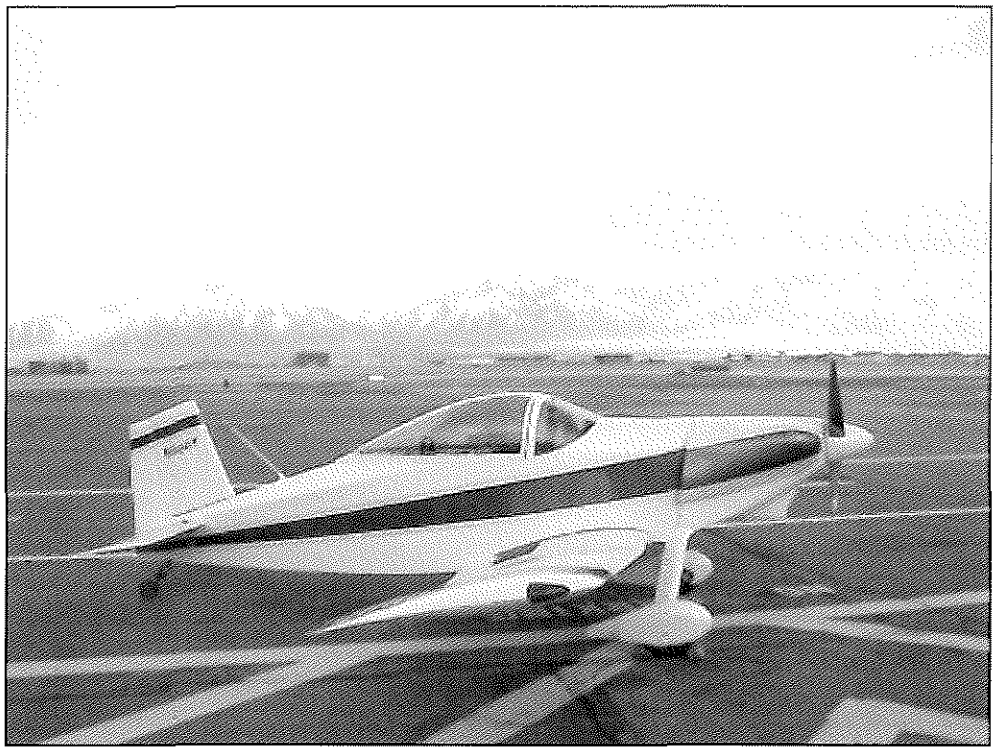
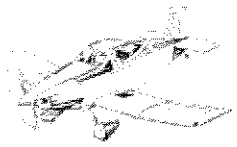
T-18 Newsletter

APRIL 2006



Fraser MacPhee ~ N886Y

IN THIS ISSUE:



Editors Notes

By: Roy Farris

I always try to be optimistic, but I find it increasingly difficult to feel that way about the future of Sport Aviation. Paul Poberezny phoned me several times after reading my comments in this newsletter and he was always telling me how important it was to get trying and to never give up. The recent demise of Paul's Sport Aircraft Association really hit a nerve with me. If a man with such insight, background, and leadership abilities was not able to hold a supposed group of aviation buffs together, how in the heck can we do it ?? It saddens me to look at what the FAA, the insurance companies, the news media, the general public, and lastly .. what we ourselves have done to Aviation. Are we a breed soon to die? Will we be priced out of existence, or regulated to the point that we can no longer enjoy the freedom of individual flight? User fees... TFR's ... TSA ... Yikes .. what is happening ?? Are any of you paying attention? Every year I see less and less participation in airplane and aircraft events and functions. Our group is no different ... This year our membership has dropped below two hundred ... How will we Survive ???

If we do not band together to promote and support the T-18, and this group it will soon be gone. If ALL PILOTS do not begin working together to save our freedom to fly, the U.S. government and the airline industry will see to it that they are the only ones that can afford to fly. Is that what we want to happen ?? Of coarse not .. none of us what that .... but why then don't we as individuals do something about it? Why do we just shrug our shoulders, and suggest that we are not in a position to do something about it?

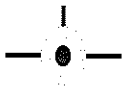
I have never understood the mind set of most pilots. I have several former students who spent a lot of time and energy, to say nothing of the cash layout, to learn to fly. The dreamed of it for years and finally did something about it ... only now that they have achieved their goal, they never fly. I have been asking this question for years ... WHY ... Why do pilots, people who actually like to fly ... why don't they fly? Why do pilots buy airplanes, only to tie them down in the sun, and never fly them. WHY? I just don't get it.

If we are to continue to have the freedom to build and fly airplanes we had better get our act together. If we are going to leave a future for our kids to enjoy the same freedom we have had ... we had better get our act together. Group like AOPA and EAA are out there trying to help us, but they cannot do it without us. Get off your duffs and do something. Join AOPA or the EAA. Write your congressman, support your local airport, Fly your darned airplane. Go to aviation activities ... Do Something !!!

I have heard that there are several T/S-18's flying in the United States. I attend many fly-in functions in a years time, and unless I get to Oshkosh, Sun'n Fun or an actual T-18 event I never see a Thorp. Why Not? Don't Thorp people like to get out and go? Them darned RV's are like mosquitoes ... but not one T-18. Even the T-18 fly-ins are lucky to get fifteen or twenty airplanes ...I just don't get it.

I want to save the T-18 Mutual Aid Society and this newsletter from extinction ... but I cannot do it without support from our membership.

NEVER ENOUGH SAID



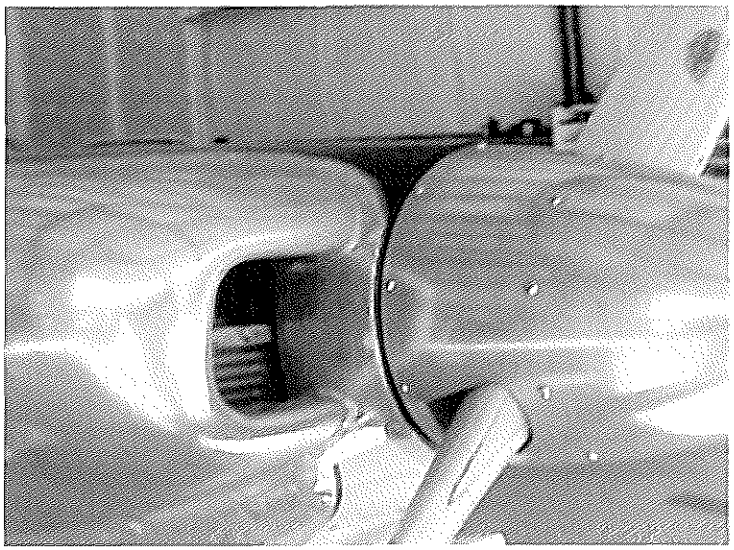
LAST ISSUE?

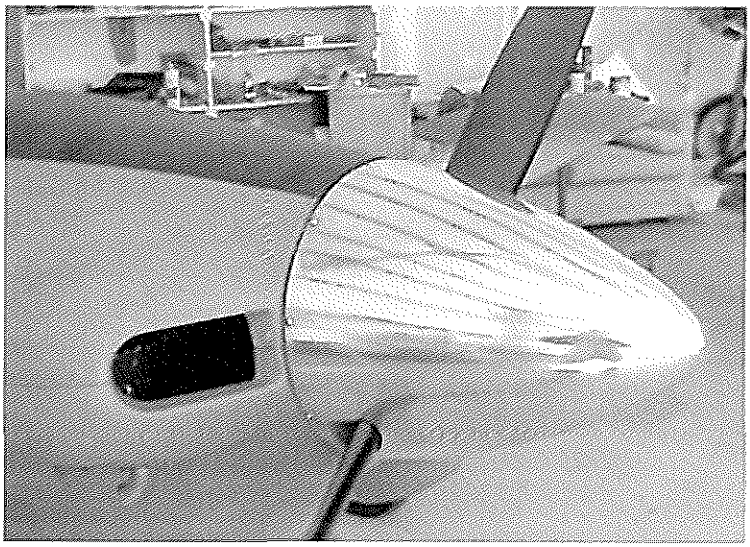
If you have not paid your dues for 2006 this will be your last issue of the T-18 Newsletter. If you are not sure if you have paid either check you mailing label on the back cover of this issue, or contact me and ask. I sincerely want to continue to send out this newsletter, but I cannot continue to do so without funding. Please support the T-18 MAS .... Send your 2006 dues NOW.

Spinner and Cowl Alignment

(By Chuck Borden)

How does your cowl line up with your spinner? When your cowl spinner alignment is off, it is one of the most noticeable items on a homebuilt when it is on the line at a fly-in. The two photos below are examples of two aircraft that I built that I used the following steps to get proper cowl spinner alignment. The first step before installing the cowl is how the engine is mounted. What types of rubber mounts are used on your engine? If you are using The Lord Mounts called out in the early drawings, Lord Part #J7401-3, be aware that over time your engine will sag from it's weight on these mounts. If you are using the larger Lord Mounts for dynafocal engines then proper orientation is important. If you are using the later they are basically made of four parts: Some use an inner core that is jell filled, two rubber mounts bonded with steel on both sides. See Figure 1. One mount is softer than the other, the softer of the two is smooth on the outside and the harder one has concentric rings around it. The harder mount is always in compression on the ground. This will prevent sagging when on the ground unlike the smaller Lord Mounts. The last part in this assemble is a spacer that runs through the inner core and the two rubber mounts. After you have sorted out attaching the engine to the motor mount we are off to step two. Step two is to determine the amount of space between the spinner and the front of the cowl. The less gap between the spinner and the cowl means less drag. Suppose that you want one half-inch, which I think is a lot, and the flange on your rear spinner bulkhead is three quarters of an inch. That means that the cowl will be one and a quarter inches back from the front of the prop extension minus the thickness of the rear spinner bulkhead. Did I loose any one there. See figure 2. What you will be doing is using the prop extension as a fixture to install the cowl. That means that to make everything work out the starter ring must be included.





Cont Pg 4

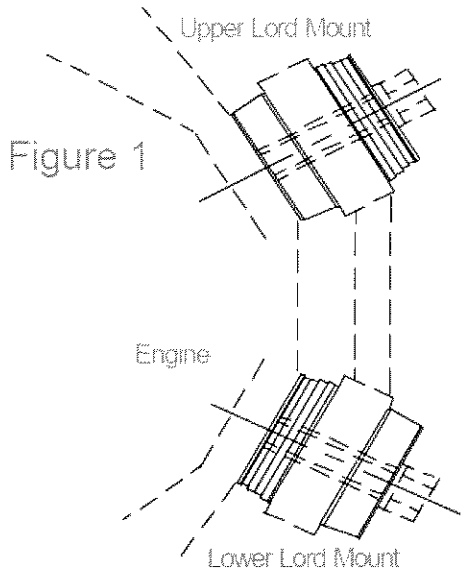


Figure 1

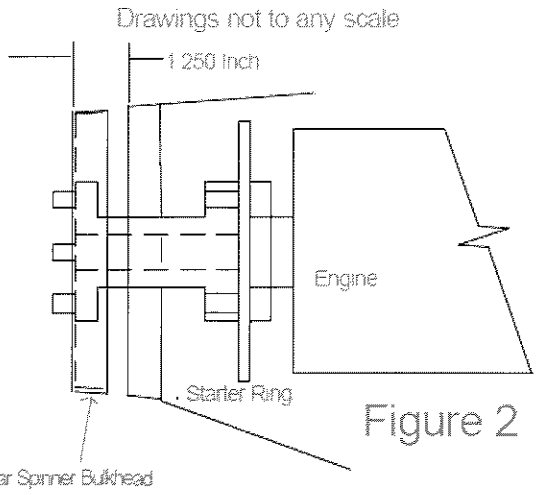


Figure 2

In step three we will make some simple wooden parts to fasten the front of the prop extension to the front of the cowling. In figure two I show ½ inch gap between the front of the cowling and the spinner bulkhead. I think that is the maximum. I prefer less. Note my Midget Mustang has about 5/16 of an inch. To get it that close is not necessary but looks good.

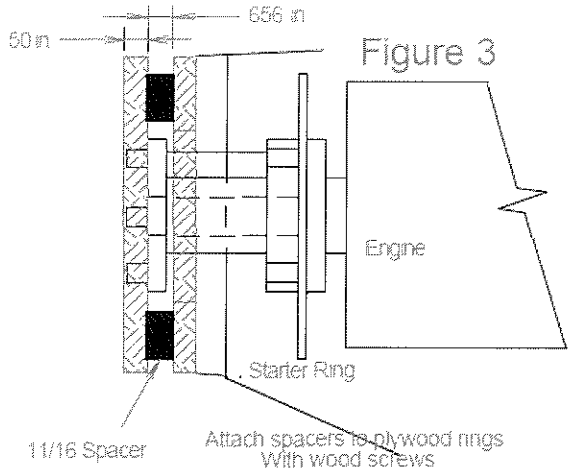
The first part we are going to make is a plywood ring the diameter of the front of the cowling. It should be about 13 inches, with a center hole large enough to pass over the prop extension. I use an old method I learned in high school shop. By taking a 13-inch piece of plywood and spinning it in the band saw. Putting a ¼ inch holes in the center and turn the plywood on a ¼ dowel pin clamped 6½ inches from the blade. Do this Using ½ inch plywood. Attach this plywood to the front of the cowl
with some 3/16 bolts or machine screws. You will have to drill some holes but your airplane won't care if you don't plug them when you're finished. Center the plywood
on the cowl. Try to make this piece the same size.

Next we will have to make an identical piece for the prop extention except you will need to put holes in this piece for the propeller drive lugs. Put hardware store bolts through two opposite holes to hold it in place.

Since for this problem we decided to use ½ inch spacing between the cowl and the spinner and we used ½ inch plywood for the front of the cowl we well have to put 11/16 inch spacers between the plywood on the prop extension and the plywood on the front of the cowl. I came up with 11/16 because the distance between the front piece of plywood and the one attached to the cowl. It is ¾ minus about 3/32 for the thickness of the spinner bulkhead. Figure three shows how it looks all put together. It is now time to talk about using the old Lord Mounts, J7401-3. As an example, the 0-290G installations use these mounts. Your engine will sag over time so now is the time to put about 1/8th inch offset into your installation. In other words your cowl should set about 1/8th lower than the spinner. In time it will all equal out. Once you have attached the cowl to the front of the prop extension you can now mark a trim line for the bottom of the cowl at the firewall. Remember for illustration purposes ½ inch space between the spinner and the cowl was used, however ¼ to 3/8 is more desirable. So don't trim the cowl for half-inch space if you want less. After the bottom has been trimmed

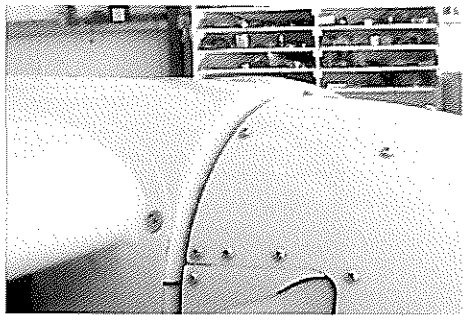
cont pg 5

Spinner and Cowl Alignment, Cont.



it is time to drill and cleco the bottom to the firewall attachment strips. Next trim drill and cleco the bottom sides of the cowl to the firewall. This will lock the cowl into a rigid condition. Now trim, drill and cleco the top to the firewall. After the cheeks or sides of the cowl have been installed with clecos the cowl should now be rigid and not sag.

The final step is to install nut plates to the bottom, sides and top and Cam Locks to the sides or cheeks. I recommend 8/32 screws and nut plates. Cam Locks can be purchased from Aircraft Spruce. After finishing installation of the hardware the cowl should stand alone with the removal of the plywood fixtures. I am including a picture of an aircraft that the spinner does not line up with the cowling.



In conclusion here are some things to consider. The distance between the spinner and cowl on my airplanes is 5/16 of an inch (8mm). I think this is an ideal space. Therefore the spacers between the two pieces of plywood should be slightly less than ½ inch (12.5mm). Use several spacers around the rings. The two opposite holes that you pick to bolt to the front plywood ring to the prop extension should be level across and the fuselage should be level. What works for me may not work for you. I am just trying to give you some ideas that are simple and have worked over the years. I believe in simple ways of doing things.

Chuck Borden

More From Chuck

When John Thorp designed the T-18 one of the design criteria he wanted was to be able to make all the sheet metal bends with a four foot brake using a 3/32 radius. Here is an eight foot brake you can build for maybe under $500. I am also on the Hummelbird Group because I started building one several years ago. What do I need with another homebuilt? Two is enough. There has been a lot of talk, on the group, about this brake. Several months ago a friend and I flew out to Apple Valley to see Skeet. He is also building a Hummel Bird. He showed us his eight foot brake that he built in a month, probably saving a lot more than a month in building time. It is great . This guy does great work. Also Skeet does great sheet metal work with a lot of home made tools. So here is the deal. Buy the plans for $35.00. Then when your done send the designer a picture of your brake (jpg) and get your money back. Mac's Machine & Design www.macsmachine.com Scroll down on the left to Bend Brake, click on it, then click on Special offer.....

Wing Panel

Ref. TS-18CW (300 Dwg)

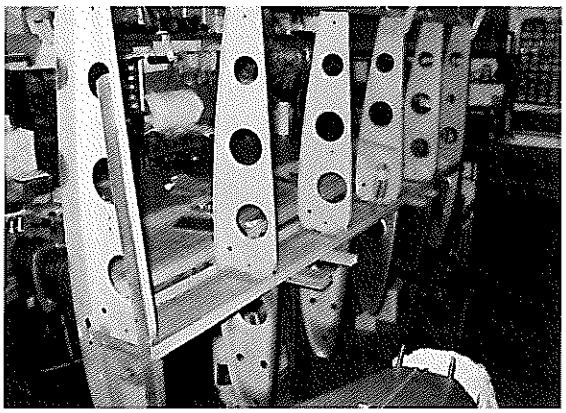
By: Don Doubleday

Hello Thorpies,

Here we are again. This time with a blow by blow on what it took to get the outboard wing panels assemblies together as shown on Sunderland 300 drawing. Assuming some of you builders are at the point of tackling the outer panels for the wings, maybe some of what I did can be of some use to you. Awhile back, I assembled the Main and Aft Beams (314-1 & -2). The beams were put together using sealant in the faying surfaces. I also secured the ribs to the Main Beams as noted in the drawings using faying surface sealant.

This, in my opinion, is the way to go considering my wings will be carrying fuel within each of the four outermost cavities forward of the Main Beams. Now, I know that some of you have heard or read some issues about the use of sealant in faying surfaces of assemblies. In my opinion, sealant provides additional strength to an assembly in the same way as glue would to a piece of furniture when nailed together. I know that furniture don't get much moving around like an airplane does, but this is my story and I'm sticking to it. If you don't think so, try this test! Get a short piece of angle and .032" material about four inches long; drill two or three holes for rivets installation; evenly spread a thin layer of sealant over one of the surfaces only and cleco the two pieces together. Do not rivet them together, just just leave them like that in a control environment area say, under the bed. After about a week, take them out and see what will it take to pull them apart (not easy was it?). Also notice that when you pull them apart, the periphery of the holes where the rivets would had been were in fact bare of sealant, while the area in between rivet holes retained a thin film. This means that the materials are in contact with each other. That, in my opinion, is where the extra strength comes from. Enough for testing so, let's get back to the building.

Now Thorpies, this writing is not a set of instruction by which to build the Thorp. Here is my typical disclaimer: This paper is only a narrative of what I did on my airplane. Any use of this material is strictly the responsibility of individuals making use of it. I do not take responsibility over the design or anyone's deviation from the designer's specifications in building an airplane. You're on your own! Anyway, back to what I did. I secured the brackets for the fuel pump mounts, brackets for control surface bellcranks and push-pull tubes, doublers for the Pitot-Static tube which would be located to the W.S. 86.113 rib. The flanges for wing tips attachment were riveted in place, aileron or roll trim tab support was located in place as well (left wing only) and any other extras and provisions I wanted in my wings. Yes folks! I am keeping my weight down.



Cont pg 7

Wing Panel, cont.

At this time for all of you preparing to build your wings, it would be a good idea to create a list of items needing attention or completion prior to riveting the skins to the frames. Some of the previously noted items would be permanently installed just before the riveting operation of the skins, while others may be taken care of after worth. I placed a piece of masking tape to the leading edges of the ribs to prevent scratching the inside of the skins when loading it to the frame. The skin was placed over the frame umpteen times before it was all over said and done. Even with the extra precautions, a little scotch-brite would probably be used later.

With all the pre skin cutting and drilling niceties out of the way, it was time for the aluminum sheets to be removed from storage. I wasn't quite sure what length the skins were supposed to be. If I'm not mistaken, I read somewhere something in the line of 83.75". I also knew that the skins I prepared for the center wing assembly (200 dwg) were 84.5" long. I wanted to have enough overhang at the trailing edges to minimize gaps in the wings and flaps area and to match the center wing assembly. Besides, it is better to have it too long and cut later than to cut it three times and still be too short. With an e-mail reply from Mike Archer of Classic Aircrafts, I did a little compromising-he recommended 92" and my decision was 90" when the time came.

Now, Thorpies - NEVER, NEVER, NEVER! Let me see if I can write that again. NEVER, NEVER, NEVER! (Whoa, that was good) trust the aluminum mills to cut the sheet aluminum straight. At the mills, the sheets are cut using a gigantic metal shear and sometimes needs to be realigned to get as close of 90 ° cut as required. It may only be a few thousands of an inch un-even, but just enough to be way off at the end of a 12' sheet. I used a square on one edge and marked a straight line to get my sheets squared up then fold in half to bring both ends together, align marks and cut. Squaring the sheets makes for better fit to frame and for reducing wing twist later. If some of you have read the newsletters as

Wing Panel, cont.

as well as made the observation of the wing splice option as noted in the 300 Sunderland drawing, you would had noticed two ways to splice the wing skins. Where the skins splice was going to be, would determine how long to cut each skin. Since the skin was going to be spliced near W.S. 86.113, the skin was cut as previously chosen (90" length). All four pieces were cut at the same time and the pieces not immediately being used were propped up against the wall for later use. It sure is a shame to see so much material going to waste with all that leftovers from the twelve feet sheet I had - even if I only gave an average $20 per sheet. Had I had all the aluminum material I needed from the beginning and done my planning a little better, I believe I would had cut all the pieces back when and use the leftovers for other items such as tunnels, frames and whatever else came along that could had been made with .032 material. This is why pre-planning is so important. It saves some bucks. Well – so much for the crying. Now, back to the grinder. The inboard skin was cut with the inboard edge at W.S. 42.25 in mind and the splice at W.S. 86.113. The width was some-where in the line of 43.890" The outboard section of skin was cut at around 29.50" width. Once the skins had been properly located and drill to the frame, a straight line would be marked for trimming any excess. Since the skins are 90 inches long, I didn't have to deal with the 1.70" extra length in preparation for the leading edge forming as noted in the newsletters. The extra holes for the clecos prior to the forming didn't have to be drilled either. Once the wing panels were completed and flaps located to B/P locations, the skins would be trimmed to the desired lengths. With the extra skin at the trailing edge of the wings, a flap seal could easily be applied and get an increase in perfor-mance of a mile or two at cruise speed. We'll see what it'll look like and whatever else later.

Now comes a very crucial part in the wings building that may very well determine if one wing will fly higher than the

cont pg 8

than the other one - the leading edge camber. Forming of leading edges (Get it? Forming - not bending) of the wings to obtain the correct camber should be as identical as possible on all skins. I had a 4"x6" about six feet long piece of oak in my back yard I thought would be a good tool to help me with the forming process. Now, I'm not suggesting that you go to the lumber yard and buy one. Oak is plenty Dolores - it just happened I had one. Remember to cover that tree with something to keep from scratching the sheets. This critter (the 4x6) weight about thirty or forty pounds, I think, and it sure saved me lots of strength while forming the sheets. Since this 4x6 had been in my back yard for many years, it developed a curve that when placed on the folded material, more force was applied in the center section which offers more resistance than the edges, forming the leading edges pretty close to even all the way across. I was able to form the pieces in no time. I really wasn't keeping up with the time. I just know it happened fast (less than 30 min with a couple of fit check to the frame).

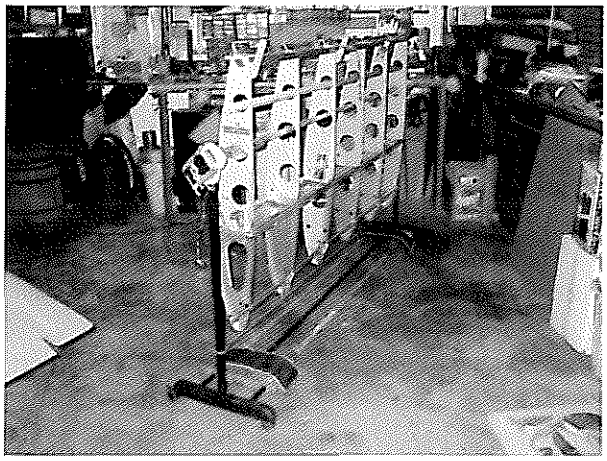
Remember awhile back on the center wing section if you happened to have read the piece in the newsletter? Where I placed the center wing section frame on 1x2 pieces of wood extending from the work bench? Well, this time I went to Lowe's lumber yard (pronounced Low-ease - Just joking) and bought one of those portable clothes hangers on casters you would see in some utility room for hanging extra clothes or whatever.

I took it out of the box and before assembling it, cut the cross pieces in half and extended the frame to about seven feet plus with pieces of pipes I also had lying around the back yard. The end result was a hanger to which the wing frame could be mounted with about two to four inches to spare at each end. The wing assembly would rotate over the pipe inserted in one of the lightening holes of the aft ribs. The hanger is made partly of plastic and thin wall pipe like the chromed sink drain pipes you can see in older houses. Nowadays it's all plastic and I can't trust it. The rack is not too sturdy, yet strong enough to hold the wing assembly with the skin attached. I even hung the flap and aileron on it, rolled it around and flip the assembly around and around. Works well enough for my use and I can move it around all over the garage, driveway, street, neighborhood to show it off - just kidding. With care, I can move it around real well and flip the assembly over. It's a lot stronger than I thought would be and only cost me about $12.

With the wing frame on my portable contraption, several items had to be taken care of before getting to the art of drilling holes. Remember that as in the case of the center wing assembly, the leading edge ribs float from side to side rather freely. If one is not careful, the ribs will move while attempting to drill or transfer the holes from the skin. If this happens, the holes will end up too close to the edge of the ribs' flanges causing

cont pg 9

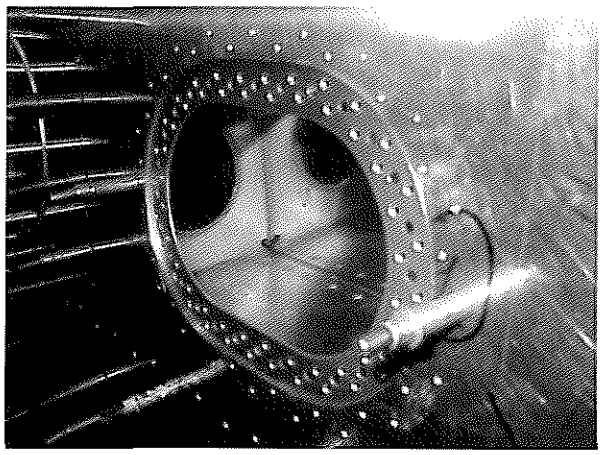
Wing Panel, cont.



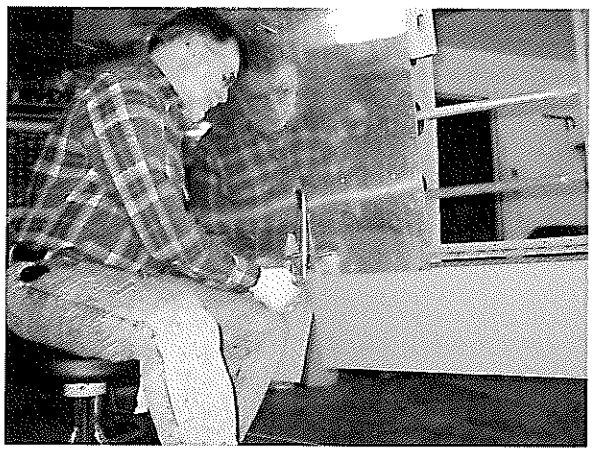
insufficient edge distance for the rivets or even fall in the radius of the rib flanges. In order to get a straight line for the rivets, I used a couple of metal yard sticks also lying about - in the garage this time. With a six inch scale, I measured a ¼" from the narrowest area of the ribs flanges and marked a straight line for the entire rib line using a felt tip pen. This would be the line I would be hunting for through the pilot size holes in the skins whence they skin were loaded to the assembly and the drilling began. The rest of the ribs and beam flanges received the same basic treatment. The leading edge ribs and main beams ended up with one inch rivet spacing while the aft ribs had some two inches spacing.. Next, I had to mark the rivets center lines onto the skins before I could apply the holes pattern template for each rib location. The ribs were located to the beam with rivets center line holes common to the skin 14.25" center to center to one another. All ribs got the same rivet pattern except the inboard most rib which got one less due to the 215 Wing Joint plate. The inboard skin had to have slots for the flap hinge plates for clearance. With the slots cut in the skin, the skin was placed over the frame for pre fit and clamped down. Attention had to be given to the leading edge camber area to ensure snug fit to the ribs. I used the flashlight to see the inside of the wing as was noted in one of the newsletters. I don't believe you can eliminate the gaps at the center of the camber completely for all the ribs, but can get real close. The pre fit checking of the skin to the frame requires several

Wing Panel, cont.

attempts to get a snug fit. The skin was on and off several times and the masking tape on the ribs leading edges replaced several times as well. Before the skin could be removed for the last time prior to application of holes transfer templates, the location of the access holes at the lower surface for each of the fuel carrying cavities had to be located; the plate for the water drain valve located; the



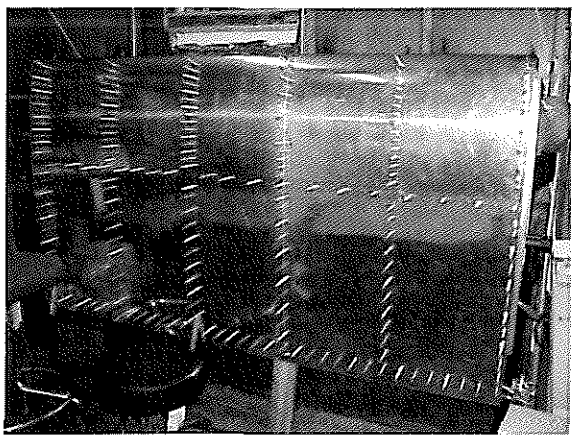
pitot tube fastener holes located and the location for the fuel filler cap on the top surface had to be determined. Am I forgetting anything? One of the item that had to wait was the clearance hole in the skin for the Aileron Push-Pull tube. After the skin was removed and the 501 tube permanently installed to the 498 bellcrank, a plate was created to aid in the cutting of the tube clearance hole. This plate was back drilled using the skin at that location and secured to the frame with clecos to mark and cut the slot in it. This became the template for the hole in the skin.



cont pg 10

With all the necessary marking done, the skin was removed; I dug up the templates for the rivets attach holes transferring to the skin. Sequence for transfer of holes from skin to frame would be to transfer the holes common to the upper beam cap first. The idea here was to drill the holes in the beam using the pilot size holes in the skin so that the skin could be clecoed to the frame at the upper main beam cap first; the skin pushed snugly unto the frame; drill holes common to the ribs moving forward, around the leading edge and down to the lower main beam cap. This would give the assembly a tight fit. We'll see if it'll work. If not, well, I just lost lots of work and a sheet of aluminum. The drill template was placed on the respective locations and holes to each of the beams and ribs were transferred using a # 40 size drill. Once completely predrilled, the skin was deburred and once again loaded and clamped securely to the frame.

With the skin predrilled and clamped in place, I was ready to transfer the holes to the rest of the assembly. I used the drill sequence noted before. The holes for the upper cap were transferred and skin clecoed. I then transferred the holes to the ribs moving forward at the center of the wing working outboard and inboard to the other ribs. Clecos were used as the drilling progressed. Once all the holes were drilled using the # 40 size drill, the required holes were raised to a .125" diameter for installation of 1/8" rivets as applicable. Yes, I know, the 1/8" rivets will not fit in those holes. The holes were later dimpled and cleaned with a .128" diameter reamer and deburred.



Wing Panel, cont.

After completing the drilling process and inspecting the entire assembly, the skin was removed in preparation for the next step.

Installing provisions for wing tip lighting, aileron control/trim and Pitot tube wiring and tubing had to mostly be done before the skin was riveted. I wanted to make sure that all that needed to be taken care of first had been done. I had to prepare the work area for the riveting process. All the tools were gathered and put away; the work bench completely cleared of anything not required for the riveting process; the assembly was completely gone over, inspected to ensure all that needed to be done was done-AGAIN!; and cleaned to make sure no FODFOD or manufacturing debris remained. The riveting of the Fuel Filler Cap assembly and lower surface access covers will be done later. The reason for that was to have bigger space for hands, elbows and tools in gaining access to the inside for rivet bucking and sealant application once riveting was completed. I will probably have a riveting party complete with steaks and beer. Care to come? No! No Beer until it's done! And if all you want to do is drink the beer, I have a cement pond in the back yard. Don't want to end up driving a rivet set through the skin or end up with a fuel filler cap on the bottom of the wing. I need to make contact with the Fuel Tank Sealant Company to see if I can get some of the PR 148 Promoter and PR 1422 Sealant. This stuff is compatible with or should I say, resistant to aviation and aromatic fuels. I will need to have some to install the rivets, apply to faying surfaces and filet applications.

I believe the riveting process will be another garage/hangar adventure and classroom session, so. I'll stop right here and come back with another Blow by Blow later. Besides, I don't know if Roy (our editor) will be too happy with such a lengthy piece for the newsletter.

In Cow Town USA ~ Don Doubleday

Important Notice

For those of you sending membership dues to me by check ... this is for you !! When I moved to Indiana last year and opened new bank accounts, I was not able to set anything up under the T-18 Mutual Aid Society name without mounds of paperwork and considerable expense. SO ...

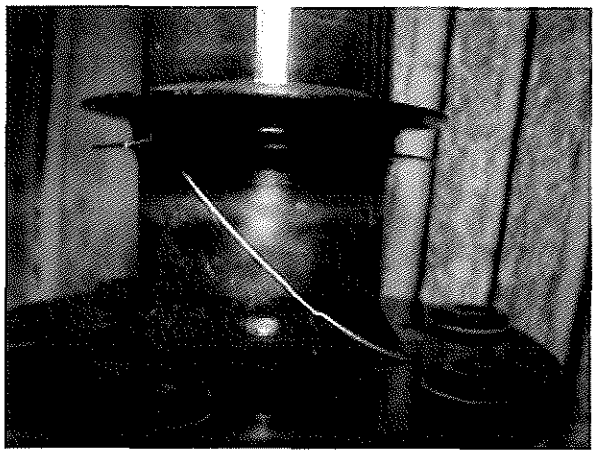
WHEN WRITING A CHECK TO PAY FOR YOUR T-18 MAS MEMBERSHIP PLEASE MAKE THE CHECK PAYABLE TO:

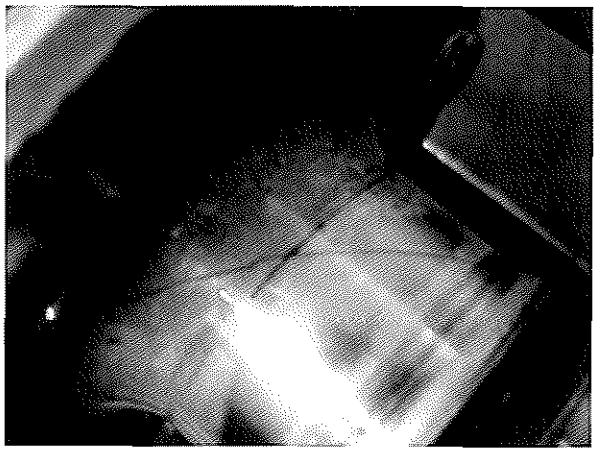
ROY FARRIS
1220 Stellar Drive
Franklin, IN. 46131

If its made out any other way I will have to return it to you and you will need to write and mail a second one. I have had several this year and of those I returned I only received a hand full of reissues ... either you guys forgot or it was to big of a hastle and you said forget it.

If you did get one returned to you I apologize for the inconvenience .. but I sure would appreciate it if you could issue me another one. We need to memberships ... Please Help

Front Seal Leaking?, cont.





Yikes ... Check out that crack !!

Front Seal Leaking?

These are some pictures (next column) taken of my buddy's crankshaft after removal from his Pitts (a what? I thought it was spelled Thorp). The engine is an IO-320. We had replaced the front seal four times and it still leaked. Upon my strong suggestion, we tore down the engine to see what the problem was. I say strong suggestion because I had been the sole pilot for the last four or five hours and I was getting a bit concerned.

Bob Highley
N711SH
SN 835

Alternator Wiring Mishap

A few months ago I read an interesting report on an alternator failure - As I recall it described the alternator circuit as having a switch in the negative wire side of the exciter coil. When you turn the 'alt' switch on the panel to 'on' it really is connecting the wire to ground. The failure report went on to describe a situation where the wire coming through the firewall had shorted on the firewall leaving the alternator in a continuously running condition (i.e. turning the switch off doesn't turn the alternator off). The accident that occurred was when the alternator positive output also shorted against the firewall

cont pg 12

and the alternator went to full output current, able to put out enough current (much in excess of the alternators rated output, say 200-300 amps) to heat the firewall red hot, melt through a fuel or oil line and cause a big fire. I read this in an NTSB report so you might be able to look it up again if you need more details.

Check that wiring !!
Ross

Left Seat or Right Seat?

I am an S-18 builder (I like to call it a T18CW) and I have something I can share with you. I am an old taildragger pilot, soloing and accumulating about 120 or so hours in a C-120 quite a few years back. I love a taildragger and loved to wheel land. I have not flown one in years, and want to get back into one, and not get spoiled by a trike. I have no trouble with a trike 172, taking off or landing from the right seat. Once, when I was much younger and more stupid than I am now, I was flying the 120 solo in the left seat, I decided to move over and fly it from the right seat while in flight. Everything was OK in normal flight, but the problem came on the final approach to land. Everything felt so different looking over the right side of the cowling, working the right rudder pedals, etc. that I felt I did not have adequate control over the airplane. I did not want to bend dad's airplane, so I therefore went around, shifted to the left seat and landed normally. I
still recall that incident, and feel that if I would have landed it from the right seat solo, a groundloop or other accident would have occurred. My advice for flying a taildragger right seat, is get someone in the left seat that can handle the airplane until you check out and feel comfortable flying from the right seat.

That's my 2 cents worth ... Robert Mardis

Walking Beam Support Cracked

I recently noticed a small amounts of lateral movement in the beam between the control sticks. Upon further inspection I found the supports attached to the main spar were deflecting about 1/4 inch. After removing the lower spar cover, I noticed that the .032 box section connecting the two support members was cracked at the aft end where riveted to the support members allowing the supports to move with aileron movement. I drilled out the rear rivets on both supports and added a .040 doubler to the .032 box and reattached with an 8/32 bolts and revetted the doubler to the box section. I do not feel the attachment was subject to immediate failure but I feel better that it has been fixed. Check your walking beam.

David Prince
N55RC

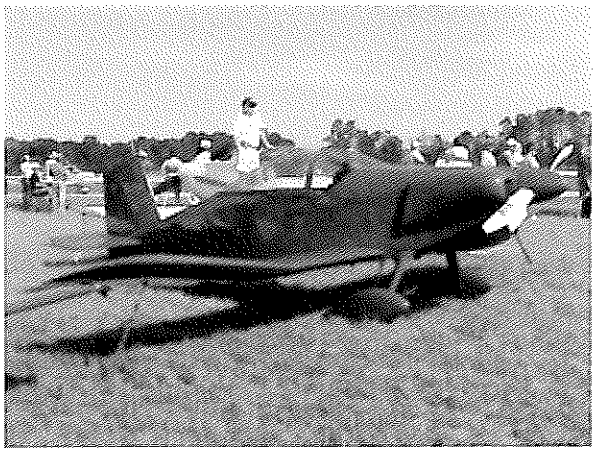
Everyone Needs Help Sometimes

My son decided he wanted to help with the T-18 last night so I let him drill the inspection plate I've been working on. I've spent at least 8 hours on this inspection plate (had to redo the flange due to edge distance) so I had to have confidence that he would drill it correctly. He did great and the door and flange are almost complete now. David Taylor

Timothy Taylor hard at work

Sun'n Fun ~2006

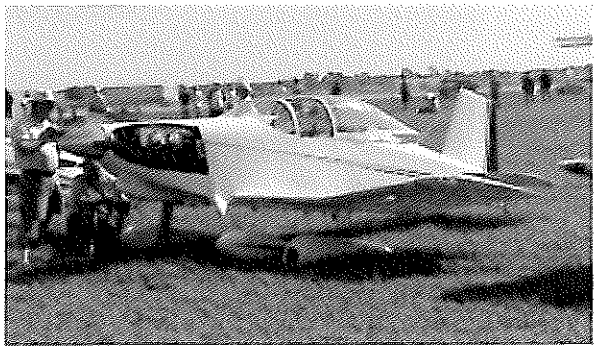
Submitted by: David Taylor



Well another Sun-N-Fun has come and gone. The weather was outstanding and I'd have been happy to have been able to stay longer. The Thorps were represented by 9 airplanes that flew (or taxied across the field) in (Gary Cotner, Gary Green, Bob Highley, Bill Williams, Jerry Lee, Dean Houseman, Steve Hawley, Les Conwell, and Bill Beswick). Thursday evening we found ourselves at the Thorp Dinner. We had an outstanding turnout. I counted around 50 people. The dinner is a great place to meet other T-18 people and just talk Thorps. I had plenty of questions about the construction of my plane and got plenty of answers. The Low Country Boil was absolutely fabulous and there was plenty to go around. If you've not had Bill Williams Low Country Boil then you are missing something great. The dinner was followed by ice cream and bananas with sprinkled with cinnamon. After dinner "The Trophy" was given away. This trophy is presented to the owner that best represents the T-18. The Trophy is a work of art in itself and each one is handmade. This year's award deservingly went to Bob Highley.

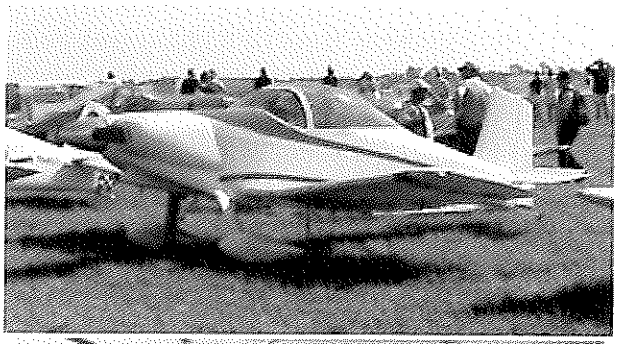
The next day we met in the experimental parking ramp and cowlings were removed. I've read about this in the early newsletters but this was my first experience. It's amazing at how much "stuff" is crammed underneath the cowling. Bob Highley and Bill Williams both have metal cowlings and you can bet they got a lot of attention by everyone. A lot of work went into their cowlings and they looked absolutely beautiful. I went through each plane looking at fuel systems, seat installations, canopies, etc. It's interesting to see how others have tackled the items that I'm currently working on.

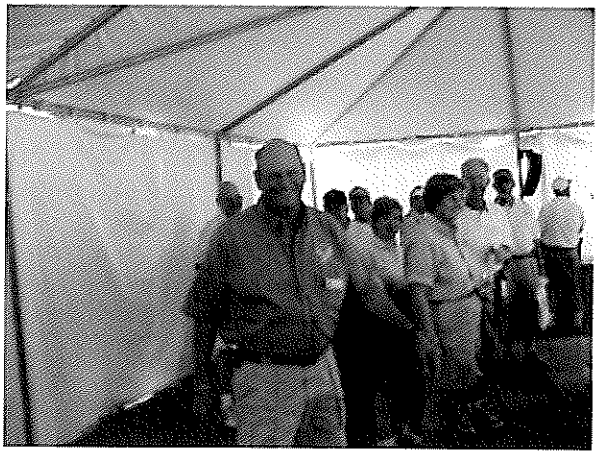
Sunday came and I had to leave. It was great to watch Gary Cotner take off just as I was about to leave the show. It's not everyday I get to see a Thorp that's flying. As Gary Green said, Sun-N-Fun and Oshkosh are great shows but the T-18 gatherings are more personable. If you are looking for a ride you can usually get one at a T-18 gatherings. I'm already looking forward to the next gathering I can attend.

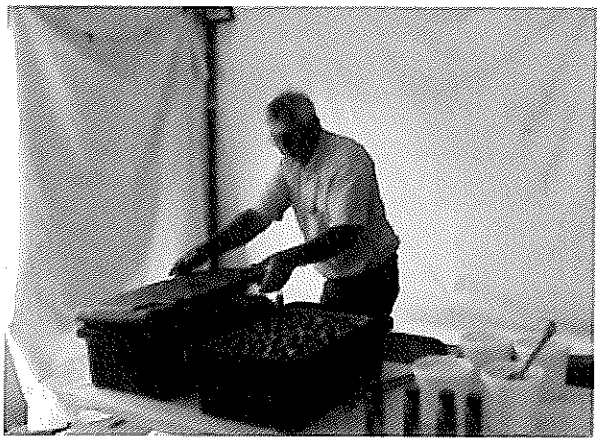


cont pg 14

Sun'n Fun ~2006, cont.







New Website

I invite you to click on my new site and email me with your helpful suggestions and your individual email address if you would like to be on my email distribution list which will be limited to sending you announcements when new items are added to the site.

The idea behind this site is not to duplicate the outstanding job that Mike Archer has done to support the S-18 or the work that Richard Eklund is doing in support of the T-18. The idea is to provide high performace upgrades to the fleet that nonbuilders (and builders) can easily adapt to their aircraft. When you go to the site: www.finetuneflight.com you will only find a couple items for sale. Both of these items represent a large amount of time in designing and creating high quality molds to manufacture these carbon fiber parts. The test vehicle for these items is my Thorp. I will post performance numbers on the site before the end of March.

Based on your input additional items will be made available. So please make your suggestions. I have already received one regarding carbon fiber wheel pants. I am thinking if I pursue that course it will be to modify the aft shape of the pant to be more like the pressure recovery design of the RV pants that is, if there is a likely market for the pants with that shape. A couple other ideas are carbon fiber fairings for the flaps and an Aviation products tail wheel pant.

Tom Hunter
N18XT

Builders Woe ... Drilling Pop Rivets

Anybody any experience of how you drill out smoking stainless pop-rivets (that you can't access from behind to grip) - helping a friend with a moni rebuild.

Dave

Builders Woe ... Drilling Pop Rivets, cont.

To keep a pop from spinning when you're drilling it out, punch a small hole out near the edge of the head. I use a automatic centerpunch. Then put the point of a scribe in this hole, pointing it against the drill rotation, and drill. Stops the spinning for me.

Leonard Gaines

After many years of airplane maintenance and having to confront Monel Tucker Pop rivets I have developed the following procedure that works well for me.

1. - Ensure the stem is carefully knocked out with a pin punch that has had the hardened pin portion shortened to approx 0.5 inches and taper ground almost to a point. Grind carefully with frequent quenching in a coolant so as not to lose the temper of the hardened tip. This prevents the punch losing a lot of its impact force by having the longer stems whip when tapped with the hammer. The hammer blow is immediately directed to the point in contact with the stem. This is important when drifting on light structure such as wing ribs or stringers. If you can gain access to the inside of the structure have someone buck beside the rivet tail anyway. I have found, most times, this modified pin punch does the trick without adjacent bucking.

2. - Have two pneumatic drills - one with a cobalt drill broken off just above the flutes (hardened material) and rounded to a curved blunt end on a bench grinder so as to sit comfortably in the recess of the rivet head. The other drill should be fitted with a cobalt drill of the required size with a drill stop set to the minimum depth required to penetrate the rivet head. Some testing may be required to obtain theoptimum setting of the drill stop.

3. - Spin the blunt drill for approx 6 seconds at high speed with medium pressure against the head. This has the effect of heating the rivet and expands it in the hole thereby creating more grip.

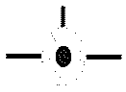
cont pg 16

3. - Quickly take the other pneumatic drill with the cobalt drill and stop fitted then begin to drill the head off at high speed. If the rivet does begin to spin in the hole immediately angle the drill slightly, (30 deg max) and keep motoring the drill. Angling the drill has the effect of still cutting material even though the rivet is spinning. You will find that fairly quickly the drill will pop the head. The drill stop will prevent the drill bursting through the rivet hole and having the drill flutes mash the hole.

The trick is to be quick and be bold!

Happy drilling!

Garrick Andrews
ZK-EDF



Some Comments on Painting and Stripping

About painting: Here is the process I have used for 18 years on 10 a/c. 6 a/c were painted more then 12 years ago and there is no peeling or paint chipping on any of them. Strip and wash with a high pressure washer. Wash with Scotchbrite and and a Simple Green solution. Wash with a 50/50 solution of denatured alcohol and MEK. Slobber it on wet, and wipe dry with a freshly washed old t-shirt. This insures there is no oil on the surface that will result in fish-eyes in the paint. Dirt in the paint is a problem. Old t-shirts have less lint than anything. Tac rags are an enemy. Flush with water to get rid of dirt. I do not use an acid treatment. Dupont Variprime is a self etching primer that sticks, allows sanding and re- spraying sanded spots because it feathers well. It will eliminate scratches & dings. This stuff is $200 for a kit that makes 2 gallons. Do not try to thin/ reduce it. It peels if you do. I apply one wet coat, sand with 380 and wash with the Simple Green solution. Next coat is a yellow, mil spec epoxy primer that

sells for about $60 for a two gallon kit. One coat, sanded with 380, washed, and it is ready for the final enamel coats. I have used Sherwin Williams Acry Glo on 7 a/c - all award winners. It is the easiest acrylic urethane enamel to apply. Imron is the most difficult.

E-mail at aviatpd@aol.com for more info.

Dave Eby
NX53PD

I preped and help paint my 170 many years ago which turned out well and have been involved in aircraft maintenance for many years. I personally believe that the etch and alodine process before beginning the painting process is a good idea.. Reading the ThorpList e-mail, it seems to be that you are confusing the stripping process with the etching process. Etching is done with a very mild acid solution which is thin just like water. It is important to throughly wash
it immediately afterwards while the etch is still wet. I would only use chemicals made for this process. I have not seen corrosion develop from etching done according to the instructions. Correct me if I'm wrong, but I'm quite certain that stripper is not acid based. In fact, I think that it is alcoline (sp). The kind made for aircraft stripping is very thick like jelly. When applied by hand, scraped off, and washed up afterwards, very little of it will seep into seams. I have seen airplanes where it was applied and taken off with pressue machines and there was considerable forced inside around inspection covers and such.
This dried mixture of old paint and stripper did make a mess, but didn't seem to promote corrosion. It was just a mess to clean up and was unsightly.
Jerry Miel

Regarding the painting process. I just recently repainted my T18. Withthorough research and discussions with the people who

cont pg 17

For Sale

Parting out my thorp, all is for sale. I will get pictures of all the stuff as soon as I can. Email me off line for pics and/or list.
steamer461 @yahoo.com or call me at 720-353-8608
the parts are from a botched landing that removed the front, rear, and wing tips from the airplane. No engine or mount for sale.

Generally, I have about 20 boxes of parts, landing gear, rear canopy, originaly designed wing "center" (not the 4' tips either side) with all the working working levers. seats, cross over exhuast (I'm not sure what engine they will fit), cabin heater box, newly built rudder, rib and other patterns, and lots and lots of
other stuff.

I will sell the lot for $2000 (+shipping, but suggest picking up) and throw in a complete set of plans and directions zeroxed from articles. I will also throw in all my copies from the Thorp builders group.

Jerry Wilson
2118 Judson St. Longmont, CO 80501
720-353-8608

Hello, I read you were looking for a Thorp T18 a few months ago. If you are still in the market for one you can reply back to this e-mail. My name is Eileen Adams and my husband bought one in late 2001. Within that year , he was involved in a motorcycle accident. I opened the hanger and saw the plane for the first time in almost three years today. He has not seen the plane over the few years and will never be able to fly it due to the accident. I am making arrangements to consider any offers that come our way. If interested you can call me

Eileen Adams
706-888-1011

For Sale, cont.

I purchased a 4" single fork Aviation Products tailwheel and modified it by cutting off the existing fork & axle assy. and making a new, lighter, stronger, & more streamlined assy. from .090" 4130. Picture are posted in the "photos" section of the Thorplist under "Tailwheel Modification by John Evens". The 4" wheel looks goofy to me on the T-18, and is harder to push over things like the door track on my hangar. So I also made one for a 5" wheel. 6" would be just as easy of course. I flew with the 5" unit to OSH last year, & it worked fine, but I still prefer my Scott wheel by far. So I cleaned up & rebuilt the Scott. I'd sell the modified Aviation Products unit if anyone's interested.

John Evens N71JE
jrevens@comcast.net

For Sale, cont pg 18

Comments on Painting and Stripping, cont.

have the best and long lasting paint jobs, I chose the following process. I stripped the old paint off the aircraft. Then thoroughly sanded the aluminum surface with scotch brite pads on a random orbital sander. A two part acid etch primer/filler was applied. Followed by a two part base and clear coat paint. Generous scotch brite buffings were done between each coat of paint. The base clear coat system is more labor intensive. But it gives the best looking paint job. The best paint adhesion was accomplished by applying the next coat within 24 hours. This makes for some very long days of painting, but well
worth the results. The paint stripper does get into the aluminum seams and bleed out into the paint. I used a water hose to spray all the seams thoroughly. But next time I'll use a high pressure washer to blast the paint

cont on back

For Sale, cont.

These for sale items come to me mostly via email. I cannot verify weather they are still available, and I am usually not notifioed if the item sells. If interested in an item you will need to contact the seller.

T-18

My name is Jason Stuart. I am helping my Father sell his T-18, and I would appreciate any suggestions you might have. Here are the specs:

First Flight: June 1993
Engine: Lycoming O-320-E2D
Propeller: Sensenich 70/73 Aluminum
Empty Weight: 986 lbs.
Paint: Dupont Imron
GPS: Arnav Star 5000
Radio: King
Hours on Airframe: 220 hrs.
Asking Price: $37,000 OBO

The plane is currently located in the Palm Springs area in Calif. It has always been hangered and is in beautiful shape. My Father doesn't fly much any more, and would like to see it go to someone who would take good care of it. I have pictures of it, however I don't know how to post them for everyone to see.

Any help, suggestions, or if you know someone who might be interested, please let me know. jstuart2004@hotmail.com

---

Project

I have a Thorp T18CW project I'd love to get out of my way. If someone wants to save lot of time and money I can deliver this complete or if anyone needs parts contact me off line.
Fuse, gear, wheel/brakes, tailwheel, nosebowl, controls, mainbeam,ribs, HS tube, Vert tail/ rudder, motor mount, prints, Lu S prints, some NL's. Make offer!
Have extra bulkheads, panel, & misc

Bob MO bobmoe@sbcglobal.net

More Projects

2 T-18 projects for sale. One is a kit with practically every part to complete the aircraft, including most hardware and rivets. All skins and parts have been cut or machined to perfection. All holes drilled,most dimpled. Beautiful metal cowl, metal and fiberglass tips, wheel pants, new Cleveland wheels and brakes, cylinders, windshield, canopy),standard gear, all baffling, dynafocal mount, oil cooler, etc. Center wing, and canopy completed, fuselage clecoed and ready for final riveting, $4,500.00

The second, the result of an accident which damaged the fuselage and center wing. Most all else is quite usable spar, outer wing panels with strobes, flaps, ailerons, horizontal tail, fin and rudder, fiberglass cowling, gear (4in longer) has been straitened but needs welding and heat treated, walking beam, control rods, 2 upholstered seats with matching panels for cabin and baggage area, trim system. Engine, Lycoming, 0320, E2A. Total time, 2925 hr, SMOH, 420 hr. Stainless crossover exhaust with pipes, Slick Mags starter, altenator, baffling. All cylinder compressions good, shaft .002. No carburator, vacuum pump needs overhaul. running perfectly when removed. $7,000.00 complete, with all logs. Narco , Mark 12, 720ch with VOR
Icom 720 ch hand held tranciever with VOR, Transponder, Panel mounted intercom, ELT
Sigma Tech Gyro compass, Sigma Tech Artifical horizon ,Electric turn coordinator
Lorance Moving map gps, Garmin gps, early model but works fine. Etc instruments for complete panel I would like to sell radios, instruments etc at 35-40% new prices Aircraft Spruce 2005 catalog. All prices FOB San Diego CA

Larnzt18@AOL.com

cont pg 19

Thought for Today

If the wings are traveling faster than the fuselage, it's probably a helicopter - and therefore, unsafe.

Spring T-18 Gathering at "The Valley" ~ June 9,10,11

This is a reminder to all of you to make your reservations and plans to attend the Spring T-18 gathering at "the Valley" in Arkansas June 9, 10 and 11.

Call the Brass Door Motel at 870-435-2988 for rooms. You will probably be talking to Mary Nell. Tell her you will be with the Green party. Room rates are $49 for singles, $57 for doubles. There are a few king suites available for $59 single and $67 double occupancy. If you get weathered out, they promised to be liberal on their cancellation policy. They have been good to us in the past.

"The Valley" (61AR) is on the very southern edge of the Kansas City sectional. The coordinates are N 36 18.851 and W 092 32.509. It is a 2800 x 22 paved strip that runs 10-28. It is on the north bank of the White River. The ridge to the north dictates that patterns be flown on the south side of the runway. Right traffic for rwy 10 and left traffic for rwy 28. Enter the pattern from the north. Fly south over the center of the runway and turn right or left downwind. Field elevation is 450. Pattern altitude is 1100 MSL. Report position on 123.0 One should be aware of the close proximity of the Flippin airport (KFLP) which is just two miles south of the Valley. FLP is up on the ridge at an elevation of 719 and pattern of 1500'. When aircraft are on a left base to runway 22 at FLP, they are on a right downwind to the Valley runway 10; so heads up. Gaston's Resort airstrip (3MO) is also about 3 miles northwest (up river). They are also on the north bank of the river, with an 6-24 grass runway.

Flippin, the Valley and Baxter Co Regional all use 123.0, but Gaston's uses 122.8.

We have plenty of tie-down area on the lot adjacent to our house, but you'll need to bring your own tiedowns. The last time we did this, we borrowed vehicles and transportation from neighbors and EAA chapter members to get folks to and from the motel. We'll do the same this year. So, I don't think any of you will need to arrange for a rental car. If you are adamant about wanting your own rental car, Enterprise has cars available at KBPK. Their number is 870-425-4440.

We will probably gather at the Brass Rail restaurant (next to the motel) on Friday evening. The Saturday evening affair will be here at our house on the Valley.

As normal at Thorp gatherings, many will arrive Friday afternoon, several will arrive Sat morning, we'll fly formations and buddy rides most of the day Saturday, pig out Saturday night, and most will depart Sunday morning. I do not plan on mailing out snail-mail fliers to all of you.... so If you need any additional info, contact me at ggreen533@centurytel.net or 870-430-5428.

For Sale, 2 projects, cont.

After 35 years building and flying my T-18 to all four corners of the US, including 5 RT San Diego-Pittsburgh I have run out of time and energy, time to move on. I would like to keep the kit together as it would make an excelent project for someone who wants to build a great T-18 in a minimum of time and expense

Details and photos on request.

Larry Whetzel
17754 Villamoura Dr
Poway CA 92064
858 673 2035
Larnzt18@AOL.com

For Sale, cont.

I have a King VOR/Loc Indicator, KI-208 for sale if anyone needs one. This is used with the King KX-155 radio and also is a replacement for the older and less reliable indicators for the KX-170 series. I'm pretty sure that it can also be used with the KX-125 for someone who wants a standard Indicator.

The one I have is in good condition and has a yellow tag from 2003. It has not been installed or used since it was bench tested. I need to get a KI-209A indicator which also has glide slope. I'm asking $550 plus shipping and it includes a new install kit which cost me $75.

Jerry jmiel@dgo.megared.net.mx

Roy Farris
1220 Stellar Drive
Franklin, IN. 46131
Phone: (317)736-8903
email: royfarris@earthlink.net

Painting and Stripping,cont

stripper out of the hard to get at corners and seams. The bleeding of the stripper only happend in the spots that were very hard to get at and it was a very minor amount. I wouldn't wory to much about that problem. Thorough rinsing after stripping is the best solution. The best advice I can give you is take your time and don't rush any part of the painting process.

Ken Hicks

Mr Clayton's Opus ~ N818TR