



Sequoia Aircraft Corporation
900 West Franklin Street
Richmond, Virginia 23220
804/353-1713

January 12, 1982

Dear Falco Builders:

Since our last builder letter, things have been as busy as ever around here. I'm happy to report that we have the kit situation fairly well in hand. Until recently we have had to back-order a few parts from each kit which had not been made. We are now able to ship about ten of the kits totally complete on the day of the order. While the back-ordered parts might have represented only a minor inconvenience to you builders, they have been a major problem for us in keeping track of who gets what. Life in the shipping department is easier now, and we are getting complete kits out within a day of receiving the order. It has always been my goal to be able to ship all of our kits on a next-day delivery basis, and we are rapidly approaching that day.

The Falco is starting to really take hold as a popular homebuilt aircraft. We originally advertised the Falco as a plans-built aircraft with no mention of the kits, even after we had begun working on the kits. Earlier last year we introduced the kits with our two page advertisement, but that ad would cost about \$25,000.00 for a single insertion in Flying, so once we saw that the ad would work, we down-sized it to a third page ad and have been running it on a consistent basis in all of the major aviation magazines with good success. We now have over 220 Falco builders, and we are shipping the kits in larger numbers each month.

Our only problems are the delays in getting the remaining kits completed. This is as frustrating to me as it is to the few advanced builders who have run me down. Most of the delays have been a result of demands on my time. It takes more time than you might imagine to calculate the length of the control cables, the bends of the canopy frame tubes, and the like.

Since the last builder letter, I have finalized the design of the fuel tanks. I don't think I have talked to a single Falco builder who did not want more fuel capacity than the original 31.2 gallons. Because of weight and balance considerations, it was important to get as much of the additional capacity in the forward tank. This was not an easy task, since there is not much room to expand the front tank, while at the same time providing for room for a radio stack that did not protrude from the instrument panel. The original front tank held 18.5 gallons. Even with the recess for the radio stack, we were able to get the capacity up to about 21 gallons (possibly 21.5). To do this, we had

to pull every trick in the book, including tank ends that fill every possible space, and a special cap which would allow the tank to fit up against the inside of fuselage frame No. 2. Even the clearance of the top of the fuel quantity sender presented a problem, but none of the problems were insurmountable. The front tank is only one part, but it took about 1½ months of work. I was concerned about enlarging the aft tank, but I discovered that the drawings that we have for the aft tank held 18.5 gallons, not the 13 or so gallons in my Series III Falco. The Series IV Falcos had 18.5 gallon aft tanks, so I left it as it was and only made a few little changes. Aside from the changes in the capacity, there were a few things that we did differently. The filler neck for my Falco's front tank is too small to see into the tank when you are filling it, and I am always overflowing the tank at fill-up. While I was changing the cap, I made the opening larger. The aft tank, because of where you stand when you fill it, does not present this problem as much, fortunately so, for I was unable to enlarge the opening since the canopy skirt did not allow enough room. Another change was the tank venting. The original Falco tanks were vented through the caps, an arrangement I have never liked. Any negative g maneuvers immediately sends fuel up the windshield from the front tank, and then, if the scupper is leaking, the cockpit fills with the smell of fuel. The aft tank is worse. If you attempt to put as much fuel as possible in it by filling it to the brim, even raising the tail to allow more fuel to go in (remember the filler is on the aft end of the aft tank), then when you take off and climb out, fuel runs out of the tank and down into the tail section. This also fills the cockpit with a strong smell of fuel. It makes your cigarettes taste bad! The obvious solution is to go to overboard vent lines. This was accomplished in the aft tank by installing a fitting to the upper front of the aft tank. The front tank required a fitting on the aft end with a tube running to the upper front of the tank so that the plumbing could be removed or checked without removing the tank. The only other change was the use of standard AN867 weld flanges at the outlets. We also worked out the installation of the inverted header tank, which connects in series to the aft tank and which holds about 2 gallons. I should also mention that the aft tank is designed to accommodate the installation of the header tank at a later date without any modification to the tank. I'm rather pleased about the way the tanks worked out. With the standard tanks, capacity is 39.5 to 40 gallons (all usable) and 41.5 to 42 gallons with the header tank installed. I did spend a little time working on the capacity of wing tanks, and the news is not particularly good. Early rough estimates show that only about 28 gallons (not all usable) can be installed within the wings, or about 32 gallons with semi-integral tanks in which the bottom of the tank is also the bottom of the wing. The only way to get close to 40 gallons with the wing tanks is in combination with a single fuselage tank or with wing tip tanks.

Some of you have inquired about the possibility of making the tanks of fiberglass or Kevlar. I am not particularly in favor of this since attaching fittings and caps can be a problem. There is also the very real danger of electrical discharges (a lot like lightning strikes except that you are not grounded, although it looks like lightning). With fuel as a conductor of electricity, I don't particularly care for the idea of the fuel not being surrounded by a conductive material.

Some people have also asked about the possibility of installing a product known as Explo-Safe in the tanks. While the demonstrations shown by the vendors are truly impressive, the only real function is to prevent an explosion caused by a bullet puncture. The more likely problem is a broken tank in the event of a crash, and the stuff will do little good with fuel outside of the tank.

I have spent the better part of the past month working on the seat design. Once again, this is not a simple matter. The original Falco seats weighed 16 pounds a piece with tracks, and I am hopeful we can save some weight here. The tracks did not have any stops to prevent the seats from going fully forward. Removing the seats is not an easy task, as I have found from having to do it a number of times. They must be pushed forward until they come out of the tracks, and the fun begins when you try to get them back in! The seat belts are also related to the seat design. The original Falco had two shoulder belts fastened down behind the seat and a single crotch strap fastened to the front of the wing spar (much too far forward). There were no lap belts at all, although most Falco had lap belts attached to the seat, which would do relatively little good in the event of a crash and tear into the side walls and center console covers. As you know, we have already designed new fittings for the shoulder belts and lap belts which are capable of 40 gs, which puts us in the class with agricultural and military planes. Another not-so-nice feature of the original Falco seats is that the lever on the tracks that you pull up to make an adjustment does not move with the seat, which is particularly annoying when you are trying to replace the seat in its tracks but cannot reach the lever -- which must be up. What we have done with the seats is to design a fiberglass seat pan. We were unable to locate any standard seat tracks that would do the job, especially since everyone wants more headroom. Getting more headroom means lowering the bottom of the seat, which means that the tracks must be very compact vertically, and it also means that the base of the seat must be narrower as the seat is lowered. Interference with the side walls, the landing gear retraction gearbox and crank and the requirement for essentially symmetrical seats makes for an interesting mental exercise. As the seat design now stands, the seat is attached to the track by four studs welded into the tracks. To remove the seats, you lift the bottom cushion, remove the four nuts and the seat lifts out. I have to assume that one day someone is going to endure a crash in the seat, therefore the studs have to be located so that they will not be directly below your hip joints. I had decided to attach the crotch strap to the base of the seat so that it would move with the seat and the loads would be carried into the tracks. The usual method is to use a standard angled three bar slide, which I was prepared to use until I realized that this put the said projecting steel piece 35° (the usual angle of a crash) down and in front of...er...ah.... I decided to do it another way, with a non-projecting tube that fits below the seat. The tracks have an integral stop that limits both forward and aft movement, and the adjusting bar moves with the seats. I toyed with the idea of raising the seat back higher, but rejected this notion (Oh, okay, I did raise it a little) because anything above supporting your shoulder blades is a waste and would add weight, and it would also interfere with putting luggage in the back. We will be using molded seat cushions, which requires a \$2,000.00 mold but this amortizes out to \$10.00 a seat

for you. I have tried to work out a design which would allow those of you who do everything yourself to make a steel tube seat frame which would attach the seat track and have the same features, but I have been completely unable to accomplish this. Those of you that are going to make your own seat should either sit down at the drawing board or buy a seat and start hacking on it. The seat and seat tracks are totally beyond the capability of the shops of even the most advanced builders to make all of the parts, but I'll do what I can to accomodate those of you who are skilled and on a tight budget by offering the pieces for you to assemble. I have also been working on the seat belt system, which is a five point Pacific Scientific system. By designing the system for the Falco, we are able to eliminate four (and possibly five) metal pieces thereby saving both weight and money. I am going to leave the covering of the seats up to you, since there is no way that I would be able to accomodate all of the varied selections of fabrics, plus I don't know any seamstresses as cheap as your volunteer family members. The original estimate for the seats was based on a price someone once gave me for the welded seats, so the figure is of no value. At this time, I have no good estimate of the cost of the kit. All I can do is bid the work out and let you know what it comes to. Hopefully, I will have some kind of a figure by the next builder letter.

We have also done some re-design work on the engine mount. The only change required on the conical mount was that the 14° angle for the nose gear steering arm support does not match the 5° angle of the nose gear. Originally, the Falco was built with the nose gear at 14°, but a problem with nose wheel shimmy required the change to 5°. This presents no problem except that the rocker arm on the upper end of the nose gear must have the proper angle on the tubes to match the engine mount. We have both versions in stock, and you should let us know which engine mount you are going to use when you order the nose gear, otherwise we hold up on shipping the rocker arm until we know what you want. The only other change to the conical engine mount drawing is some minor additional detailing and some details to show the installation of hardware and rubber isolators.

This brings up a related point. When we make a change to a drawing that will require a new drawing, we note this in the revision list as a "new drawing issued". This is to signal you that a change has been made, but it does not mean that we will send out the drawing on that day. What we usually do is wait until we have enough to justify printing and shipping a batch out and then send all these out at one time. Those of you who are at a stage where you will need the drawings will usually get an advance copy from us, but we can always supply something for you if you are in a hurry and need the drawing right away.

Back to the engine mount. With the dynafocal mount, we have made a few changes. The dynafocal mount shown in the drawings was designed for a Falco owner who wished to install it in his Falco. I do not know if the mount was ever built, installed or tested. Dave Thurston (the engineer who does all of our consulting work on the changes to the Falco) and I are concerned about the design of the dynafocal mount. For one thing, I have never seen another dynafocal mount in which the upper doughnuts were supported by only one tube.

While the dynafocal type mount results in a smoother ride (actually the conical mount in my Falco is smooth enough for me), the guys who designed the thing should be turned over the Iranians. They got it backwards. The six cylinder Lycomings have it right, with the isolator mounted in the engine casting and with all tubes on the engine mount focusing in on a central tube and bolt exactly like the conical mount, only with a larger rubber piece mounted at an angle. The problem with the dynafocal system for our engine is that the doughnut must be on the engine mount which means that the tubes must be welded to the sides of the doughnut and therefore to the sides of the loads. The usual method is to support the ring with two tubes to each ring (so that the doughnut pulls or pushes equally on each tube and does not try to twist and bend under eccentric loads) and then to additionally support the doughnut with gussets to stabilize it from any possible movement. This is the way it is done on all of the aerobatic machines such as the Pitts, and while I don't mean to be critical of the original design, I do not feel comfortable with it. We have made these design changes and my intention is to test the mounts to the ultimate loads.

I have found that many of you want to use an injected engine and that while Lycoming has injected engines available for the conical and type 1 dynafocal mounts, they are not readily available in the used market. The Twin Comanche's IO-320-A, -B, and -C seem to be as common as flies. Although I did not intend to design such an engine mount, enough builders have purchased these engines that I have little choice but to go to work on it. Indeed, it looks like these engines may be the most commonly-used engines on our Falcos. We have the engine mount designed, but we have a problem in that the injector interferes with the anti-torque tube on the engine mount. To solve this problem, Dave Aronson has sent the engine he purchased to the shop that will be making the mount. We will then figure out what to do and fit the mount the the engine. Hopefully we will have this done by the next builder letter.

Speaking of engines, I would like to give you a quick primer on the O-320 series engines. With one exception (the "H" series) all of these engines are basically the same engine. The engines with the low compression pistons (or is it the heads?) are the 150 hp engines and the high compression engines are the 160 hp engines. The crankcases are all cast in the same mold but the lugs are machined differently for the conical, type 1 or type 2 dynafocal mountings. The engines have carburetors (for the O-320) or injectors (for the IO-320). The carburetors are almost always mounted on the bottom except in the case of a version (O-320-D) made for the Grumman-American Cougar. The injectors are mounted on the bottom except for the Twin Comanche engines (IO-320-A, -B & -C). Therefore, all of the "O-320-A", "O-320-B", etc. refers to is the various combinations of injectors or carburetors, 150 or 160 hp, and conical, type 1 dynafocal, or type 2 dynafocal mount. Anyone who tells you that the "D" stands for "dependable" is blowing smoke. They are all basically the same engines except that there are the usual characteristics: the 150 hp engines tend toward lead fouling with 100 octane "low lead" fuel, and the injected engines are slightly more efficient due to better mixture distribution but are also more troublesome due to clogged injectors. After the "A", "B", or whatever

letter follows the "320", is a number than designates the crankshaft. The number "1" indicated that the crank is for a constant speed propeller, that is, it is a hollow crank and has provisions on the engine for a propeller governor. The "2" means that it has a solid crank and can only be used for fixed pitch propellers. Now the O-320-A1, O-320-B1 and O-320-C1 engines were the first made for the constant speed propellers and the propeller attachment bolts were 3/8"dia. These proved to be too small for the constant speed propellers (the 3/8"dia bolts are fine for fixed pitch propellers) so these three series of engines are now obsolete and no longer made. Their replacements are the "3" engines (O-320-A3, O-320-B3, and O-320-C3) which have 7/16" propeller attachment bolts. The 7/16" bolts are standard for all other "1" engines except for the O-320-A1, O-320-B1 and O-320-C1 engines. To use the Hartzell constant speed propeller that we are going to use, you have to have the 7/16" bolts. Also this constant speed propeller will not work on a "2" engine.

The next indication of the engine model number is a letter (as in O-320-B3B) and this letter designates the accessories installed on the engines. There is no standard meaning to any one letter. The usual variable is the magnetos; the impulse coupling Bendix mags are the usual one and the one you want, the 1200 series Bendix is used for high altitude turbo-charged engines, and the Slick magnetos are "throw-a-way" magnetos (which is is very good thing to do with them -- the Bendix mags are better). A "D" as an additional letter (as in O-320-H2AD) indicates that the engine has one of the new Bendix "dual" magnetos, a new version in which both magnetos are in a single case and run off a single drive shaft. The initial versions of this magneto gave some problems due to warping cases, but the problem has been largely solved by Bendix which promptly redesigned the thing after it gave people some problems.

The only exception to the above is the "H" series engine. This is an entirely new engine and quite unlike the other engines we have discussed. Bluntly, it has been a real lemon. Cessna installed it in their Skyhawks, and the things started quitting with regularity. Lycoming and Cessna had a real nightmare on their hands (the head of Cessna was "retired" as a result) and even though Lycoming gave a valiant and responsible effort to solve the problems, they never did. Cessna dropped the engines and sold them to Wag-Aero to sell to homebuilders. Folks, it is no deal. The price might seem right, but remember that the engine has not been reliable and that the FAA is considering and might issue an AD requiring a new \$5,000.00 crankcase. One of our builders was assured by Wag-Aero that he could use the O-320-H2AD with a constant speed propeller, and he purchased the engine. Because of an interference problem that I am not going to tell you about, you cannot use the engines with our engine mounts!

While on this subject, I have also been doing some work on the propeller installation. The constant speed propeller that you will need is the Hartzell HC-C2YL-1BF/F7663-4 propeller with the A-2476-14 spinner mounting kit installed. Propeller specifications are (a) pitch setting at 30" station, low: 13°, high: 30°, (b) diameter, maximum: 72", minimum: 70" (no further reduction permitted). The spinner is the Hartzell 835-44 spinner assembly. This propeller will work on all of

engines with the "1" and "3" crankshaft except for the 0-320-A1, 0-320-B1 and 0-320-C1 engines. It will not fit the 180 hp or 200 hp engines. I know very little about propellers except that this is the one you want. The Twin Comanche propeller should not be used as it is a propeller with an extended hub and is a fully feathering propeller. The extended hub should not be used on an aerobatic aircraft. I don't know if the blades from this propeller can be mounted on another hub to make up the proper propeller.

One other point on the engines. The conical mounts have the bolts in the rubber isolators pointing straight ahead. With the type 1 dynafocal they are focalized, that is, they are angled toward a point just ahead of the center of gravity of the engine. When the Twin Comanche came along with the extended-hub propeller, the type 2 dynafocal mount was developed to maintain the focus of the isolators ahead of the center of gravity. I don't know if this was because there was a problem with focusing it behind the center of gravity or if it was just theoretical, but it does raise the question of using the type 2 dynafocal with the normal compact hub that we will be using. I have talked to Lycoming about this, and they said it doesn't make any difference. What you have is a less perfectly focalized mount, but certainly better focalized than the conical mount.

One thing that I have noticed about my Falco that I do not like is that the rudder pedals are too low. After talking to a car designer friend of mine (more about his later) and comparing my shoe to my drawing, I have concluded that you will need a well for your heels 50mm below the floor level. This well will be between frames 2 and 3. I don't have the time just now to draw it up, but the only thing I would like to stress is that I don't want the well to extend all the way back to frame No. 3 on the right side. The flooring will be taking some of the side loads imposed by P/N 717, and I would like some plywood around it to support the side wall near P/N 717. Take my word for the fact that the floor is too high. I find I have to point my foot and push with the result that my right calf starts to tremble in even a short climb.

One of the things that I will be working on in the next several months is the instrument panel. I have decided to use an engine instrument cluster almost identical to that in the Mooney 201. This plus the location of the radio stack required by the front fuel tank means that those of you who plan to do things my way should wait on all things connected with the instrument panel until I have finished the drawing. Only then can you see where everything is going to go and what you have the liberty to change without getting into trouble. It is not a simple matter, nor is it one of those situations where you can change one thing without affecting lots of other things. With this in mind I note the excellent article that Tony Bingelis did on the air vent. There is absolutely nothing wrong with Tony's design, quite the contrary, it is superb. But I may end up doing something with the instrument panel which will tie into this. I want to look at the location of the vent in my plane to see if it coincides with my knee. I want to look at the ventilation and heating system. I want to see if there is some way to get some air to the windshield to defrost/defog. I may want to install

some vents on the panel. All I am saying is: don't get ahead of me if you are going my way.

Kits. The canopy frame bent tubes are due in shortly and then we will proceed with making the canopy frames. The jig is under way now. The canopy frames then go to the canopy shop so that we can make a trimming jig so that the canopies will fit the frames without further trimming. The tanks are being made now, and we may have the first available in a couple of weeks. When this is done, we have to perform "drop" tests, in which the tank is filled to determine the total capacity and to determine the resistance of the sender at various levels so that we can make the faces for the fuel gauges so that they will read accurately. Since the two tanks have different capacities, I don't think that the usual "empty, 1/4, 1/2, 3/4, full" would be very good. Instead, I intend to have the dials read in 5 gallon increments and with a red line at a point where you have 1/2 hour of fuel remaining in the tank. I will be working on the cowling, and I hope to have the first cowling delivered by the next builder letter. I have done some work already on the cowling. The first step was the propeller and spinner installation drawing which is well under way. We will be able to eliminate the hole for the starter and the slot for the oil cooler, which we will mount either on the front or rear engine baffle. I have made a quick nose bowl to work out the radiuses around the inlets. It looks the same from a distance and the changes are really only minor refinements, but it is a world of improvement.

Those of you who have recently purchased the plans may not be aware of our "semi-finished" kits. These were offered after a lot of builders had problems finding the extrusions they needed for the various hinges. What we do is purchase enough material for 100 airplanes. We cut the material to the length required for 50 aircraft and put this on the shelf as part of a semi-finished materials kit. The rest we use for our finished parts. We buy the stuff in fairly large quantities, but the price of the extrusions is still very high -- I don't even like to think about it! We buy only new certified material from Tiernay Metals in Redondo Beach, California. There are a number of places where you can buy "aircraft extrusions" at some very reasonable prices. I would caution you to be careful about who you deal with. A lot of the inexpensive material is in fact material that has been rejected and sold through salvage and scrap yards. You don't necessarily know that something is good just because it is expensive, but you can be sure that if extrusions are very cheap it is cheap for a reason. Extrusions are hard to get and expensive, so any good material ought to be snapped up at bargain prices. I'm not trying to sell these things (the semi-finished kits have proved to be very popular largely because people know what they are getting and know that they are getting what they need), but I do think a word to the wise is in order.

My Falco is just back from the radio shop with a full set of radios. I have replaced the instrument panel on the right side and left side. I made a new central box for the radios. Most of the things are new. I have dual King KX165 (because they were the shortest radios I could find) with a King DME (I couldn't use my Narco 195 since the channeling was different), a King marker beacon, and a Collins

transponder (again, the shortest on the market). I also have a Davtron clock-timer, outside air temperature, and voltmeter (I really like those digital things). I have an Alcor 4 cyl EGT/CHT which will go in when I change engines this spring. There is also a carburetor ice detector. I have added a genuine Bendix ignition switch to replace the old starter button and mag switch. I've put post lights in all over. We made up a custom audio panel, which is just a row of switches connected to the audio and mic lines, and that's all you need if you are not going to have a speaker. I have a David Clark Isocom intercom which is really beautiful, and I would suggest you all put one in your Falco. Next on the agenda is to re-do the center console so that I will have room for the prop control. Things are now working nicely. This may not sound like much, but there were a lot of things that didn't work, or worked poorly, or made noises. I like everything in an airplane to work, or I want it out of the airplane. It is now an airplane that you can get in and go somewhere with confidence that all the gadgets will work.

A special note for our overseas builders. Some of you have complained about the problems of having to get bank drafts for our kits. I regret this, but about a year ago the U.S. banks stopped accepting overseas checks. I don't know why, but all I know is the only thing that is good here is a check drawn on a U.S. bank. I'm sorry about this, but the last overseas check we got for a kit took six months before we get our money.

Electrical system. I thought I got the word out. We will be using a 12 volt system. The 24 volt system shown in the plans is for the original production aircraft and was put in the plans since I thought it better to give you something rather than keeping it all a mystery.

I should mention that because of certification problems with my airplane, I am being forced to replace the perfectly good engine with another engine. In a nutshell, I have a O-320-A2B with a Hoffman fixed pitch propeller. The Type Certificate Data sheet calls for the O-320-A1A engine (which is obsolete so they will let me use an O-320-A3B) with the Hartzell constant speed propeller. I will be selling the engine and prop when I put the new ones in. I'd like \$2,600.00 for the engine and \$500.00 for the prop. If any of you are interested, please drop me a note.

I am giving some thought to entering my Falco in the CAFE 400 in June. This will mean a trip to the west coast, and I think we ought to plan a get-together of Falco builders. I think even my dirty slow Falco will do fairly well in the competition. I've increased the speed on the Falco about 10 mph so far. The landing light was responsible for 8 mph, but I'm not up to speed yet. The other day I got a letter from Luciano Nustrini, who won the Giro d'Italia (beating a field of about 30 aircraft including some SF-260s) with a speed of 234 mph burning 7.2 gallons per hour. Nustrini has a problem: he is now flying at 6 mph below red line.

Those of you that do not know about the EAA Project Schoolflight might be interested to know of the program. The EAA serves

as a dating service between schools who would like to build an airplane and a sponsor who would like to have an airplane built for him. The sponsor provides all kits, materials, supplies, engine, propeller... all the pieces. The school supplies the labor, free. When the airplane is finished, the sponsor gets the airplane. Average construction time is 2 years, although occasionally some school does it in 5 weeks of concentrated work. If you have any interest in this sort of thing, the man to contact is Ben Owen, EAA Project Schoolflight, P. O. Box 229, Hales Corners, Wisconsin 53130. Telephone: (414) 425-4860.

I have mentioned in the past that there have been a lot of people who have helped us with the Falco. I don't know quite what it is, people are taken by the aircraft. I think you would be startled at the list of names of everyone who has made an effort in the Falco's behalf. It's been one of the great pleasures of doing what I am doing to sit in the middle and work with such people. One of them is lately in the news. Robert Cumberford is a friend of mine, a friend of the Falco, and a former editor for the old Air Progress. While I have been working on the Falco, he has been designing a new car and going through all of the same things that we have. We are always trading notes and ideas on things, and he has assisted us in the purchase of certain items whose manufacturers did not want to sell to aircraft companies! See the January issues of Motor Trend, Car & Driver, or Road & Track for the Cumberford "Martinique". This machine has about the same number of parts as a Falco and in many ways is comparable. Fortunately not in price!

While I am off the subject, I should explain the enclosed announcement by Talkeetna Records. This is something my brother-in-law and I did a number of years ago just for fun. The guiding principle of the "business" was that no one got one free thereby allowing us to fleece all our friends and relatives to recoup our costs. At last count we have made nearly \$170.00 on this venture. We still have a few records and they are still not free! The address is no longer any good. Those of you that are fools for this sort of thing can make your checks out to us. I'm the one on the right, and Meredith is in front of me. It's homespun music, but fortunately for me, Peter is quite good, having played with almost everyone that came out of the Cambridge folk scene in the early sixties.

I should make a mention of a feature of the Falco plans purchase agreement that is sometimes overlooked or forgotten. The Falco design is the property of Mr. Frati. He licensed us to sell the design to amateur builders for a percentage of the plans sales, and our agreement with Mr. Frati prohibits the resale or building more than one aircraft from a set of plans without the usual compensation. These terms are also in the purchase agreement that each of you sign. There have been a couple of occasions where we were contacted by someone who has bought a set of plans from someone who has given up on the idea of building a Falco. The situation is always a painful one. The purchaser rightfully feels wronged, and the sellers have all failed to answer letters. This provision is standard for many designs, for example, the usual architectural contract provides for only one building from the drawing. The plans for the Pitts and a number of other aircraft are

similarly restricted. Many magazines, including Sport Aviation, refuse to run advertisements for the resale of plans for the Pitts, Falco, etc. since the purchaser is in effect being defrauded. Aside from the terms of the agreement, I am completely unapologetic for the provision. First, I think it is entirely proper that Mr. Frati receive compensation for each and every set of plans sold. It is his only compensation, and I do not think he should be deprived of this for the gain of a builder who has given up on the project. We advertise the Falco at large expense and the plans and brochure sales do not quite cover our costs (I admit, this is unintentional). The "seller" of the plans is in effect receiving the benefit of our advertising without paying any of the costs. I think we give good value for our purchasers of the Falco plans, both considering the quality of the plans as well as the support we provide with answering builder's questions, with these builder letters and the like. It is unreasonable to assume that we would provide such services to those that do not purchase plans from us. It also would not be fair to those of you who have paid the price to render the same services to those who have not. We do not have any problem with the resale of components, partially completed or completed airplanes; that is a separate matter. The plans cost about \$100.00 to print, so we can allow the transfer of the plans, crediting that amount to the purchase of the plans.

With this letter, we have also enclosed the latest price list. As warned in an earlier letter, we have a few price increases based on some increased costs in producing certain kits. Frequently, we set our price of the kit based on estimates of the costs of any components not yet made. When we get all of the parts in, we have to revise the price of the kit to reflect actual costs. Some of the increases have been the result of our putting additional components in a kit, as in the case of the seat belt attachment fittings added to the fuselage kit. Believe it or not, there are instances where things turn out to be cheaper than originally estimated, as with the nose gear trunnion. There are also some price changes for some of the wood kits. The Aero Cabinet price increases are effective January 1, and I think the Trimcraft kits prices are effective immediately.

At the end of the price list, you will note that we have added a new section. The Lamb tire is produced by a Rockwell engineer for use as a main gear tire for the Vari-Eze. I have one of the tires, and I have installed it on the nose gear. I think this is the best tire available, and I suggest its use, although the other tires are still acceptable. I have also made arrangements with Instruments and Flight Research, Inc. of Wichita for the direct purchase of a number of instruments. Their attitude and directional gyros have larger bearings and internal cushioning for aerobatic aircraft. We will also be specifying their heated pitot tube, and our electrical system will be designed to match it. We will also be working with IFR on the selection of other instruments such as rate of climb, airspeed, turn & bank, altimeter and manifold pressure/fuel pressure. Some of these require special dial faces for the Falco, and we will be working with IFR on these and will let you know when they are selected. I want to make sure that all instruments will drop into our instrument panels and that all connections will fit. IFR is a manufacturer, and all of the instruments

are of new manufacture. For new instruments, the prices are very good -- in fact, they are "OEM" prices normally available only to the airframe manufacturers. Please don't talk this around too much since some of the major manufacturers might get a little upset if they knew about it.

As some of you know, Little River fell behind schedule with their deliveries this past year. Little River was organized by Bill O'Brien, and he set up a shop in Floyd, Virginia, building his Falco and parts for the kits while he attended to his industrial graphics and design work in New York. Without the owner in the shop, things got a little out of hand. The work the guys in Floyd did was very nice, but they would waste time on things. If someone came to the shop to see the kits, it was not uncommon for a couple of the guys to spend all day with the visitor while no work was accomplished. They would give delivery dates to Bill who would pass them on to the purchasers in good faith, only to look like a fool when the date was not met. Bill sank twice what most of you will put into your Falcos into the operation. The situation was not likely to improve so the shop was shut down. I suggested that Bill and Francis Dahlman of Trimcraft join forces, and this they have done. The tooling belongs to Little River, and Francis is doing the work for Little River. They are now catching up on all orders and should have all of the existing orders taken care of within a month or so. They have been working on the fuselage kits first and should have all of these shipped in a few weeks. When that is complete, work will begin on the tail group kits and deliveries will be made as soon as the parts are complete. While the production of the wood kits is separate from our operation, I do play a role in what happens. My philosophy has been to see to it that there are several suppliers offering different kits so that if one supplier were to drop the ball there would be someone to take over. Early on Stan Weiss dropped out, and Little River took over where they left off. Now Trimcraft is joining forces with Little River to produce the tail and fuselage kits. (I should mention that the ordering procedure will be the same as before.) While I regret the painful delays that some of you have endured, I am very proud of the fact that all of you will get your parts and that no builder will be hurt by this.

When Stan Weiss bowed out of the kit business, Francis Dahlman was interested in doing some of these kits. I held him back since I wasn't sure that he could handle the amount of work, and I wanted another supplier for diversity. Things were slow for Francis at first, but starting last spring the orders for rib kits and his materials kits started flooding in. Quentin Rench goes over to see Francis to pick up his materials and told of seeing Falco ribs stacked up to the ceiling. Last week it was fuselage rings! He also told me of seeing Francis turn back a truckload of spruce that did not suit him, although he was badly in need of materials. All of the builders who have received his kits have spoken highly of his work, and as a result of the quality of work that he has produced he has been the principal supplier of spruce to our builders. I'm glad to see this happen, and that some good can come out of the Little River problems. I am very happy with all of the suppliers that we have for the wood kits.

I should also mention that I am getting lots of good feedback from you builders on Aero Cabinet and Doncaster Sailplane Services. Aero Cabinet has not been flooded with orders for the simple reason that most builders order the wing spar kit only after they are well into the project. Those who have the wing spar kits have been very happy with the workmanship and the prompt delivery. Ron Rickabaugh of Aero Cabinet told me that he had an engineer from one of the major aircraft companies (I think it was LTV) pay a visit to his shop. His shop has been selected to do the interior cabinetry on a Boeing for some head of state, but they wanted to see his work before giving him the contract. The first thing the engineer saw was the Falco spars. It turned out he knew all about the Falco. He looked at the Falco spars and left. They were approved on that alone.

Doncaster Sailplane Services is our representative in the British Isles. They have been in business for about 30 years supplying homebuilders. I felt they would be a good addition to our organization since we have a lot of builders in and around England. They are paid a small percentage of plans and kit sales in their area, and in return they are available to assist builders and to promote the contagious Falco disease! Additionally, they get their foot in the door with their wood kits, which have proved to be as popular with European builders as Trimcraft's have on this side of the Atlantic. I have yet to hear from a builder who had dealt with Brian Fox of Doncaster Sailplane Services who did not praise him for his helpfulness and assistance.

No matter where you are located, one thing that I am hearing over and over from builders is how much time is saved by working from one of the kits of wood machined to size that are offered by Trimcraft, Doncaster or Western Aircraft. If you are going to make all of your own wood components, this is by far the best way to go.

We are enclosing a copy of our builder list. We used to send this out at irregular intervals, but the printing adds up. Our plan is to send it out once a year.

As time goes by, we will have less and less to report to you in new developments in these newsletters. Much of what is in this letter has to do with the work that we are doing on the design of the remaining components. This activity will slow down and while we will have less to report on our activities, we should have more to report on the progress of you who are building. Accordingly, with the next builder letter, we will begin a section titled "Roll Call". This will be a section for you to send in your progress reports. What we would like you to do is to put your entry on a separate piece of paper from your other correspondence with us, and we will put it in a special file. At the time of our builder letter we will pull out the file and put them into the column. Please mark the entry "Roll Call", begin with your builder number and then your name, followed by your report. A recent post card from Jan Waldahl in Norway put by me into the requested format will illustrate:

626. Jan Waldahl. My Falco is coming along ^{nicely}. I'm about to start lining up the fuselage rings on the jig. I have finished all

the wing ribs and the stabilizer. I have laminated the wing beam and will be gluing on the webs in a few days.

Get the idea? It is essential that the entry be on a separate piece of paper. Although we get many such letters from builders, they almost always concern something else as well, and the letter ends up in the file. To write such a column would involve a search of all files which would not be workable.

I'll make the progress reports brief since this has become a long letter, and since I'm hoping you will make up for it with your "Roll Call" entries with the next letter. Quentin Rench paid a visit to Larry Wohlers who now has his Falco well advanced. He still has to install the cowlings, canopy, and engine, but otherwise the basic structure is complete. Dave Aronson now has his Falco completely skinned and it should be getting some paint by the time you get this. Tony Bingelis, Syd Jensen, and George Neuman are all at about the same stage. The Chilean Air Force had all of the wood structure complete as of the early part of December but not skinned. They are concentrating on doing as much as possible and leaving the skinning for the last. Bob Esau's Falco has finally found a home, Ray Purkiser bought the project about a month ago and should have it up at his shop in Oregon by now.

I'll close by telling you about Dave Aronson's flight in my Falco. He was down in Richmond in November, and we spent about an hour up in the Falco. We did a lot of aerobatics which he was enjoying. Then I took him down to my airstrip on the river. I flew down the runway at a high speed, pulled up at the end and rolled it. I hadn't warned him that I was going to roll it, and the next thing that happened was that Dave was lurching forward making "urp" noises! This happened a couple of times. There wasn't any mess, just Dave sitting there looking at me with his cheeks bulging and his lips pressed firmly together. He maintained this odd expression while I quietly landed the Falco and gave him a chance to take a little walk. You have to really like Falcos to maintain that kind of control!

Sincerely,
SEQUOIA AIRCRAFT CORPORATION

Alfred P. Scott
President