

### MORE RIBS, BUT LESS WEIGHT

Here is a modification in the wing that some might find worth thinking about. CLARENCE MULTOG, McMinnville, Tenn. sent us this a couple of months ago and we just got around to including it. Here is how he built his wing.

" I have two extra ribs in my wing and spaced 12 inches. The nose end of the ribs are 1/8" ply, not 1/4" as Pete's design. The cap strips come almost to the end and the ribs were put together in a jig; no nails. Even with the extra ribs I think I am lighter than Pete's design as there are also no intermediate 1/4" nose ribs. Figure to cover the leading edge with plywood rather than aluminum. There can't be much structural integrity in a nailed on aluminum edge, whereas the plywood glued on makes a "D" spar that must add a lot to the wing strength.

Clarence also added that he thought that the vertical fin should be offset a bit and has a friend who is an old pro in the flying game who is going to try to provide some adjustment. He promised us more on that later.

### SWAP, SELL OR TRADE

Not too many military men are building "Fly Baby" for several reasons, such as space, moving around a lot and military pay scales. A few however have overcome these obstacles and one of them is SSgt JIMMIE L. STURGILL who is currently at Clinton Sherman AFB in Okla.

Jim has some Grade "A" cotton, enough to cover "Fly Baby", that he is willing to swap for about anything or sell outright. He can be reached at 400 Choctaw Road, Clinton Sherman AFB, Okla. 73632.

Jimmie is also among the group interested in a two place version since he has a Lycoming 125 GPU still in the crate. He also picked up at a bargain an old Cessna "Bamboo Bomber" from which he is salvaging a lot of hardware.

### SKYWAY RADIO

Several people have asked us about the small version of the Skyway radio which seems about the right size for our ship. If anyone has any experience with this radio, we would appreciate hearing from you. We saw a couple in "Fly Babies" at Rockford but didn't get much information on them. One was mounted in the floor between the rudder pedals and another in the headrest.

Since radio is being required at more and more airports all the time, it would behoove us to try to gather as much information as possible on radios suitable for "Fly Baby". How about some help?

Along these same lines, we have had a couple of questions on an electrical system for our ship. As far as we know, there aren't any ships flying with electrical systems. We may be wrong, and if so would like to hear from you.

### ERROR CORRECTION

Remember the item we ran about Pete Bowers rigging up a remote camera on the fin and shooting in-flight footage. Well we said it was a "Liberty Sport" that he was after in the chase sequence, but were wrong. The ship was the "Hawk Pshaw", which is a Myers "Little Toot" built by ARLOSCHROEDER of Newton, Kansas. For the movie set-up, it was flown by JOHN BERWICK of Wichita Kansas.

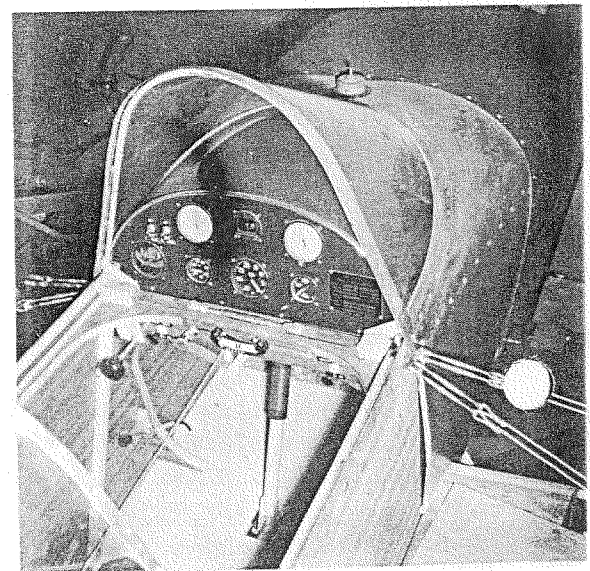
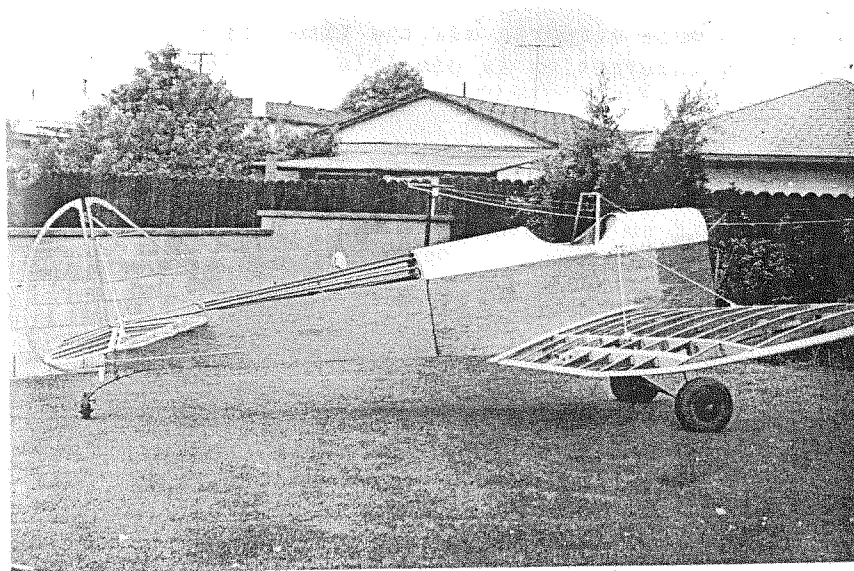
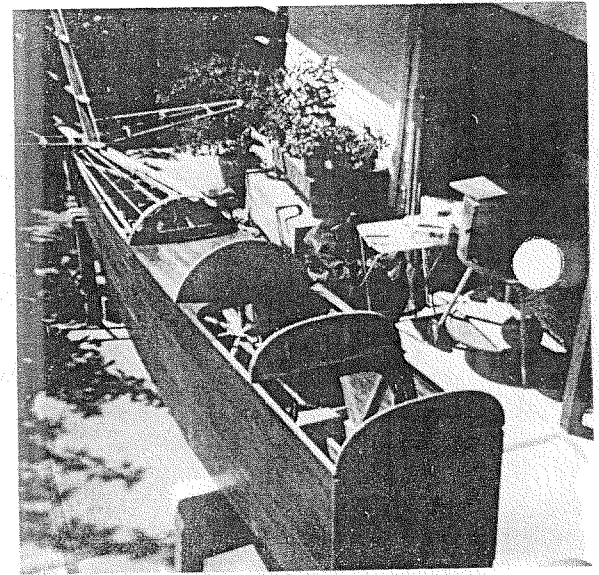
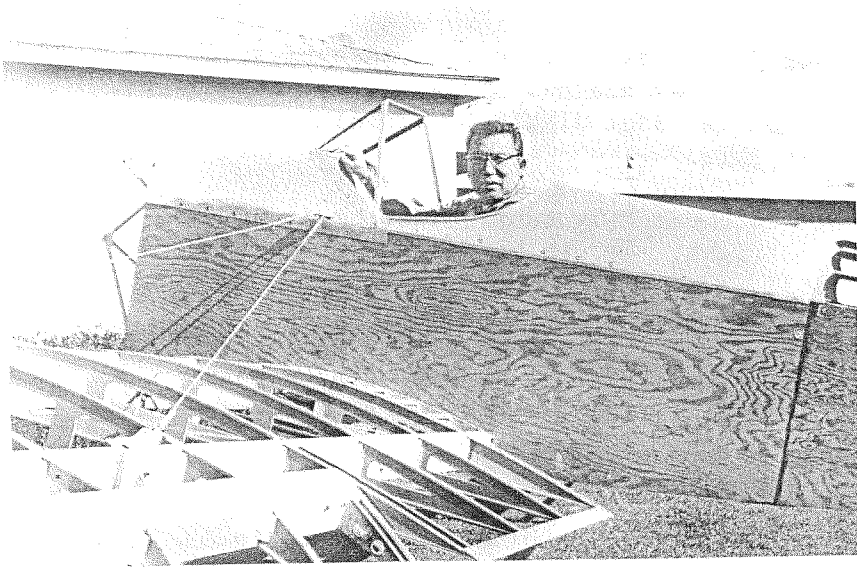
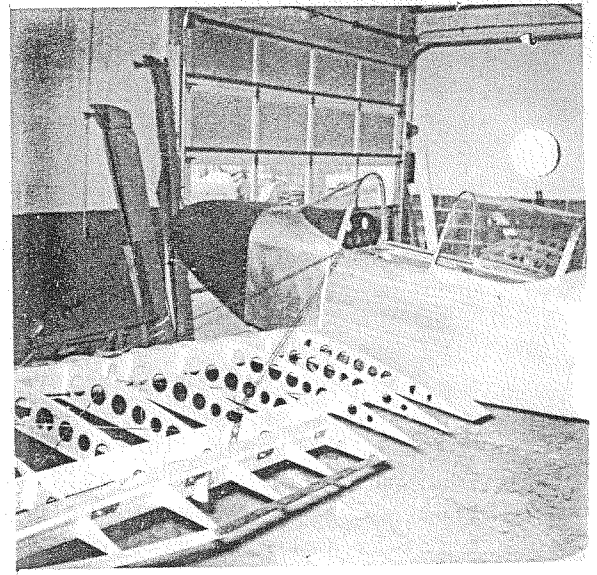


PHOTO PAGE CAPTIONS

ALL LEFT SIDE

Beats there a homebuilders heart that isn't stirred by the sight of a wood wing aircraft just before covering? There is something about the fragile-looking open woodwork with the uniform rows of ribs and the delicate tracery of the brace wires that once again causes you to marvel at the miracle of aerodynamic lift. (There we go again, lapsing into that romantic, nostalgic mood, but there are times that you can't prevent it.)

The top and bottom photos on the left side will give you an idea of what we are getting at, and in the center is FRANK NISHINA, of Los Angeles, the proud owner of the ready-to-cover job. Frank appears to have just returned from one of those "flights of fancy" that Pete warns us about in the plans. (Surely Pete can allow us one little flight after all that work.)

We have done the best we could on these open framework photos, but a halftone print just can't capture the fine minute detail that shows up in a glossy print Frank sent us. Only wish we had enough to go around, as it is truly beautiful.

RIGHT SIDE

Here again, by popular demand as they say are more photos of CLARENCE RRUGGEMAN'S ship showing the canopy. This particular canopy has done more to generate interest in a covered cockpit than any other and we have been asked several times to run more detail so that others may copy. In the meantime, as we mentinned earlier, we are working on getting prints drawn up that will help in building this canopy. This however may take some time. Clarence has supplied us with quite a bit of detail and we are working on it. Both the top and bottom photo are of the same ship.

The center photo is the nearly-complete fuselage of WOODY THOMPSON of Eureka, Calif. This shot was obviously taken in the summer as evidenced by the patio scene and Woody should by now be well along on his wings. (Assuming of course that they have winter in California.)

Want to see your bird in the Bulletin? All it takes is mailing us a snapshot and a little info on what you have done. It is even better when the builder is in the photo. Not that we are running a beauty contest, but it adds interest.

Unlike the slick paper commercial magazines, we don't have any "closing dates" or deadlines and that sort of thing, so send them in any old time and watch the Bulletin. Sooner or later it will show up.

(Watch next issue's photo page, as we have a "shocker" all lined up.)

MORE COMMENTS FROM "DOC" ROBERTS (Complete with drawing)

The "Doc" isn't a monicker, for Lloyd Roberts is a for-real M.D., but more important to us, he is one of our best contributors of ideas. Another example follows. A drawing by Joe Pope illustrating his idea appears on another page of this issue.

"About this fancy hinge for the top of the fin." You will encounter the same aggravation on the stabilizers. The alternate solution which I have used kills two birds. The joint between the tail post and the diagonal spar doesn't have much strength because it is essentially an end to side arrangement. The addition of two filler blocks as illustrated, with bolts of sufficient length will not only allow you to put your hinge on where you want it, it will also effectively stick the tail post and spar together, something which is needed anyway.

If you have left out a mounting pad or two in these little hollow spars, don't burn the whole project in despair. Simply open up the spar by cutting through the plywood with a sharp knife or chisel, fill in the aching void with a block 1/8" deeper than the spruce member so that the block is flush with the outer surface, and cover the whole mess with a good deal longer piece of 1/8. You may then have to put 1/8 pads under the rest of the hinges on the same side to keep them in line, but this gives you something to plane off here and there to get the alignment right. Actually as the climate changes (I moved my project from Texas to Virginia to N.Y.) the length of the diagonal spars changes slightly so that the hinges get themselves out of line any way, but this adds no noticeable friction to rudder travel. In fact, these hinges are quite flexible and can stand a good deal of misalignment laterally and be bent back again. (a good reason for NOT making them of .090.)

Doc Roberts as well as several others has requested that we ask for comments from our clan on rib stitching versus the glue-to-the-rib method Pete says is fine. One inspector who is generally sympathetic towards homebuilts didn't think it was such a good idea. We have heard it cussed and discussed but no real logic or thought out answers.

It would be very much appreciated if some of our more experienced builders would elaborate on the fabric attachment idea as well as some of the other hints and kinks that go with covering a fabric type ship. Some of us novices might wind up crunching our structures if it isn't done right, so we are told. Don't know exactly what they meant by "crunching", but have some idea that it is similar to what happened once to a balsa model that had the silk put on too tight and collapsed when it started shrinking and drying.

A DO-IT-YOURSELF STRESS ANALYSIS

Next issue we have a stress analysis write-up by DAVID PAULE of Santa Monica, Calif. Would have tried to get it in this time but still trying to decipher it. Not that Dave didn't do a good job of writing it, we just haven't quite "understood all we know" about it and since there are several algebraic equations in it we want to be darn sure we get it down on paper right.

In the meantime, grease up your slide rule, brush up on your high school algebra, and gather up the weight and dimension data on your ship. You will need it.

Dave Paule, by the way is using Sears & Roebuck type brakes as featured recently in Sport Aviation. This cost is around \$20.00. Would like a little more detail on that Dave if you please. Like where and what to order.

CUSTOM WOODCRAFT  
P. O. Box 42  
10484 Platt Rd. So.  
Milan, Mich. 48160  
Phone 313-432-1621

WOODEN AIRCRAFT PARTS, KITS, SUPPLIES & SERVICES

We have been appointed a dealer for "FPL-16A". (Hughes Chemical # 3684 Wood Epoxy Glue.) This represents the adhesive mentioned in Mr. Michael Myal's article, "The Ultimate Glue", in the October issue of "Sport Aviation", page 15.

This glue is especially prepared for all types of wood glueing in aircraft, boats, etc. It is completely waterproof when cured, and very high strength, up to 5000 lbs, plus on shear test. Possesses gap filling properties, the glue line can vary from one to eleven mils without any appreciable loss in strength, so pressure clamping is not required.

This glue has a long shelf life, does not age once the can is opened. Open assembly time is up to 1½ hrs. at room temperatures, and there is no unpleasant odor. At room temperature this glue will produce a joint overnight that has sufficient strength for handling. A full strength cure depends on time and room temperatures, but 48 hours is usually sufficient. Lower glueing temperatures can be tolerated, but again the time required to attain strong joints will be extended considerably. We do not recommend using below 50 degrees.

(MIXING INSTRUCTIONS)

Stir resin thoroughly. Measure out 10 parts resin; Measure out 1 part hardner. BE SURE TO MEASURE OUT COMPONENTS CAREFULLY - PARTICULARLY FOR SMALL BATCHES. MIX GLUE THOROUGHLY.

Apply with dime store brushes or acid brushes for small areas. Cleanup may be done with lacquer thinner. This glue covers much more area than other glues, so start with small batches till you get used to using it.

(Note)

This glue is not F.A.A. certified but is excepted in Amateur Built Aircraft.

(Prices and Shipping Information) Please read carefully.

Price is \$6.50 per quart, \$16.50 per gallon, shipped United Parcel Service, prepaid in the following states. Alabama, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Missouri, North Carolina, South Carolina, Ohio, Tennessee, and Wisconsin. Partial state coverage to Kansas, Nebraska, North Dakota, Pennsylvania, Virginia and West Virginia. (Check your area for further information.)

Outside the above areas, prices are \$7.00 per quart and \$17.50 per gallon, Parcel Post paid to all states.

PLEASE USE ORDER FORM ENCLOSED. Money order or check with all orders.

SORRY, NO C.O.D.'s

(note: In this particular ad, the order form mentioned above is not enclosed.)

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DATA ON FPL-16 A GLUE

As soon as we learned from JOE POPE that he had ordered some of the new FPL-16 A epoxy glue, we asked him to let us know how it checked out and if possible write us an article on it. Joe, as usual came through like a trooper. The article follows:

In the October 67 issue of "Sport Aviation" was an article entitled "The Ultimate Glue". Naturally I read it, with great interest and a little doubt. It sounded too good to be true. It required no glue pressure, wasn't temperature sensitive, and was stronger than resorcinal as well as completely waterproof & inert.

Developed by Forest Products Laboratories as FPL-16 and slightly modified by the author of the article, Mr. Michael Myal, EAA 7978, it is known as FPL-16 A. Manufactured by Hughes Chemical as their Formula 3684, it is distributed by Custom Woodcraft, P.O. Box 42, 10484 Platt Road South, Milan, Mich. 48160 at \$6.50 per quart, and \$16.50 per gallon prepaid.

I had to try some so I sent in my order the same evening I read the article. I had the glue, consisting of a quart of Resin and a plastic "squeeze" bottle of hardener within 2 weeks.

Being in the process of moving at the time, the project was shelved for several weeks. When I finally was able to get started I mixed up a batch, and it was awfully thin. The blocks soaked up the glue like a sponge. After re-reading the article, I stirred the resin real good, as the filler had settled to the bottom. The next batch looked better and didn't soak in quite as much. The blocks were set one atop the other and left overnight. Next morning, after an 11 hour cure at an average temperature of 66 degrees F. they were put under shear load in a vise and they all pulled wood.

A total of 20 blocks were made up and pulled in shear to failure on a recording weld tester. All pulled wood and the average shear load at failure was 3,843 PSI.

I believe the glue is capable of much more than this but I can't prove it, as the tester used won't accept a larger piece of wood. The only way to get more shear load on the glue line is with a larger piece of wood so it won't pull in two as fast and a 5/8" x 2" cross section is as much as the machine will take. This is sufficient however to prove that the glue is stronger and more efficient than Resorcinal, Plastic Resin, or any of the other accepted aircraft glues.

Peeling tests of lapped joints also pull wood every time. Even butt joints will pull wood if you put one coat of glue on the end grain, let it soak in for 10 or 15 minutes, then recoat it, coat the mating piece and put them together to cure.

Temperature has little or no effect on FPL-16 A. Five blocks were cured outside for 12 hours one night when the temperature got down to 19 degrees. They pulled wood and failed at the same load as the others after an additional cure of 4 hours at 72 degrees.

Glueing pressures varied from contact to 20 psi for different sets of blocks.

(Con't)

FPL-16 A, Data Con't.

No difference was noted in load and all pulled wood at failure. Two pairs of blocks cured with 150 psi of pressure however pulled a little lower than the rest and there was partial glue line failure on one.

This stuff is really great. It works best with little or no pressure over contact and it doesn't need a bunch of "C" clamps to get a fine exceptionally strong joint.

It is quite easy to use. Being thin like paint, it is very easy to apply. Just paint it on both mating surfaces. Mate the pieces with a sliding motion so you don't trap any air bubbles and use a couple of nails or staples to hold it in position and leave it alone for 10 or 12 hours and you've got a fine joint.

Pot life of small batches, about a cupfull, is approximately an hour at 72 degrees. Working time, open or closed is about 1½ hours at the same temperature. This is much longer than Resorcinal or Plastic Resin so you won't have to rush to get things together.

It is mixed 10 parts of Resin to 1 part of hardener. I have never had any trouble mixing it. Baby bottles make good measures for large batches and I use syringes of plastic such as diabetics use or veterinary types available in drug stores for small batches. The syringes are calibrated in cubic centimeters.

Just be sure to stir the resin very well, especially the first batch, as the filler will be mostly on the bottom when you get it and after several days of storage too. I turn the can over every day and this helps. Stir the hardener in well too and you won't have any trouble at all.

I think this is the best thing that ever became available to us "wood butchers", it really qualifies as the "ultimate glue". Try some, I think you will agree. I have made up almost 100 joints with spruce, hemlock, oak and mahogany plywood. All were most satisfactory and I am going to use FPL-16 A from now on. (end)

There you have it. One of our own builders who we happen to know is quite meticulous in everything he does is well pleased with it.

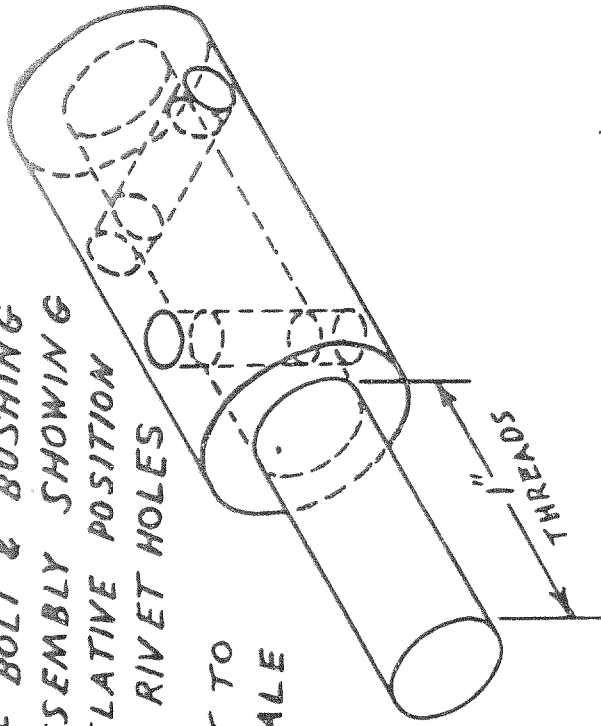
Right now, as far as we know, the only place you can get this glue is from Custom Woodcraft in Milan Mich. In this same issue you will a re-print of the brochure and instruction sheet that is sent out with each order of the glue. Should you have any comment or question regarding the glue, please contact Custom Woodcraft. After you have used it we would like to have your comments on the results.

One added little wrinkle that Joe didn't mention, that he practices is the filling of nail holes from the inside out with this new glue. He does it with the syringe he reffered to by filling it with mixed glue, inserting it in the nail hole and filling the hole from the bottom up. This leaves no room for moisture, stray fungi, or any other contaminants. Also if you will note on some old wood aircraft where nail holes were plugged at the top, the "plug" has popped out eventually and left the old hole exposed.



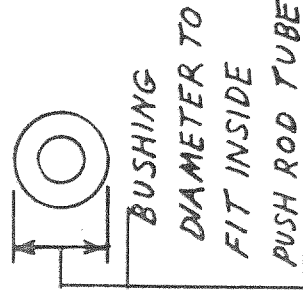
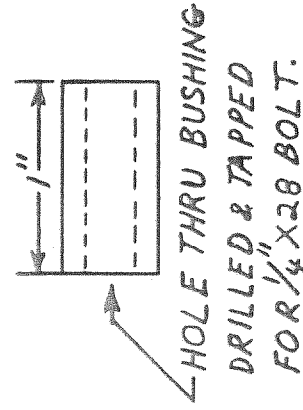
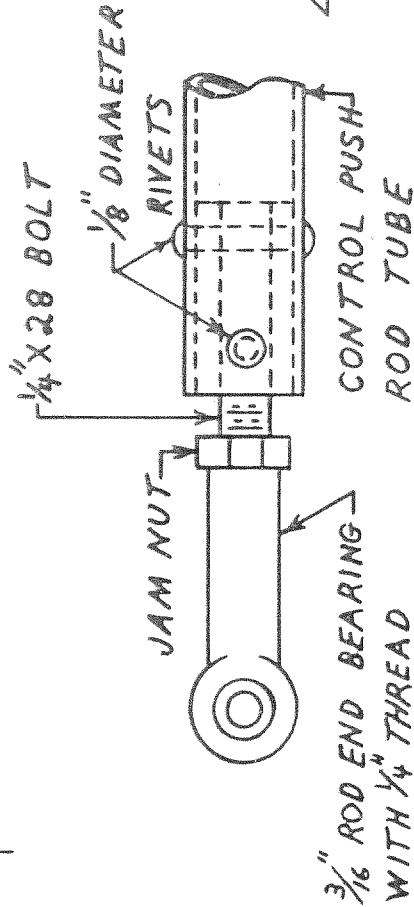
PERSPECTIVE VIEW  
OF BOLT & BUSHING  
ASSEMBLY SHOWING  
RELATIVE POSITION  
OF RIVET HOLES

NOT TO  
SCALE



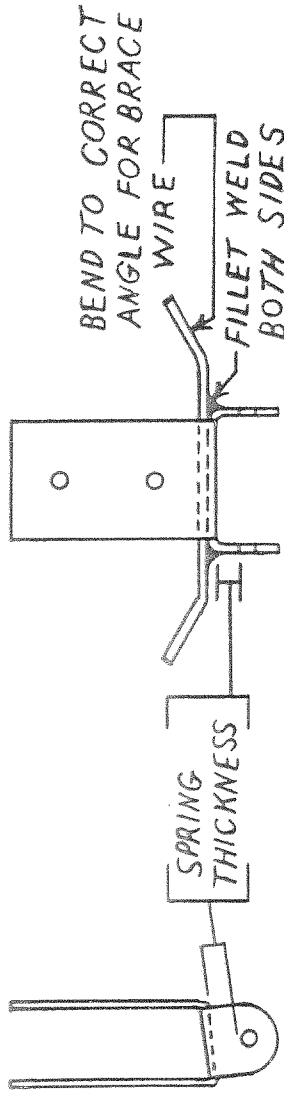
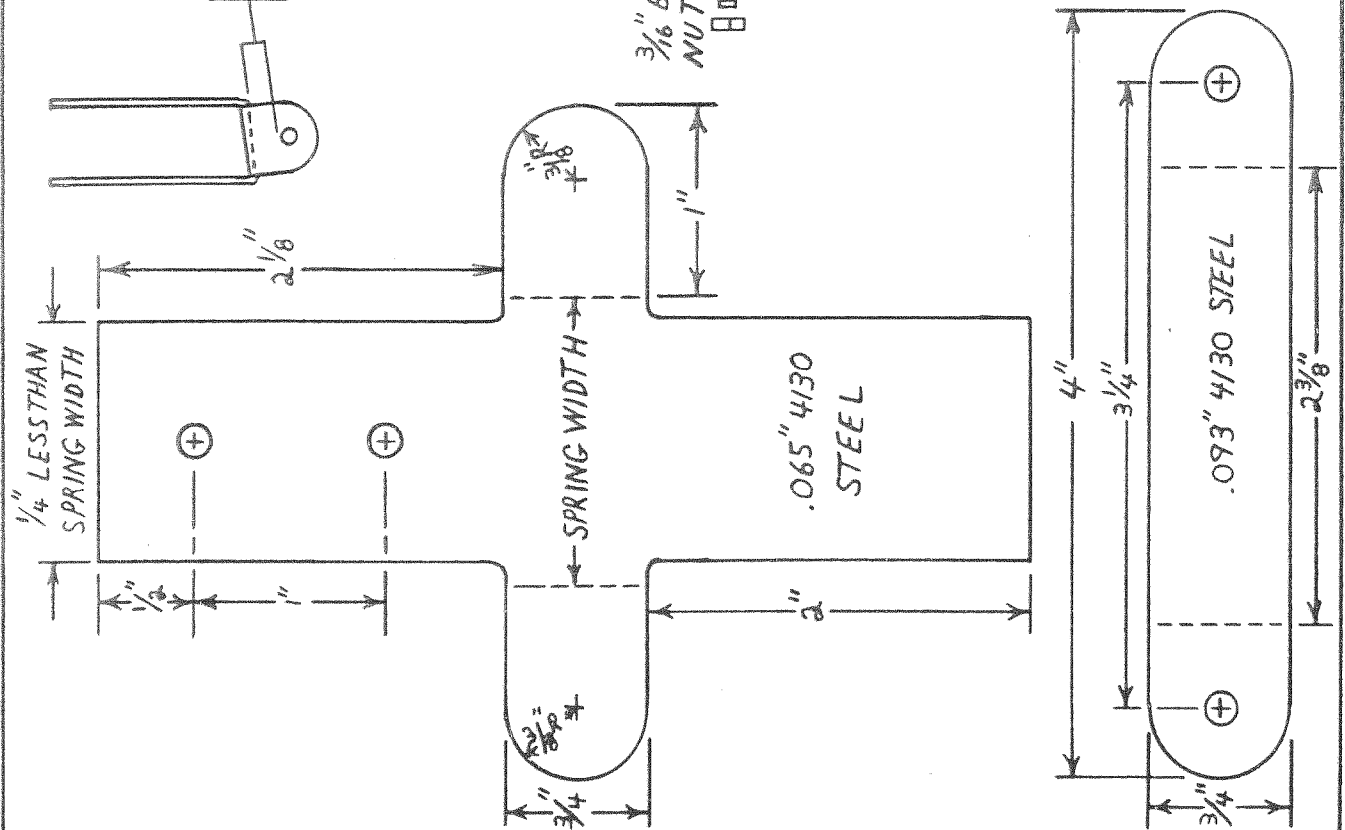
PUSH ROD END FITTINGS  
BY ERNIE HARBIN  
FLINT, MICHIGAN

TURN STEEL BUSHING STOCK TO  
SNUG FIT IN TUBE, DRILL & TAP  
 $\frac{1}{4}$ " X 28. EXTEND THREADS ON  
 $\frac{1}{4}$ " X 28 BOLT TO 2" MIN. INSTALL  
BOLT IN BUSHING WITH 1" OF THREAD  
PROTRUDING, CUT OFF BOLT HEAD  
& INSTALL ASSEMBLY IN TUBE  
END. DRILL TWO  $\frac{1}{8}$ " HOLES WITH  
AXES 90° APART, ONE NEAR EACH  
END OF BUSHING & INSTALL  $\frac{1}{8}$ "  
RIVETS.



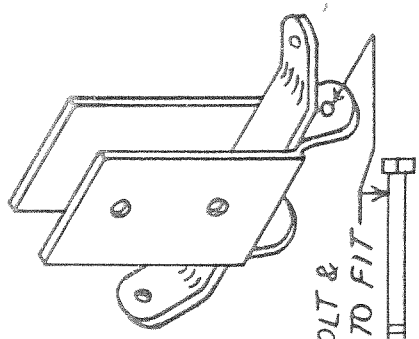
for Paper 1-2-68





TAIL SPRING BRACKET, STAB.  
 BRACE WIRE ANCHOR MODIFICATION  
 BY

LOWELL MORROW  
 YORKTOWN, INDIANA



MAKE MOUNTING TAB NARROWER THAN SPRING SO FITTING WON'T TEAR AT CORNERS. ADD  $\frac{1}{8}$ " PLYWOOD SPACER TO FRONT SIDE OF RUDDER POST TO COMPENSATE FOR ADDED WIDTH OF FITTING. BEND ONE LOWER TAB THEN DRILL, BEND OTHER TAB & BACK DRILL. NOTE: DRILL HOLE SO  $\frac{3}{16}$ " BOLT WILL HOLD TAIL SPRING SNUG AGAINST TOP OF BRACKET. ALL HOLES ARE  $\frac{3}{16}$ ".  
 REFERENCE PLANS PAGE 2-12 FIG. 2-6 & PAGE 3-10 FIG. 3-5

*Joe Pope* 1-28-68

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## "TO TELL THE TRUTH"

One of the most straight-forward replies we had to our original questionnaire came from DON HOOVER, of Hunlock Creek, Pa. Don has finished his ship, and in June, '67 had logged 35 hours. His airplane, by the way was one of the 5 shown on page 20 of October '67 "Sport Aviation". Don's remarks, we believe merit thoughtful reading.

"As my own "Fly Baby" is finished, I am interested in hearing from other builders that have flown their own completed projects - would like to know how their ship handles. How much testing they have done, such as a good calibrated airspeed, spin and stall characteristics, flutter, etc.

What really counts on this deal is that when giving the information on "Fly Baby" in this respect, is that the actual results are given and not something that might be mixed with a little wishful thinking. Also when info is given on airspeeds, stalling, cruising, approach speed, landing speed, etc., it should always be given along with the information that would include any modifications in the airplane, gross weight, engine-propellor combinations, weather conditions, etc. In short, if we are going to swap information, lets do it so we can get something out of it.

Just because my own "Fly Baby" is finished, doesn't mean I am no longer interested in all the other phases of this project. (the bulletin). I have learned a few things and if I can help someone out by something I have learned, well i'm ready to try and I am interested in this Bulletin business because I have not learned everything and this looks like a good chance to learn a lot more. Well you asked for it and there it is." (end)

Well, ask for it we did and get it we did, and appreciate it, we do. This is the spirit of cooperation and willingness we have been looking for and for the most part, have found.

You can't imagine how much it means to us to have someone like Don take this attitude. It is not however exceptional, since most of our readers do feel this way, but we just don't hear from them as much as we should. We did specifically ask Don for this and he responded. So some of you others, take a few minutes out from building time and write us a few lines. It doesn't have to be an epistle, but just bring us up to date on what you are doing.

In line with the above article, we would like to have some operating figures from ships already in the air. If we can get them, we will start a regular feature giving the vital statistics of different planes each month and maybe it will grow as more projects take to the air.

Well, thats it for this time, "wood butchers", now all we have to do is get the service man in and get our machine running so we can print this mess. Everything is ready except the press. Soon as it is fixed, we will " go to press" as they say in the slick paper world. See you next month.

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# THE **FLY BABY** BULLETIN

Issue No. 7

January, 1968

## A GUEST EDITORIAL

For some time now, we have had a letter kicking around on our desk that we wanted to include in the Bulletin, but for various and sundry reasons, it never made it. Some times it was lack of time and again we would run out of space. At any rate, one way to be sure to get it in is start with it.

Maybe the title line of "Guest Editorial" is a little misleading, since the author is not a "guest". Neither is it an editorial. The article is actually in the form of a letter from a builder to the Bulletin. However the letter is so well written and thought out that we cannot under any circumstance, improve it with our "amateur" editing.

The author is ELWOOD M. BOND of Montvale, New Jersey. "Woody", as he prefers it, is an Eastern Airlines captain and flew his Fly Baby in November, 1965. The facts that he is an aviation professional and has over two years in his own ship should be kept in mind while reading this. We feel that these facts give him a little more license than usual to "speak his piece". We think you will agree after reading it. Here it is exactly as we received it.

"Dear Hayden, I really have not forgotten about you people down there. It seems that working for a living is interfering with my hobbies. I wasn't able to make Rockford this year (1967) although I had really planned on going.

I appreciate what you are going through in setting up a paper such as the Bulletin, for we (Chapt. 73) went through a similar experience in setting up a newsletter. It is a tough and time consuming job, made so to a great degree by the difficulty in in prodding the membership into doing any work, especially into writing any articles. You may find that a large percentage of individuals, in paying a token assesment to cover expenditures, feel that they have done their part and it is now up to you to carry the whole thing alone and keep them entertained. Please dont think I am cynical, I am 101% pro EAA and "Bulletin", the above is simply a fact of life that is perpetrated on public ventures.

Perhaps from our old bruises, you can derive something, therefore allow me a few personal observations. : Stand up on your two feet and shoot straight, avoid a "mutual admiration society" type attitude. A lot of people are hurt (physically) through ignorance. It is far better to hurt their feelings and let them realize the truth, than to stand by and let them really get hurt. If some nut incorporates modifications that are unsound, and you know it ..... dont tell him its "interesting", tell him its "lousy" and tell him why. Then if he isn't man enough to learn and admit to mistakes, then at least you have done your part.

We all need more education in Aerodynamics, much more education. This is especially painfull to Twister and Miniplane builders, and it will elicit long wails of pain from said quarters. Few will admit to the "man-hole-cover" flight characteristics even after they scare themselves witless, however you will notice that numerous of these aircraft are for sale, again and again.  
(con't next page)



EDITORIAL (con't)

Our purpose is not to deride current designs per se, only to educate in good design, and LEARN through past experience; then, if the shoe fits: wear it. We are fortunate in that the "FLY BABY" is a good design, a little heavier than need be, but based on sound judgement and excellent working knowledge. If we can manage to "understand" this aircraft, study the thought behind every truss and fitting....and why it is thus, then.... as a child learns to appreciate good music by listening to good music, we will have made a good start in light plane design. There is quite a gap between assembling a Heath-Kit and designing that same radio.

I suppose I should get off this soap-box and answer your questions.

Fittings: These are accurate with the exception of the lower front flying wire fittings. These fittings are oriented to point directly to the axle shackle. Any variation in angle of incidence will influence the direction of cable pull on these fitting, so to preclude the possibility of an eccentric load, you may be better off rigging the wings on the fuselage before final shaping of the fitting. I have noticed that among our homebuilders around here, there is a tendency to trace fitting patterns right off the plans. On Bowers plans this is feasible to some degree, but it is not good practice. Plans and especially blueprints are subject to distortion due to the techniques of their reproduction. This is not true of all, nevertheless it is not considered good practice to trace from the plans. Use the measurements given, and draw your own pattern.

The forward stabilizer "C" brackets could go to .090 to provide more stiffness. The strength is ample with .065, but the rearward pull from brace-wires, people, etc. tend to "sweep back" the horizontal stabilizers such as to pull away from the fuselage about 3/32" or so at the forward attach fitting. I would strongly favor a one-piece stabilizer in every respect.

The forward floor boards (under rudder pedals) are higher than need be. I find that the level of my heels is too close to that of my seat, and on long cross-countries, my heels go to sleep. There is quite a bit of room between floor-boards and the bottom of the airframe, so I believe one could drop the rudder pedals down a couple of inches and be much more comfortable. I am going to drop my forward floor this winter and will let you know how it turns out.

I found it necessary to install a small rudder trim tab to compensate for prop-wash, torque, etc. Otherwise a varying degree of right rudder is required. If the vertical fin would be offset a fraction of an inch to the left during construction, this might be remedied. I cannot give you any measurements on this as the question comprises: engine, propeller, and speed considerations and would be quite empirical. I would estimate about 3/4" left, but you had better check with Pete Bowers on that. (Ed. note: See article and "fix" on this subject, (offset) elsewhere in this issue.)

Hayden, I believe you can do a great service to the EAA with your Bulletin. I say this because the "Fly Baby" it's self can just about stand up on it's own two feet, but the general EAA members light plane criterion is rather cripple. Now I'm not being acid again, really, but look at these fly-ins and see what I mean. In fact look at the trophy business.....there are awards for "best finish", "paint schemes" etc. etc. for gorgeous chariots with overstuffed furniture, rugs, chromed struts! They are lovely to look at, but gentlemen, they can't fly! The fool things are so heavy it takes 125 hp. to get them in the air, and they fly (?) like a bomb. (Con't.)

So, we are staging a beauty contest! Not a word is said about performance, such as: best climb, shortest landing, best ratio of top speed to stall, and so forth. The question is: What are we rewarding in EAA, design and performance of aircraft, where an aircraft is considered a flying-machine or a gravity-stricken bunch of prima donnas? Beauty and performance are very desirable, but Beauty and the hell with performance is terrible. We profess to foster Education, .... education in what? Cosmetics? Now I believe there is room for everyone in EAA regardless of their personal taste, but when our EAA starts rewarding Beauty for it's own sake, to the detriment of aerodynamic efficiency.....then something in our basic philosophy is amiss. The buying of performance (?) with overgrown engines in inefficient airframes follows the same vein. Admittedly it is easier to substitute H.P. for brains.

The EAA needs the "Fly Baby" philosophy, it's ingenuity, it's insight. If we are to develop a better aircraft, we're going to use our heads, and for lightplane criterion, the "Fly Baby" and some of the French designs are as good a start as I can think of!

So now that I have placed the whole responsibility for this shooting-match on your shoulders, I'll quit. If you have any specific Fly Baby questions in mind, I'll be glad to answer them if I'm able. Best of luck to you.  
/S/ Woody Bond. (end of letter.)

There you have it! The Bulletin has never had a "statement of policy" as such, and probably never will, but if we are ever asked for one, the above letter is a pretty good answer. What is your opinion? This letter should elicit comments from our readers. We would like to hear them. Do you agree or disagree. Let's hear from some of you have not written before. "Equal time" is guaranteed to anyone who wants it, Pro or Con.

#### ANOTHER LADY BUILDER

This month we welcome to our ranks another lady builder. That makes two, gentlemen. They're gaining on us. This lady, MRS. LULA W. RODGERS, of Reseda, Calif. is not entirely new to the game, as she has been helping her husband on rebuilding a "Cougar". If this keeps up, we may have to start a "ladies only" column. Glad to have her aboard.

#### MECHANICAL BRAKES

HARRY KOECKE, Prairie Du Chien, Wisc. has some info for economical brakes for the bird. Harry says there are several sports car master cylinders that will do the job and a Ford Fairlane will be O.K. However, hydraulic brakes are not mandatory and he is using motor scooter brakes. Here is his parts list.

Source: Sear Roebuck & Co.  
Allstate (Vespa) Motor Scooter  
Model # 78894494

#### Parts List:

4 ea.	# 81229	Sec. A	Jaw, rear brake, with lining.
4 ea.	# 7886	Sec. A	Pad
2 ea.	# 25990	Sec. A	Spring, Return of brake lining.
2 ea.	# 2140	Sec. C	Lever, front brake.
(and if you want to put a drum on another wheel)			
2 ea.	# 23831	Sec. A	Drum, rear brake.

There are other scooter brakes that will do just as well, so says Harry. If you are interested, his address is, 409 Brisbois St., Box 203.

### FLY-IN REPORTS WANTED

The beginning of the Fly-In Season is just around the corner and a lot of us will be spending good building time at them looking at other ships and maybe an occasional Fly Baby. So that the time spent away from the bench won't be a total loss, here is a way you can justify it. There is always a chance you will see a Fly Baby and then you are duty-bound to tell the "Bulletin" about it. What we are getting at seriously, is to try to find out how many ships are flying around the country of which we have no record. We are sure there are some from rumors and heresay, but nothing definite. By next month we are trying to get up a list of known flying aircraft, and then when you spot one that isn't on the list, fire it in to us. When possible, get all the info you can. If nothing else, get the registration "N" number and we will look it up in the FAA book of numbers. Keep a sharp eye out. Here?

### ANOTHER VOTE FOR EXTERIOR GRADE PLY

RILEY BUMGARDNER, Ft. Smith Ark., is employed by a furniture manufacturing company and discovered they use exterior grade ply for drawer bottoms. He gave it the "soak test" and it came out O.K. and he is using it. He paid a nickle a sq. ft. for it but didn't mention if this was the going rate or just a "special" for him. At any rate, if you live near a "case goods" furniture plant, it might be worth checking out. Riley went on to say that he is using "C" grade Douglas Fir for longerons, etc., and found some suitable white spruce at the lumber yard for the tail section. Strictly aircraft grade spruce for wing spars though, which are next on his production schedule.

### SELECT FIR FOR SPARS ?

While on the subject of wood, we have a question asking for opinions of others. BILL LEISGANG of Onalaska, Wisc. is considering the use of select fir for wing spars. It seems the local A & P, in business since the OX-5, says that he never replaced a light plane spar with anything but fir which he selected locally. Bill checked all the local yards and they all have fir, select grade and costs a fraction of aircraft grade. He asked that we toss it out for discussion and opinions.

Our own ship is being built on "beer money" and beer isn't even legal where we live. Consequently we also would be tempted by all that select fir. However, we plan to spend several hundred hours and maybe several thousand supported by those spars, and when we divide the cost of aircraft spruce spars by those hours, the cost per hour of the extra peace of mind gets down pretty reasonable. Granted that there is still room for human error even on aircraft grade, but that inspector is supposedly an expert and his judgement is the best I can get. Certainly, there are lots of homebuilts flying around with "lumber yard spars", and probably, and thats the rub, they will never fail. Still, we will have to cast our vote with the "certified" group. Any opinions from the "field"?

### LONDO GOES ELECTRIC

Remember Londo's Adventures back a few issues ago. He's had another which you will read about later this issue. However, we wanted to mention here that he has the first Fly Baby with an electrical system as far as we know. His engine has starter and generator already, so all he had to do was put it to work. If we already had it on our engine, we might be tempted to use it, but otherwise we will probably stay with propping the mill. That's part of the appeal of Fly Baby.

## FLY BABY UPSIDE DOWN

FLY BABIES have been getting upside down quite a bit lately as the pilots warm up to their aerobatic capabilities. Upside down on the ground, however, is quite a different matter. Some builders and would-be builders have expressed concern over the absence of a recognizable turnover structure to keep the ship off the pilot's neck if he does flip it over on the ground. Don't jump to conclusions about FLY BABY having built-in noseover tendencies because of the accompanying photos. There is a story behind each and they are presented to prove that a roll-over bar or similar structure near the cockpit is not necessary.

The shots of 500F are the result of a runaway. Normal starting procedure for starting without help was to tie the tail to a ground tiedown through the glider towhook on the tail wheel casting. The pilot could prop the ship alone, climb into the cockpit for a warmup, then pull the release and taxi away. Well, just prior to the time the pictures were taken, Fly Baby was moved to another hangar, and the new one didn't have tiedowns in front of it. A helpful friend said he'd drive a stake into the ground so the old technique could be continued.

Pete went out to fly one day, pulled 500F out of the hangar, and slipped the tiedown rope into the towhook. He propped the engine with the throttle part-way open, trusting that the tiedown stake was as secure as it looked. The thing must have merely been slipped down a gopher hole, because as soon as the engine caught the stake came out of the ground like it had never been there. Pete made a dive for the left wingtip and caught it. This made him the pivot point, and Fly Baby went 'round and 'round, the throttle vibrating farther and farther open until it was practically wide open.

People began to gather, trying to figure out how to get inside the circle to get to the cockpit and cut the switches. The speed of the turning complicated this, as did a wooden stake on the end of three feet of rope swinging straight out from the tail. Well, to make a long story short, no one got inside the circle, and the wing pulled out of Pete's hands. Away the ship went, parallel to a line of tied-down airplanes and between them and the row of T-hangars, headed straight for the big maintenance hangar. Pete was already figuring the cost of repairing a rammed Bonanza or replacing a hangar door without even considering the costs to Fly Baby, when Nature, in the form of an extra-big gopher hole, came to the rescue. The wheels dropped into the hole and the ship flipped onto it's back before it had travelled a hundred feet.

Damage? Just about nil. The prop was bent, of course, the windshield was mashed flat and the balsa wood block that forms the top of the vertical fin (instead of the bandsawed plywood of the plans) was split. What if a pilot had been in it? No sweat, if he ducked his head. Those concerned about the results of noseovers will be glad to hear that THE HEADREST NEVER TOUCHED THE GROUND. The points of contact were the top front end of the engine, the windshield, and the tip of the fin.

The photos show how cleanly Fly Baby went over. When it came to rest, neither wingtip was touching the ground. Plenty of manpower was available to set Fly Baby upright again and if one didn't mind flying without a windshield, a replacement prop was all that was necessary to fly. As it was, the ship was taken home to Pete's shop for a careful going over.

(Con't. next page)

The other FLY BABY nose-over episode involved FRANCIS LONDO'S beautiful bird (be sure to see this one at Rockford in '68) that another pilot was flying for the first time. He had just landed on turf when another plane taxied across in front of him, and he hit the brakes. He was used to much softer brakes, and Francis' were set up to be real touchy (even Pete had commented on them when flying the ship himself). Well, this Fly Baby went over onto it's back too, except that only the fabric seal at the top of the fin was ruffled.

The difference here was that a pilot was in the ship. He ducked and was unharmed. However, an interesting problem showed up. Francis' ship had been fitted with a military-type shoulder harness with loops on the bottom through which the safety belt passes. The pilot reported that because of his weight pulling these loops tight against the belt, he had difficulty in releasing the belt to get out of the upside-down cockpit. Bystanders helped him out. It is recommended that Fly Baby builders use the types of belt-harness combination in which everything fastens at the middle with one latch.

An interesting sidelight on this episode - Pete was down the field a way when it happened, photographing an airplane. Someone else took off for the scene of the accident on a motorcycle, and Pete hopped on the back fender, holding his camera case and winding film at the same time. He jumped off the cycle at the scene and immediately climbed to the top of a nearby truck and started snapping pictures. Some friends joked afterward that he seemed more concerned about getting pictures than finding out how the pilot was. His reply to that was that he could tell that the pilot was O.K. by the way he was jumping up and down and cussing, and that he had to get the pictures fast if he was to get them at all because a crowd was coming and soon had the plane practically buried in spectators.

500F seems to hold the record at the moment for inadvertent inversions - once on the ground and twice in the water. Let's leave it that way.

Speaking of inverted, we had a shot of FLY BABY inverted in the air, but unfortunately it wouldn't print. We are trying at the moment to "borrow" a shot of 500F inverted in flight, and will print it if we do. Meantime, take a look at page 14 of the Spring-Summer Edition of Air Progress' "Homebuilt Aircraft". The photo illustrates an article by Pete on aerobatics and if you have any thoughts of even mildly putting your ship through it's paces, this will make interesting reading. Pete points out that you don't have to have a raging cyclone of an engine up front to perform "everyday" aerobatics. If you don't have a copy, Air Progress will probably be able to supply you, for a price of course.

The photos this issue don't require a caption page as usual. The above tells all about it.

Now that the "ice is broken" on reporting handling mishaps, we would like to hear about some of the scrapes you others have been into. Certainly not to criticize, but so that the others of us may profit from your experience. After all, that's what this thing is all about, to help each other through experience. If you have scraped a wingtip, bent a strut or axle, blown out a tire, or in some other manner, learned something the hard way, let us know. There are a couple of instances we know of, but don't know the details, that we would like to know more about. How about it?

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