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Dear Falco Owners & Builders:

For those of you Falco owners who are receiving this "Owners and Builders Letter" for the first time, we send this letter out from time to time to all of the Falco owners as well as to our Falco builders. We ask that each of you check and make sure that we have all of the addresses correct, and we are always interested in hearing from you about the Falco. In particular, we are interested in hearing of any difficulties you might have had with the aircraft, so that we may share this information with the other Falco owners and, if necessary, provide corrective measures on the aircraft that are being built by our builders. Also we can help the owners with locating spare parts, or we can supply parts from our inventory.

Jan Hudson reports from Germany that he had a problem with his landing gear. The nose gear steering limiting bracket was bent and allowed the nose gear to turn too much in one direction. The wheel jammed against the bottom of the aircraft, and the nose gear upper drag strut was bent. The Falco was safely landed, and the part was repaired. Jan also reported that Dieter Welsch crashed his Falco (serial No. 406). This was a weather-related accident -- reportedly involving a thunderstorm -- and the aircraft was totally destroyed. We have no reports on Mr. Welsch's condition.

I have also received a report that Falco serial No. 404 was destroyed in an accident in Finland. The investigator for the accident has written me and requested some drawings and only described the accident as one involving the landing gear but no details on how it happened. No one was injured although the aircraft was destroyed by fire.

On a brighter note, one of the more pleasant surprises of our booth at Oshkosh was that we had six Falco owners stop by, plus a couple more pilots who had flown it. As each owner would announce himself, he was quickly surrounded by our builders who would pump out questions about how good the Falco really is. Typically, the owners would talk mainly about the handling of the aircraft, and their raves might have sounded like the words of a man who had completely lost his touch with reason in his love of the Falco, but they all had the same thing to say! Each of them at separate times would wander into the booth and with different words talk about the most fantastic handling imaginable. I would be embarrassed to promote the Falco using the same words as no one

would believe me, but for those builders who were there and listened to these owners it was a rebirth in their enthusiasm for the aircraft.

One of the owners was Joachim Ramthun, who has owned two Falco and just sold his Laverda Super Falco for about \$30,000.00. This aircraft was painted in a military camouflage scheme. Joachim now has an SF.260 which he says has heavier controls than the Falco and is faster, but otherwise is essentially the same type of aircraft. It burns too much fuel so Joachim took a set of Falco plans home with him and placed an order for the Little River kits. This, then, will be Joachim's fourth Frati aircraft.

All in all, I would term our Oshkosh trip and our booth there a great success. We had a number of parts there, including a complete set of landing gear plus some assorted parts such as the control sticks and a tail group equipment kit. We were quite busy and usually had a booth full of people looking at the plans and parts and answering questions. Little River had some of their fuselage and tail group parts on display, and they were well received. The workmanship is excellent, and they already have a number of orders for their parts.

All of you may be interested to know that Little River Aircraft has produced a very fine series of Falco accessories. There is a windbreaker, a cap, a golf shirt, and a T-shirt each with our Falco logo. They are quite good looking and were well received at Oshkosh. Contact Little River for descriptions and ordering information: Little River Aircraft, 300 E. 34th St., New York, N.Y. 10016.

Luciano Nustrini was in the United States earlier this summer and sent the drawings of his canopy modification. He was in Tucson so I put him in touch with Larry Wohlers who gave him a tour of his Falco under construction. Neil Johnston stopped by the other day. His Falco is back in the air again, now with a smoke system. Neil has been doing airshows with his Falco and reports that the smoke system works well. He had some photographs of him doing a strafing run on a poor unsuspecting creek -- quite exciting to see.

I am grateful to Claudio Lamioni of the Italian magazine, JP4, for a list of all the Falcos and their owners. I only have the cities of many of the owners, and I would appreciate your help in obtaining their complete addresses. Mr. Lamioni is a real friend of the Falco, and has written a number of articles on the aircraft. The Falco Club has been having regular get-togethers, complete with races and judging of the aircraft. Get in touch with Luciano Nustrini if you would like to combine a trip to Italy with one of these meetings.

By the time you get this letter, Aero Cabinet should be in a position to deliver some of their wing spar kits. I remember Stan Weiss speculating that the wing spar kit might cost from \$6,000.00 to \$9,000.00 last year. Earlier this summer, Sparcraft had offered to do the wing spar kits at \$4,200.00 with deliveries in six months. Since Sparcraft had never answered anyone's letters, to my knowledge, I had already given up on them, and Aero Cabinet was underway with their kits.

Aero Cabinet's wing spar kit is \$3,800.00 which I think is a fair and reasonable price for the work involved. Falco builder Ray Purkiser has seen their shop and reports that their work is "better than excellent". There are some of you out there who have been asking all along for complete wood kits for the Falco since you were not up to doing all of that work, and I'm happy to say that it is now all available for immediate or imminent delivery.

I have some words of admonition for you. Many of you have indicated that you want kits of wood components with the more time-consuming work already done for you. Earlier on Stan Weiss produced kits for the Falco as well as for the Barracuda, but he had a lot of expensive machinery and the volume of orders for his kits did not justify keeping the machinery so they quit the kit business to concentrate on custom-building aircraft for a number of clients. When Stan Weiss got out of the kit business, I heard from a lot of you that you were planning to buy the kits but were surprised at his departure from the kit business. Now Little River has taken over Weiss's tooling for the tail group kit and has produced a fuselage kit as well. For the work involved all of the wood kits (Little River's, Aero Cabinet's and Trimcraft's) are fairly priced. If you really want these kits, my suggestion is that you order them now. These people depend on you for your support of their efforts, and if you wait until next year you will only be hurting them. I don't plan to start building a Falco for several years, but I am getting a set of these kits to put in the attic until I'm ready to go. I suggest you do the same. One thing is very certain, they are not going to get any cheaper. I don't mean to concern you unduly about the matter since Little River is adequately financed, but they must have orders. I do not see a repeat of the Stan Weiss situation in the works, but I do want all of you to be aware of the need for orders. You have it in your power to hurt or to help. If you want these kits, and if you want to help others as well as yourself, now you know what to do.

Some of you have complained that you wanted to buy the ribs that Trimcraft offers but that you did not like the Weldwood glue and wished that they would use Aerolite. Francis Dahlman is now doing a time study of the use of Aerolite and will be offering the ribs made with Aerolite, but there might be a slight price premium. Contact Trimcraft direct if you are interested in these ribs. I also understand that Trimcraft is now offering a kit of materials for the wing spar for those of you who want to build your own.

As for the availability of our kits, we have the tail group equipment kits in stock and have been filling orders as they come in. We now have almost everything for the wing and fuselage kits, and we should be able to fill orders for those kits in the next week or so. We are also able to fill orders for the materials kits (No. 820, 821, 822, & 823) that so many of you have asked for. We have all of the bushings in stock now.

I am sorry not to have gotten this letter out more promptly, but I have been very busy lately. Most of my time has been in doing the last work on the plans. Unfortunately, I am not at all the master of my

own time. Often some little thing comes up that demands my immediate attention (you can get an idea of this from the revisions), and I have to jump on the problem. I am making very good progress with the plans and the kits. I have all of the drawings essentially finished, and I am going through some of the old drawings making some additional detailing to clear up points of confusion that have come up. Most of the drawings I have done are for machined parts and since they are printed on the smaller sheets, I would like to finish them all and send the entire batch to the printers at one time. For almost all of you, when you get these drawings you will look at the parts and realise that you will have to buy those parts. The larger drawings are chiefly concerned with the assembly of the aircraft. I will have a set of larger drawings out in a week or so, and I hope to have a batch of smaller drawing out in a month. We will have a plans index out, but I am waiting until I have the bulk of drawings finished. I have just revised the rudder pedal drawing to show the installation of the cast aluminum brake pedal. I have also revised a number of drawings to show the installation of a Morse "Red-Jacket" cable for the elevator trim tab. (Incidentally, the Falco owners have been unanimous in their dislike of the Falco trim system since there was too much play in the system. Many said they never bothered with the trim and always left it alone. The reason for this is that the actuating "cable" on the production Falco was a stainless steel wire in an aluminum tube. There was quite a bit of slop, and one Falco owner told me he would have to turn the wheel a full turn to get any movement. With our system, all of this sloppiness will disappear.) I have also been working on the control cables, and to simplify the system I have had to make a few small changes so that the standard cable end fittings will match the parts to which they attach.

We are also making very good progress with our kits. The number of parts which have to be made or purchased is not to be believed. Unfortunately, I am handling all of this procurement as well as re-drawing the plans, and I don't have enough time to do both as quickly as I would like. Frequently I will have a part on the shelf before I have a final drawing out to you. Our inventory has just passed the \$300,000.00 level, and we have a mere \$20,000.00 inventory in bushings alone. There are a number of parts such as the landing gear for which we first have to have all of the little pieces stamped. All this takes time. We now have almost all of the stampings in house for the main landing gear leg and arm, and engine mount. I expect that we will begin to assemble and weld the main landing gear legs and arms in the next two weeks.

I am afraid that since my time has been taken by other activities, I have done a rather poor job of communicating with you about what is available and when. Also, the make-up of the kits changes almost daily as I make little changes in the hardware needed, and so forth. Even after I have the kits "finalized" there is usually some little change that must be made later due to an error in the plans or in my calculation of the bolt lengths. One of the things I have on my list is to print a complete description of each kit complete with an exploded drawing and list of parts. In the meantime, I am enclosing the list of kits that we use in our work. Those with prices listed at the bottom are essentially "finalized", but there will be little changes in many of the kits even before you get these lists.

I have been pressured by a number of you to make the parts available on an individual basis, and not just as part of a kit. Accordingly, I have prepared an a la carte price list of parts. We will not be selling readily available hardware items that are included in our kits as separate items, so if you want to buy some washers, we are not the place. For the rest of the parts, though, we can take care of all your needs. In general, the kits reflect lower prices for all of the parts, since it costs us more to handle individual parts. The exceptions to this are such things as stampings and screw-machine items (such as bushings) which we do in large quantities, and you will pay no premium for purchasing these things individually.

I have included a questionnaire form for each of you builders. I need to know from you what your plans are so that we can plan accordingly. None of this is intended as committing you to ordering a specific kit, but rather for us to get a sense of what kits you think you will buy and when. There are a number of preference items on the list, and I should discuss these.

We have two types of main landing gear available, the Cleveland 5.00x5 wheels and brakes and the Rosenhan 6" wheels and brakes. The original Falco landing gear was basically an 8 inch wheel with a 4 inch wide tire. This is a very narrow tire and the gear fit into the thin Falco wing very nicely. The outer surface of the original Falco tire was 5.95" from the centerline of the arm tube. With the Rosenhan wheel using the 4.10x6 tire, the outer surface of the tire is 6.10" from the centerline of the tube and the Cleveland 5.00x5 is 6.95" out. The 4.10x6 tire is basically the same width tire as the Italian tire but four inches smaller in overall diameter, so there is some question as to whether this tire will be suitable for use from rough strips. The Rosenhan wheel can also use the 5.30x6 tire, which would stick out more than the 4.10x6 but less than the Cleveland. The Cleveland wheels and brakes are more expensive. I would like to know which your preference is. We have to make up the landing gear arms and I would like to know how many of each to make to suit your tastes.

I would also like to know which engine mount you will probably be wanting. The original Falco used the conical mounts, sometimes called the "flat" mounts. The dynafocal-type is more widely used today and some people say it gives a smoother ride and others say you can't tell the difference. The conical mounts are cheaper and easier to make, and they are for the engines (O-320A & B series) that the Falco was built with. The dynafocal mounts as we have them now designed are very expensive to make. To be competitive, we will have to change to the standard type of cups and rings used on all of the U.S. aircraft, including the Pitts. I would like to have some idea of which type of engine mount you think you will want. We will have the first of the dynafocal mounts available in 30 days, and we have a few conical mounts in stock now. You may order the engine mount in the kit with all of the hardware and rubber isolators or you may purchase the mount alone (there is no premium for purchasing the mount individually), however we do not yet have the lengths of all the engine mounting bolts worked out and we will have to send these later.

Some of you have been confused about the selection of nose wheels. The little metric nose wheel and tire for the Falco is not available, and we had planned to use a 5.00x5 nose wheel. The drawings were changed so that the larger (MUCH larger) wheel would fit in. It was still very tight. Like other little changes that seem so innocuous at first, this became a bag of worms. The nose gear strut would have to be shortened; the rudder cables suddenly had no place to go; a centering device was required; a shimmy damper would probably be needed; and the screwjack had to be moved and the geometry changed. Then we found the Rosenhan wheel for the 4.10x5 tire. It is the identical size as the original design. No changes would be required. Do I have to say more? We are using the Rosenhan nosewheel and nothing else.

A couple of other things. Please let me know your construction status or plans for when you think you will begin your project. I have also put down a list of our kits and if you will indicate your present plans for buying these. Again, we are not talking about an order, only your preferences so that we can make plans around yours.

I should also tell you about the flap system. Originally we were going to use an electric system. We had a very simple and reasonable actuator that was picture-perfect for the Falco. After several months of work with the company they got scared of aircraft and refused to sell the actuators to us. Since Mr. Frati had sent us drawings for a manual system, we reverted to that system. In working on an installation drawing, we discovered a number of problems with the system. The very first Falcos had a lever-type landing gear retraction system that was quickly abandoned, and the Series I and II aircraft used douglas fir in place of the spruce we have now. With the switch to spruce, the structural members became larger. The problem with the manual system is that the lever is going to hit the housing for the retraction system (the housing could be moved to the right to clear the lever, but that introduces changes in the spar and the screwjacks for the main gear -- an even worse bag of worms) and the pushrod hit fuselage frame No. 5. In discussing the matter with Mr. Frati, he said that the system was installed on only one aircraft and that apparently it was redesigned in the shop to fit, and he didn't know what they had done. Also he was very negative about the manual flap system since the flap lever would interfere with the landing gear crank if it needed to be used. Certainly, a manual flap system can be made to work, but it will require careful fitting in a completed aircraft. Probably, the lever will have to loop up and over the landing gear motor and housing and the linkage changed for clearance. I have gone back to the electric system. I have now learned that it doesn't pay to tell these companies what you are going to do with their devices, so I got a friend to buy them for me. I will have to keep the manufacturer's name from you so that all this will not get back to them, but you could not buy them anyway as they are strictly an OEM item and not sold to the public. I had the same problem with a motor for the landing gear retraction system, but I have my motors anyway. So much for forthrightness!

In a month or so, we will begin work on a "Falco News". This will be a four page promotional mailing piece which we will be sending

out to all of the people who have bought the Falco brochure. This will concentrate on what we have done so far, the kits, and on you builders and your progress. I would greatly appreciate a black and white photograph of you and your project. You might also include a short note about the project from which we might pull some quotes on your impression of the project. In particular, you might mention your previous aircraft construction experience and your difficulty, if any, in building the Falco.

Speaking of building Falcos, I should mention that we are now up to 157 builders. If only one third of you bought kits, we would be out of stock immediately! As best I can tell, we have something between 50 and 70 Falcos under construction. Some of you don't let me know what you are up to. I got a note from Larry Black the other day ordering some parts, and he mentioned that his fuselage was in the jig. First time I knew he was under construction! Bob Esau remains our fastest builder, and he is now completing the fuselage and wing skinning. Bob has had a hard time with his Falco since he went so fast that we have not been able to keep him supplied with parts. He found the aileron hinges troublesome since he drilled the aft wing spars without having the matching aileron hinges. Tony Bingelis is moving along nicely with what now looks like an airplane in his shop. Larry Wohlers, Mike Reilly, and Syd Jensen are all moving very quickly. Bill O'Brien's Little River bunch is going to move very quickly now due to the size of their crew.

Speaking of Bill O'Brien, you may be interested to know that Bill is working on forming a three or four Falco aerobatic team. He has already had a number of meetings with some major sponsors and there is interest. This would be a team like the English Rothmann's team advertising something like Seven-Up. Harry Shepard is to be the lead pilot and Debbie Gary Callier and Chuck Lischer are to be in the team if it all comes to pass.

I should comment on the epoxy glue matter. At Oshkosh, I saw my friend from Bellanca (he's now at Mooney now that Bellanca is out of business) who told me that he had no real new information of the epoxy glues. All of their earliest tests were done with solid maple blocks, and in their water-soak tests some of the blocks were floating separately after a couple of hours in the water, that is, they separated by themselves after being put in water. He did further tests with other woods and found the same problem with solid birch blocks, a lesser problem with birch plywood, and much less with douglas fir and spruce. Then I went to the forum given by Dr. Rivers of the Forest Products Laboratory. He too cautioned against using epoxy glues in aircraft since the glue joint was "not durable in the presence of moisture". He felt that the epoxy-glued joints were pulling themselves apart. This makes sense. All of the regular glues used on aircraft are water-based, and when the glue is applied it tends to "raise the grain" of the wood. Epoxy does not, and it follows that the raising of the grain is what is pulling the epoxied joints apart. It also explains why the denser woods have a greater problem and why birch plywood, with a softwood core, would be less susceptible than solid birch. He had a chart which he showed the fall-off of strength of epoxy glue joints with the moisture

content of the wood, and if memory serves me, the strength of the glue joint did not fall below the strength of spruce until about 70 to 80% moisture content, but above that the reduction in strength is severe.

I was also interested to receive an advance copy of a study recently completed by the Forest Products Laboratory on the moisture excluding characteristics of various finishes. In this test, blocks of wood were uniformly conditioned to 30% relative humidity and then painted with the various finishes with one to six coats used. Then the blocks were subjected to 90% relative humidity and tested after one day, seven days and fourteen days. A value of 100% would mean that the coating was totally effective in keeping moisture out. Interesting results! One coat of spar varnish rated 0% after 14 days and two coats only 15%. The best results were multiple coats of polyurethane paint and epoxy paint with ratings of 60% to 70% effectiveness. The clear message is that none of the coatings are totally effective, and you must consider all finishes as a method of protecting the wood over the short term but that the wood is going to stabilize to whatever the local humidity is.

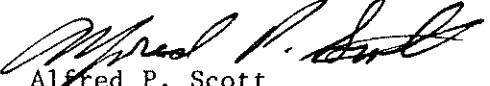
Our European builders may be interested in knowing that Doncaster Sailplane Services will be offering wood kits for the Falco. Initially, they will be supplying wood to size for those of you who are going to make all of your own parts. They are: Doncaster Sailplane Services, Doncaster Airfield, South Yorkshire DN4 5HU, England. Telephone 0302 57695/61713.

In closing, I should tell you that we have a builder in Norway who is building a Falco. That in itself is not unusual, but he has no airfield, so while they whittle away in the shop, they have a bulldozer out in the pasture building their airstrip!

Not all of our builder letters will be this long or will come after such a long interval. I will try to be more regular in the future. In the meantime, I'll leave you with something from one of our builders, Chris Lockyer-Bratton, who has flown Mike Sheild's Falco. He was at Oshkosh and repeated over and over "Fantastic! Just the most fastastic airplane you will ever fly!" to everyone who asked about the airplane. At our Falco builder dinner Chris commented that "any aircraft that can still give people erotic dreams twenty-five years after it was designed must have something going for it."

Just like a Piper, hey ho.

Sincerely,
SEQUOIA AIRCRAFT CORPORATION


Alfred P. Scott
President