plan B washed out without explanation. (I imagined nurses scurrying to their reports every few hours, pain, no sleep, they reported.) I was a goner. A programme of 20 shots of radiotherapy was commenced.

I remember that three days into it, the pain diminished.

There is a subplot interwoven here. My wife was in extreme pain due to a severely eroded hip, but when I was faced with the need for care followed by imminent death, she gallantly bore hers. A mistake

of gargantuan proportions—she aged visibly—85 if a day, and unable to help me, and regretfully nasty with it. She was booked into a hip operation and from that decision forward, she lost years. Today, after the operation she is 65 and we fully expect 55 within a few days. Love has bloomed again.

After 20 shots of radiotherapy I believe I am cured. I think I am anyway. If I get a few months painfree that is a bonus. The tumours are reduced, a year will tell if they are stopped. The medics are astounded. Days after instructing specialised nurses to visit me and prepare me for the shroud these charming girls caught me playing hookey and flying with my friends in my Falco. I was supposed to be resting.

What’s it all about? It has little to do with a Falco. I think it is about the dedication of a loving family, about the care of other human beings, sometimes wrong in their knowledge but so right in their motivation, after all they were preparing for the worst yet they should have been preparing for a cure. Does it matter now? We will know within a year. I have lived my sixty-four years, not as long as I have liked but longer than many, and by God, I have enjoyed it.

*Charles Wagner  
Glasgow  
Scotland*

As soon as the area restrictions were removed from the aircraft Juliet and I decided to use it on a fishing trip. After all, among the qualities I was looking for in an aircraft when I decided on the Falco was the ability to travel to the extremities of this big country. We travelled to an island in the Gulf of Carpentaria called Sweers Island where there is a small and isolated fishing lodge, and lots of fish, big and small, and also crocodiles! We travelled over desert and scrub, stunted forests, swamps and mangroves, rugged rocky hills and parched plains. After a week there we returned home via Alice Springs, across the Simpson desert to Birdsville and Broken Hill. The total distance covered being three thousand and twenty five nautical miles.

The Falco proved to be a beautiful cruising aeroplane. It developed a true airspeed of around 180 knots (205 MPH) at 8500 feet with an OAT of 12°C, consuming 35 litres of avgas per hour (65% power). Stability was such as to allow comfortable cruising even without an autopilot. Dare I say it! The Falco cruises at least ten knots faster than the SF260B which itself is faster than the later versions of the 260 because of a



thinner wing and a slightly different angle of incidence. These changes to the 260 were apparently made to improve the stall characteristics.

The only problems we had on the trip were with the nav aids. The ADF would only point to NDB's within ten miles or so, and the knobs on the GPS seized up on the way to Alice Springs. VOR's are scarce in Australia, and once away from major airline routes the ADF is the primary nav aid, so a malfunction is important. This problem is yet to be sorted as I am a long way from a radio technician here. We Australians live in fear that one day we will be out in the sticks and you Yanks will switch off the satellites!

We have fifty-one hours on the aircraft and have settled into it pretty well now. The behaviour of the aircraft is as predicted with no vices whatever. The spin is benign in both directions although the rate of rotation is quite high. Flat spins can wait a little while. So far I have only been to 5G positive. VNE has been seen many times, it is not hard to get there on descent. Aerobatics are easy and pleasant. Height can be gained during manoeuvres if required. Certainly full power is not necessary. I stress I am a recreational aerobatic pilot, and I don't attempt the rigid shapes of the competition pilot. Who cares if a bystander thinks my loops are egg shaped!

The Falco is an aircraft for all men (and women) provided he (or she) doesn't have multiple children to cart around. They are likely to be grown up before the aircraft is completed anyway.

*Ian Ferguson  
Dookie  
Australia*

Here is some information for builders

1. Aerodux 500 resorcinal glue with Hardener 501 is available from Custom Pack Adhesives. Their phone number is 1-800-454-4583 and they have a web page at [www.custompak.com](http://www.custompak.com). Aerodux comes in three versions with different curing speeds and temperature ranges. They presently only provide the medium or fast setting hardener, but when I spoke on the phone with them, they said they may consider providing the slow setting hardener in the future. According to the literature, it appears that medium Aerodux can be used in temperatures down to 59 degrees and fast Aerodux can be used in temperatures as low as 50 degrees. This glue is discussed in the December 1997 builders newsletter by Alan Powell.



*Top: The coastal plain and rivers of the gulf country. Middle: Parallel red sand ridges of the Simpson Desert. Above: Ian and the Falco at Birdsville.*



*The Eastern MacDonnell Ranges, east of Alice Springs.*

2. The Forest Products Lab has published a new book in 1999 called the “Wood handbook—Wood as an Engineering Material”.

The whole thing is available to be downloaded chapter by chapter in PDF format from their web page at <http://www.fpl.fs.fed.us/documnts/FPLGTR/fplgtr113/fplgtr113.htm>. Chapter 9, “Adhesive Bonding of Wood Materials” has some interesting information on adhesives, preparing surfaces, and bonding wood.

I hope this info is useful to others. The website is great. I appreciate all of the articles in the Skunkworks section.

*Ron Strong  
Phoenix, Arizona*

I cranked up the Falco with a friend not long ago for the biennially required flight review only to discover the brakes would not hold during the run-up and when a mag check was attempted at a somewhat lesser RPM I got no drop; returned to the hangar.

Brake problem and mag problem? No, a faulty tachometer. The thing was erratic, sticking. I probably had 22-2300 RPM for run up, thus the creep and the needle was stuck for the mag check. Replaced the tach, but it had damaged the cable. For \$6.00 I bought a speedometer cable at the local auto parts supply, cut it to fit, “unstaked” the Lycoming fitting from the old cable and staked it to the new. Flight review a few days later.

On the first take-off, max RPM was 2500, but flight continued. I now suspect it has been 200 RPM off from the start, never checked it, but Bob Bready has always said my Falco should be faster. About a year ago I lucked out and I won a “sweepstakes” with Aircraft Spruce. They sent me a \$1,000 gift certificate. One of the spend-thrift items I bought was an electronic Tach Check, works like a charm. Falco builder Tony Petruccio and I cranked up the prop control until we got 2700 max and then took Lady G four-four Fox (WWII phonetics) to the altitude she seems to favor, 8500’, and did a few runs.

At altitude and full RPM the Tach Check confirmed 2700 RPM. With the max M.P. of 22” we moved along at 173.3 knots true for 199.4 mph. A 23/23 cruise gave us 163.0 knots for 187.5 mph. Not the fastest IO-320-B1A Falco in the air, but no slouch. Bob was right. Fuel burn at cruise appears to be about 7.5 gph. I have open, round, Marchetti 260-style gear, leg doors and no “cowling door” as yet. I am impressed.

I am also pleased with a recent modification with respect to battery location. I have one of those small “upside-down-if-you-wish” B&C batteries and I located it just aft of station 6, incorporating a Piper external power receptacle on the forward face of that frame. My former battery compartment is now a storage compartment for tools, tie-downs, chocks, etc. It moved the CG slightly forward but well within limits. Next project is to install a P/N 11-17685 (Aircraft Spruce, who else?) intercom gear warning device (it will send me a “horn” in the headset, I cannot hear mine), cost \$110, cheaper than a prop.

*John Brooks Devoe  
Stratham  
New Hampshire*

Greetings from Canada. Not having been able to attend the Oysterfest, Team Wiebe thought it might be appropriate to provide a progress update.

Control surfaces on, gear in and swinging. All woodwork and filling on the bottom of the wing is complete. Expecting to glass the bottom and roll her back over by mid December. At that point, the spaghetti wiring coming from all parts of the airframe will be dealt with. We’ve been accumulating instruments since Oshkosh, with an EI engine monitoring system, new Sigma-Tek gyros and Apollo SL-40 comm and SL-70 transponder at the heart of the system. We’ll start out VFR, and the jury is still out on a Garmin 190 vs the new colour 295 as the nav system.



The engine will arrive in early December. What we've done might be of interest to others. Aerosport Power from western Canada—the homebuilt division of Progressive Air engines—is building us an 10-360-B1E-like engine using a used case, sump and accessory case. However, all the important moving parts are new, including our custom choice of things like remote oil filter and one Jeff Rose electronic ignition. Crank, cam and full cylinder assemblies are new certified from ECI (Engine Components Inc.). Fuel injection is overhauled Bendix, with an option for Airflow performance. From what we've seen, the only risk factor is in how they put it together. Our experience there makes this easy. We had an engine failure in our Murphy Rebel in the Canadian Rockies fifty miles from Aerosport three years ago. They provided a “homebuilt overhauled” 160HP O-320 which we've flown on floats virtually troublefree for 300 hours since then. I also understand from a local guy who has about 900 hours on an Aerosport 180HP in an RV-6, that these guys are doing alot of work for RV builders. Even though RV guys don't have much airplane class (!), they tend to know value when they see it. We'll keep you posted, and I'm happy to provide more info to anybody interested.

Had a great time this past weekend. Steve Bachnak—who dad and I met at the Oysterfest two years ago—accepted our invitation to visit. Though the weather wasn't great, he graciously allowed us each to fly his aircraft from the left seat. While obviously the Falco needs to be respected, the fact that two guys with virtually no high performance time could depart, fly around for half an hour, and land (reasonably well!) with only Steve's encouragement from the right seat is a great testament not only to Steve's courage, but to the aircraft. Okay, okay, I admit it. I was beat in quality of landing by my 71-year-old partner and “old man”! The shame....

Steve visited the shop and declared that we were probably building to an adequate standard and that the aircraft would probably be able to fly. (Actually, he was more than generous with his praise. However, since Dad is supposed to be the building partner and I'm the flying partner, I'm pissed off that Dad did better landings and so I'm holding back credit for his construction expertise.)

God willing and the creek don't run dry, we will fly next year. Oshkosh is a possibility, though perhaps without paint.

*Mike Wiebe  
Ancaster, Ontario, Canada*



**Top:** Jack Wiebe and Steve Bachnak. **Above and Center:** Andre Tremolada's Falco at the press roll-out. He awaits only government permission before he can fly it.