

# Falco Builders Letter



*Tim and Bud Baker in their Falco.*

## **First Flight: Terry Smith**

The 20th Sequoia Falco flew on April 12th. The proud builder is Terry Smith, of Forty Fort, Pennsylvania, who built the Falco over a five-year span.

This is easily the most powerful Falco ever to fly, as it has a High Performance IO-360-B1E which has been polished and ported. The engine was checked on the dynamometer and produced 192 hp at 2700 rpm. The Falco came in a bit heavy, at 1,271 lbs empty with engine oil, and Terry worried a little about this—until he flew the plane.

Terry flew the Falco at 6:30 in the morning from the Wyoming Valley airport, and he reported “the Falco jumped off the runway like a kangaroo. I chose to keep the event small to prevent a circus attitude and no undue go-or-no-go decisions. It was only witnessed by my wife Mae who video-taped the flight and one flight instructor from my pilot’s club who talked with me during the flight. The plane literally jumped off the ground in a few hundred feet. Once I was 50 feet

*Please Turn to Page 2*

## **First Flight: Tim Baker**

Every now and then a Falco builder will call me and say that he is thinking about hiring someone to help finish the airplane. The first thing that comes to the builder’s mind is to attend the local EAA meeting and find an experienced homebuilder. I always caution against that, and instead suggest that they look for a machinist. A machinist really is the ideal Falco builder—well versed in reading drawings and making parts, and experienced at turning out work on a steady basis.

*Please Turn to Page 4*

---

---

## **In This Issue:**

- 8 Oxygen for the Falco
- 10 Construction Notes
- 12 Goings On at Sequoia Aircraft
- 14 Sawdust
- 14 Brenda’s Corner
- 16 Mailbox

## **Around the Falco Patch**

You may remember that Jim Slaton had a problem with the elevator trim of his Falco. In the past couple of months, Jim has been busy solving the problem. From the beginning, his Falco required a lot of nose-down trim. With full nose-down trim, it would fly hands-off at about 135-140 knots indicated, but at higher speeds, it wanted to climb, and he was unable to trim it for level flight.

I first asked Jim to check the elevator tab movement. It goes up 19° up (versus 20° shown in the drawings), and ‘up’ is nose-down trim. The empty weight center of gravity is 67” which is forward and thus cannot be the cause of the problem. As an experiment, Jim tried lowering the flaps slightly and that made the problem worse.

I had two ideas. The first one was to increase the chord of the elevator tab by gluing on a piece of aluminum to extend the trailing edge by 12mm or so. The second was to slightly reflex the ailerons and flaps. I sent a fax to Mr. Frati to ask for his opinion. Mr. Frati replied that he thought the error was in the stabilizer’s angle of incidence and that he didn’t think a bigger elevator tab or greater elevator tab travel would work. By the time I had gotten Mr. Frati’s response (only two days later), Jim Slaton had already tried both ideas and found that neither one worked. Reflexing the flaps did absolutely nothing.

At this point, I decided it was time to get scientific about the problem. I asked Jim to give me a very exact measurement of the angle of incidence of the stabilizer. Jim reported that at station 2, the left stabilizer’s leading edge was 9.5mm low and the right stabilizer’s leading edge was 4.5mm low. At station 5, both sides were 1mm low. That meant that the inboard section of the stabilizers were 1° and 0.5° low.

We decided the simplest cure was to cor-

*Please Turn to Page 6*



## Terry Smith

*Continued from First Page*

in the air and knew it was going where I pointed it, the anxiety left and the pleasure and excitement set in.”

“Some preliminary figures show reasonable buffet and stall around 55 knots in clean configuration. One hundred and seventy knots indicated and 184 knots true airspeed at 7,000 feet. It climbs at 2,000 ft/min. It handles beautifully during landings as far as I’m concerned, however, I’m used to the sink because most of my time has been in a T-tail Arrow. The stick just comes naturally.”

The final inspection was, well, *interesting*. The inspector was placard-crazy and spent all of his time looking at the placards on the panel. He finally noticed that there is no way to open the canopy from the outside and told Terry to put an “in case of emergency, break glass” placard on the canopy. Terry could scarcely believe it. The bureaucrat barely looked at the airplane and only once when he came up for a breather from placard inspections did he manage a sideways glance and an oh-by-the-way, looks-like-you-did-a-nice-job comment on the airplane.

With abortion now generally accepted by all but the religious right, perhaps it’s time to consider ‘doing something’ about bureaucrats when they are still tiny babies. Mothers can easily recognize them by a glazed-over look, lethargic behavior and early response to ‘pension’, ‘job description’ and ‘not my department.’ Surely there is some legal way that parents can quietly save society from this scourge. Chores after 4:30. Games that require imagination. Sunlight.

Terry’s Falco is perhaps the ugliest Falco yet to fly, outfitted in something he calls “Rommel brown,” for the Falco has not one drop of paint on it. Instead, it is just fiberglass-over-birch-plywood with spots and dabs of microballoons. The Falco is going to be painted professionally, and Terry wanted to get it in the air and debugged before he took it to the paint shop.

There have been a number of problems. After about 4 hours of flying, the crankshaft oil seal developed a leak and its replacement required removing the cowl and propeller. The exhaust is very close to the cowl at two places and was burning the fiberglass, so Terry made a little blister at each trouble spot.

The directional gyro was misbehaving, so he sent that back to IFR who gave him a fast turn-around.

There are still two problems that remain. Terry has the full gear doors and while the gear retracts without incident on jacks, the circuit breaker consistently pops with four turns to go on gear retraction. I told Terry about Jim Slaton’s experience with heated tire expansion (see “Around the Falco Patch”), and Terry is beginning to investigate this. As a simple experiment,

**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. Publication dates are the 10th of March, June, September and December.

**Subscriptions:** \$12.00 a year, \$15.00 overseas. Available to Falco builders only.

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



once he had been airborne long enough for the tires to cool, he slowed the plane down, extended the gear and then selected gear-up. This time the circuit breaker popped with only two turns to go. Terry plans to smear some grease on the tires to see where it is hitting. (As we go to press, Terry reports that he found the problem with the tires hitting the doors.)

The other problem is noise in the electrical system. Terry's initial thought was that the problem was with the alternator, and he had the alternator worked on. With some new brushes, the system was noticeably quieter, but it's still objectionable and causes the ADF needle to swing 60° off course. Terry also reported that the electric fuel pump is noisy.

Terry began to talk about putting a noise filter on the alternator. I called my friend, Walter Marsh, who understands electricity better than most people, and Walter thought it was not an alternator problem. Alternators are normally rather quiet, and any noise that they do generate would be caused by bad brushes, loose connections or a not-grounded shield on the field wire. Instead, Walter thinks the problem is probably a poor connection in the audio circuit, which would set

up a high resistance that would make a scratchy noise.

I think Walter is right and asked Terry to check all of the other motors. So far, he has found that the flap motor, fuel pump, alternator and magnetos all are making noise. He hasn't check the landing gear motor yet, but it's obvious to me that the problem is not with the alternator, motors or magnetos. Something in the system is amplifying the little noise they make. This type of problem is very annoying and difficult to find, but you have to simply go through the system and isolate the problem by shutting things off.

The Falco, N828TS, is now upholstered with a conservative light grey interior, velour seats and with charcoal grey carpet. Black and red vinyl is used for trimming around the cockpit and to pick up colors that will be used in the paint scheme. We don't have any hard numbers on the performance yet, but Terry talks about seeing 165-170 knots indicated at 6,000 feet. The rate of climb, as would be expected, is spectacular.

Horsepower alone does not make a fast airplane. Homer Woodard put a High Performance polished-and-ported 340

hp Aerostar engine in his SF260 and got only 9-12 knots more at cruise. At Farmerville a couple of years ago, Homer leaned on the propeller and said, "Now I'm not saying I'm sorry I did this, but..." and went on to explain that it wasn't worth the effort or expense. "Fрати knew what he was doing when he selected a 260 hp engine for this airplane." Later that same day in a friendly little race, Jan Morgan beat Homer in his stock 260 hp Marchetti that he had simply cleaned up. Of course, if you clean up the airplane *and* add power, it will go like stink.

Terry says, "For those wondering how to get the plane to the airport, it will fit on a tip-back car carrier with a few inches to spare. It was quite an event for our small town. The state police closed three lanes of U.S. 11, and I was escorted by 5 police cars the two miles to the airport. The approach control at Wilkes-Barre, which is 7 miles away, has been most helpful during the testing and allows me to fly any altitude and direction that I choose."

Terry is back in the air and has about 7 hours on the plane. If all goes well, he will have the restrictions flown off soon and should get the Falco into the paint shop in time to make Oshkosh.—*Alfred Scott*

## Tim Baker

*Continued from First Page*

By the standards of the machine shop, most homebuilders have poor work habits. They work slowly and carefully, and once they have made something, they spend an equal amount of time admiring their handiwork and sometimes engage in the practice of polishing parts. Nothing wrong with this if you are building a plane for your own enjoyment, but such work habits would get you fired in the first hour at any machine shop.

So when Bud Baker retired after a lifetime of working as a machinist, there was no possibility of finding his time taken up with honey-do's and yard work. His son, Tim, had other things in mind. Bud had owned and worked on airplanes all his life, and Tim says Bud has owned "every type that had a tailwheel." Bud would buy them, fix them up, fly them for a while and then sell them.

Tim grew up handing his father wrenches and then started buying insurance wrecks, rebuilding them, flying them for a while and then selling them. This way he built up his hours and then started flying for a commuter liner and later switched to Federal Express where he has flown DC-10s and 727s. Tim has an A&P rating with inspection authority, and he spends his spare time fiddling with airplanes. Over the years he has built, rebuilt and repaired innumerable airplanes, sometimes for himself and sometimes for others.

Tim bought the Falco plans while he was finishing up a couple of Pazmany PL-2s, and he started buying kits on a steady schedule. By the time Tim and Bud started construction on March 10, 1988, Tim had all of the kits in stock. Bud had just retired, and Tim put him to work on the Falco full time. Tim worked on the Falco whenever he was home. They put in a lot of hours and the airplane went together rather quickly—at one time Tim talked about bringing the plane to Oshkosh '88, but there were numerous interruptions and changes in his work schedule. November and December were idle months, with little work accomplished, and they spent the month of March waiting for the FAA to inspect the plane.

Over the years Tim had developed a close working relationship with the Allentown, Pennsylvania, GADO office and had always been able to get an inspection on very short notice. And the



inspections had been cursory, to say the least—on his last airplane, the inspector had dragged his finger across the wing and said, "Looks okay to me." That was itta.

Unfortunately for Tim, the days of easy inspections from his buddies at Allentown were over. It seems that a commuter crash was blamed in part on poor inspections by the office. On the day in early March when Tim called for his inspection, everyone except the receptionist in the GADO office was fired. "Call Teterboro," was the only thing he could get out of her.

So Tim had to climb Paperwork Mountain like everyone else. Finally, the inspector arrived on April 27th. Tim reported that "the inspector was awed by the panel and had nothing but good things to say about the plane." Tim flew the plane immediately after the inspection and says "I had no major problems so I sucked the gear up on the first circuit. The first flight lasted approximately 45 minutes. I accomplished several gear cycles on low fly-bys at Slatington Airport. The first few retractions resulted in popped circuit breakers until the system 'greased itself'. No problems whatsoever with the gear now."

Bud took the second flight and later that day Tim and Bud—both 200-pounders—loaded the plane down with full fuel. "I was pretty well maxed out, but we saw 170 knots true at 2500', 60° and backed up by KNS80 display."

The Falco, N4BT, came in at 1,204 lbs

painted only in primer and with a 160 hp IO-320-B1A engine. It has all of the gear doors except for the nose gear bay doors which Tim plans to add soon. The Falco has a standard canopy, inverted header tank and a Christen inverted oil system. "The Falco is equipped with a KNS-80 with GS, KX165 with GS, KY197 and hopefully soon a KT97 if I can ever find one reasonably priced. The encoder is installed and run out to the panel. A Century 1 autopilot and 4-cylinder CHT/EGT round out the goodies."

The airplane is built entirely from kits and is a to-the-plans airplane, except that they eliminated the battery box door. Instead, the battery was relocated under the baggage floor which provides more than adequate access. Tim reports "no CG problems at all. We used West System epoxy through all building. No finish fabric was used, instead we used two coats of pigmented West System. The color was added for sanding, so as to control thickness. Total time to finish the plane (primed, but no paint or interior) was documented at 3,162 hours."

"Bud and I cannot praise you enough for the incredible package that you have turned out. We have built several homebuilts and have rebuilt many certificated aircraft in the past, but none will even come close to the Falco in terms of performance, ease of construction, looks and design thoroughness. Please realize that the above statement comes from a G—air builder."

(In a moment of weakness Tim agreed to finish a Glasair for a friend who had



*Tim and Bud Baker have finished the 21st Sequoia Falco.*

already finished the wings. They got a lot of work done but were not pleased—to paraphrase, Tim was less tactful—with the fit, finish and workmanship of the parts they received. The partially completed airplane is now hanging from the ceiling, waiting for the owner to “come and get the thing out of here.”)

Tim reported that the left wing was heavy. He talked about trimming this out by rigging the flaps. That seems like a logical thing to do, but Dave Aronson tried this to no avail. Dave reported that it does absolutely no good at all. I told Tim about his experience, but Tim just had to try it. One day they rigged the flaps for a little differential trim. Tim took the airplane up for a spin, then he would land and leave the engine running while Bud cranked in a little more trim. It didn’t do anything and after the first couple of adjustments, Bud would say, “You ready to believe Alfred yet?” every time Tim landed. In the end, they had the flaps one-half inch out of rig, and it did nothing. They finally resorted to the standard piece of aluminum sheet on the aileron.

Tim is still working on positioning the stall strips. The Falco stalls straight ahead clean, but drops off quickly on the left wing with the gear/full flaps down.

With his experience in numerous home-builts, I was curious how Tim would like the handling of the Falco. He said “as soon as you broke ground you knew you’re going to love it—that sucker’s smooth! It couldn’t be nicer. I can’t wait to start on the next one.”

At this time, Tim and Bud have about 22 hours on the Falco and are just flying off the restrictions. Tim says it is easy to get 200 mph true, that 24/2400 nets 150 knots indicated and that if you push it you can get 160-165 knots indicated. That’s with the 160 hp engine and full main gear doors. They plan to install nose gear bay doors soon. Next to come is upholstery and the final paint scheme. Tim is going to use the same scheme that Dave Aronson had on his plane. Other planes are



coming in soon. Tim is putting a lot of hours on the Falco and says the “PL-2 sure is getting dusty!”

This Falco is the 21st Sequoia Falco to fly, and it is a bizarre coincidence that Tim Baker lives in Slatington, Pennsylvania—only 30 miles from Terry Smith, who flew just two weeks before. It is even more surprising, in the normally cozy Falco group, that Tim and Terry have never met. Since Terry’s home base is within Tim’s restricted zone, Tim flew over to see him one day. He landed in the Falco, taxied up to the ramp and was met by several of the local airport bums. Tim slid back the canopy and asked if they knew Terry Smith.

“Yeah, we know Terry. He’s just finished building a Falco. Nice airplane—you know anything about it?”

“Matter of fact!” said a very stunned Tim Baker, “I’m sitting in one right now!” Never underestimate the obtuseness of the male of the species.

After years of machining metal, this was Bud Baker’s first experience with building with wood, and he is very taken with it. Knowing that he has a habit of selling planes, Tim already has building-rights and many parts for a second Falco ready to go. “We are hoping to run across someone who would like to have a Falco built for them since the pleasure of doing so and

## Around the Falco Patch

*Continued from First Page*

rect the angle of incidence by fitting a glove around the stabilizer. This would not disturb the structure and would be much easier than trying to tear up and rebuild the stabilizer. I went to work at the drawing board and lofted a new airfoil section for Jim. It was a simple, but boring, process. I drew the as-built airfoil at the existing negative angle of incidence. Then I drew a horizontal line representing the centerline of a correctly positioned stabilizer. I 'mirrored' the airfoil about this line, by measuring from the new center line to the bottom of the existing airfoil and then using this measurement as the shape of the new airfoil. At the leading edge, it looked horrible, so I placed the tracing paper on the blueprints and grafted the leading edge portion of one of the airfoils. Nothing scientific, I just picked one that looked smooth and traced it.

With the new airfoils 'designed', I then lofted the entire tail on mylar and sent this off to Jim. He traced them onto some pieces of 2mm plywood using carbon paper, cut out the plywood and glued them to the stabilizer at each station, filled the intermediate areas with rigid foam which he sanded down to the plywood rib/templates and then put a layer of 'glass over it all.

This took about a week and Jim called to report that the hands-off speed increased to about 150 knots indicated, but he was still unable to fly the airplane hands-off at normal cruise speeds. The day he flew the plane was gusty, and he thought the speed of the plane increased by 2-3 knots.

I had also talked to Dave Thurston about this problem and called him again to report on this development. We discussed two alternatives: a down-spring and introducing some camber into the stabilizer's airfoil. The down-spring would work but Dave didn't much care for it and thought that it would be preferable to cure the problem by modifying the shape of the airfoil. Dave also thought Jim could accomplish this with no drag increase.

Jim spent another week contouring the tail. This time, he added a layer of quarter-inch rigid foam to the top of the stabilizer and sanded it to a smooth shape and then covered it with another layer of 'glass. Jim called to report that this



*Jim Slaton's Falco is now painted.*

change "performed a miracle." The Falco now flew hands-off at normal cruise and required partial nose-down trim. Jim also said the plane picked up about 5-6 knots.

Jim had flown formation with his A-36 and had noted that the indicated airspeeds were about 5-6 knots lower. He finally concluded that he had leaks in both the pitot and static systems. He checked everything but could not find the source until he pulled the panel. There he found the problem, the fittings that went into the back of the airspeed indicator were slightly loose. After a generous application of teflon tape, the system no longer leaks.

Curious about the performance, he took the Falco out for a speed check. He made his runs at 3,000 ft and 77°, which works out to a density altitude of 4,830 feet. At 23/2300 (104.8 hp or 65.5%), the Falco indicated 154 knots for 165.5 knots (or 190.5 mph) true. At 25/2500 (128 hp or 80%), the Falco indicated 165 knots for 177.3 knots (or 203.5 mph) true. And full throttle, balls-to-the-wall produced 182 knots indicated for 195.5 knots (or 225.2 mph) true. (The engine power figures are based on the standard Lycoming engine chart and thus are probably a little low for Jim's High Performance polished-and-ported engine.) Obviously, Jim's Falco is one of the fastest out there.

There has been one other problem that has plagued Jim, every time he retracted the landing gear, the circuit breaker would pop with about one turn to go. Jim has the full complement of wheel

well doors and reported that the system worked well on the jacks.

On a hunch, Jim rubbed some grease on the side of the tires and retracted the gear. On the jacks, there wasn't a mark on the doors, but after takeoff the doors had grease marks at various spots. The answer, obviously, is that the tires were growing slightly from the heat created by the takeoff roll. Jim then started grinding on the doors and took off somewhere from 3/16" to 1/4". Once he got the doors to clear the heated, expanded tires, the doors work as designed, and the circuit breaker doesn't pop any more.

Jim's sole remaining problem is the Century 1 autopilot, which slams the plane into a full left turn whenever you turn it on. We think the problem is simply that the servo is wired incorrectly.

Jim and Judy Slaton took the Falco to Midland, Texas, for their first long cross-country in the Falco. Jim was a little apprehensive about how Judy would like the plane, but she said it was "just wonderful". I was curious about how she reacted to the high noise level of the Falco. It didn't bother her, she said, though it was too loud to attempt talking. She wore her headset when she wanted to talk, but she also just pushed the seat back, put her feet up on the top of the glareshield, took her headset off and went to sleep.

There was she said, "just one little problem!" On base leg while landing, the electrical power went off. It came

back on while taxiing on the ramp. The problem was that the main power plug on the back of the panel was not completely seated. Other than that, she said, it was “kind of a neat flight.”

With the major problems now worked out, Jim is getting used to the airplane and is really enjoying flying the plane. It is painted as planned in Imron, but with cream rather than mother-of-pearl. The upholstery is leather with shearling lambskin for the seats. He now has about 55 hours on the Falco and says the High Performance engine is the “nicest running engine” and hasn’t given him a bit of trouble. Now well settled into the Falco, Jim says, “it’s the nicest flying airplane I’ve ever got hold of.” Everyone thinks he is crazy, but Jim says that what he would really like to do is to fly this for a while, sell it and build another. You can meet this demented man at Oshkosh; he’s arriving as part of the Hansen/Harns/Purkiser/Slaton convoy.

Steve Bachnak called the other day to report that he now has about 22 hours on his Falco. He spent a lot of time fiddling with the stall strips and finally got the stall strips adjusted and installed. He moved them up to 45° and a little higher on the right. He found, as others have before him, that there is no warning at all without stall strips.

Steve has a problem with the gear retraction; it’s much too slow. The circuit design is his own, and Steve has used heavy gauge wires out to the limit switches. You just can’t do that, you have to use relays to keep the voltage drop to a minimum.

The performance of the airplane is quite good, and Steve gets 185 mph true from 24/2400 and no nose gear doors. Steve doesn’t know for sure if the airspeeds are accurate and doesn’t much care. The plane is plenty fast enough for him, and he has no plans to try to wring any additional speed out of it. But he does enjoy moving along, and reports that once with the assistance of a good tailwind, he saw 220 knots ground speed on the loran.

Steve complains about the ride in turbulence. “I don’t like the way it rides. In turbulence it will really knock your kidneys out.” After reading our flight test guide, he was pretty well prepared for what the Falco is and how it handles. There were two surprises. The first was the torque on a grass strip; he pulled the nose up too soon, and the Falco took a lunge for the pasture on the left side of the runway. Second surprise was on a cross-wind landing where he let the nose wheel touch down too soon—“You only do that once!” But overall, Steve reports, “I like it. It’s just what a guy always wanted.”

Bad weather to the north and west conspired to keep any Sequoia Falcos from the great Buttercup Fly-In, but it was a nice social event and a pleasant way to spend a Saturday afternoon. In all, we had about 40 people attend who arrived by car, Cessna, truck, Super Cub, Bonanza, CAP-10 and one famous disgraceful Falco. Pawel Kwiecinski again made it as far as West Virginia but was turned back by the weather.

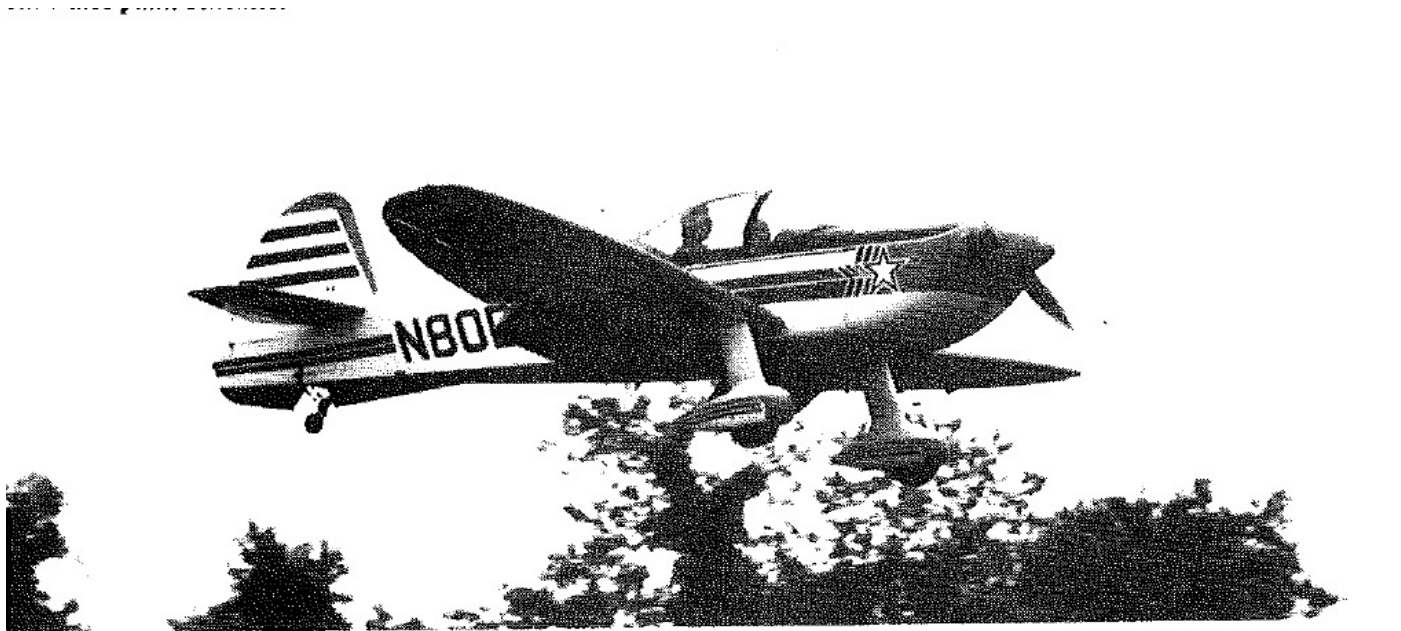
I scheduled it so that Terry Smith and Tim Baker would have ample time to

get there. But Terry Smith developed the problem with the crankshaft oil seal. And Tim Baker was assigned a flight out of the country. In the end, it didn’t matter, because the weather was IFR from Maryland north. Jonas Dovydenas arrived on Friday night in a Super Cub. Wilkinsons and friends filed instruments to get there and back.

One neat thing about the day was that this was much more of a social event of interesting people than a “fly-in” in the usual sense—whatever that is. Steve Wilkinson wrote that “it’s a sign of what a cozy little group we’ve become that there’s precious little mundane Falco talk at your gatherings; everybody seems to be more interested in a greater variety of things. Susan noticed this, and our friend Karin Reichin, who frankly was initially reticent about coming along with us because she thought we were going to some kind of dreadful ‘fly-in,’ couldn’t stop talking about how wonderful you, and Rosegill, and your friends all were.”

John Oliver did not make it, in his Falco or Piper, because Midge Oliver slipped on some ice in January and broke her hip. She is mending slowly and is now graduating to a single cane, but all work on his Falco stopped while John took care of Midge. It was only through masterful effort and great skill acquired from years of experience that Joel Shankle also managed to not finish his Falco in time for the event. He arrived by Stinson, and left early to get back to painting his Falco. Joel is taking the month of June off from work to devote his entire time and effort to not finishing his Falco.—*Alfred Scott*

*Parke Smith at the Great Buttercup Fly-In. The paint scheme on his CAP-10 was designed by Lu Matthews, who also did our Falco paint schemes.*



## Oxygen for the Falco

How silly that I, of all Falco builders one of the slowest, most pedestrian and most process-rather-than-product-oriented, should be the one to describe as flighty a system as an oxygen-tank installation. Of course, it's through the use of such dodges—and the construction of myriad ornate fairings, the constant puttying and reputtying of real and imagined surface faults, the endless pondering of such non-crises as upholstering problems—that I continue to avoid completion of the airplane. (Hey, you finish it you gotta fly it, right? Am I ready for this? Where does it say I signed on for this???)

In any case, one of my favorite forms of flight is trundling up into the narrow band of uncluttered airspace from 10,000 feet up to 18,000 (where, of course, positive control begins). Everybody else is either higher—the jets, many of the turboprop commuters, the pressurized guys and the turbo freaks—or lower. A lot of light-plane pilots apparently get nosebleeds any higher than exactly 7,500 feet.

You're above the summer haze layer, you're on top of a lot of weather, and you often can even get a good look at thunderstorm activity—nothing like being in the clear at FL 410, but a lot better than soldiering on through the summer crud at 7.5 wondering where the embedded cells are.

I used to fly up there as often as possible with my old Comanche 250, a light and overpowered little machine that buzzed up to five-digit altitudes quite nicely, and more recently with the Mooney 231 that I flew thanks to the generosity of a prosperous friend. The 231 was, of course, turbocharged, so it was quite at home at altitude.

Taking the Comanche to 16,000 feet could be a form of free turbocharging if I was going in the right direction and got one of the not-infrequent strong tailwinds. (My Comanche was an early—1958—model that had small fuel tanks, only four seats and a spare interior, so when I flew it alone, as I usually did, it had a rather remarkable power-to-weight ratio.)

More accurately, it was a form of flat-rating an engine, a common procedure with turboprops: since turboprops lose efficiency relatively fast with altitude, a manufacturer will install an engine that's much more powerful than necessary at sea level

but that therefore ends up with adequate power at altitude. Put in a 1,000-hp engine but restrict it to a maximum of 750 hp, and you'll be able to pull that 750 hp all the way to 10,000 feet, say.

So since the little Comanche was originally designed to fly on 180 hp, let's say a Comanche 180's maximum output at 7,000 feet is 75-percent power, or 135 hp. My identically airframed Comanche 250 was still able to put out 135 hp (for it, 55-percent power) at about 15,000 feet. (I once wrote about this for the British magazine *Pilot* and got letters from horrified engine mavens who claimed that flying an engine steadily at such low power settings was a dreadful thing to do, but what do they know? I don't think you can kill a Lycoming O-540 with anything short of a sledgehammer, and in any case, the percentage of the engine's lifetime that it actually spent running at 15,000 feet or higher was pretty small. Some people take life so seriously.)

Anyway, this is the long answer to the question, "Why are you putting a 180-hp engine in your Falco, since that engine is virtually unobtainable and it won't make the airplane go that much faster anyway, huh?" If your 160-hp Falco is down to 120 hp at about 7,500 feet, I'll still be able to pull that power out of my "flat-rated" Falco at a somewhat higher altitude, and I'll be able to climb to altitudes you wouldn't bother with. (I used to also argue that a strong climb rate could get you through icing more quickly, but I've grown cowardly enough that I hope to never again experience the relevance of that.)

Hence my oxygen system, since the FAA says you need it above 12,500 and might well want it above 10.

Oxygen used to be a big pain in the ass. You snorted it through nosebags that recycled every belch, interfered with microphone use and were so leaky and profigate they'd empty a big oxygen tank in two or three hours. That's a thing of the past, though, once you discover the nasal cannula—a maskless oxygen-delivery system that pipes the gas directly into your nostrils through tiny, soft-neoprene hoses so light they rest on your upper lip. Sounds gross, I know—and I remember aviation writer Peter Garrison saying in *Flying* that his initial concern was that one would get what he uncharacteristically delicately referred to as "cooties" on the pipettes—but in practice the nasal cannula remains unsullied.

Even better, without needing to take off a mask, you can talk to ATC or passengers, eat, rip off enormous burps or do whatever else you normally do to pass the time in a cockpit.

Best of all, a nasal cannula is so stingy and direct in its delivery of oxygen that an ordinary tank lasts not three hours but more like 10. That's a big factor when you discover that the only thing harder than wearing an oxygen mask is getting an oxygen tank filled, at least here in the Northeast. One helpful local FBO said, "Go to Kennedy." Another had a set of big fill tanks but reserved them for his corporate tenants. A third mechanic elsewhere filled my little portable tank largely because it seemed like a good excuse to stop feeding wire bundles into the darkest recesses of a Cheyenne. It cost me \$41, about half a mile of walking and the filling out of a variety of liability-mandated work orders, however.

The tank I use is a lightweight, uncharacteristically narrow bottle borrowed directly from modern medical technology. Your typical aviator's tank is borrowed directly from Curtiss P-40 technology, and I doubt the Scott Co. has done anything new for general aviation since they perhaps simultaneously discovered the wheel and fire.

Both the tank and my two nasal cannulae (pilot and passenger) were bought from Aerox Aviation Oxygen, 215 Masarik Avenue, Stratford, Connecticut 06497. As I remember, the set cost something under \$400. Each cannula comes with its own flowmeter/indicator, which is nothing but a graduated plastic tube with a ball bearing trapped inside it: hold the tube vertical and adjust the needle valve on the tank until the ball bearing is floating on the stream of incoming oxygen at a level commensurate with your altitude. No messy regulator or complex valve. (At 15,000 feet, as an example, that level will mark a flow of just under 0.5 liters per minute of oxygen; at the same altitude, an ordinary mask will be using more than three times as much oxygen—1.5 liters per minute.)

One caveat about nasal cannulae: they're only good up to about 18,000 feet. Some salesmen will try to tell you that this is only because "they didn't bother to certificate them for higher altitudes—too much paperwork—but they'll work fine." Don't believe 'em. I took my system up to the low 20s in the Mooney one night and



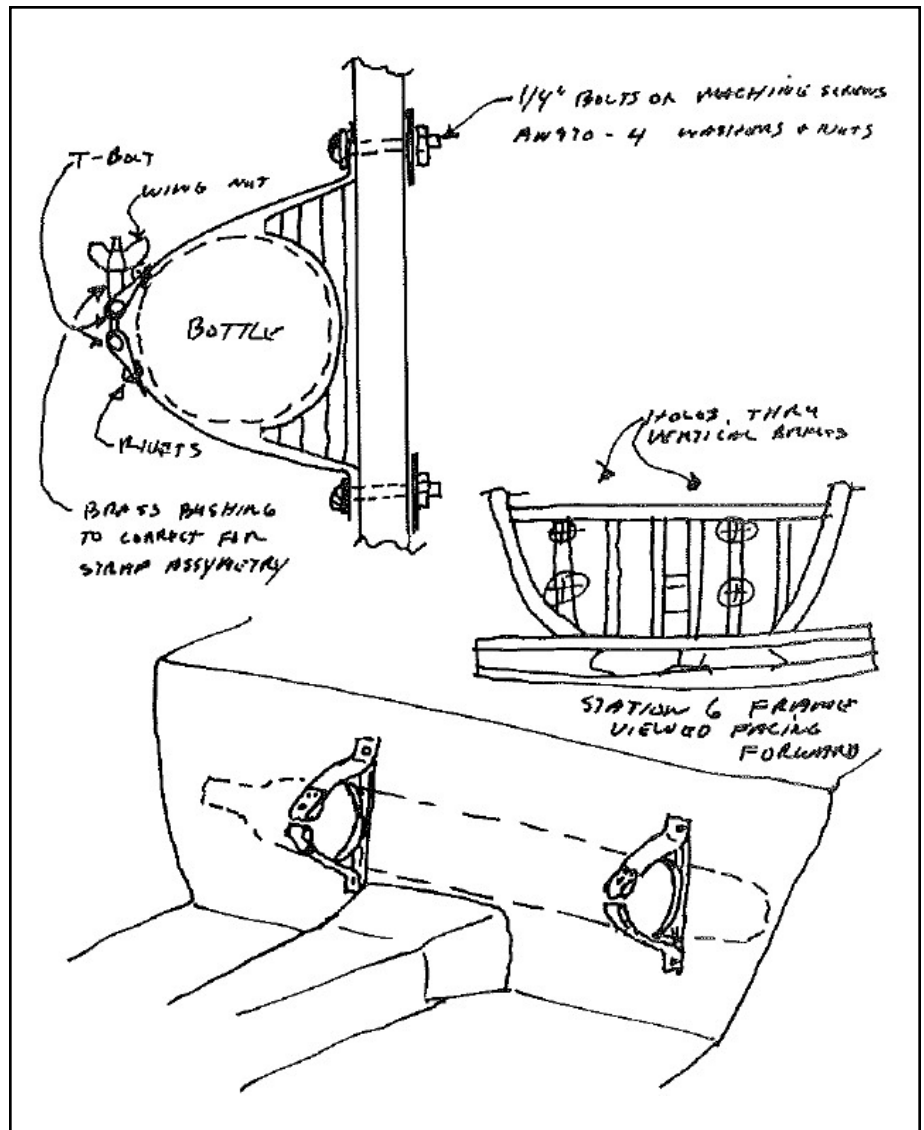
found myself coming unwrapped—the old feeling, “two plus two equals... less-see, carry the two... plus the, uh, what was the question?” A brisk descent to 17,000 solved the problem.

My first thought was to mount the oxygen tank semi-permanently in the Falco under the baggage compartment floor, hidden away inside the tailcone with only the regulator end poking into the cockpit through a round cutout in the bulkhead of frame six. Dr. Ing. Alfredo Scoti pointed out that (1) there would be no way to secure the tank sturdily enough to prevent it turning into a 155mm artillery shell in any major deceleration, and (2) the bottle would be in unheated airframe space, making it absolutely necessary to use expensive and hard-to-obtain “aviator’s oxygen.”

If I ever plummet to my doom from 18,000 feet, what I’m about to write will certainly free anybody involved (other than myself) from liability, but since I think that’s how it should be anyway, here goes: You can recharge your bottle with much more easily obtainable medical oxygen (have a doctor friend give you the necessary prescription). Medical oxygen differs from aviator’s oxygen only in that it isn’t moisture-free. Oxygen with any moisture content could freeze at altitude in a bottle or flow lines mounted in any unheated portion of the airframe, thus blocking the flow.

Tell you the truth, I know people who use even cheaper, vastly more available industrial oxygen—you get it at any welding-supply house—with no problem. I won’t propound doing that without a little further research, but I did go chat with the guys at the local welding-supply house, and they said they’d be delighted to lease me a set of big (welder-size) tanks that could be refilled at \$25 or so a pop, and what I did with the oxygen was my business. And yes, they’d be happy to fabricate the appropriate connector, as long as I did the actual connecting. After payment of an initial deposit, you deal with the bottles just like household propane: they replace the empty with a full one at the cost of the refill alone.

With such a rig, I’d be able to charge my little 2,000-pound bottle fully once, then be able to fill it the next time to maybe 1,500 pounds, then perhaps 900 pounds, as the main bottle depleted. (You need to gang a whole set of high-pressure feed bottles to consistently get full pressure out of the fill pipe.) Yet even two shots



per bottle would be a lot cheaper than FBO prices, and the benefits of only having to walk out to the barn to do it are enormous.

It should be pointed out, however, that amateur oxygen-handling is nothing to be done lightly. The fire risks are tremendous if it’s done improperly, and these tanks are potentially enormous projectiles that frequently kill and maim when mishandled. Just walk into any industrial-gases supply house, and you’ll see a pretty sobering assortment of OSHA posters, handouts and instruction booklets.

If you aren’t discouraged yet, my bottle is now mounted, at Alfred Scott’s suggestion, on the forward face of the bulkhead of frame six, just high enough to clear the aft end of the center console, cradled in semicircular spruce standoffs and secured by stainless-steel straps bolted through solid structure in that frame.

The straps are straight out of the Aircraft Spruce catalogue, where they’re listed as “fuel-tank hold-down straps”—0.50” stainless steel an inch wide and 36 inches long. (All it takes is one, obviously, cut into four appropriate sections.) Along with the straps are listed a pre-formed rubber anti-chafe channel that slips over the strapping to prevent metal-to-metal contact between tank and strap, and the necessary T-bolts to complete the installation (see diagram). Fifteen dollars buys you all the hardware you need.

Each pair of straps has a quick-release wingnut on its T-bolt so the bottle can easily be removed for refilling. The regulator end of the bottle extends toward the passenger’s side of the cockpit, with the bottom of the bottle at the extreme left side of the cockpit, which puts the regulators and canulae quick-disconnects in a position accessible to the pilot if he or she leans back slightly to reach behind the passenger’s seat.

—Stephan Wilkinson

## Construction Notes

There is one little peculiarity to pneumatic staple guns that is worth noting, and that is that the staple does not apply any clamping pressure unless you push on the gun at the time you pull the trigger. Unlike a hammer, which not only drives a nail into wood but also provides a lot of clamping pressure, a pneumatic staple gun just shoots the staple—nothing else. It's almost as though clamping was not in the gun's job description.

We discovered this while using the gun for crating. We ship plywood in a stapled-together picture frame that's covered with cardboard. If the cardboard is not pressed against the wood, the gun will simply shoot the staple in. It's strange to see a series of 5/8"-long staples driven through the cardboard and into the pine crating, but still with a small space under the cardboard. So if you want clamping pressure on your glue joints—and you *should*—you will have to hold that pressure with the staple gun at the time you pull the trigger.

George Barrett sent along some notes and sketches on how he jiggged the elevator. Instead of looping the trailing edge alignment string over the ribs as suggested in the manual, he clamped a vertical board at each end of the elevator spar. These boards were clamped into an exactly vertical position, which he established with a carpenter's level and plumb line. The vertical boards were made as part of what George calls an "L" piece—sort of

a large, wooden shelf bracket—which is clamped to the table top.

The front face of these vertical boards is used to establish the centerline of the elevator, and George used two lines, crossing each other at the center of the airplane. At the center, the two lines should just contact each other and this indicates that the two sides of the elevator are in the same plane. With this arrangement, the ribs may all be installed in one session. This is just a variation on the method shown in the construction manual, and you should use whichever method suits your fancy.

If you have been working on your upholstery, then you already know that fire-resistant foam padding is difficult to find. Steve Wilkinson saw an announcement of a source in *Flying*. He sent us a sample and also advises that he bought too much, so if you need some, give Steve a call at (914) 534-7601. Now, I'll just turn the 'phone over to the Steve.—*Alfred Scott*

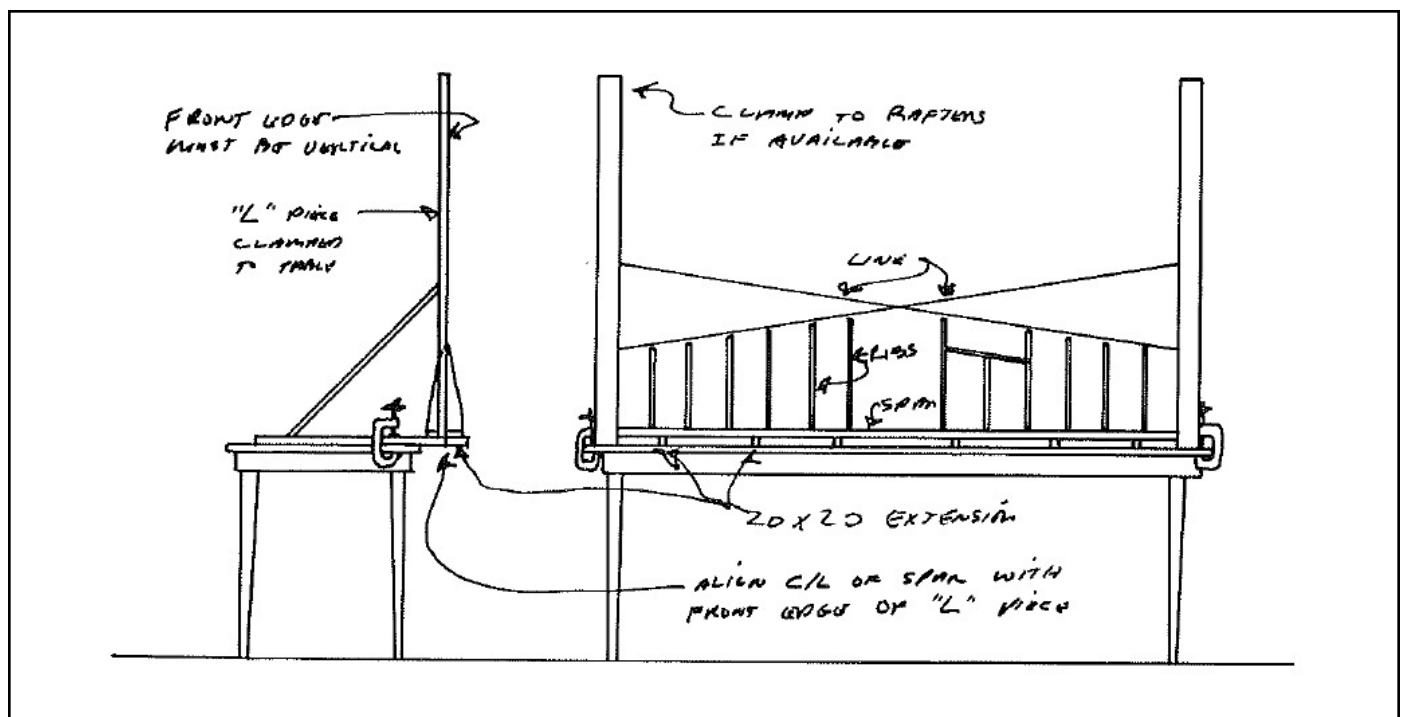
The smelly sample enclosed is a piece of the upholstery padding I bought from Chestnut Ridge Foam. No auto body or trim shop I talked to around here knew anything about "fire-resistant foam," and they barely knew anything more than that they stuffed some kinda soft stuff in behind the upholstery when they were installing a headliner or a vinyl top. What it was, how thick it was, where they got it... all great mysteries, and they apparently just threw in whatever was around the shop that day.

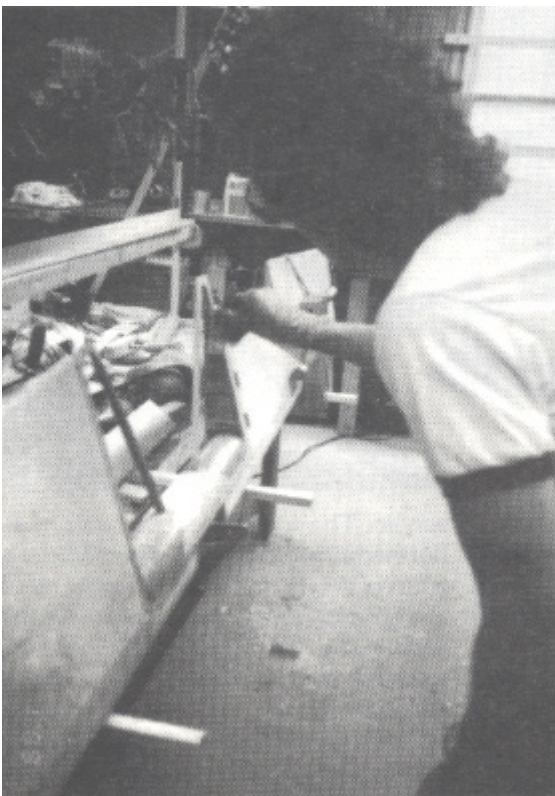
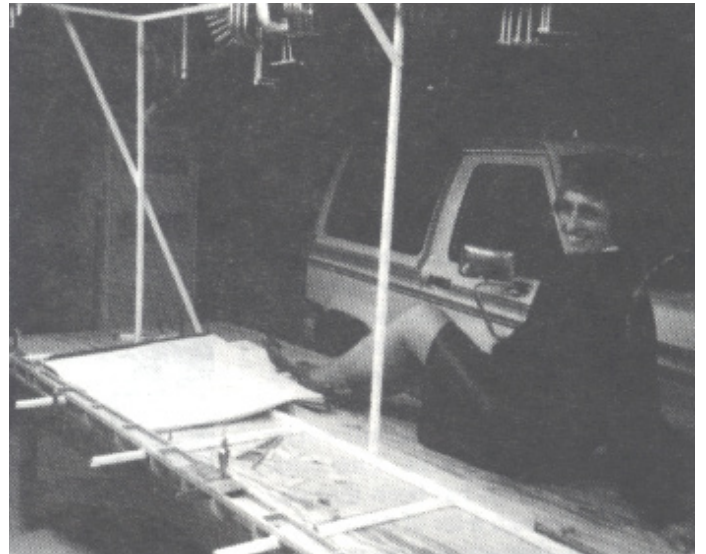
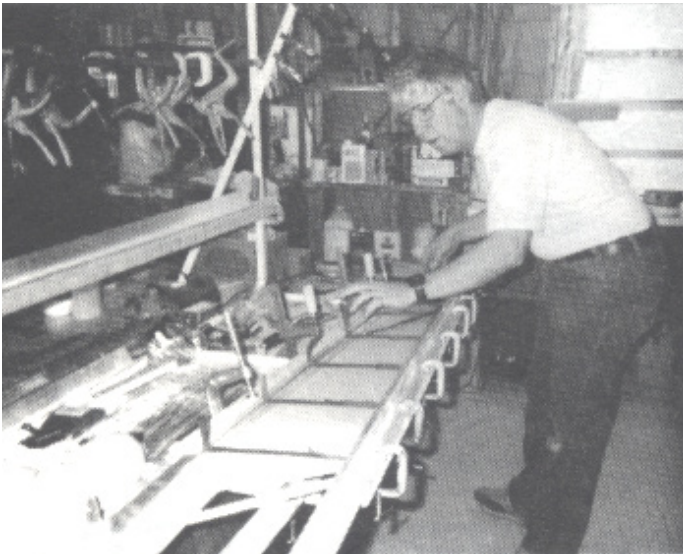
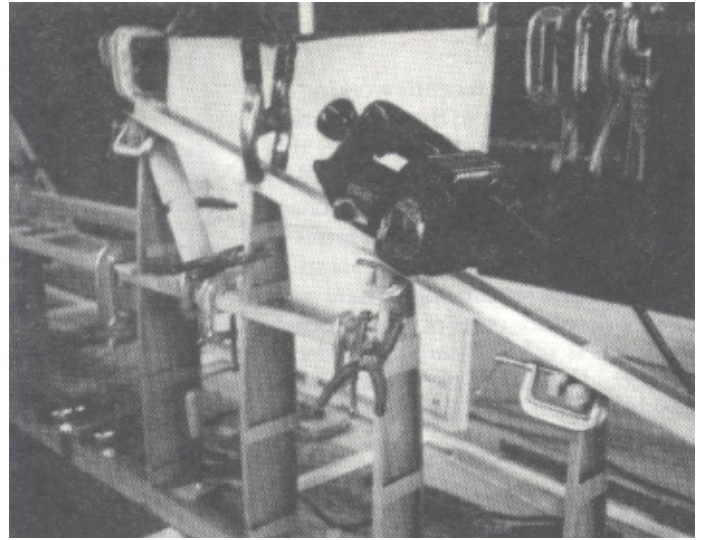
So I'm delighted to have found this material, even though it's a bit thicker and heavier than optimum, being 3/8", but it is made specifically for aircraft applications and is fire-resistant enough to come with a piece of paper that certifies it as meeting FAR 25.853(b)—the FAA's "blowtorch test." The 3/8" thickness is the thinnest they supply; there is a 1/4" foam, but it's considerably stiffer and not recommended for padding applications.

One nice thing about this stuff is that it comes with its own thin fabric backing, so you can sew this directly to the upholstery itself rather than using some kind of muslin backing to keep stitches from pulling through the foam, and you can then glue the foam-and-upholstery sandwich directly to the thin plywood (or whatever) upholstery-bearing panels.

The stuff is called LS-200(C) and comes in sheets each a yard wide and 60" long. They're \$10.93 a sheet—less than 75 cents a square foot. Chestnut Ridge Foam is at Box 781, Latrobe, Pennsylvania 15650—412 537-9003. The company is perfectly willing to supply small quantities—I bought five sheets' worth—but they do ship COD (no credit-card orders) and are accustomed enough to dealing with OEMs and professionals that when my shipment arrived, the COD instructions were that nothing but a "company check" was acceptable.

UPS had to come back the next day when I had company cash, which was also acceptable—*Steve Wilkinson*





Falco builders Howard and Marty Benham are correcting the image of Wichita-built airplanes. Top right: an easy way to get the correct angle for the leading edge strip. Center left: Thick pieces of nylon webbing work well to staple through. An aluminum "T" strip keeps the trailing edge straight. Center right: Note the all metal alignment jig.

## Goings On at Sequoia Aircraft

I've been fairly busy recently working on several new chapters to the construction manual. These are enclosed with this builder letter, and I think you will find this self-explanatory. While these chapters are essentially complete in terms of the order of construction, there are still a few things that are missing. There are a number of minor parts of the construction, such as the fuel tank access doors, that should be worked out in detail. And I would like to include a cutting schedule for plywood.

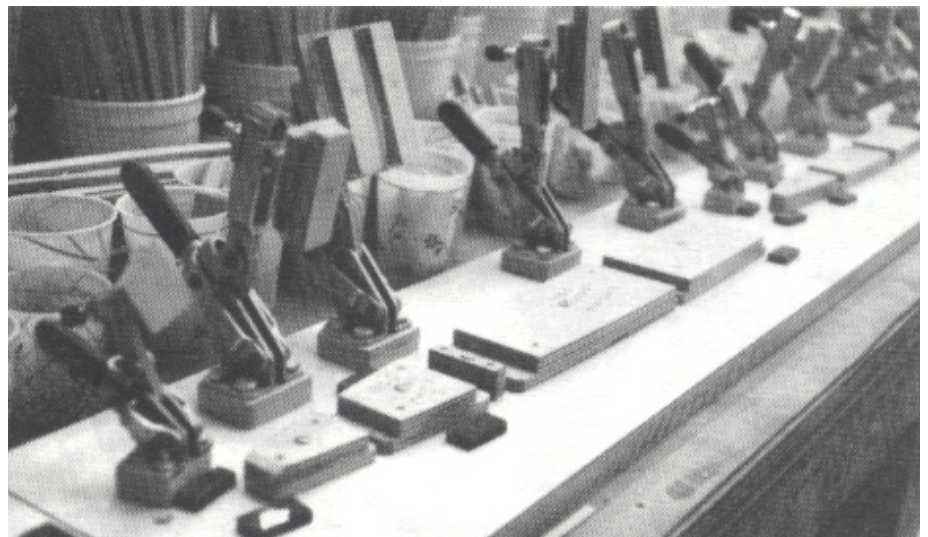
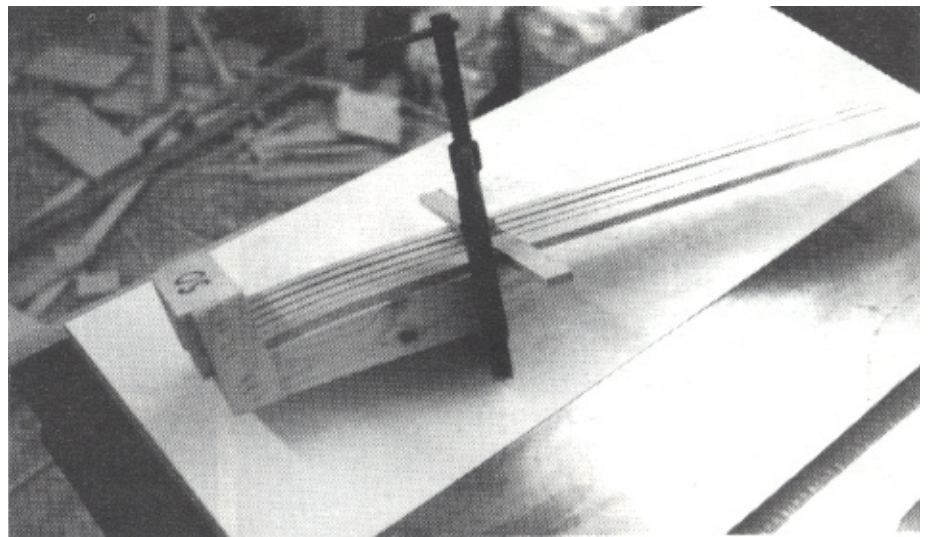
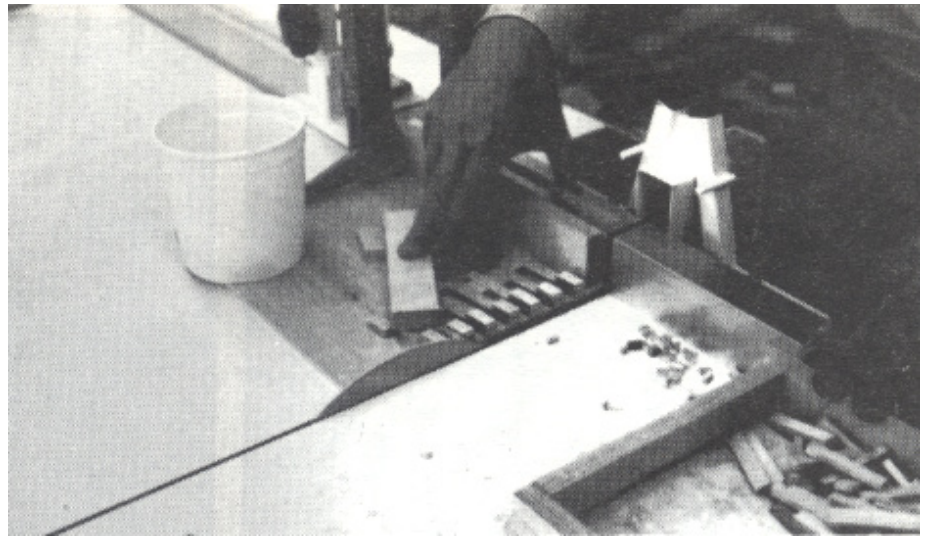
In the case of the wing and tail, I found it necessary to completely redraw the construction drawings before I could complete the chapters of the construction manual. That would be the way I would have preferred to do it for the fuselage, but I thought it was more important to get the chapters in your hands in their present form.

At this time, I am in the process of redrawing the fuselage and many of the assembly drawings. This is a very extensive project and will take quite some time, but there will be a huge improvement in the quality of the drawings. The drawings will be improved largely in the presentation of the material so that details will be shown in the logical places. One criticism of our drawings has been that you have to flip through a lot of drawings to find the detail that you are looking for. I have eliminated this problem in the wing and tail, and now it is the fuselage's turn.

There will not be much new information in the new drawings. There will be a series of sections through the fuselage of a completed airplane that show everything in minute detail. Most of these views are already shown in the illustrations of the construction manual.

Even though we have a CAD system, I have concluded that for these drawings, it makes more sense to draw them by hand. Unfortunately, the drawings that I am now doing for the Falco are as much illustrations as engineering drawings and there are still many things that you can do better by hand than with a machine. But having the capability to almost-do the drawings on the computer is very frustrating. Now I know how John Henry felt.

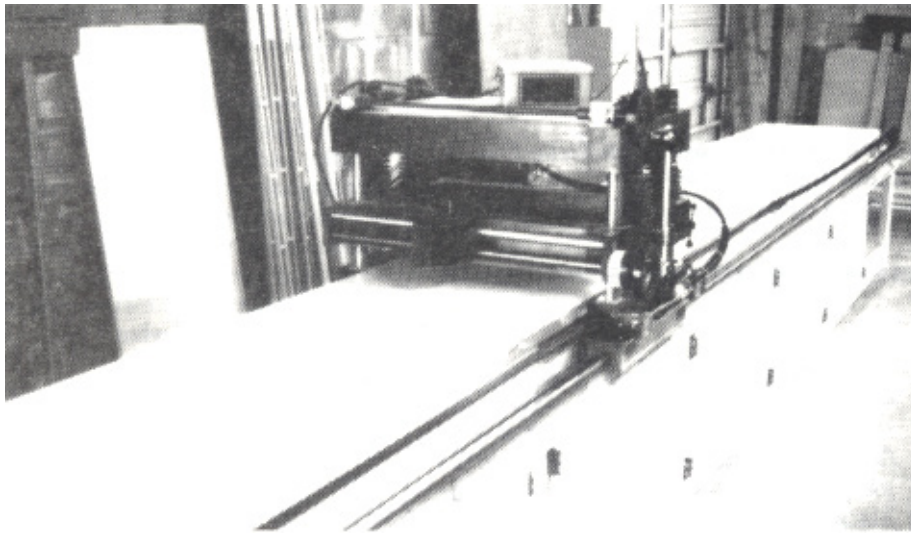
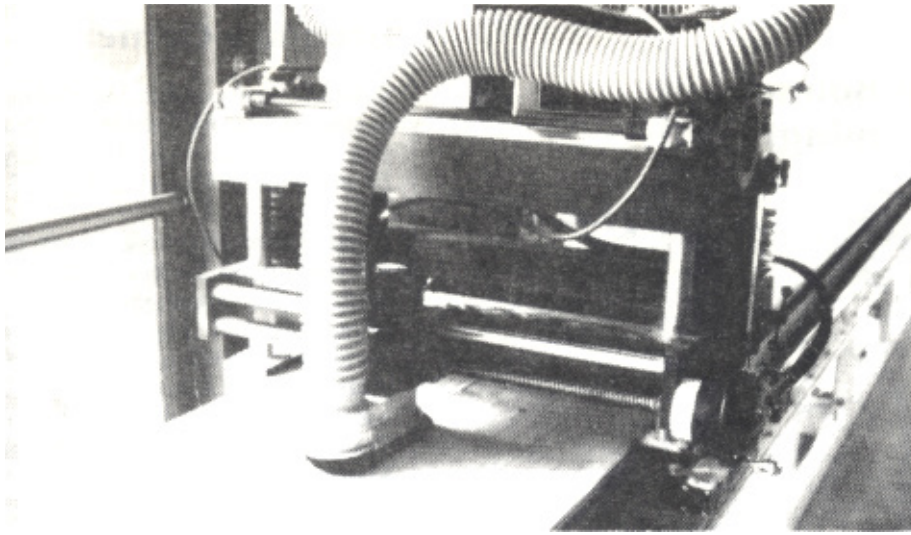
You may be interested to know how we make the tail group ribs, which is quite different from the usual method. The



ribs are made 1mm oversized and then machined to the finished profile on the inverted pin router. This gives a very accurate profile and also requires that you do not use any staples in the construction—unless you enjoy the spectacle of an exploding carbide router bit.

We start by drawing the rib on a piece of

acrylic. The acrylic is cut precisely to the finished airfoil shape. We glue additional strips of acrylic to locate the cross pieces and gussets. This is used to make the first of gluing jig. By using a  $3/4"$ Ø cutter and a custom guide pin, we undercut the rib contour by 5mm, thus making an inside jig around which the rib capstrips are fitted. The capstrips are 1mm over-



sized and are held in place with plexiglass blocks glued to the jig surface. The Baltic birch jigs also locate the cross pieces and gussets, and the gussets are clamped with toggle clamps.

Each toggle clamp has a foot bonded to its spindle with a layer of silicon rubber compound. This eighth-inch-thick layer of rubber gives the clamp some ability to accept some variation in part thickness and still achieve a good clamping pressure.

The capstrips are soaked and bent ahead of time in a simple bending jig. The cross braces are cut on the table saw using a Beisemeyer miter table and series of simple plywood holding fixtures. We have a gauge-block system based on a 11.500" setback from the saw blade, so all of the crosscut holding fixtures work with the same setback on the stop, which is quickly set up. It is a very simple system that allows us to set up and cut pieces very quickly and accurately. Little strips of quarter-inch birch plywood hold the spruce strips at precisely the right po-

sition and angle. Every piece is exactly the same.

The second operation is gluing on large piece of plywood that covers one side of the rib. There is another 'inside' jig and a matching plate to hold the plywood plate in position. The final operation is routing the outside of the rib on the inverted pin router. The rib is held in place by an 'inside' jig and the acrylic master template is used as the guide for the router. The cutter machines the rib to the final profile and also cleans up all extra glue and plywood. Before the rib is machined on the outside, it is the nastiest looking thing you ever saw.

I'm generally happy with the way the rib assembly process is working. As with everything, though, you make some mistakes and learn from them. My biggest mistake was in positioning the elevator and rudder rib gluing jigs too close together, and this makes it difficult to reach in to fit the pieces in place. I also failed to anticipate that with the hinge of the toggle clamp located above the clamp-

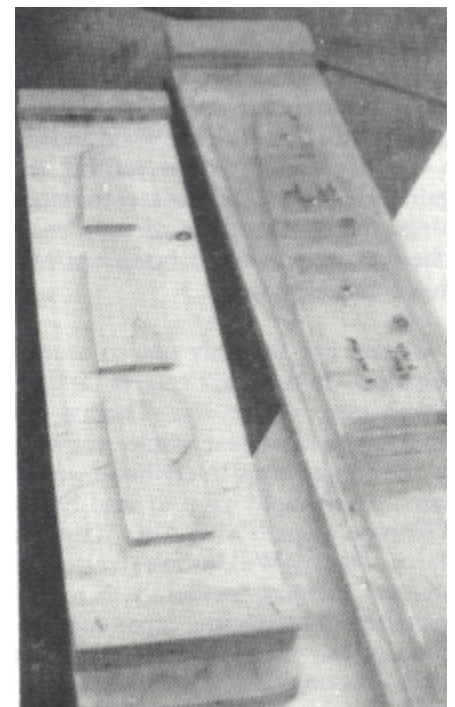
ing foot, the angle of the toggle clamp was important. If you mount the toggle clamp at the wrong angle, the foot will swing into the jig block.

All of the blocks are located with steel dowel pins and thus can be taken up and then put back down with real precision. Once you get all of the jigs and fixtures done, the parts can be made very quickly with great accuracy. But there are a lot of jigs required to make the ribs. We have 27 different ribs in the tail group and each requires three precision jigs, as well as numerous crosscut holding fixtures and capstrip bending jigs.

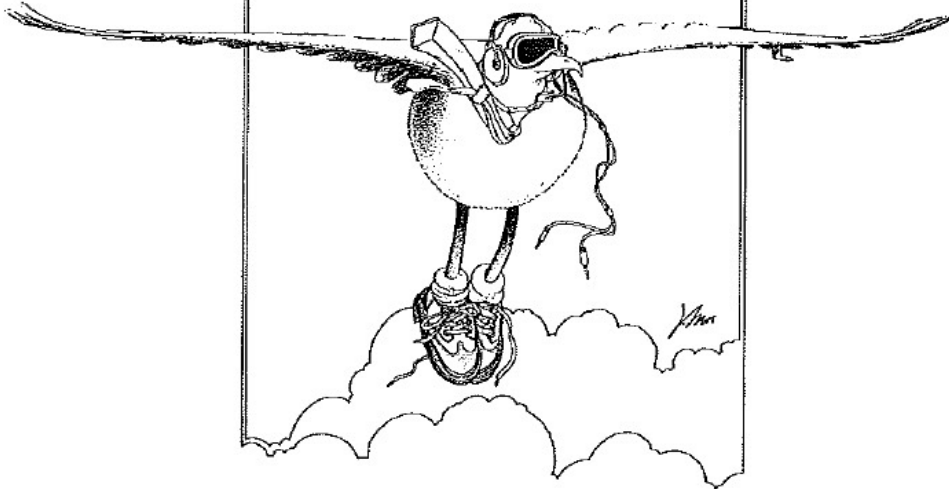
There is just a little more tweaking and fiddling required on the tail group rib jigs and then I'll turn Daryl Corle loose on a steady schedule of rib assembly. By the time you get this, he will be finished with all of the solid spruce aileron and flap ribs.

Our custom spar machine, 'Gonzales', is now finished. The table top of two layers of 3/4" birch plywood is installed, machined smooth with a router and covered with formica. With doors on the front of the machine and shelving inside, it looks more like a kitchen counter than a piece of woodworking equipment.

The next thing on my schedule to make new jigs and fixtures for the tail group and wing spars. Things have not been going as quickly as I would like, so I plan to put in a lot of time this summer working on these things. If you call and find me unavailable, it's because of those things.—*Alfred Scott*



## Oshkosh Bound, Frati's Coming!



*A gentle reminder for those of you who forgot or never got the word that Stelio Frati is coming to Oshkosh this year along with Giancarlo Monti and perhaps others from General Avia. Luciano Nustrini is also planning to come as well. (Silly bird courtesy of Falco brochure designer Jack Amos.)*

---

---

## Sawdust

• The Belgian Veteran Aircraft Federation Fly-In at Schaffen-Diest is hosting the ninth annual meeting of the inspired designs of Stelio Frati: Falco, Picchio, Nibbio and SF.260 on August 11-13. For details, contact Guy Valvekens, Hasselsestraat 49, B-3290 Diest, Belgium. Telephone: 013-311496.

• Alan Bramson has always been a devotee of the wonderful wood-and-fabric French Robin aircraft, and he always goes to pains to point out how modern they are. In the latest issue of James Gilbert's *Pilot* magazine, Bramson closes his review of the Robin Regent with, "If the idea of wood and fabric in this day and age turns you off, think again." He then ticks off a list of the modern things that go into the aircraft: *modern adhesives, modern fabric, modern paint finishes and modern wood.*

• We are not the only one to tout *Pilot* magazine—in the latest issue of *Light Plane Maintenance*, editor Kas Thomas raves about "surely the finest article ever written on the jet-warbirds-in-civilian-ownership craze... you simply have to read Stephan Wilkinson's superb 'MiG Alley West' in the March *Pilot*. Wilkinson's 'Letter from America' column, incidently, is routinely one of the finest reading experiences to be found in any avrag on *either* side of the Pond—reason enough, in fact, to subscribe to *Pilot*. Look into it if you have a spare bob."

• Bye, bye blackbird. The U.S. Air Force is retiring the SR.71 Blackbird—one of the most amazing machines that has ever flown—partly because satellites can do the job just as well and partly because the Blackbird is expensive to fly. We all knew it wasn't cheap, but the actual cost is astonishing: \$250,000 per hour.

• Greenland claims its second Frati airplane. First it was Max Conrad who crashed a Picchio on his last ferry flight. The latest is Peter Lert, who was ferrying an SF.260 from New Zealand to Louisiana. Since he planned to fly through the Persian Gulf area, Peter had refused all offers of underwing tanks and had been threatening to have an "engine failure" in Bali. Instead, it came right after takeoff in Greenland—the engine threw a rod and Peter put it down on the rocky shore of the fjord. Had it happened 30 minutes later, Peter admits he "would have been in a world of hurt." Peter's next joust with the deep is when he flies the Swearingen SA-32T (the SX.300 with an Allison turboprop) over to the Paris Air Show.

• Stelio Frati's latest design, the F.22 Penquino, flew on June 13 for the first time. Test pilot G. B. Zanazzo now has 4 hours on the aircraft and reports that it flies very well. The Penquino is powered with a 116 hp Lycoming O-235-2 engine with a fixed-pitch wooden propeller.

## Brenda's Corner

It doesn't seem possible, but it's time to start packing for Oshkosh. This year the show starts on Friday, July 28, and ends on Thursday, August 3.

If you plan to come to Oshkosh, be sure and attend the builder dinner. With Mr. Frati coming, there should be quite a crowd. Not only will you get to meet and talk with other Falco enthusiasts, but Alfred puts on quite a show. The builder dinner will be on Tuesday, August 1, at 7:30 pm at Martini's Restaurant in the Midway Motor Hotel. Be prepared to eat rare prime rib. If you are a card-carrying vegetarian, the chef will prepare you a piece of chicken.

One of my favorite episodes from the "Little Rascals" was the one where Spanky and the gang put together this stage show, and to make sure all of their patrons were satisfied Alfalfa announced to the audience that they should pay as they exit. There was a mad scramble after the show, and no one knew who paid what.

The end of the Falco builder dinner as been similar to that a few times. This year we have decided to try something new. We will collect the price of the dinner when you arrive and give you a name tag which will be your ticket for dinner. The cost of the dinner is \$14.00 which includes gratuity. Hopefully, this way everyone can sit back and enjoy the speeches with no interruptions.

We need to give the restaurant some idea as to how many people to expect. Please drop by our booth in the Central Exhibit Building and let me know how many will be in your party. Also, if you need a ride or can give a ride to someone else, tell us then. Of course, family and friends are welcome.

I will be leaving Richmond on July 25 and will be back on August 7. Keep that in mind if you are going to place an order around that time. I will have room in the van to bring some orders (no canopy frames) to Oshkosh if you are interested. Just give me a little notice, please.

Please let me know if I can assist you in any way. See you at Oshkosh!

—Brenda Avery



*Top and above: These are the first really good photographs that we have seen of Jim Martin's Falco. This Falco was nearly sold to a gentleman in England but who backed out at the last minute, so it's still available. Interested parties should contact Jim Martin, The Mail Box, 1560 Geer Road., Suite 126, Turlock, CA 95380. Telephone: (209) 571-9736.*

*Center left: J. M. Simons of Roggel, Netherlands, bought this Series 3 Falco from Italy two years ago.*

*Left: Herbert Müller's Falco is based in Passau, West Germany. The plane is technically a re-built production Falco licensed as a certificated airplane, but in reality is a new airplane using a few metal pieces from a Falco that had the misfortune of running into a mountain in bad weather. Although he was badly hurt, the pilot lived, and Herbert Müller reports that everything is going well.*

## Mailbox

Still dreaming and sorting out my financial difficulties. Don't misunderstand me. I lead a very interesting life. I am closely involved with finding harmony with the essence of life itself. Everyone I am in contact with seems to become richer in their true values. I am exceedingly rich... yet I'm broke. Maybe this year will lead me to the creation of my dream aircraft.

*Peter J. Hatcher  
Iver Heath, Bucks  
England*

I am now working on my main wing spar. As I am back into my Falco with chips flying, I plan to start assembly this summer. So if you have the second half of the construction manual finished, I could use it.

*Carvian K. Brumfield  
Massillon  
Ohio*

Still planning on frames and ribs by '89 convention time with spars shortly thereafter, pending unforeseen demands that seem to multiply upon retirement. Does that suggest something?

*William E. Roerig  
Kaukauna  
Wisconsin*

I enclose tech lit on Aerodux 500 resorcinol, following your most recent builders letter. Where I felt that u.f. was a little iffy unless you could guarantee good clamping and a perfectly matched angle, I have no doubts about resorcinol. The areas I am thinking about in particular are in the rib-to-spar fillets, though overall, I am more confident in resorcinol. The stuff is certainly not as pretty as u.f., the skins looking as though there had been a massacre, that you had bled more than your full 8 pints over them, that the wife had at long last taken revenge.

I can understand the apprehension your Austrian builder about coming up with cash up front, having been recently screwed by a mob calling themselves Anglo American Avionics, from somewhere in Texas, I am most embarrassed to admit, to the tune of \$1,750—or was it £1,750?—I don't even want to think about it. I am normally very reluctant to part with cash to an organisation I don't know, however I was lulled into a sense of security, having dealt with you in the past. The buck often finishes up at your door, pal.



**Walter Morrien of the Netherlands especially likes the headroom in the Falco.**

Unfortunately, I have got myself involved in slipped disks and starting up a new company, borrowing the money, and eating dirt for little p(bleep)-artist bank officials in the process. Have you noticed that these people are similar in appearance—small, rat-faced? It's all been very exciting, makes the adrenalin flow, but the Falco has suffered. I am threatening my son that I intend to retire in a couple of years and really get stuck in.

*Charles Wagner  
Glasgow  
Scotland*

*Thanks to Charles, we now include complete instructions and specifications for Aerodux 500 in our Appendix D of the construction manual. The instructions do indeed say that the glue can be used at lower temperatures and with light clamping pressures. This makes it quite different from most resorcinol glues. Although it is one of Ciba-Geigy's most popular glues in the U.K, I am not aware of any source in the U.S.*

*By the way, Charles, I should tell you the story about my friend Bob Williams, who runs a large paper company which owns*

*Dixie Cup, the maker of paper plates and cups. His work takes him to Scotland often, and Bob—being a tireless promoter of his products—recently took along a package of paper plates to give to a Scottish lady. When he returned a couple of months later, he asked her how she like the plates. "Well," she said, "they're veddy nice, but they fall apart after you wash them about ten times.*

*—Alfred Scott*

The construction is going a little bit slow now. I didn't imagine how hard it was to sand all of the wing in preparation for skinning. The fuselage jig is almost ready. It is made with steel pipes, and is quite different from that suggested in the construction manual. I'll send photos soon.

*Marcello Bellodi  
Jaboticabal  
Brazil*

I'm building my workshop at this time for the Falco. Also collecting parts for the aircraft, i.e. engine, propeller, petrol tanks and lots of metal components.

*Terry Greaves  
North Humberside  
England*