

T-18 NEWSLETTER



*N5822W was built by J. Shinn and Lou Sunderland now owned by Robert T. Carman.
See Robert's letter.*

IN THIS ISSUE:

Spring Fly-In Coles County (MTO)

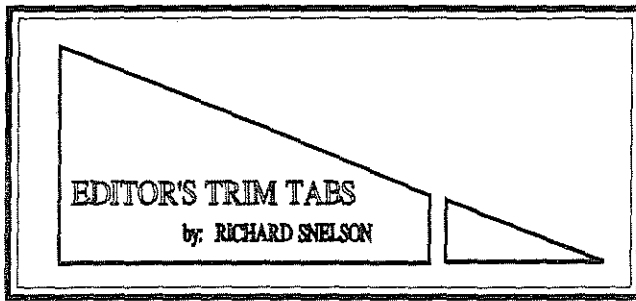
Building Tips *by Dave Goff*

For Sale Items

Flight Safety *by Lyle Trusty and Marion Smallwood*

Placerville Fly-In

NOTICE: (STANDARD DISCLAIMER) *As always , in the past, present, and future newsletters, we would like to make you aware that this newsletter is only presented as a clearing house for ideas and opinions, or personal experiences and that anyone using these ideas, opinions, or experiences, do so at their own discretion and risk. Therefore, no responsibility or liability is expressed or implied and is without recourse against anyone.*



READY FOR OSHKOSH?

Seems like the Summer is going fast. With vacations, Spring Fly-In's and Young Eagle Flight Events behind us the Mammoth event of the Year "Oshkosh 97" is just around the corner. I have some changes in our Oshkosh events to announce. Please take note:

NO Banquet, (Butch's Anchor Inn closed earlier this year) Anyone with Oshkosh knowledge of where we might hold a banquet next year, please get in touch with me.

Forum --- will be in the Nature Center on Friday August 1. Bring a sack lunch to the Center and join us for lunch. Drinks will be furnished. We will start at 12:00 and then hold the forum right after we finish eating. Sorry about the change in plans, but several of the folks that have helped us in the past aren't going to be there this year.

Placerville Fly-In will be September 5,6,7 at Placerville (Hangtown), California. See the LET'S FLY page in this newsletter.

Sun N Fun was bigger and better than ever. I flew down and was asked to host the forum. I meet a number of our new members. Classic Sport Aircraft had a booth reserved but Phil Keys became sick with the flu as he was flying to Sun N Fun and spent the whole fly-in on his back. (Sorry Phil, we missed having you there) I wasn't able to stay for the big T-18 cookout on Thursday because of the bad weather heading for Illinois. Folks say Bill Williams did a great job cooking steaks on the monster grill he built for the occasion. Thanks Bill. The first John Thorp Trophy for the best T-18 in attendance went to Les and Margie Conwell. Congratulations to both of them. They have built a beautiful T-18. (See picture in the Spring Fly-In article) Bob

Highley and the Directors of Sun N Fun are working hard to made the fly-in top notch. Why not join the T-18 bunch next year. Maybe you will win the 2nd John Thorp Trophy for best T-18. See you there.

The T-18 homepage is up and running, to see it address your web browser to <http://homepage.dave-world.net/~rsnelson/thorp.html>

Look around and click on the highlighted text as it will take you to additional pages. I'll be putting some new pictures up in the next few weeks. I'm available by email at rsnelson@dave-world.net

Request for articles:

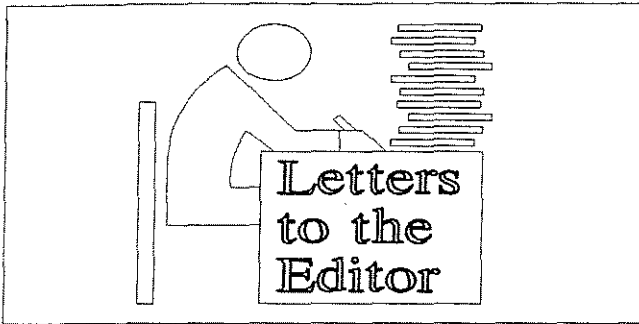
I'm looking forward to some articles that are in the preperation stages. Lyle Trusty is working with the folks in California to improve the T-18 cowling induction system and cowling drag parameters. He has promised an article down the road on this one. A lot of people have an interest in this subject.

Please submit articles, parts of articles or what have you on the T-18. We all learn through the sharing of information and articles.

Flight Safety: Another metal cutdown M74D prop bites the dust!!!! This one came off a Thorp before it killed someone. We still have T-18s flying with this dangerous prop. It's only a question of "when" it will fatigue and break...I'd make plans to jump if I were you.

June 15, 1997

The sad news came this morning that Mary Holt passed away. It will be hard to attend a T-18 Fly-in without thinking of Mary Holt and all the fun and good humor she brought to each one she attended. Our prayers and sympathy go out to Leroy. We are thinking of you in these time when your strength is being so severely tested.



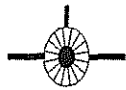
To The Members of The T-18 Mutual Aid Society,

I would like to express my appreciation for your kind thought, prayers and remembrances after Jeannettes death. I want everyone in the T-18 group to know that you were an important part of Jeannettes life. She had a special liking for anyone who had anything to do with T-18s. She also had many special friends as a result of our association with the group.

You made our lives better because of your friendship and kindness.

I miss Jeannette a lot and I am sure she will be missed by all of you who knew her personally. She was truly a remarkable person.

Ed Ludtke.

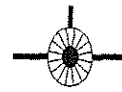


Dear Richard,
I have passed my 85th birthday and am no longer current. I still like to keep in touch with home-builts and their builders. I enjoy reading about the many Thorp T-18s that are featured in the T-18 Newsletter. I have almost 600 hrs flying Thorp T-18s and I must say that it is the finest flying airplane that I flew in the 60 years of my flying. As a flight instructor 1039-1947 at Louis School of Aeronautics at Lockport and also at Sky Harbor Airport, Northbrook, Illinois I had a chance to fly many small airplanes - factory builts.

John Thorp was a long time friend that I admired very much for his engineering ability and his knowledge-when it comes to designing a small airplane. I used his shop when I built my T-18 Serial #22 - N22DU. I finished the airplane and flew it for the first time in July 1977.

I sold the airplane to Henry Steiginger July 1990. The present owner is Howard Ginn who resides in Camp Verde, Arizona. He is very happy with the airplane and flies it a lot.

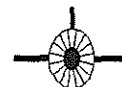
Best Regards, Dan Dudash



May 12, 97

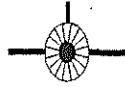
Richard,
I'd like for you to put this in your next newsletter hoping someone will have an idea. One year ago I put on a new Hartzell constant speed with a new Woodward governor on my 180hp Thorp. Since that time I've had a vibration, mainly in my rudder pedals, above 140 M.P.H.. This is either an airspeed problem or a power problem, but not an RPM problem. I can fly with 2500 RPM and 19 inches of manifold pressure with my plane perfectly smooth. If I add power (manifold pressure) I pick up a significant vibration in the rudder pedals. I've concentrated on the rudder area, even trying a different tailwheel & springs but nothing helps.

Gayle LeCount N5GL
407 Mill St
Georgetown, IL 61846
217-662-6532



Richard, I recently purchased Nate Eastman's T-18, N-2NE, and have put about 15 hours on it. Please sign me up for the newsletter. I'm trying to make arrangements to attend the Coles Co. fly-in in June, so maybe I'll meet you there. My

wife and I are proud to be a part of the T-18 flying community and hope to contribute to your fine newsletter. Ed & Miranda Askins. 6308 Millwood Ct. Arlington, TX 76016



April 14, 1997

Dear Richard,

Enclosed herewith is a check for my T-18 Newsletter for the next year.

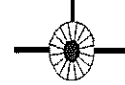
My T-18 has been the same color for the last 18 years and last December I decided that I was tired of it. It also has 1000 hours on it which is the equivalent of 190,000 miles so I figured that it was time to take it apart and look things over. I had planned to have it going so I could show it off at Sun and Fun but I didn't even come close. I might make Oshkosh. I found only one crack that could eventually have become serious. The top vertical fin rib had developed a crack emanating from each of the two relief holes at the rear of the rib. The aluminum plate that holds the rudder fiber bushing and is attached to the rib with four rivets was starting to become kind of loose. It would have been years before any failure actually occurred though. I fabricated a .035" - 4130 steel doubler that caught 4 original rivets and put two more cherry-max rivets through the doubler catching the vertical fin main spar. It is now much stronger than it ever was! John Thorp certainly designed a very durable airplane.

I built two new ailerons and two new anti-servo tabs using the folded trailing edge technique. They came out very nice. I also installed a fresh air vent for both sides of the cabin down by our feet. The inlet is in the leading edge of the wing and is fed with 1" SCAT tubing. The on/off control in the cabin is my own design and I think rather clever. If it works, I'll send a sketch and do some bragging, otherwise I'll keep quiet.

The painting is just about complete. Next comes upholstery and then I can start putting it back together. I made up a new instrument panel so it will take a while.

Keep up the good work.

Steve Hawley
Tucson, Arizona



T. R. Graumlich
2703 N. Dearborn Rd.
W Harrison, IN 47060
812 637-5114

Date: April 13, 1997

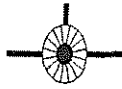
Richard,

Just got back from Sun-N-Fun where I took my obligatory video of T-18 construction details. Somebody please tell me how some of those folks managed to countersink rivet the training edge of the rudder on both sides! Unfortunately, I wasn't there long enough to attend the T-18 forum session.

We finally completed construction of the rudder and are currently working on the horizontal stabilizer. There is something to be said for working on smaller pieces while developing your building skills. At least you don't feel so bad about scrapping smaller parts when things don't work out well! One of these days we'll be forced to return to working on the fuselage 'cuz we won't be able to work on anything else....

I'm trying to get some of the group together to attend the Mattoon gathering in June. Hope to see you there.

Best Wishes,
Tom Graumlich
graum@aol.com



08 Apr 97

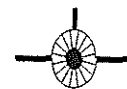
BUILD YOUR OWN WINDSHIELD!

After looking at the windshield, I believed it could be flat wrapped. First I tested it with Kraft paper - it looked OK. Then I tried heavy, solid cardboard which wrapped nicely. I concluded if this would wrap, so would acrylic. To work- A base was built using 3/4" stock. Fore and aft bulkheads were affixed at the proper angles, after the bulkheads were shaped to match the fuselage contour and the windshield frame respectively. A sheet of scrap Al was wrapped, nailed down, and covered with flannel. A sheet of 0.125 acrylic was cut about 1.00" oversized to allow final trimming. The whole mess went to the oven and, when one with more experience than I suggested it was about right, was pulled. Two men, one on each side, pulled the aft corners down until it set (less than one minute). The completed but untrimmed windshield was thin coated with Spraylat for protection then fitted and trimmed. Holes were initially drilled using a Plexiglass drill (available at any plastics supply house) then enlarged using a Dremel bullet stone. Attachment to the airframe was per the plans.

I have the form, have no further need for it, and would gladly pass it on for just the cost of material and crating (~\$30 - 35.) I would, of course, select the truck line which offered the best rate (there are some real ripoff artists, e.g. Yellow, out there). I would slightly modify the form to obtain a better fit. NOTE: this only fits the basic T-18 airframe - not the wide body.

If anyone is interested, please write or call 801-476-0153, after 1900 Mountain.

Floyd Myers
5170 Sunset Drive
Ogden UT 84403



Dear Mr. Snelson:

Thanks for the back issues. I'm gleaning from them and creating something of a POH for this specific airplane. And I'm having fun learning from the experiences of others although, inevitably, some of the experiences had serious consequences.

The stall strips are not yet installed. I'm currently in a condition inspection and found it necessary to put new Slick mags on the 0290C7-4 as well as replace the oil pump gears and housing. I have been cautioned by one person (credentials unknown) to expect no more than 500 hrs TBO on this engine. Any comment from you would be appreciated. And I trust you received my check for the stall strips....

My Hegy 68X62 prop is showing some wear and tear wanted to ask your opinion/experience with the different available props. Don't expect to capture a lot of your time for this just a short list of your favorites Would be really appreciated. My considerations thus far are the Bernie Wornke and the Aymar-DeMuth and I'm concerned that the Warnke would require a new spinner as it seems to be a very thin bladed prop even near the hub.

Thanks for your time and attention, Sincerely
Larry J. Church Captain, MD-80's Continental Airlines.

P.S. I'm a bit confused-I have the folding wing - Therefore, is mine considered a wide body S-18?
Larry J. Church
1015 Parkview Dr.
Los Lunas, N.M. 87031
T-18 N146M, #1125

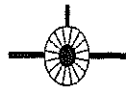
Editor's Note: Only if it's the 38" wide, 5" longer wide body fuselage. Several T-18's were built with the folding wing.

Dear Dick,
 I am writing to you in regards to my T-18, which I have decided to sell. It was built by J. Shinn and Lou Sunderland, and is one of the nicest homebuilts ever. Completion date was 1986 and it has a factory new O-290 aircraft engine ... with a total time of A/E of 290 hours. Paint and interior is a #9 and the airplane has always been hangered at N17-Endicott, New York.

My reason for letting the T-18 go is that I have not flown it more than once a month since the purchase of a Twin Comanche in 6/95.

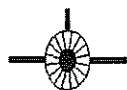
I would appreciate your comments or suggestions on how best to sell such a plane.

Please pass this along, drop me a note or call me.
 Home phone: 607 754-7757
 Office: 607 748-7328
 Sincerely, Robert T. Carman, DDS
See photo on cover of this newsletter.



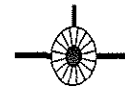
Shop Notes

The #4 gauge cable used for battery and starter motor circuit wiring uses massive terminal ends. One way to attach them is to use a special crimping tool available from NAPA auto parts stores. This is the Belden #726604 "Crimp-All" crimping tool, which handles #6 to #4/0 gauge. It is expensive at \$48 but does an elegant job. This tool looks something like the tool for riveting aircraft brake pads. It has a vee-block anvil and a captive punch. The terminal goes between the vee-block and the punch, and the punch is struck with a heavy hammer to make the crimp. The working end of the punch looks like a grooved quarter-inch pin punch. — David Hamilton



I am the WebMaster for EAA Chapter 172, in Augusta, Georgia. We have a very rare Thorp, since as far as we know it is the only tri-gear version in existence. I have spent the last year

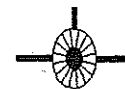
restoring it, since its disassembly over 18 years ago. I hope to have it back in the air by the end of this year. Please feel free to drop by our Web Page at: <http://www.csra.net/lancer/eaal72.htm> and let us know what you think. If you like, I will be happy to provide a reciprocal link from our site. Please let me know, if this is acceptable to you,
 Sincerely, Charles A. Barreras, Jr. WebMaster
 EAA Chapter 172 Augusta, Georgia



Rich,
 Last I talked with you was when you were thinking about selling your Thorpe, then changed your mind. I "think" you put me on a list of potential buyers, but since I hadn't heard from you AND the fact that I changed Internet Service Providers to ATT Worldnett and therefore a new Email address, I though I'd touch base with you. My new address is.....ROrife@worldnet.att.net Home phone is 904-615-8072 (Daytona Beach, FL) or 1-500-484-7424 if that fails due to my being on the road working.

I've been tempted with the RV6 and 6A, but even with the extra room and greater availability (and better than twice the price) it still doesn't have the classic look of the Thorpe. A guy's gotta have some pride in ownership! Please keep my address and phone number handy to pass on to any prospective sellers of 1st class machines only..... prefer 180 HP, CS prop, IFR but would settle for a nice 160 HP.

Thanks!
 Richard Oribe



Dear Richard,
 I sent a sketch of the airbox mod. to James Borg. He wrote back that it helped his T-18 N180RG; He no longer has to lean for take off. I was most surprised to hear from an RV-4 friend in Colorado that my N18WX was on the Internet! - Neat! Hope to see you at Coles County Fly In, Keep up the good work.
 Jack Waxenfelter,

Rich,

I'm not an instructor but I have over 300 hours in T-18 and the majority of my 1000 + hours in tail draggers.

Since most T18 accidents seem to be approach stall/spin related the single key point is to **KEEP THE BALL CENTERED**. At altitude (3000') I have explored the approach configuration and have deliberately hauled it into tight turns at 55-65 kts. With no flap there is more than enough buffet to alert the most insensitive pilot, however with full flap there is little warning. If the ball is centered at the stall, relaxing back pressure immediately unstalls the wing **BUT** if the ball is out it will let one wing go and roll 90 degrees or onto its back and requires 500' to recover. This is the reason for the fatalities on approach, there is just not enough altitude below you to recover in. **KEEP THE BALL CENTERED AT ALL TIMES**. This skill should be looked for at check out time. The budding T-18 jock should also experience this trait at check out time. Second area of incidents seems to be departures from the runway. The T-18 has very good steering control on the ground providing the steering springs are not slack(I recommend the compression type)and the pilot is quick with his feet and does not let the aircraft wander too far.

At check out good foot work should be evident. My local field always seems to have a cross wind but the T18 can handle quite high cross winds as long as you think ahead. Incidentally I **ALWAYS** 3 point it unless the wind is above 20 kts and on an angle.

At all other phases of flight the T18 is like any other high performance aircraft, a delight to fly! Hope this is useful to an article.

Regards Tony S (ZK-VMS)
 Tony & Viv Schischka
 a.schischka@xtra.co.nz

Hi Rich,

Hope everything's OK with you guys. We should see you in Matoon. We're sure looking forward to it.

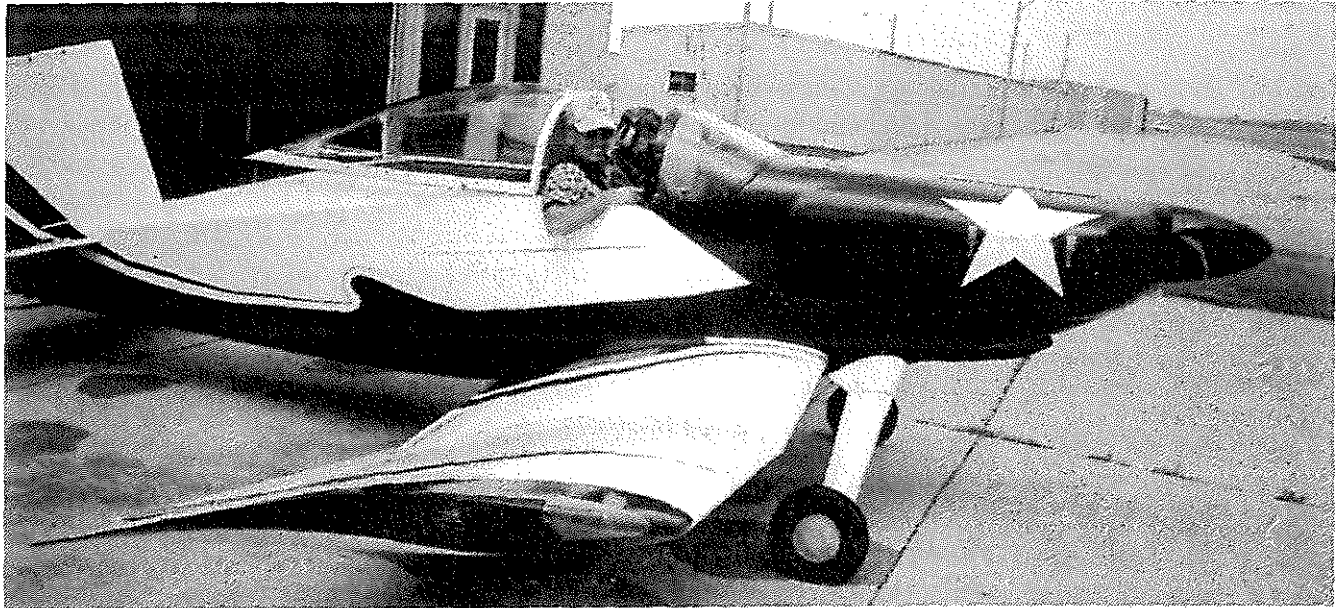
I have another request - in the last newsletter you printed my letter (or combination of letters) and signed it JREvens@aol.com. I've had 2 people, so far, tell me that they had a hard time getting ahold of me, because they're not on the internet, and didn't know who I was. Some think that I must be officially known as "JR". Would you print my name and address, in regards to ordering hats & visors?

Thanks a lot Rich.

John Evens, 6855 Allison St., Arvada, CO
 80004 Phone 303-420-2724



SPRING FLY-IN COLES COUNTY (MTO)



Rick Jones and Dan Wolf taking the "Star of Texas" out for some aerobatics

Dateline: Friday June 6, 1997 1600GMT: Mattoon (MTO)
Site of the Thorp Spring Fly-In

A flashy red, white, and blue Thorp decked out with the "Star of Texas" arrived under the overcast sky to find an empty ramp. The Captain of the Thorp and his Co-pilot looked at each other in surprise and asked:

"Is this the right weekend, Louana?"

"You mean we came all the way from Texas to be by ourselves, Rick?"

The giant hangar door in front of them opened and "The Jones" discovered they weren't alone.

The scene repeated itself as the flight of three rockets from Lakeland, Florida circled the field.

"Hey, Bob. There's no one else down there."

"Ramps empty, Bob."

"Guess it's just us."

Once again the giant hangar door opened and swallowed Bill Williams and his passenger Lee Skillman, along with Bob and Susan Highley and Les and Margie Conwell.

By Friday night the hangar looked a little fuller with 8 Thorps and one RV-6. RV-6! Who let that guy in? Oh well! Now we had someone (Ed Ludtke) to do the cooking on Saturday night. The flights in also included Gary & Maxine Green, Gary Cotner, John & Vickie Evens and Richard & RoxAnne Snelson. Considering the wrap around low pressure system that brought low ceilings and rain to central Illinois, the fly-in was off to a good start.

Joining us for Friday evening dinner at Casey's famous "Richard's Farm" were Bob Berning, Roy

Farris & Comelia, Joe Kroupa, Dan & Jane Wolf, Jim & Judy Paine, and Ben & Teresa Scola. The food and company was great. We were all ready to head off for bed when we got back to the beautiful Ramada Inn in Mattoon, victims of too much food, a long day of flying and driving.

Saturday morning the weather opened up and we got in some T-18 rides. The afternoon brought rain showers around Mattoon, but that didn't stop a flight of five Thorps from heading south for Olney to see Roy Farris' T-18 project. The group reported back later that Roy does beautiful work and is building a show machine.

Saturday evening we fired up the grills for our under the hangar door, cook-out. We were joined by some additional T-18 owners and wanna be owners. Dr. Scott Stine, Bob & Carolyn Jaeger, Richard and Cherie Sharp and Jim and Joan Brownell. The EAA Chapter 274 president and his wife joined us, Waldo & Peggy Born and from Decatur John & Jannine Dixson and daughter. The ladies had a good time showing off the things they had purchased in Amish country. All except Maxine Greene, who didn't get a beautiful pitcher she wanted and on top of that, she had to write a check for Gary to buy \$\$ worth of airplane parts. Gosh Maxine, didn't Gary tell you that's just the way it is with us airplane builders. (I'll be in trouble for the last sentence, I'll leave it, won't be the first time.)

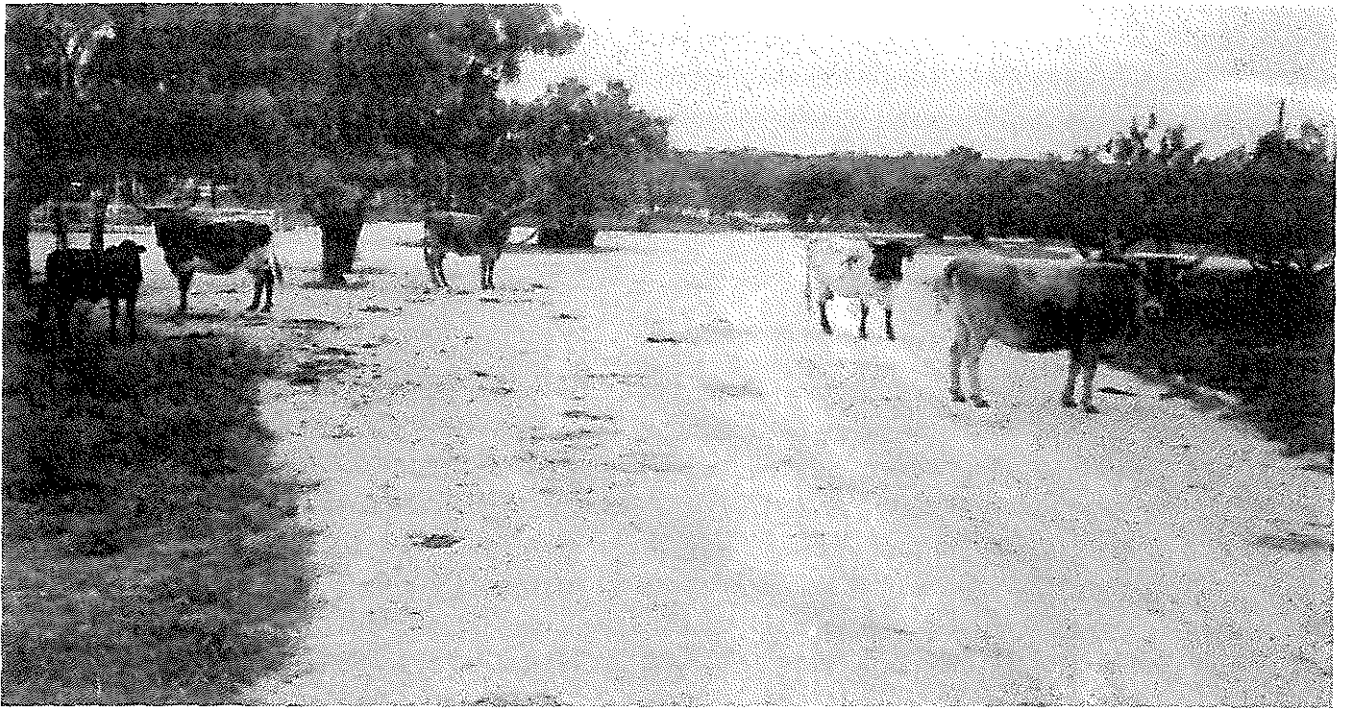
Early Sunday morning found the crew at the airport. Don't know why! Cause no one was going to be leaving very soon. Ceiling down to 300', rain, rain, rain. By 11:00 someone saw one little patch of blue sky. Then it disappeared. At 12:00 we got some more breaks and a spot of sunshine. By 1:00 pm most of the planes had snuck out under the local low ceiling conditions and were on the way home.

Our thanks to the Mattoon Airport Authority for their cooperation and for letting us use the big hangar. They want us to come back next year! I've promised we would fill the big hangar. Ok? How about it folks, come join us next Spring at MTO Mattoon Illinois for a great weekend of flying and fellowship.

FOR THE LADIES: RoxAnne speaks,

The T-18 ladies departed from the normal sitting at the airport and "yaking" to a trip to Illinois Amish country. The 2 car caravan of 11 ladies drove NE to Arthur and enjoyed seeing horse drawn buggies and the Amish people going about their everyday business. Our objective of course was to find something to BUY! But as we strolled along down town Arthur, we were taken back in time with old fashioned soda fountains, hand crafted items, homemade fudge - Some of us just couldn't resist! Quilts, and fabric, pottery and glassware caught our attention as well. We then moisyed over to Miller's Dry Goods Store. Well, yes I did make a few wrong turns-but Illinois is very flat & well I was kind of lost....

Anyway we really went back in time to a store that had no electric lights - only gas lamps. We enjoyed the five & dime old fashion store but were getting hungry so we continued on to Cadwell Corner, population 6, for lunch. The Cadwell Corner shop is owned by a sister of an EAA buddy of ours. She really did it up right for us. Cadwell is an antique store and restaurant combined. We actually ate on tables among the antiques and collectables. The table and chairs were even for sale. Ask one of us about the Marshall Field sandwich & desserts! Better yet - come to Mattoon next Spring and we'll take another step back into time! RoxAnne - Queen of the wrong turns... (see picture next page)



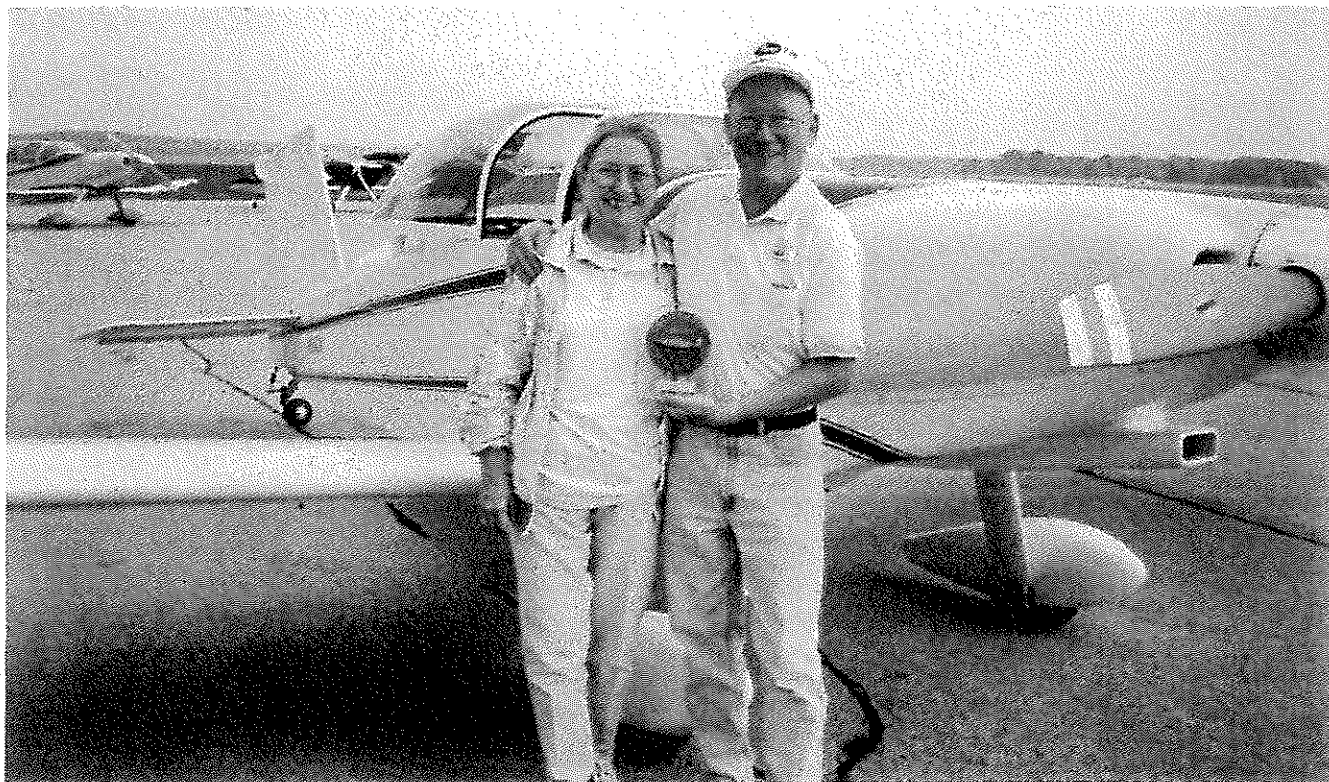
Gosh! I'm sorry, ladies. We must have taken a wrong turn. This looks a hell of a lot like Texas!



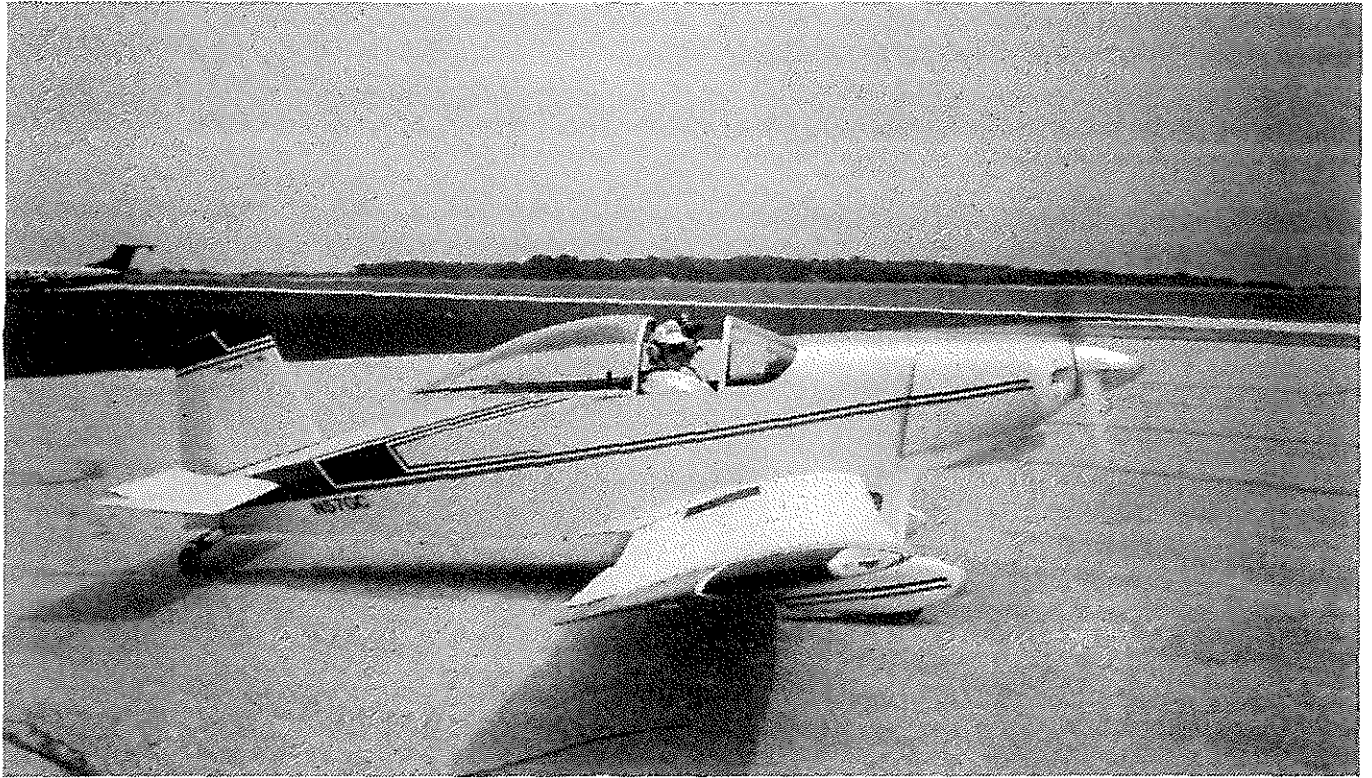
Jim and Joan Brownell help the chief cook ED (RV-6) LUDTKE



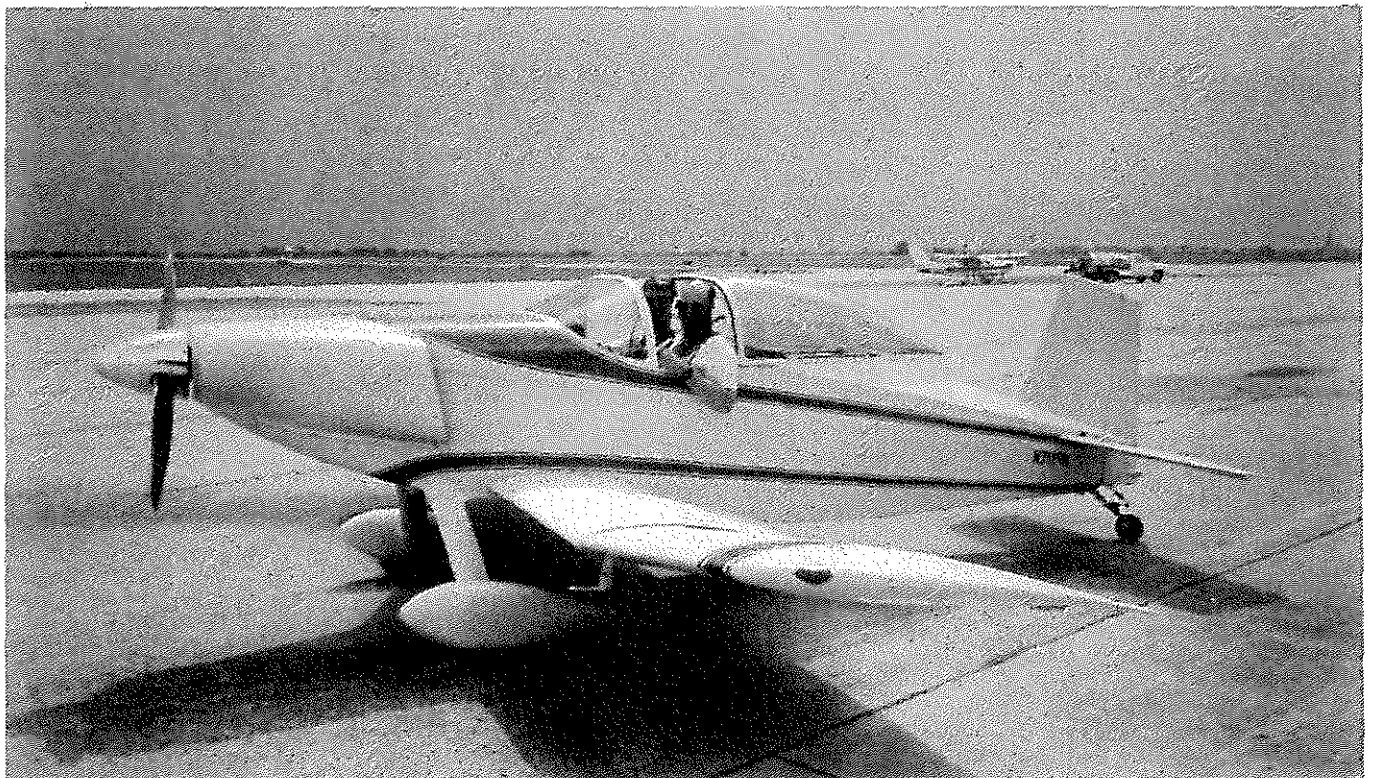
John & Vickie Evens "John's the T-18 Cap Man" For a T-18 Cap call John at (303) 420-2724



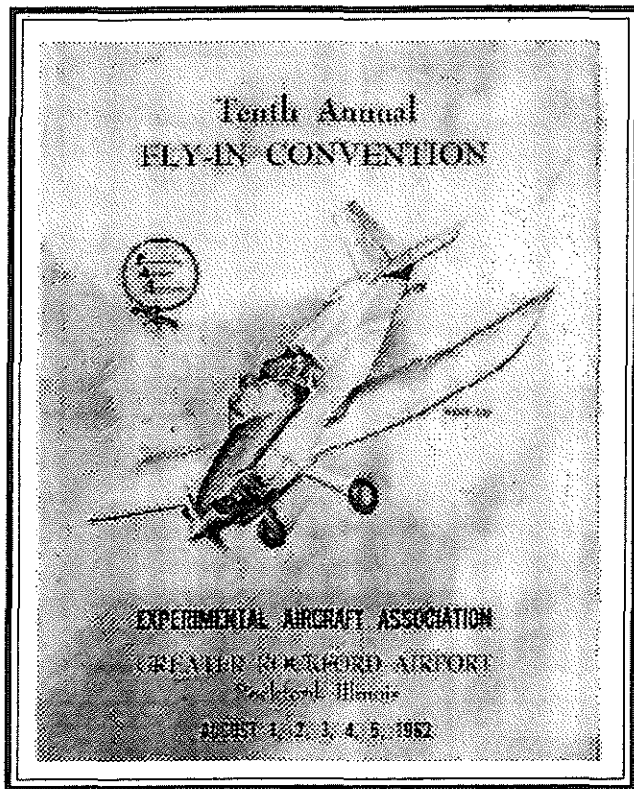
Les and Marie Conwell with their "John Thorp Trophy" from Sun N Fun for best T-18



Gary Cotner of Collinsville, OK. showing off his beautiful paint job and giving rides to boot.



Bob Highley from Lakeland, FL. and his Thorp. This airplane climbs like a homesick angel.



Richard,

This letter will probably start like so many others, so I'll get right with it. I've wanted to contribute some ideas, and such, to the newsletter but usually found most of my solutions to problems in past newsletters. Many thanks to all those for their input. Now I think I have a couple of my own to finally share.

#1- This photocopy was a surprise from my father, Bill, that obviously saved everything from when I was a kid. A package came to the house one day from him with a note attached to this program that says: "Dave's first fly-in". I had been building on my Thorp for a couple of years and dad found this old Rockford fly-in program in a box of my kid stuff in his attic. What a great coincidence to know the Thorp was pictured on the program. The issue is complete and in mint condition. Has any one else seen this before? I'm not sure if I'd ever part with it, but if there's a die hard T-18'er among us who can't live without it, my project is always in need of funding. It's now framed and hanging in my workshop.

#2-When it came time to drill the holes where the

torque tube for the stabilator trim passes through the side skins I wanted a little cleaner and tighter fit than I've seen on some. The blocks and torque tube were fitted to the frame according to the plans out of the fuselage. The tube was removed from the blocks and the frame was reinstalled into the fuselage (clecoed). Next a piece of 1/2" bar stock, about an inch long, with a #30 hole through it was installed

into one of the blocks and a #30 bit run through the hole towards the outside, through the sideskin. This produced a pilot hole exactly in the center of the torque tube. The same was done for the other side and simply enlarged to 9/16", with a "Unibit" for clearance. All that remained was to cut the 1/2" slot to the top of the skin for the torque tube installation.

#3- I thought my hip skins were going to be a nightmare after reading all that everyone had gone through to make them appear flat. The solution for me was to use everyone's ideas together. It simply went like this: Sides, rear top and the deck skins clecoed in place. The hip skin material was cut to about the right size. Pilot holes were drilled into the angled portion of the frames, sideskins, deck and top skin where the hip skin would attach. What I did next ended up sounding too good to be true, but it worked. I stuck a small piece of scrap .025" alum into the joggle area between the frame and the sideskin. Next, I laid a 6" steel scale on the angled portion of

the frame and let it rest against the scrap material. Carefully read the measurements from the pilot holes to the scrap for each frame. These points were transferred to a form block. The form block is straight for a few frames and curved for a few feet toward the forward end. The hipskin material is formed in the blocks at this time and the lower edge is trimmed of excess. At this point the rest is simple, pick up the rest of the pilot holes with a hole finder, and trim the top edge to 1/4" from the center of all the pilot holes. It really worked! And they're flat.

#4-The next tidbit is a very simple process that

I've used to finish a portion of my instrument panel. Since I wanted flight instruments grouped together and engine gages together, this left switches and circuit breakers in a "plain" field. In the end, if you're looking for a super smooth, non glare paint job on your panel, follow this. Clean the aluminum very well (soap and water, rinse well, blow dry), & prime. I used "Plasti-Kote" #216 New Ford Gray, in a spray can. A few coats, with a light sanding with #600 paper between coats and let harden for a couple of days. The magic part is to put a couple coats of latex base, satin finish polyurethane, with a foam brush over it. It's a really nice detail that I'll get a picture of for the newsletter, once it's done.

#5- Next, I need some help. I have not asked Ken Brock if he'd supply just the 1 1/4"x .313" 4130 tube for the gear legs yet, but I may if I can't find a supplier soon. I'd like to make them myself and get them heat treated to try and save some \$ on my project. The fiasco that Aircraft Spruce put me through when I asked for a quote on something that wasn't in their catalog just about blew one of the circuits! I had taxed them a request to quote this material and the neoprene at the attach points and simply got back a fax that said: "we don't stock this material." I taxed them back a note that said I understood that they didn't stock it but could they at least quote it for the quantity I needed? About a minute later my poor fax machine proceeded to rifle about a pound of paper out the receiver tray. I guess the answer is still up in the air. Unless there's a supply for this I'll end up buying the gear complete. Is there a chance of using this tube with a .375" wall? Any input would be helpful.

Well Richard, I've blabbed on long enough and I hope any of this will be useful to someone else.

Mr. Dave Goff
3442 Putnam Rd.
St. Augustine, FL 32086 U.S.A.

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Also, an extra McCauley -CI4 yellow tag prop for Lycoming O-360. Marion Smallwood
501/756-6565

For Sale: Beautiful Thorp T-18 Caps

Call or write, John Evens, 6855 Allison St., Arvada, CO 80004 Phone 303-420-2724

For Sale: Lee Skillman's Thorp Widebody Project is for sale. This is a great buy, priced at the cost of parts. \$13,500 Lee does great work so if you are looking, check this one out. Lee also has an all metal Thorp cowling for sale at \$1500. Phone: 334-633-3535

For Sale:

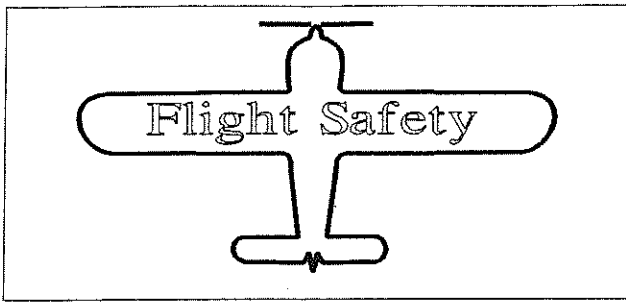
Dynofocal engine mount for T-18

Remote compass with indicator

1/8" Clecos

Set of standard body plans

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Exhaust Pipe Thermo Wrap.

Due to encountering uneven EGT's and a slightly rough running engine, I've been doing various things like wrapping my exhaust pipes with thermal insulation tape to determine what effect, if any, it would have on engine operation and performance. The material is 2 inches wide and comes in 50 foot rolls. It is silicon based so that it withstands about 2,000 degrees F. It is said to reduce engine compartment temperatures by about 70 degrees F. It also raises Exhaust Gas Temperature by about 100 degrees F. It's used by Hot Rodders and Drag Strip Cars, and is available in Speed Shops as well as through airplane parts houses catering to Homebuilders. The degree of effectiveness is controlled by the amount of overlap you make each time you go around the pipe during the wrapping process. The manufacturer recommends no more than 1/2 inch overlap. My present cowling is a Rattray and I am about to change to a Thorp all-metal. First the good news: 1)The engine speed increased about 30 RPM during climbout, which equals about nine horsepower, a 6 to 7 % increase. (HP varies as the square of the cube root of the difference in RPM) 2) The EGT increased by 100 degrees F beyond the highest peak EGT's I had seen before, as measured with my Microvision Instrumentation. 3)This produces more jet thrust effect from the exhaust. (It really does) Since the higher temperature expands the exhaust gas more it has to go faster to get out of the pipe, and, as a consequence, the airplane goes a little faster at cruise, 3 Knots I would guess. The best part of it was that now that I had effectively insulated my exhaust pipes from the intake pipes I was getting a more balanced fuel/air mixture to the engine. It ran incredibly smooth. In addition, my EGT's balanced out,

reading within 10 degrees of each other at my usual cruise power setting. Since all cylinders were now running at more nearly equal HP outputs the net effect was less fuel consumption since I was more nearly correctly leaned for all cylinders, instead of just one. (Figure that if you are limited by one cylinder that peaks 80 to 100 degrees ahead of the other three you are running 3 cylinders on the rich side of peak EGT by 100 degrees.) My fuel flow meter showed there was some difference, which would take some speed/power points to determine. Another item that helped to even out the EGT's was a baffle down the middle of the engine, splitting the plenum area on top of the engine into right and left compartments. This eliminated a high pressure area over number three cylinder, which always ran cooler than the others in my airplane.

The bad news is: I cracked my exhaust pipes twice in about fifteen hours of flying. I attribute it to the thermal stress imposed by the higher temperatures. The EGT's have been peaking out at about 1,630 degrees, and I've been running with the mixture set so the temperatures would stay at about 1,600 degrees. Never-the-less, that is more than my mild steel pipes could take. I put 1,350 hours on them at 1,500 degrees EGT with no problems, but they lasted only a few hours at the higher temperature. They're scrap now.

I have a beautiful new set of Stainless Steel pipes that are going to go on without the thermal wrap. I may get them coated inside and out with a thin, baked on ceramic material that is available, which some owners are using, but I need to know more about the process before I do it. Secondly, I am going to insulate my intake pipes, if I have any differences in EGT's.

My old exhaust pipes were very close to the intake pipes because of a very tight cowling. I now believe this was the biggest contributor to the uneven temps and rough running. The new pipes were made for the Thorp cowling so they have much more space between them and the intake pipes.

Best Regards,

Lyle Trusty T-18 N851LT

(Flight Safety: Cont)

Dear Rick:

Hope you had a nice fly-in without much rain. I would liked to have been there in Illinois ... but I didn't have the right propeller. At the time of engine buildup I had checked the bolt circle diameter between the former O-320 and the new O-360 which were the same. I was considering a three blade and when I decided to stay with a two blade after listening to prop conversations at our meetings I began a closer technical investigation, beginning with prop bolts since the prop was going on a larger engine. This led to the discovery that my prop was approved and vibration tested for the O-290, O-320 and O-340, but not the O-360 which has a 1/4" longer stroke than the O-340.

Because, as engineers and articles told me, the vibration tests are based on the mechanical structure, I decided not to upgrade the 7/16" O-320 bolts to 1/2" O-360 bolts in order to use the prop after boring out for larger bolts. Modification of the old prop, not vibration tested for the O-360, even with its fresh Return to Service Inspection, seemed out of the question since the O-360 was built with all certified components to certified standards for safety. But, I learned that 'my Hartzell propeller had no placarded RPM operation restrictions for the O-290, O-320, and O-340. Other, later aluminum hubbed two and three blade propellers were placarded for RPM restrictions 2000-2250 or higher on non dampened engines. My engine does not have a dampened counter weight crankshaft. A dampened engine has counter weights attached to the crankshaft in order to prevent harmonic vibrations at a resonant frequency which tends to cause propeller blades to break, especially at the tip, causing an Eddy Murphy shot up bus wreck 48 Hours VERY BAD DAY!

There is a restriction on operating the engine between 2000 and 2250 or there about on most propellers. Even the new ones have a restriction below 1500 manifold pressure at those RPM ranges which, of course, would not be a problem as one does not cruise at 1500 manifold pressure. And, if your engine did have dampened counterweights,

the operation restrictions might not apply. As I mentioned, vibrations can result in blade or tip failure, causing real trouble.

I found the best application for my O-360 was a McCauley C214 with 16E blades used on Mooneys. It had no ADI's and no vibration RPM restriction. I was lucky enough to find a good one at Memphis Propeller. The support and interest was so good from Mark. I am sharing his phone number: 601/895-5282. Of course, I was glad to depend on him as he has supplied me with a yellow tag propeller close by.

The Mooney propeller is fat which will provide climb from the O-360, but with retract gear I expect to be operating between 2000 and 2250. At 25 square the O-320 with the Hartzell HC82VL1C cruised at 204 with maximum speed of about 230, winning a trophy at Sun 'n Fun. The thin or narrow blade with less drag, of course, facilitated a faster cruise while still providing constant speed climb performance ... which is a bit of a commercial since this propeller is now available for someone with an O-290, O-320, or O-340.

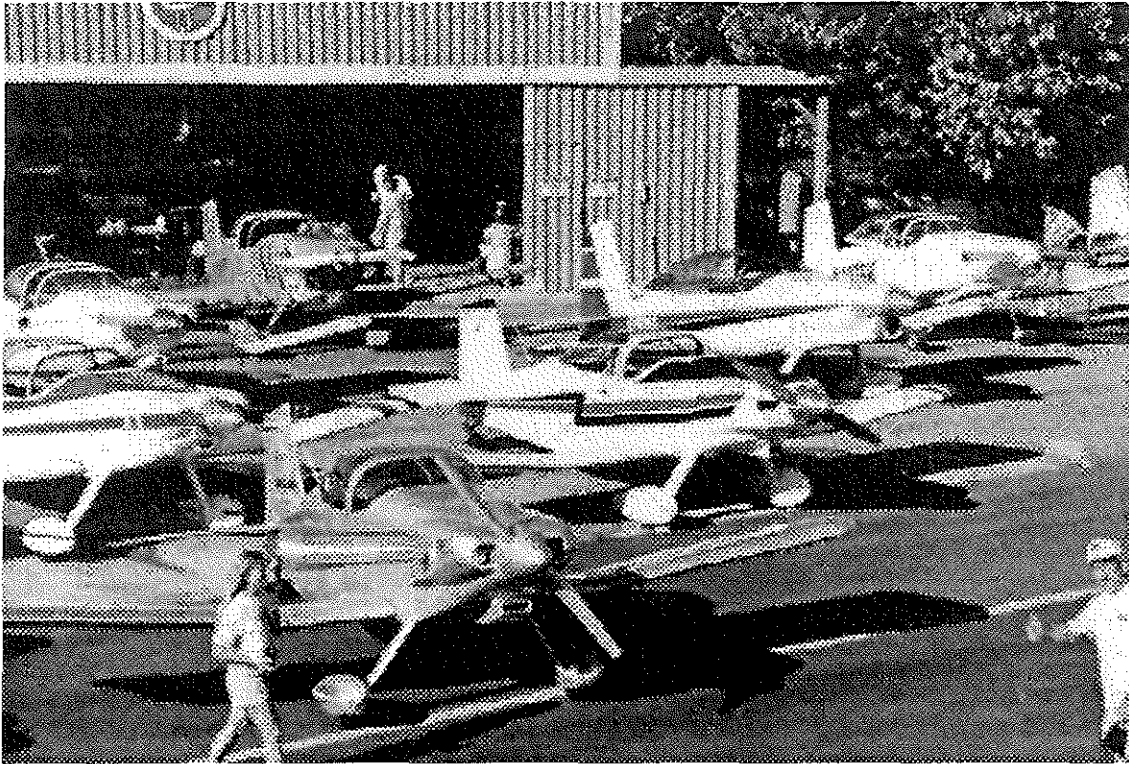
But, my point of writing this missive is to point out the importance of matching the correct propeller to the engine in order to avoid prop vibrations that can result in blade or tip failure, ruining an otherwise good day.

Build an airplane, not a time bomb, wrote a Hartzell engineer, Brian Meyer, specializing in vibration testing, who also used to work for McCauley. He wrote an excellent article on how to choose a propeller in July '94 Sport Aviation, page 41. For direct contact with Brian who has built several planes, he can be reached at Hartzell: 937/778-4374.

At McCauley 1-800-621-7767 tech reps were also very helpful. Yellow tagged certified is not enough. It has to be the correct propeller.

Sincerely, Marion Smallwood

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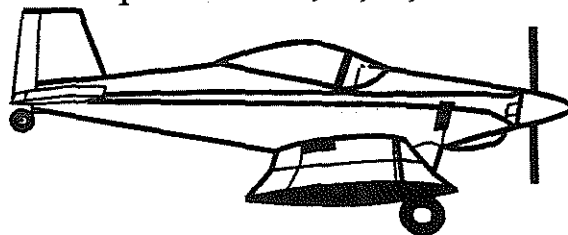
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