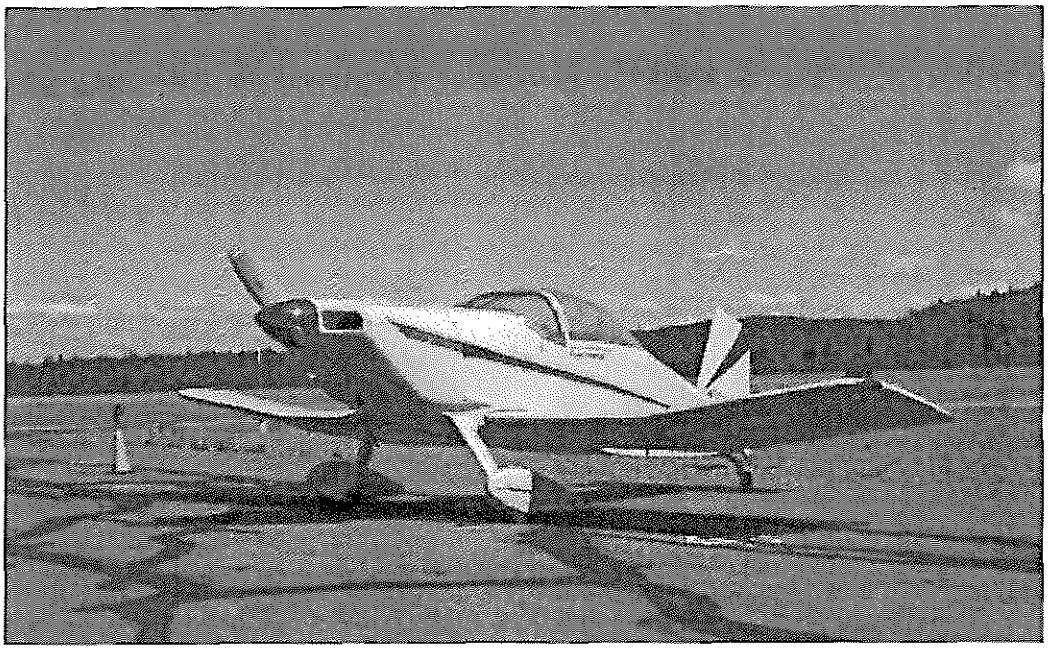
T-18 Newsletter

April 2004



Lane E. Olson's T-18 ~ Wasilla, Alaska

IN THIS ISSUE:

Editors Notes

By: Roy Farris

I believe our family has a problem. Those of you that are members of the ThorpList email group are probably aware of the problem. Our group and its members are becoming known worldwide as a bunch of one-sided, arrogant, know it all's who resent anyone that does not own or fly a Thorp. I have received many emails and some phone calls from people who have visited our ThorpList to ask questions and to find out more about the T/S-18. They all complain that we are rude, opinionated, and unwilling to help the new guy. I don't necessarily believe all of that to be true, however I think that those of us who participate on the ThorpList will agree that there have been a few problems recently. Regardless of what each of us believe individually, the problem is that the ThorpList in general has gotten a bad name, and in some cases potential owners/builders/pilots have simply moved on to different airplanes with groups that they feel are more receptive to their needs. The ThorpList was created as a media for us to exchange ideas, but it was also created to help and nurture Thorp wanna-be's and possibly get a few more T/S-18's flying. I truly believe that we all have good intentions, but as we all have learned, good intentions using email sometimes backfire in our faces. When we use email our feeling, our facial expressions, and the tone of our voice, is unreadable and sometimes our good intent gets lost or scrambled. Sometimes, as we all know, new people ask dumb questions, and get a resultant answer that they find less than tasteful.

Lets all agree that some damage has been done to the T-18 Mutual Aid Society, and that none of us really wanted that to happen. So those of us who participate on the ThorpList need to be careful and choose our words more carefully. Lets all work on getting our good name back !!!

T-18 Directory Questionnaire

T-18 Mutual Aid Society member Rick Shoup emailed me a while back and ask if I thought compiling a written list of all the Thorps would be a worth while endeavor. I responded affirmatively, and stated that other members had expressed similar interests. Rick then replied that he was willing to undertake this monumental task. What he is now attempting to do is compile a list of every T/S-18 that has ever been built, or is in the process of being built. Now I think that we can all say with certainty that he has undertaken a HUGE project. There are many Thorps that have been built and not registered or licensed as T/S-18's, so these may pose a problem that is not easily rectifiable. But I believe with persistence he will be able to track down most of them. He will then compile the information into book form and make them available, at some nominal charge, for all of those of us who wish to own a piece of Thorp history.

Rick has ask that EVERYONE that is building, has built, is flying, restoring, or just has any knowledge of a T/S-18 to please fill out a questionnaire. I have included one on page 16 of this issue. You may also find two different versions of the form on the T-18 website. One form is downloadable, and you may then print it out on your printer. The second version is fillable on the website .. when completed just click on "Submit" and it will be sent to Rick by email.

Rick also asks that everyone include some pictures of their airplane. It doesn't matter if its flying or still in the project stage ... just send some pictures. You can email them to him or send them by regular mail service.

Send your completed questionnaire to:

Rick Shoup
HC-61 Box 82A
Capon Bridge, WV. 26711

You can contact Rick at:
Phone: (304)856-1023 Fax (540)722-2633
Email: volo_t18@citlink.net

Surerior 0-360 XP Engine

By: Bill Beswick ~ N2618B

I originally flew my T-18 in September of 1978 with a O-290 GPU, since that time I have added about 700 hours. For ten years of the interim period I had a Bonanza N35, and the T-18 saw little use. After retiring in 1996 I began looking for a bigger engine and settled on a O-360 A3A and a 70 X 84 Serba propeller. This combination worked well for several years, but I had gotten used to a constant speed prop on the Bonanza and began looking for an engine/prop combination utilizing a constant speed prop. When Superior announced their O-360 XP this past year I began to investigate the possibility of acquiring a new engine and prop. I went back and forth on the issue trying to find a way to justify the $26,000 and wondering what increased performance would be achieved. I used the Superior web site to build an engine in cyberspace many times, always coming up with the same price. Then one day the price came up about $3,500 less than before. That was all I needed. I ordered the O-360 XP with 9 to 1 pistons (185 HP), Lightspeed ignition on the right side, a standard updraft oil sump and the HA-6 horizontal carburetor. Also ordered at the same time from Classic Sport Aircraft was a new Hartzell blended airflow constant speed propeller which had been tested with the Superior engine.

I planned on building a 90 degree fitting and carb air box similar to the one described in newsletter 56 page 5B written by Steve Hawley. Some changes were made to Steve's design. I obtained a 2 ½ inch 6061 aluminum schedule 40 close radius elbow, machined aluminum flanges out of 6061 3/8 plate and had them welded to the elbow in such a manner as to clear the engine mount with the carb air box. I think the offset was 15 degrees. A support was added to the rear of the carburetor to dampen vibration. The air cleaner installation posed a problem due to the limited space at the rear of the engine. I spent a couple of hours at the local **U Wrench It** used auto parts yard and came up with a air cleaner

cont.

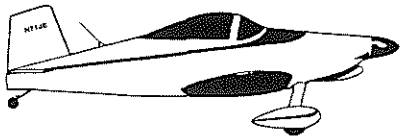
Chrysler V-8 of undetermined vintage. Probably late 80's or early 90's. With minor modifications it was fixed to the engine mount on the right side with incoming air coming from the right rear engine baffling.

The engine arrived in mid November and the prop on December 18, 2003. Hartzell was kind enough to send me a scrap hub so that measuring for a prop extension and spinner was complete before the prop arrived. After the prop arrived the plane was weighed and to no ones surprise it had gained about 70 pounds to 988 pounds. The weight and balance was recalculated and required some weight in the tail. I built a bracket which was anchored inside the fuselage to the tail wheel spring attachments and bolted on ten pounds of lead bringing the new empty weight to 998 pounds.

On December 27, 2003 everything was relatively complete and the engine was started for the first time since the test run of one hour by Superior. All was well, no fuel or oil leaks. Monday, December 29 was an overcast day here in Michigan, but with little wind and plenty of ceiling. The first flight was a cautious one and necessitated an adjustment of the prop governor to limit the engine speed to 2700 RPM. Once that was accomplished I began the flight tests in earnest.

The performance is amazing, at least to me. The acceleration is brisk with 80 mph on the airspeed almost as soon as the throttle is all the way in. I Followed the recommended break in settings of varying power between 65 and 75 percent for the first several hours. I can report that 65% power (22 inches and 2400 rpm) resulted in 190 mph true air speed, and 75% (25 inches and 2400 rpm) resulted in true airspeed of 203 mph. The rate of climb also increased somewhat, I can still get 2000 fpm at 150 mph. Initial sustained rate of climb is 2500 fpm.

I am please with the engine and propeller choice and would be pleased to communicate with anyone who has questions about the installation or performance. wbeswick@chartermi.net



Thorp T-18 N71JE

FROM THE DESK OF
John R. Evens
6931 Lee Street
Arvada, CO 80004

My WingTips

I've had so many requests for info on the wing tips that I built, that I thought maybe a short article on the building process was in order. I've been struggling, because it's sure a lot easier to describe and tell about in person, with the tips there to look at, than it is to put into words and drawings on paper.

I built the tips early in 1995 and now have over 450 hours on them. They took about 2 weekends of work, not including painting. As seen in figure 1, they are what I would describe as a "modified-Hoerner" style. I made them because I liked the looks of a similiar set on John Kleber's T-18. Credit for the process used to form their shape must go to John, who helped me with the building of mine. The one big advantage over the original rounded style used on most T-18's is increased lift, as proven by test flights I made with a new tip on one wing only. There doesn't seem to be any measurable effect on cruise or top speed, but there was a great difference noticed in ground effect, leading me to decrease my landing speeds. I might point out that my tips are 12" wide, as opposed to the originals which were 11". I think John Kleber's are 10" wide, and Larry Eversmeyer built a set which I believe are 14" wide.

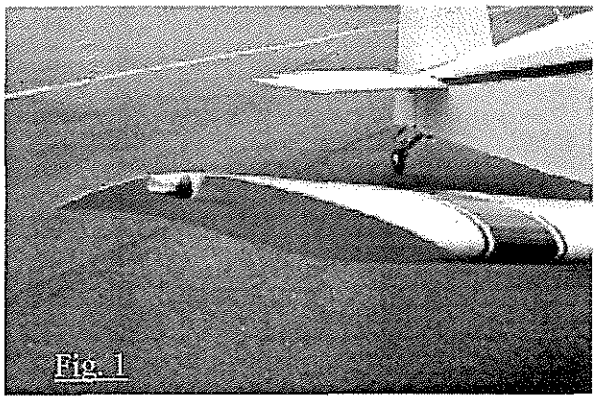


Fig. 1

The tips are constructed using the "Rutan" method of hot-wiring a foam core and laying fiberglass over the core. The method described will produce the flowing shape of the tip automatically, with no freehand sculpting necessary. I won't attempt to go into all of the details of working with fiberglass in this article. If you have a "plastic airplane" builder available, especially one who has built a Rutan design, you can probably get all the help you may need. I'd also be happy to answer any specific questions by email or phone.

As for materials, you'll need:
2 blocks of blue "styrofoam", both the same size (just large enough for one tip) and cut perfectly "square" (right angles).

Fiberglass cloth, 8 ounce, BID (bi-directional) - enough for 4 layers, which should produce a laminate of approximately 1/16" thickness.

Epoxy resin - I like the "West System" #105, and the #206 hardner. Get the West System pumps which screw onto the cans, and give you the proper ratio of resin to hardner. Very easy. Strong. Sands easily.

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My WingTips, cont.

Misc. materials like gloves or hand protection creme, mixing cups (wax-less), stiring sticks (tongue depressers), cotton "flox" (shredded cotton fibers) for the upper to lower surface joint, etc.

A hot-wire cutter. I made my own, utilizing a variable transformer ("Variac"), a wooden frame, and S.S. safety wire as the cutting wire. Again...talk to your Long EZ friends.

Most of these materials can be purchased from Aircraft Spruce or similar suppliers. I got my epoxy locally.

Start by making 2 airfoil templates out of thin aluminum to match your wing where the tips will attach. Keep in mind that the outside edge of these templates will be the inside edge (dimensionally) of the finished tips, and the tips should end up approximately 1/16" thick. Cut your templates accordingly. It is recommended to mark the outer perimeter of these templates with numbered index marks every inch or so, to aid in keeping the hot wire perfectly straight and perpendicular to the edges as it is being moved through the foam (very important). You'll also need to fabricate an aluminum strip 1 1/2" wide (or to suit) long enough to go from the leading to the trailing edge along the bottom surface of the tip at the root. This is used for the final cut, to be described later.

The two airfoil templates are attached to both sides of a foam block. Locate them in exactly the same position on both sides, or you'll have a pretty funny looking tip. I attached mine by punching a lot of holes in the center area of each template, and using nails pushed into the foam through the holes. You're now ready to cut out the basic "core" which is like a simple section of the wing. See figures 2 and 3. It helps to have a helper to assist in guiding the hot wire, with one person calling out the index marks as you move along. Be sure to save the pieces of foam which are cut away because the completed core is quite thin at the trailing edge, and they can be used for support during the glassing operation.

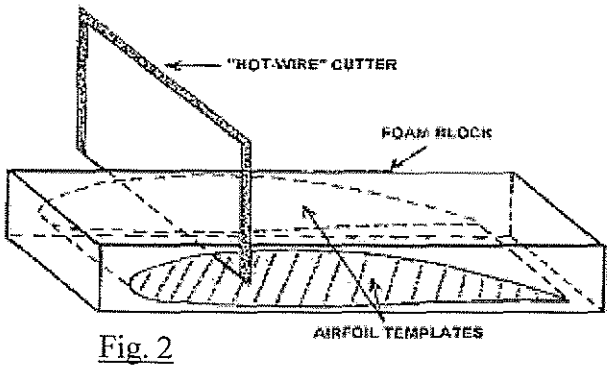


Fig. 2

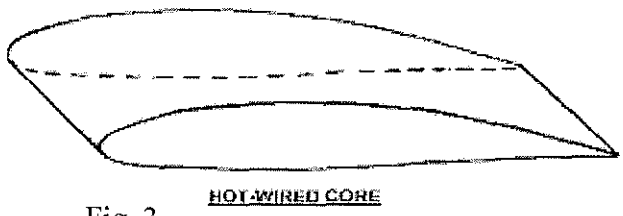


Fig. 3

Once you have the basic core cut out, the airfoil template on the **INBOARD** side can be removed. The core is turned upside down, and the 1 1/2" wide template strip is fastened to the core along the bottom surface from the center of the leading edge to the trailing edge, and right against the inboard edge. Also, the airfoil template remaining on the outboard side is shifted straight down (approximately 1/8" seemed to be about right, as I recall. Just be sure to do exactly the same on both tips). Now to make the final cut, the hot wire is run along the **UPPER** edge of the airfoil template and the **INNER** edge

cont. pg. 6

My Wingtips, cont.

(towards the center of the block) of the 1 1/2" strip, starting at the trailing edge and continuing forward to the leading edge, where the wire will exit the core material. This is harder to tell than to do, but rest assured, if you follow these directions, you will produce the proper shape automatically, with very little if any touch up or sanding necessary. Refer to figures 4 and 5. As mentioned earlier, save the cut off pieces to help support and stabilize the core, especially in the very thin trailing edge area, while applying the fiberglass

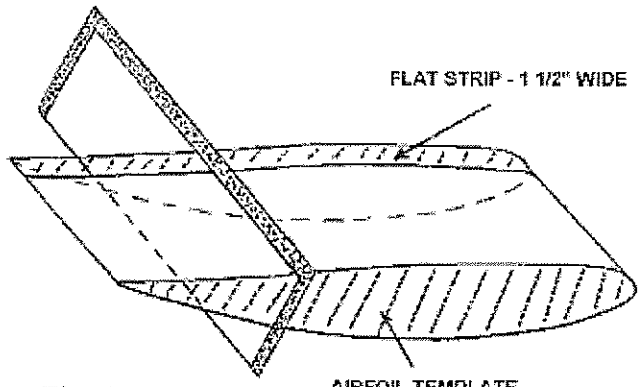


Fig. 4

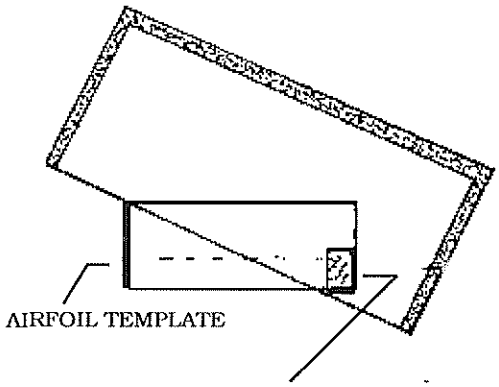


Fig. 5

Front view - looking at leading edge of hot wired core

The second core is cut, obviously being careful to produce a mirror image of the first. If the foam cores look good, you are now ready to begin the application of the fiberglass. All four layers are layed on either the top or bottom, before turning the tip over and covering the other side.

The fibers of each layer of fiberglass cloth should be cross oriented with respect to the preceeding layer for maximum strength and stability. Excess resin should be avoided, but full wetting of the cloth is necessary, with no air bubbles between layers. The excess cloth on each layer can be trimmed easily with a razor blade, if done when the layup is just starting to cure and still kind of "rubbery" - not too hard and not too soft. Experience comes into play here.

Once one side, top or bottom, is complete and trimmed to the correct shape, you're ready to lay on the other side. To complete the joint between the top and bottom along the outside edge, I used what is known as a "flox joint". Basically, a wedge shaped section of the foam, perhaps an inch or inch and a half wide is cut out all along the joint line before starting to lay up the second side. That area is scraped and cleaned real well, right down to the fiberglass. It is important to remove every trace of the foam in this area, and even sand the fiberglass to "rough it up" a little. Next a thick mixture of epoxy and the flox fibers is mixed up and used to completely fill the area where the foam was removed. You then proceed to lay the cloth on the second side. The only place where the cloth actually overlaps from top to bottom is in the area of the leading edge, inboard.

When you're all done and everything is trimmed up, the piece should be allowed to cure completely in it's "cradle" made from the trimmed off pieces of the original foam block. You can then fill and sand to get the finish you desire. I used "micro balloons" and epoxy, which is very light and sands easily. The final filling of any very tiny pin holes can be accomplished with a finishing putty of some sort.

If you desire, you can add a faired

cont. pg. 7

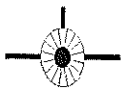
My Wingtips, cont.

faired area for nav-light mounting, by gluing on a shaped piece of foam, and glassing over it. The details of doing this won't be discussed in this article.

Finally, the foam can be removed if desired. Unless you think you need an extremely rigid structure, I suggest removing it. It's just extra weight, and you'll find that 4 layers of 8 ounce cloth make a nice, stiff tip, even without the foam. Don't try to remove the foam by melting it out with gasoline or acetone, as some people suggested to me. It makes a terrible sticky mess. In my opinion, it's much better to carve or dig the bulk of it out, and then attack it with some course sandpaper. This works well.

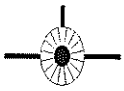
Good luck!
Best Regards,
John Evens

(For further information or questions, John can be reached at: (303)420-2724 or by email at: jrevens@comcast.net)



Here is **something for the newsletter**, if you want to print it. It is a combination of my opinion and some information from Mike Archer. Mike said it was OK to print his reply. Even if you don't want to print my opinion stuff, the info from Mike is a nice update.

The success of the RV series of aircraft shows that there is plenty of interest in an all-metal aircraft that goes together easily . In my (and some others at Sun n Fun) opinion, the only difference is in the marketing. When people are looking at an airplane to build, T-18's and S-18's are usually not even on their radar. Or if they do know about them, they are still considered as still being strictly plans-only and very time-intensive to build. We may know different, but many other potential builders do not. I think that with its wider fuselage and kinder airfoil, the S-18 fixes the only "shortcomings" of the original T-18. With the S-18 now kitted with premarked holes and such, Classic Sports Aircraft is now offering nearly everything that Vans or Zenair are with their kits. I have heard some fellow Thorp builders comment that building one of our airplanes isn't for the kind of builder that just wants to "slap together" some preformed, prepunched kit. True enough, but I do find that, in spite of having a lot of preformed parts, I still spend a *lot* of time checking and measuring before I drill a hole, and even then things don't always come out OK and I have to remake a part. Not that I mind doing all this, but I don't have another airplane to fly while I am building and I would like get mine built and flying as quickly as possible. Once I have my parts measured, punched, and clecloed together, the actual assembly and riveting goes pretty quickly. So it has become quite obvious that I would be moving along much faster if I had a bunch of predrilled parts that already fit together and were more ready for riveting. And no matter how good I might .. (cont. pg 15)



Landing Light

I read your comment in the T-18 e-mail and thought you might like a copy of the landing light instructions for the newsletter. If someone wants to take my instructions and re-invent the wheel it's OK by me. Or they can order the kit from me for $70.00. I haven't been a subscriber to the newsletter for years because I don't even have time to even read Sport Av. I am however, retiring from active duty as a business owner next month, I've had it, we will se if I can catch up on things.

Chuck Borden
cborden@kcbx.net

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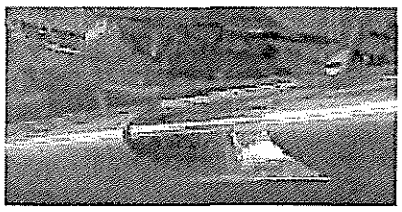
Chuck Borden's Landing Light Kit

Metal Aircraft
Landing Light Installation Instructions

This landing light kit was designed for the Thorp T-18 as a method of installing a halogen landing light in the leading edge of the outer bay of the outer wing panel.



Since there are several different airfoils used on the Thorp T-18, it is necessary to make your own form for the plexiglas lens to be used with your airplane. Also, airfoils will vary by how the leading edge of the wing skin was formed. With the following instructions the installer can make a form to fit any metal wing. This kit will also work with all RV Aircraft.

Supplies Needed:

1. 6 Amp circuit breaker switch (recommended), or a toggle switch, fuse holder and 6 amp fuse.
2. About 15 ft. of 18 gage shielded air craft wire.
3. Clear silicon sealer. Aircraft Spruce Part #09-27800 *
4. Six 1 1/2" # 8 Drywall Screws *
5. Wood Glue
6. Cotton Gloves
7. 8"x 12" Piece of 1/32 plywood sheet *
8. 2 feet of 3/4" x 6" shop pine*
9. One piece of felt about one foot square.*
10. * These Items Provided

Tools you will need:

1. T Square, Compass, Tape measure
2. 2 clothes pin type sheet metal clamps
3. Sheet metal cutting tools and files
4. Rivet tools and dimple dyes for 3/32 rivets and # 6 AN flush screws
5. Cotton gloves
6. Wire crimpers and hand tools
7. Oven set at 310 degrees fht.
8. Whitney punch if available
9. 3/32 clecoes and pliers
10. Rivet Sqeezer
11. Hand drill with # 40, 5/32 and 3/16 drill bits. Band saw and disk grinder.
12. Hole cutter (Malco HC1)

Important Facts ... before installation

Before you unpack the landing light remember this: **Halogen lights burn very hot and touching the bulb will greatly diminish it's life due to the oils in your skin.** If you should forget and touch the bulb, clean with isopropyl alcohol before turning on. With regular use the bulb should never have to be replaced.

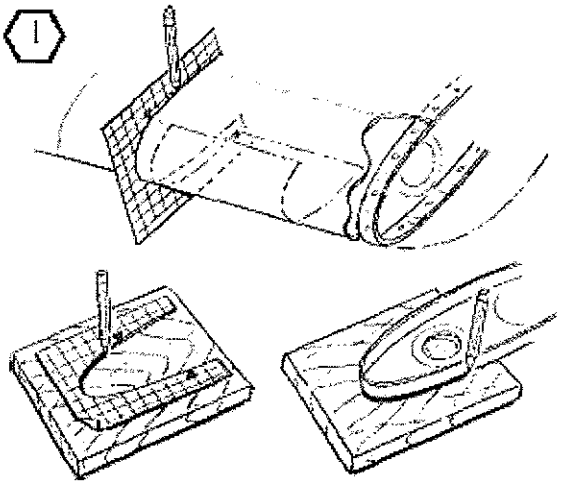
Also, **laying out the opening in the wing and cutting the wing skin should be done with great care.** You do not want to re-skin your wing panel because of a mistake.

cont. pg 9

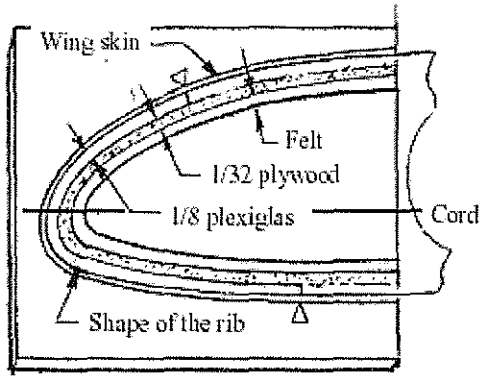
Chuck Borden's Landing Light Kit.

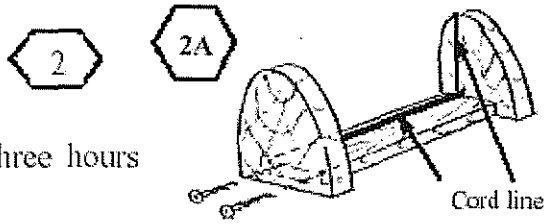
Step 1. If the outer wing is completed, carefully remove forward outer wing rib by drilling out the 1/8 AN rivets. You may use this rib to make a pattern for making the landing light lens. Refer to figure **1.**

A form must be made to shape the plexiglass to the shape of the airfoil. A pattern can be made to the shape of the outside of the airfoil and transferred to a piece of 3/4 by 6'' pine, or take the outer wing rib and trace around the rib. The cord of the wing must be perpendicular to the spar end of the rib. After making two of these pieces, cut outside of the line and sand to the line on a disk sander. This completes step one.



Step 2. After forming two pieces the shape of the rib, material must now be removed to allow for the thickness of the plexiglas, plywood covering and felt which will cover the form to keep from scratching the Plexiglas while forming. Cut shape on band saw to the line marked felt. Leave the line and sand to the line on disk sander. Cut a board **4.5''x 3.5''** to place between the two airfoil shapes. Make sure cord lines are on the same plane. Screw and glue together. Use white glue and drywall screws. See figure 2A. This completes step 2. Let the glue set up for about three hours before starting step 3.





Step 3 Cover the form with the 1/32 plywood. This can be done without breaking or cracking the plywood by soaking it in hot water for a few minutes. Wrap the plywood around the form with the grain. Hold in place with some large rubber bands until dry. See figures 3A and 3B. After plywood has dried glue and staple to form. Let glue dry and remove staples. Light sand and cover with felt. Felt can be stapled on the bottom and drawn tight but does not have to be attached in any other way. See view 3C.

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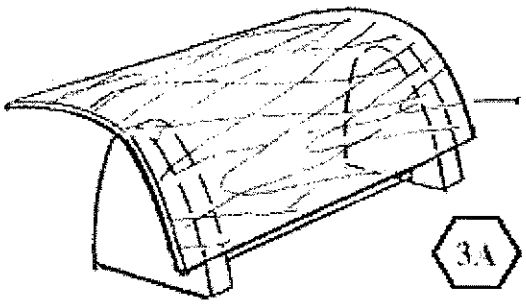
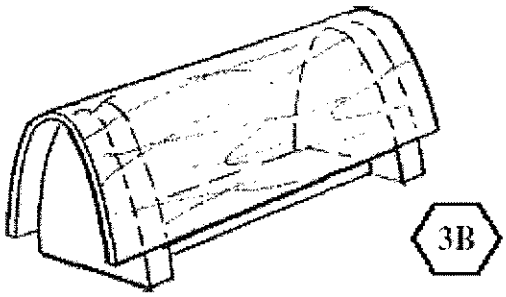
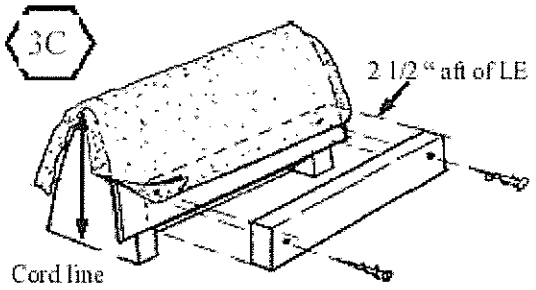
Chuck Borden's Landing Light Kit, cont.

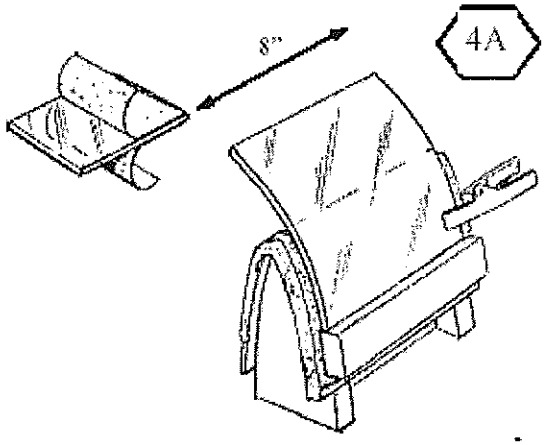




After the felt has been applied to the form a squaring block must be screwed to the form. It is on what will be the top part of the leading edge of the wing and is 2 1/2 inches back from the leading edge along the cord and is parallel with the leading edge. Figure 4A shows why this block is necessary. The squaring block is made from a piece of pine and can be attached with two 1 1/2 inch #8 drywall screws. The squaring block is 2 1/2 inches aft of the leading edge on the top of the wing

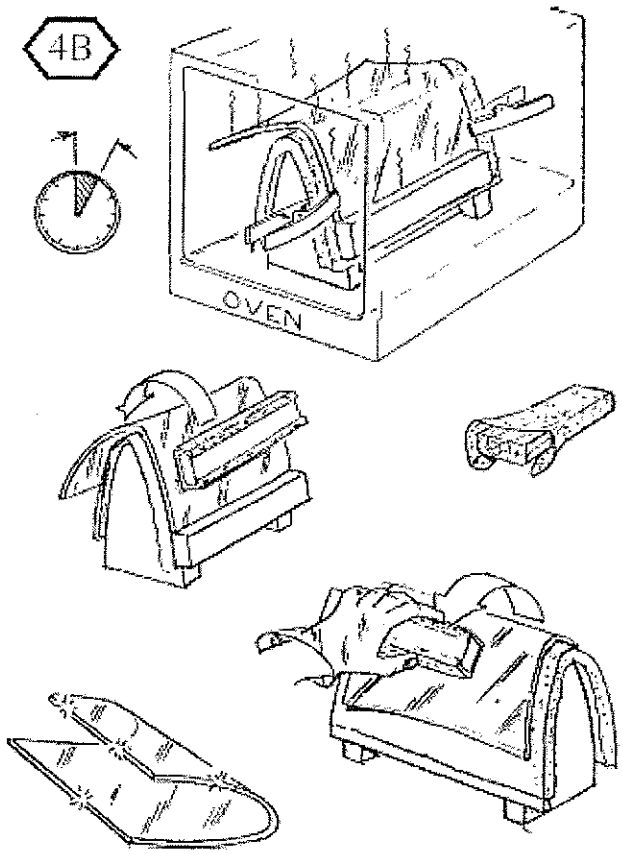


Step 4. Forming the lens is actually the easiest part of this installation. After removing the protective paper, clamp the 1/8th plexiglas to the form using sheet metal clamps, one on each side. Make sure that the 8" width is parallel to the squaring arm, figure 4A. Set oven for about 310 degrees. You will probably have to remove most of the oven racks to get everything in. Forming this piece of plexiglas will not hurt your oven. To avoid gouging or scratching the hot plexiglas remove all rings or other jewelry and where cotton gloves to keep from burning your fingers. After being in the oven a few minutes remove everything and give the plexiglas a gentle push around the form just past top center. Place everything back in the oven for about five minutes. The plexiglas will gradually start to droop, figure 4B. When it is almost all the way it is time to remove from the oven. With a small stick about 8" long, covered with felt, start to iron the plexiglas in the direction shown in figure 4B. Keep ironing until the part has cooled. Be sure to have your gloves on before doing this. And remember no jewelry. You will be amassed at how well the new lens fits and hugs the form.



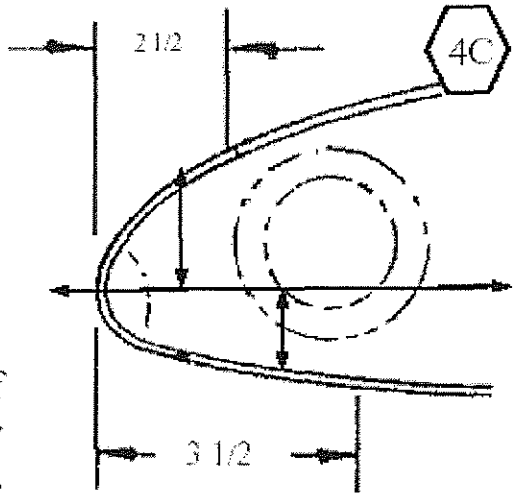
cont. pg 11

Chuck Borden's Landing Light Kit, cont.

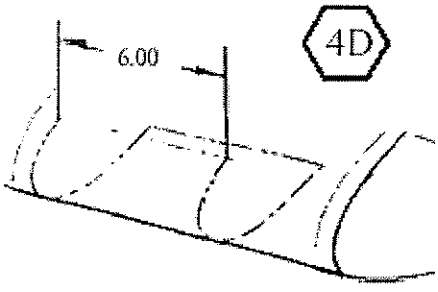


After forming the lens put the paper back on and set aside.

The finished dimensions for the lens is: eight inches wide, 2 1/2 inches back on the cord line on top and 3 1/2 inches back on the cord line on the bottom. The top should be the right size and the width should also be correct but the bottom will probably have to be trimmed on the band saw and sanded smooth on the disk sander.



You have now completed part one of the landing light installation. It is now time to put the wood working tools away and get out the sheet metal tools. Laying out the cutout in the wing can be accomplished with a #2 pencil and a T-Square. Measure back along cord 1 1/2 inches on top of wing along the cord and 2 1/2 inches along bottom of wing, figure 4C. Using a T-Square on the tip of the wing draw a line top and bottom parallel to the leading edge. These two line represent the rear cut lines top and bottom. The red numbers in figure 4C represent the location of the lens and the arrows lead lines represent the cut lines for the sheet metal. The width of the opening is six inches. 4D This means that the lens will extend 1 inch larger all the way around the

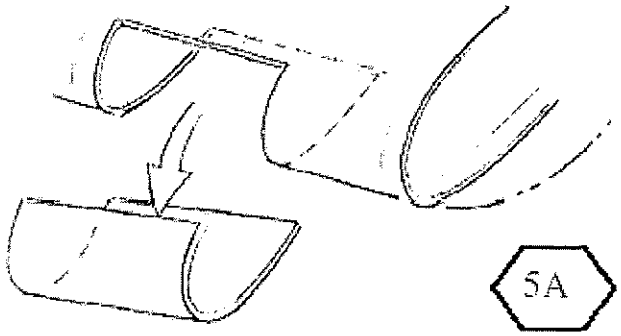


cont. pg 12

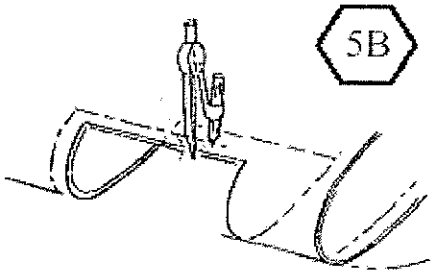
Chuck Borden's Landing Light Kit, cont.

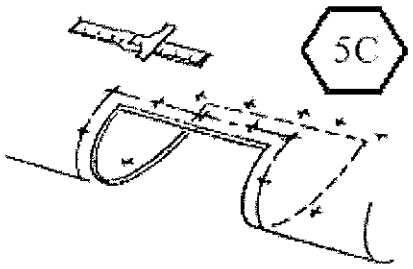
inside of the skin.

Step 5. Layout the cut out on the wing skin. It should be 6" wide and 1 1/2" back from the leading edge on the top of the wing and 2 1/2" back from the leading edge on the bottom. Also the cutout should be centered in the outer bay of the outer wing. Or centered between the two outer ribs. Carefully remove this piece of skin using left and right hand sheet metal snips. A starter hole is helpful using a large step drill. Leave the line and file a radius in all four corners with a 1/4" round file. ***No Sharp Corners.*** With a mill file very carefully file to the lines making the cutout fit the above dimensions. See view 5A.



With a pencil compass draw line 1/2 inch all around them opening. This will be the centerline for the attaching stainless screws for the lens, five holes across the top and bottom and one hole on each side top and bottom half the distance between the rear screws and the leading edge. Accurately laying out these holes gives the appearance of professional workmanship, view 5B and 5C. Holes in the skin can now be drilled or punched out to 1/8th of an inch and de-burred on the inside of the skin. Take the new lens and carefully push it into the wing as far forward as it will go. You will notice that it does not fit perfectly. They never do. Take the formed lens and center it and assure yourself that it is 1" larger than the opening all the way around. If you followed all the instructions this will be the case.

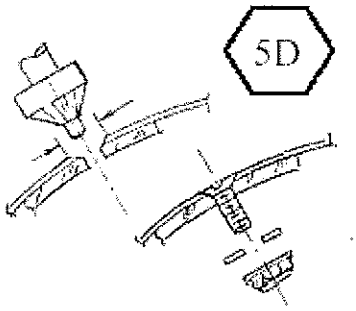




Holding the lens in place drill, and

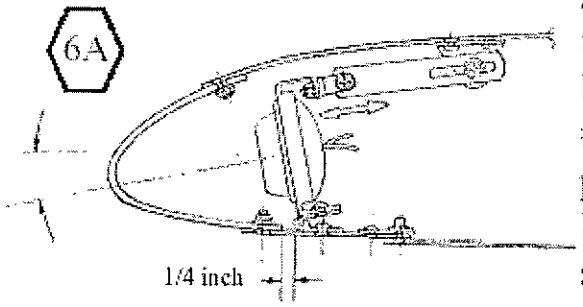
cont. pg 13

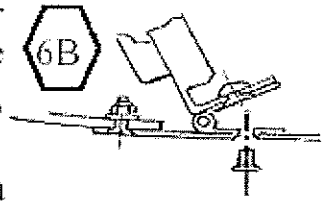
Chuck Borden's Landing Light Kit, cont.



cleco as you go. After all holes are drill in the lens remove the lens and enlarge holes in the wing skin to 5/32. Now dimple these holes for #6 flush screws. See view 5 D. Now enlarge the holes in the lens to 3/16. The over size holes are to allow for expansion and contraction. Now countersink holes in lens only to accept dimple in wing for #6 screws.

Step 6. With lens held in place with a couple of temporary screws it is time to locate the hinge that will be the main support for the light and give the light the ability to be adjusted to different angles. The hinge should be located 1/4 inch aft of the bottom rear of the lens. Center hinge behind the lens and drill with #40 drill and cleco through holes provided. Be sure to use the hinge half marked bottom. Dimple the skin and countersink the hinge for flush rivets. Rivet the hinge half in place, figures 6A and 6B



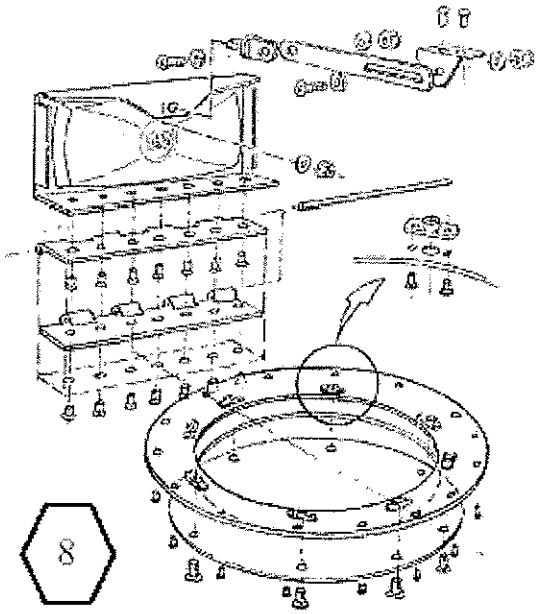


Step 7. It is now time to install the lens. Using a clear silicon, Aircraft Spruce Part #09-27800, put a 1/4 inch bead of silicon all the way around the outside inboard of the screw line. When the lens in pushed into place the sealant will ozz out. screw into place with the Stainless #6 screws. Do not over-tighten screws. They should be snug so they do not turn but not tight. With the locking nuts they will not come out. Whip up excess silicon but leave enough to fill any gaps between the skin and the lens. It will take about 24 hours for the silicon to cure. After the silicon has cured it is time to install the light assemble. All that holds the light assemble in place is the hinge pin and the adjustment arm. After putting the hinge pin in place you will notice the light has plenty of travel. We used a portable 12 Volt battery to test the light in the dark. Sitting on the tarmac of the airport we set the light to

cont. pg 14

Chuck Borden's Landing Light Kit, cont.

hit the ground about fifty feet in front of the airplane in the tail wheel position, It is a good place to start until you can actually go out and do some landings. After finding the right angle for the lens, rivet the L/bracket to the top of the skin so that the obround slot in the adjustment arm is centered. This allows adjustment for and aft of the fifty foot setting. Attach adjustment arm to L/bracket..



Step 8. The access panel and ring are for the purpose of readjusting the light and the possibility of ever having to change the bulb. If you are not concerned that this problem will be an issue, then don't install it. If you are going to install the panel now is the time to do it, before reinstalling the outer wing rib. An inspection panel can be built into the outer wing rib but that still requires removing the wing tip every time you have to work on the light. I believe the access panel is much better.

The outer ring for the panel is 10 inches in diameter, so the center of the ring should be 5 1/2 inches back from the trailing edge of the bottom hinge stock. Cut an 8 inch hole in the wing using a circle cutter. If you do not have one most RV 4 builders do, borrow it. After cutting the hole, screw the 8 inch plate to the ring and place in the hole and use the ring as a drill template. Cleco as you drill. Remove the plate from the ring and dimple and rivet ring in place. You can now screw the panel to the ring on the outside of the skin. Reinstall the out wing rib. The ground wire can be attached to the outer rib after it has been installed and the hot wire ran through the wing to the 6 Amp circuit breaker switch. This completes the installation of the halogen landing light.
Contact me with any problems. cborden@slonet.org

NOTICE: please contact Chuck at: cborden@kcbx.net
instead of the "@slonet.org" address listed above.

Something for the newsletter, cont. from pg 7

get with sheet-metal fabrication, it is hard to match the precision of parts that are laser-cut or stamped. Being a T-18 builder, I am naturally interested in seeing more people building a T-18 or S-18 instead of Brand X.

With all that said, I mentioned this to Mike Archer in an email. Here is his reply: " We are busy with our new tri-gear aircraft and it has priority over everything else in order to get it in the air as quickly as possible. Yes, I agree with you, marketing is one of the major differences between us and Van and Zenair. They have had a lot more time to develop their kits. The development of our kit as of now is at the stage of repeatability and we are looking at further improvements for development of the quick builds. When we get the new tri-gear flying (early summer) we will be in a better position to expand our marketing."

Also unlike Van or Zenair, we have mulitple suppliers for our aircraft, as opposed to one central kit supplier. I'm not sure just how much Ecklund and CSA are in direct competition with each other for parts, versus how much they complement each other by having different parts for two different airplanes. I realize that having a booth at Sun 'n' Fun or Oshkosh is expensive and a long trip from California. I wonder if sharing a single booth for both designs would be more cost effective. I'm not trying to tell anyone how to run their business, just voicing a few thoughts and opinions because I would like to see more people building and flying the T-18 and S-18. The more that I have studied these two aircraft, the more I have seen just how well designed they are and how, nearly 40 years after the original design was drawn, the performance is just as good (or better) than most newer designs.

Andrew Robinson

A Letter From The Past

(From the ThorpList)

22 Jan 69

Dear Arthur Wortz

I am spending thousands of dollars and taking my life in my hands to sort out the T-18 horizontal tail problems. We at least know now what the problem is and are on our way to a solution which will not be difficult to accomplish.

The flying tail is superior in all respects to the conventional tail and after having worked with it for over 25 years, I have no interest in the convential tail.

In my effort to get maximum performance for the T-18, I made the horizontal tail too thin. A conventional tail of the thickness and size probably would have a fluttered at about the same speed since it was a symanetrical bending ?????? of flutter that we have encountered. Of course the convientonal tail would need to about a third bigger for the same flight effectiveness and it can never be a effective in ground handling. A T-18 with a conventional tail just cannot be as satisfactory performance or handling wise.

The linait(?) Maneuvering tail load for the T-18 is 1000#. This would apply to any tail. However all other tail loads would be effected by tail geomatry, your best bet is to refer to F.A.R. 23 for loads and distributions for the T-18 in the areobatic catagory. Tail loads will take a 10 or 12 page report to develop and I do not have time to do it for you even if I hand you geomatry.

Flutter is a complicated subject. The two most important factors in avoiding it are stiffness and speed. The T-18 is fast enough to get into trouble with the big engines.

I don't berate you for being "spooked" by the accidents, but just making a different tail doesn't insure you against flutter or in-flite failure. It is your neck.

cont. pg 18

T-18 Directory Questionnaire

Please fill out this form as completely as you can. You can photo-copy it to avoid damaging your valuable newsletter. I did however put some non-important stuff on the other side ... so ... **Please include some pictures** of your Thorp for Rick to include in the directory. We want everyone building, flying, restoring or just storing your Thorp to participate. Send your completed form and pictures to: Rick Shoup ~ HC-61 Box 82A ~ Capon Bridge, WV. 26711

Name: _____

Address: _____

City: _____ State: ____ Zip: _____

Country: _____

Phone Number: _____

Email Address: _____

Plans Number: _____

N Number: _____

Thorp Model: (Circle One)
Standard T-18
T-18C (std fuse, conv wing)
T-18W (wide body, std wing)
T-18CW (wide body, conv wing)
T-18L (std T-18, using LDS airfoil)
S-18 (Lu Sunderlands design)

Status: (Circle One)
Project
Completed and Flying
Completed but Not Flyable
Under Restoration

Airframe Hours: _____

Engine Type: _____

Propeller Type: _____

Name of Builder: _____

Start Date: _____

Completion Date: _____

Time to Complete: _____

Length of Ownership: _____

Previous Owners: _____

_____

Equipment List: _____

_____

_____

Modifications: _____

_____

_____

Personal Information: _____

_____

_____

Comments: _____

_____

_____

_____

For Sale

T-18

Aircraft 48 hrs, Engine 78 hrs .
Engine 0-360 Lycoming (180 HP) with 75089 pistons
Flush rivet construction
Wide body model
All flight instruments
Two radios king-ki205 + king-kx145, plus intercom
Encoding altimeter to 25,000 feet .
Loran.
Wing tip strobe lights.
Electric trim Ailerons, flaps, rudder, stabilizer and flight
trim light
Double strength landing gear struts
Double thickness aluminum sheeting
Main fuel tank plus two wing tanks. Total capacity, 56
gals.
Wood Sensenich propeller model w68ly-80= 80/70 pitch
Solar panel battery charger.
Tinted canopy and windshield
sholder belts
Note: All original plans, logs, and news letters included. $30,000.00

Ed Elder

bigeewe@bellsouth.net

772.595 5698 , after 5:00 PM (Florida)

T-18

No.1138
Standard Wing and Fuse with 150hp, manual flaps & trim. Needs paint and interior asking 26K
990 TTAF ~700 SMOH last compression check 79,78,79,75 Annual in Jan 04 Pictures upon request
Matt Loiacono
mattloiacono@hotmail.com
matthorp@aol.com

T-18

THORP T-18, 180HP, 1140 TTA&E, C/S prop, vortalators, autopilot, GPS coupled, IFR certified, very nice aircraft, 170-kts.+ cruise.
$39,995. GA/(478) 934-4136; (478) 934-4549.
(478) 934-4136
Cochran GA $39,995

T-18

1982 T-18 for sale. 180 hp w/cs prop. approx 1100 tta, 1100 tte. night vfr equipped. color gps. intercomm, ky-97a, egt/cht. very nice airplane. based at cable airport in upland, ca (ccb). asking 34k/obo. pics on request.
909-739-0218 or e mail. thanks.
Nanci Greenfield

pngreenfield@earthlink.net

Prop

Having installed a constant speed prop on my T-18, I have for sale a 70X82 Serba prop with about 200 hours, spinner and 4 inch prop extension both from Ken Knowles. All for a Lycoming O-360. Call if or email if interested.
Bill Beswick
11304 Kingfisher Ct
Holland, Michigan 49424
616 748 9156

wbeswick@chartermi.net

Carb Nozzle

FOR SALE Nozzle (47-828) for MA4 spa carburetors # 10-5009 or 10-5062
Improves atomization, there fore better milage and power. This is new but will not work in my carb as it's the wrong #. Original cost was about $75, would like $50. Paul MacMichael
copterplt@juno.com

cont. pg 18

For Sale, cont.

Prop Extension

If anyone is looking for a nice 6 inch diameter prop extension I have one available for $150.00 plus shipping. Please reply to: rjaeger@bellsouth.net

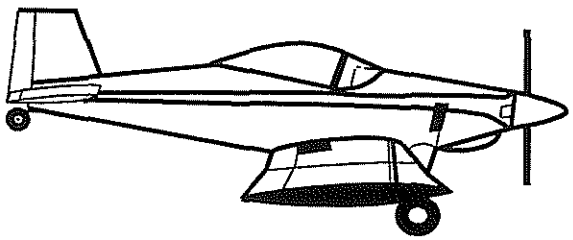
Robert Jaeger

A Letter From The Past, cont.

P.S. The original T-18 tail is safe at a red line of 180??/??

Best Reguards
John W. Thorp

Editors Note: The person contributing this original letter had some problems reading a few of the words ... so where the ???? you will just have to figure it out.



Spring Get-Together Scheduled

Maxine and I will put together the Spring Thorp Gathering on the weekend of June 4,5 & 6. It will be a Baxter County Airport (BPK) at Mountain Home, Arkansas. BPK has a 5000' x 75' runway with parallel taxiway. They have lots of ramp space with tiedowns installed and a

cont.

Spring Get-Together Scheduled, cont.

couple of large hangars that may possibly offer some shelter in the advent of threatening weather. I talked to the airport manager and he is enthusiastic about hosting it there. I think local EAA Chapter 775 will sign on as a "sponsor" so we can have the advantage of their liability insurance coverage at no cost.

We'll hang around the BPK airport on Friday evening to greet late afternoon arrivals and probably try to arrange some sort of cookout there that evening. Saturday, we'll beat up the airport with buddy rides, formation flights, etc. Gaston's White River Resort is very close, and some may wish to drop in there for a light lunch on Saturday. Their runway is quite adequate for a Thorp—I've been in there several times. Saturday evening, those wishing to fly in to "the Valley" airstrip will be welcome to do so. It is 2800' long but only 22' wide——ya gotta be able to keep it on the imaginary centerline! There will be transportation to the Valley for those wishing to leave their planes at BPK. We'll have a cookout and hangar party at the Green's place Saturday evening.

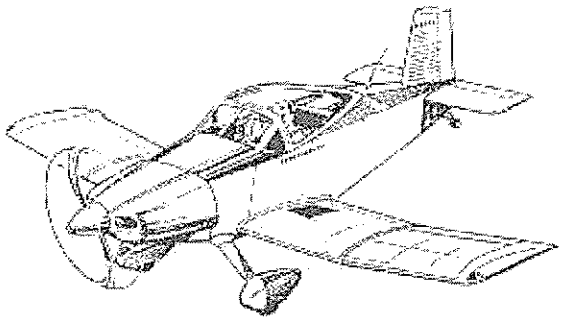
The closest motel is the Brass Door at Gassville. They have double occupancy rooms for $57 (+ tax) and some suites for $67. They only have a total of 37 rooms and fill up early with trout fishermen this time of year. They will accept late cancellations if it is due to unflyable weather. Their number is 870-435-2988.

The Holiday Inn Express is the newest motel in Mtn Home and a bit pricier. You can get a discounted rate of $64 if they ask for the Gary Green group rate Their number is 870-425-6200.

There are several other nice motels in Mtn Home. Getting a room at the last minute should not be a problem, but not being where most others are staying gets to be a transportation challenge for us. Here are some of the other motels:
Baxter Inn 888-644-6555
Comfort Inn 800-924-9449
Days Inn 800-329-7466
Ramada Inn 870-425-9191
Super 8 800-800-8000

I can see no disadvantage to getting on the phone right now and making a reservation at the Brass Door (870-435-2288). You can cancel anytime prior to 48 hrs and at the last minute if it is due to nasty weather. It would help Maxine and I to plan things if you'd also email us (ggreen@bullshoals.net) if you plan to be here. You can call us at 870-430-5428.

Gary & Maxine Green



William Bertrand passes

A New Smyra Beach man died when the plane he was piloting plunged into a Central Florida lake.Witnesses spotted the Thorp T-18 experimental aircraft flying below the fog over the lake about 11:25Saturday, Florida Highway Patrol officials said. The plane flew back up into the clouds and dropped straight into the Cresent Lake shortly afterwards. The plane's engine did not appear to be functioning when the plane crashed, officials said. The pilot was identified as William Bertrand, patrol officials said, There were no passengers on the plane. Bertrand's body was recovered by several residents and a Cresent City police officer. Cresent City is about 60 miles north of Orlando.

Thorp Events for 2004

April 13-19 ~ Sun 'n Fun Fly-In - Lakeland, FL. We are planning a dinner-forum at Bill's at Dranefield Deli 3043 Dranefield Rd. It is located across from the airport at the ap proach end of Rwy 23. Date is 16 APRIL 2004. More details to follow..
Bill Williams ~ n360ww@yahoo.com

May 14-16 ~ These are the dates of the new Mid-Atlantic Fly-In and Aviation Convention to be held at the Lumberton Airport in Lumberton N. C. While the full schedule has yet to be determined, I have met with the organizers and have been assured that there will be a lot of flying, an air show, forums, vendors, camping and all the other good stuff that goes with an old time regional fly in. Lumberton has over 1600 rooms. If the interest is there, I will scout out a good motel and set up a deal for us T-18ers. This part of N. C. is known for great bar-b-que and I'm sure we can find a place to hold a dinner on Saturday night. For info go to: New-lumberton.gif or contact Dana LaBounty at: dana.labounty@SHAW.AF.MIL.

June 4-6 ~ Spring Get-Together - Mountain Home, Arkansas. See page 18 in this newsletter

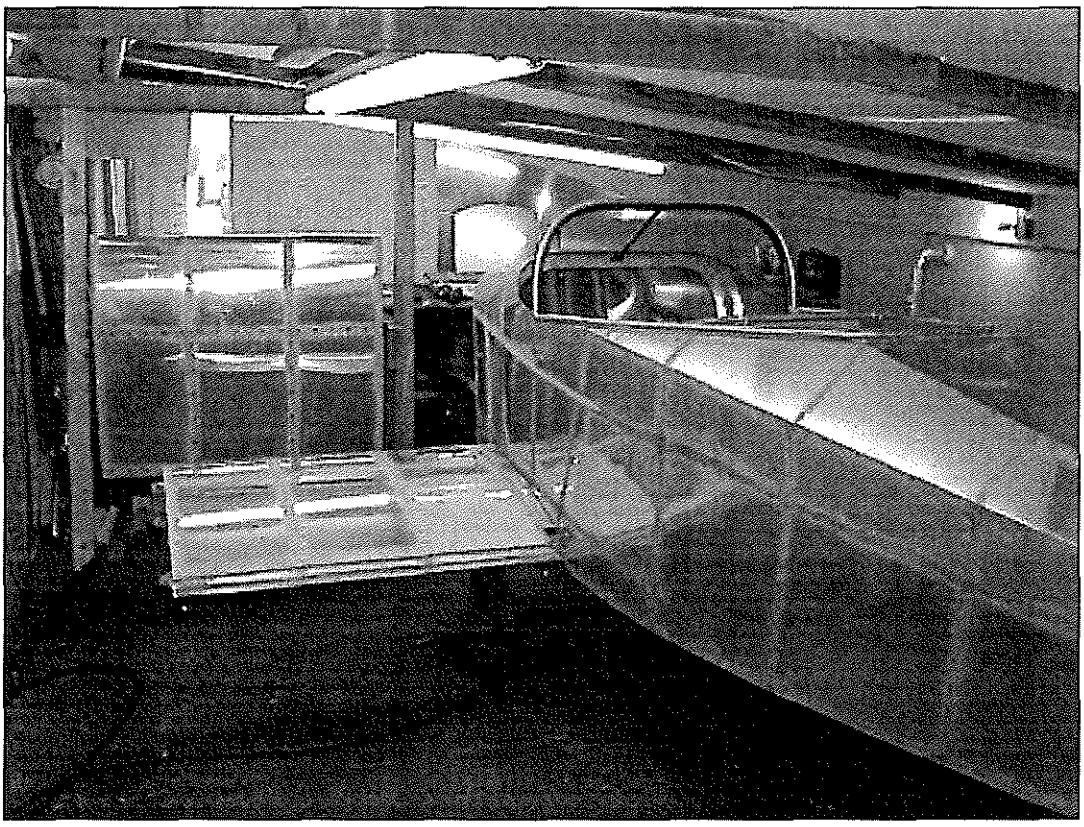
July 27 - Aug 2 ~ EAA Airventure - Oshkosh, WI. We are planning our usual T-18 forum and luncheon on Friday July 30th at 12:00 noon in the big tent at the Nature Center. For more information contact: Roy Farris (618)723-2594 or rfarris@shawneelink.com

AUG. 28 - 29 ~ Thorp Gathering at Mifflin Country Airport - Reedsville, PA. For more information contact: Jim Hockenbrock by phone at (717) 667-2790 or by email at hockey@acsworld.com

October 8 -10 ~ Annual Kentucky Dam Get-Together - Gilbertsville, KY. For more information contact Teresa Scola at: btscola@aol.com or 847-437-7153

T-18/S-18 Thorp Newsletter
Roy Farris
P.O. Box 182
Noble, IL. 62868
Phone: (618)723-2594
email: rfarris@shawneelink.com

April 2004



David Reads Project ~ Olney, Illinois