

T-18 NEWSLETTER



Barry Hall & Jud Carter's Thorp T-18, N31BD was build by Bob Dial

IN THIS ISSUE:

BLAZING A TRAIL by Richard Snelson

SUN & FUN 95 by Richard Snelson

0-290G by Bob Hartmier

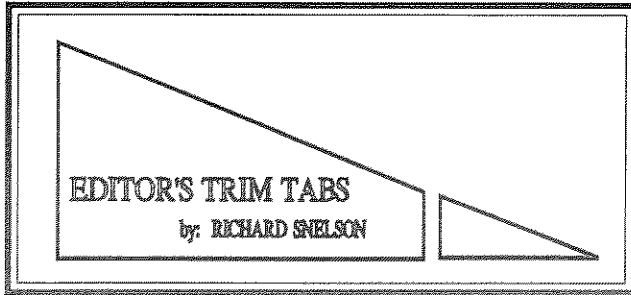
ENGINE TIPS by Ron Gerrard

FLAP TRIM SYSTEM by Doug Frantz

OUR SUPPLIERS

PROJECT FOR SALE

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.



Let's get the events for Oshkosh in here first. It's simple everything is on the first Friday. We have the EAA Nature Center starting at 11:00 AM to 3:00 PM. We will cook Brats and serve lunch at noon. Sign up on the flight line Thursday or early Friday so we can have some idea of how many will be there. We will buy extra so don't stay away if you forget to sign up. Cost will be about \$3.00. We will hold the T-18 Forum right after lunch, also in the Nature Center. It was either that our hold it Sunday night at 8:00 PM, that's the time Wes Schmidt offered us. Who in the heck wants to spend Sunday at the fly-in and then stay or return for an 8:00 PM forum. Ben Owens was gracious to get a notice in Sport Aviation for us. Let's put a couple of signs up on one of the Thorps on the flight line Thursday about the Forum/Lunch and banquet. **Would one of you early arrivers please volunteer for this.** That same Friday evening we will again return to Butch's Anchor Inn for our annual banquet.

Bad weather kept the attendance at McAlester down this year. Leroy Holt said about ten Thorps made it. Sorry we missed this one. We will try to have the Spring event in June next year, the weather should be a little more settled by that time of year.

I got a call last week that there will be a Thorp T-18 included in the Wright Brother's Awards again this year. I'm proud to say that I have been selected to receive this award, by the previous Thorp T-18 Wright Brothers Winners. Each year at Oshkosh the past winners select one T-18 and it's builder for this award. The award is given at the Dayton Airshow on the weekend before Oshkosh. I promise to write a story about this award and the fabulous weekend that comes with it.

As always: I can use your help in getting articles together for the newsletter. Send me what you can. There are a lot of folks that would like to know how you accomplished and solved the many small problems that occurred while building your Thorp T-18.

OSHKOSH 1995 EVENTS

Friday July 28, 1995

11:30-1:00 pm Nature Center

Join us for lunch followed by

1:00-2:30 pm Thorp T-18 Forum
in the Nature Center

6:00 pm Thorp Banquet
at Butch's Anchor Inn

My Email address is:

RSNELSON1@aol.com

I check for mail twice a day and respond quickly.

FREE

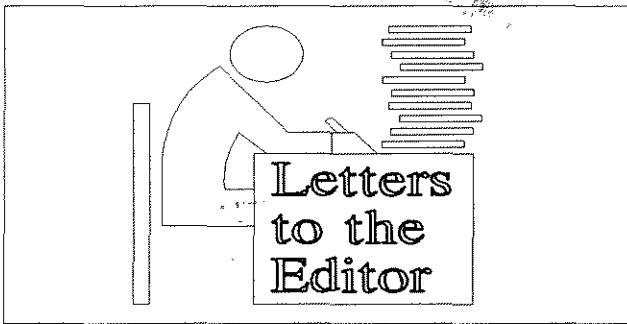
Used Rattray type "C" cowling including gill fairings. Will ship free anywhere in Continental U.S.

Bob Hartmaier

8 Holly Road

Jamesburg, NJ 08831-9670

908-521-3069 or 70422.3151@compuserve.com



Dear Richard,

I encountered a problem with my fuel gage that stumped me for over a year and only found the solution out of desperation. It would work fine on the ground but would be intermittent in the air. I tried everything I could think of from grounding, new wires and connectors, to a new sending unit. None of which corrected the problem. Finally, I took the sender wire which was ty-wrapped to the tachometer cable away from the the cable and it has worked perfectly ever since. I would suggest not tying anything to the tach cable.

Another problem developed with my compass after ten years of satisfactory operation. I thought the compass needed repair but it was fine. It had always been mounted near the tachometer with no problem, but over the years the tachometer case became magnetized and effected the compass. Moved the compass and it works fine.

Maybe other people are aware of these things and know to avoid them but I didn't, and it sure caused me a lot of aggravation. Sincerely, Jim Hockenbrock



Dear Rich,

Happy to report that my wife, Elaine, is recovering from last year's cancer struggle. She looks great and says that she feels the best that she has felt since Christmas 1993! In fact, she is planning on going to Oshkosh with me this Summer.

Ain't that great?!

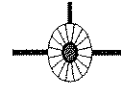
Bad news on the job issue. My company is in

trouble and they are giving incentives to leave. I probably will do that and go on to something else. I have a fair amount of ability in the area of precision flow measurement and I believe that I have a lot of energy left in my body to continue to pursue this career. Besides, I love it!

Boeing has some of our special turbine fuel flow meters on the 777 for flight test and I was fortunate enough to visit the plant a week and a half ago. Got to get on the prototype and a Brit Airways aircraft on the ground and I saw a couple take off. Wow! What a monster!

Well I expect to be very busy for the next few weeks and I hope that I can log some Thorp building time. It is excellent therapy for me.

Sure appreciate the great job that you are doing with the newsletter. It is top rate and I can tell that you put a lot into it. Thanks again! See you this Summer at Oshkosh. Sincerely, Don Ruffner
Glad to hear your wife is doing fine--- Rich



Auburn Field - Seattle Washington 11/94 What a wonderful airplane ! Got a opportunity to take a ride with Cecil Hendrix who has been flying his T-18 for some 20 years. I've been flying gliders so the little stubby wings of the T-18 made me feel like I was riding on top of a 20-foot long hotdog bun at liftoff. However, any comparison to a hotdog ended there.

The T-18 really moves out. In no time we were out of the pattern and had the little craft at cruise speed, on step. The forward visibility with the nose down approx. 15 degrees is really fantastic. Thorp really had the pilot in mind when he designed this ship.

After making several turns and a couple of aileron rolls, we did some slow flying. This seems to be a real honest little ship with no surprising tendencies. Next to no back pressure on the stick and little rudder input was needed to

make moderate turns at cruise speed. Also, It slows up fast when you throttle back. This should be helpful for slowing up for other traffic in the pattern. Slow speed characteristics were what you would expect from a well designed airplane.

Roll response was terrific I'll have mine flying next year. Steve Barrett, Seattle Washington



Hi Richard,

I'm in the process of making a new drawing of my tailwheel installation, which adapts parts of a Scott Tailwheel to a Whitman type tailspring and mounts on a standard Thorp "Bolster" at the fuselage attach points. It increases the ground angle of attack by about one degree, which in combination with the extended gear gives the T-18 a more compatible ground attitude with respect to stall angle of attack. It takes off sooner, lands slower, and has about half the drag of the flat tailspring. In addition, the spring rate of the tailspring more nearly matches up to the main gear spring rate so the rebound from a hard landing is flat - not tail high. On top of that, you can put a streamlined fairing on it if you really want to get fancy. With all of that you still have a steerable, full swiveling tailwheel for the same price as a Scott and a flat spring. Interested?

I've been reading the mail on the T-18 Forum and thinking of jumping in with my two cents. I've been flying my airplane for 21 years and have about 2,250 hours on it now. I just finished putting an Electronic Ignition on it incorporating aircraft spark plugs, (not automobile plugs) and have shielded the primary coils, which have to be mounted in the engine compartment. It's a bit of a Job! The benefits show up mostly at high altitude with lower fuel consumption and increased reliability.

I talked to Bob Archer on Saturday, at the Rosamond Air-Park Fly-in Pancake Breakfast/

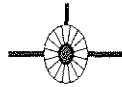
Lunch sponsored by EAA Chapters 49 & 1000. He is the guy that designed the antennas for the T-18 fin tip and wing tips, sold by Sport Aircraft. I had never been able to get an explanation of what kind of antennas these were before. I learned they are Gamma Balanced and the design goes back to spacecraft antennas. I had put a Bird Wattmeter on mine and was quite surprised to see the results - up to twice as much power out compared to a regular aircraft antenna. He is available for consultation/design work. His number is (310) 316-8796. He lives in Torrance, CA.

On the subject of fuel tanks:

I started off back in New York with 29 gallons in the main, period. With a 150 HP engine and flat country where I rarely had to go over 5,000 feet that would get me over 400 miles down the road. That's quit a ways back there in the weather patterns prevalent. When I came out west I suddenly found I had to climb to 8 to 10 thousand feet to go most places from Lancaster and my legs were not long enough. So I put in a 10 gallon aux tank in the baggage compartment. That was much better. Then I put on a 180 horsepower engine. My first long trip was to Alaska. Since we had 65 pounds of gas in the baggage compartment and we had to carry 35 pounds of Survival Gear, most of our baggage went under the seats, into the seat cushions or on our backs. Not too red hot! So I redesigned the wing when I got home. There are several benefits that accrued, however, I'll stick to fuel. I put 14.2 gallons usable in the first two bays out from the fuselage, 7.1 on each side. Now I have a total of 42.6 gallons usable, which gives me 4.3 hours endurance at 75% power. I cruise at 170 to 180 KTAS, depending on gross weight, so I can make 3.5 hour legs. That is a good usable 600 nautical range with excellent reserves. Albuquerque is 599 NM and I regularly make it in 3.3 hours no wind. When running around California I like to put 28 in the main and 4 gallons in the wings. That gives me the ability to run the main way down if I choose to and still feel comfortable with the wing fuel there.

Because I have a fuel flow computer I had to put in an electric fuel pump on both wings and the main which provide fuel to the engine driven pump, and to the engine if the main pump fails. Its axiomatic that if you have an engine driven pump you must also have an electric pump in any low wing aircraft.

Enough for this time, Thanks for the advise on AOL T-18 Forum access. Lyle Trusty
Email address is DadTrusty@aol.com



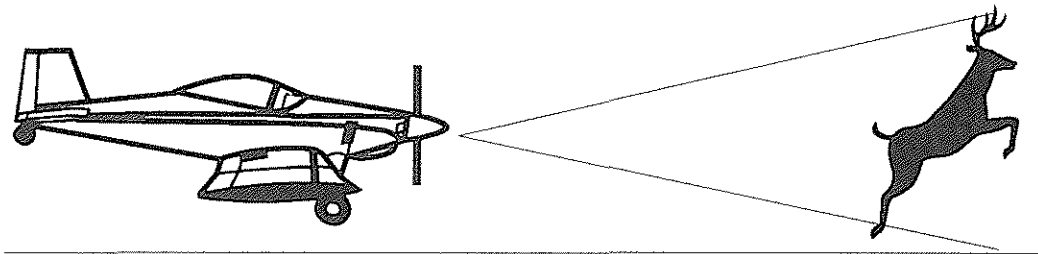
Dear Richard,
Vicki and I hope to see everyone @ McAlester. We plan to fly up to Branson, MO afterwards, on Sunday, and probably stay a couple of nights and see some shows. We really love to travel in the T-18.

It seems as though very strong winds have been a problem the last couple of months here in Denver (at least on the weekends, of course!) --- Haven't flown nearly as much as I wanted to. My T-18 is flying very well - around 350 total hours now. I just replaced my battery for the first time. The old one was 4 1/2 years old and still going strong, so I probably wasted money, but I didn't want to get caught somewhere - been told that 4 years is probably a good average life, and that they fail rather suddenly. The original (and replacement) are Gel-Cells, Johnson Controls Mod. U1-31. It's a 30 AH rating and sure has been good. I have a Ford Motorcraft electronic regulator, and Delco Automotive alternator (45 amps).

I recently completed a new set of wingtips for my T-18. They're a Hoerner style tip with position/tail lights and strobes. I made them "Ala Rutan" by hot wiring blue styrofoam, and laying up 4 layers of 8 oz. bidirectional fiberglass with West Systems' Epoxy. Then removed the foam core. As a test I put the new left tip on and left the old tip on the right side. My ship is well balanced, and normally with just me in the left seat will be a

little left wing heavy, requiring some roll trim. Well, during this test flight, I had a strong right roll/turn tendency, requiring a fair amount of left stick force. The new tip was producing considerably more lift! The first few landings with both tips (new) on proved that my approach speed needed to be slower than normal in order to avoid excessive "float" in ground effect. Not bad! I'm really excited about these! I see some potential for increased cruise speed -- we'll see.

Also, I made another change recently, I made some new control sticks, straight ones, as per John Throp's drawings. I made my originals offset to the outside, as I had seen others do, to exactly center the grips with the center of the seats. Well, let me mention something that others may have noticed. If you have long legs, as I have, your legs may be positioned right between your stick grip and the sidewall of the cockpit. Or is you passenger has thick thighs, the result is the same to the right. Either way, you may find it rather hard or impossible to get full stick throw either direction (However, you can always shift your leg towards the center). Granted, there are few times when full stick throw is needed in a T-18, but when you do it's nice to have that extra 3/4 to 1". This may not be a problem with widebody versions. Just food for thought. Sometime, you know, it's pretty hard to better John's design. Best Regards, John Evens N71JE

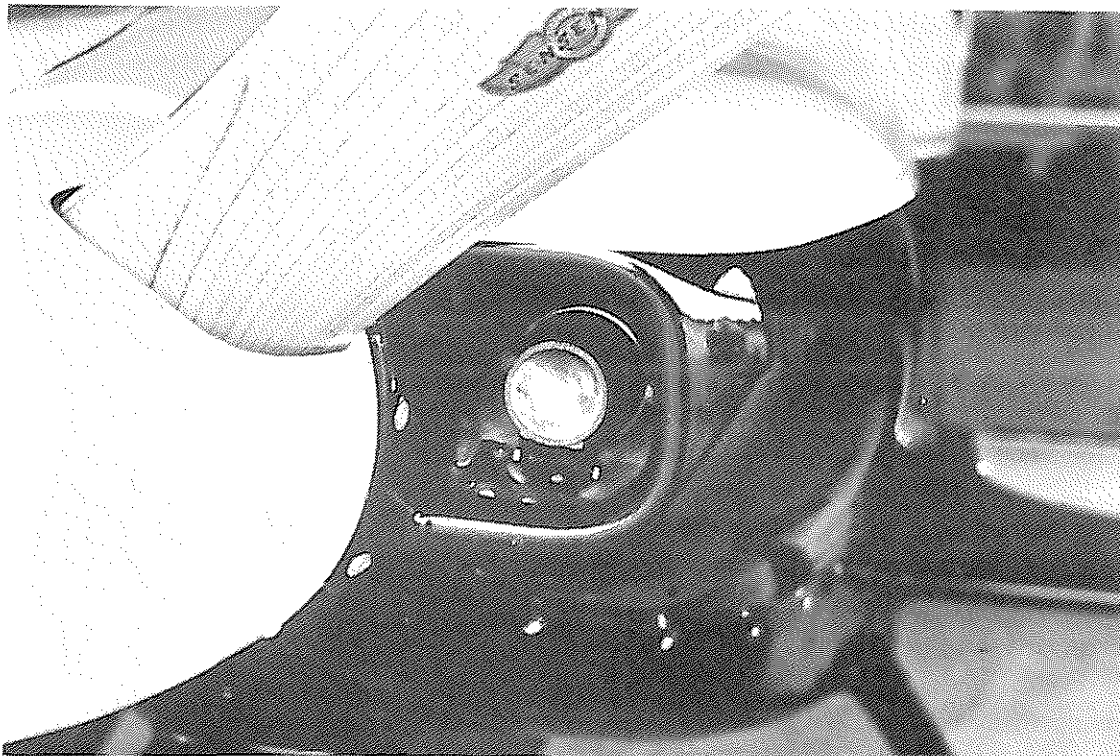


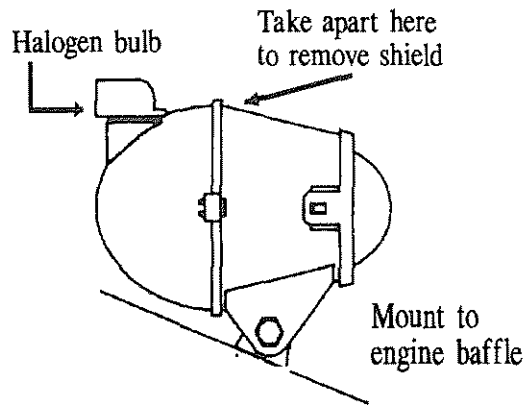
"Blazing a Trail"

by Richard Snelson

Here's a tip on a neat landing light. It's compact, lightweight and puts out a flood of light. As I visited the Lancair display at Sun & Fun, I noticed a tiny coke bottle lens staring at me from the air inlet of a factory built Lancair cowling. I had been looking for a landing light for some time, and had put off purchasing one because I didn't want the problem of building a bracket for a conventional type bulb. Sitting there in this \$75K airplane was a little marvel of a light, with its own case and mount. I was sure that the thing would cost at least \$100 bucks and that it could not put out close to enough light for landing. The near-sighted coke bottle lens "BLAZER" sure fooled me.

Before I tell you where to get this little gem and how much it will set you back, let me tell you about its features. It's powered from 12 volt dc, has a quartz halogen bulb, internally is all reflector with a thick coke bottle lens in front. Trying it out in my backyard it lights up backyards four houses away. It's made of light weight thermoplastic and takes the heat of the halogen bulb with no sweat. Really folks it's not a lot bigger than the bottom of a coke bottle. The really big surprise came when

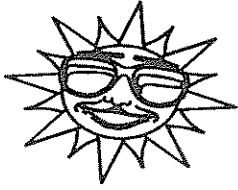




the salesman told me, "It's called a Blazer and you can pick it up at WALMART in the automotive section". Two of them cost \$39. What a deal!

The Blazer is a driving light that you can mount in the lower front bumper of a number of cars. One thing you will notice, when you turn it on, the light pattern is cut off sharply across the middle. The Blazer has an internal aluminum shield that keeps the light out of oncoming drivers eyes. To remove it, for a full pattern, you must take the light apart. Here's how- with a small pen knife work around the large diameter cutting the small amount of rubber cement away and gently prying the lip up as you go. This will take several trips around and some patience to do without breaking the case so stay with it. Two plastic keepers hold the case together- by compressing them it will come apart. Don't touch the halogen bulb, or the reflector portion of the light while it's apart. Oil from your skin will shorten the life of the bulb. Remove the aluminum cross reflector with a small phillips screwdriver and you can reassemble it and get a full lighted pattern. Remember to put a little rubber cement in the grove as you put the two halves to together This will keep out moisture and help hold it together. Let me know how this little guy works for you. I'm on the way to the airport to install mine now. The Wal Mart product is called: Blazer projector "THE ULTIMATE DRIVING LIGHT" C8004K.





Sun & Fun 95

The flight operations team at Sun & Fun had the arrival path well established and engraved in the clear blue sky over the Lakeland area. Arrive north at the power plant on the north east corner of the lake, fly west along the north shore and turn south following the path of strobes to the airport control tower. At that point, the tower provided turning instructions to the appropriate downwind. "Black and white Thorp keep it in close", was the call. On final, "Thorp, keep it coming, fly to the orange triangle on the runway". Touching down on the triangle shortly beyond, I went back into the air from a dip in the taxiway being used as the runway, It was sure funny as I passed a flag man signaling a turn. The Thorp was still about a foot in the air- that would have been some turnoff!

Pulling into the homebuilt area I found the Thorps parked well up front. Bob Highley's T-18 was marking the corner position. How did he get there first? Just kidding. He had made sure we had a prime location for our T-18s. Thanks Col. Highley. Bob has the best job in the country, he works for the Sun & Fun organization full time. During the fly-in Bob is the Flight Operations Officer. He's one busy fellow during this event. Looks like a great job, any openings on the staff Bob??

I counted 10 Thorps in the row, later to increase to 12 or more. A surprise to see Sweet Marie, Ken Brock's Thorp from California. Ken had problems with his Cessna 210, so he jumped in the Thorp for the trip. Ken and Marie were very busy at Sun & Fun working their booth and flying in his



Part of the Thorp line up at Sun & Fun 1995



Les Conwell new Thorp with it beautiful paint job.

gyrocopter during the airshows. They still had time to show their love for the Thorp. I found Ken out on the flight line each morning wiping the dew off his T-18. A new T-18 was in the lineup, it belongs to Les Conwell who lives in the Lakeland area. Les had just had it painted a beautiful cream color with red trim. Congratulations Les, you have built a fine looking airplane.

At first glance it had appeared that Sun & Fun was just another, only smaller Oshkosh. But the more I experienced, the more I realized that Sun & Fun stands on it own. Or putting it another way: "outstanding on its own". Everyone I talked to told of the many things that Sun & Fun had to offer. They mentioned good camping and lot of good places to stay in and around the Lakeland area. Everyone talked of the friendly folks- the volunteers- that really make Sun & Fun happen. We had the best of the best in that category. Debbie and Bill Williams, a real "T-18 family" had invited us to stay with them. They live about three miles from the airport and both take their vacation, to work as volunteers during the fly-in. Each morning it was off to the airport, for them, to work inside all day, while all the rest of us are out having fun on the flightline. My stay with them was great. Their new home is beautiful, and shows the great craftsmanship of Bill and Debbie. They are doing all the interior finishing and it show Bill's careful attention to details. Bill's new Thorp still isn't painted, and I can sure understand why. The house had to come first.

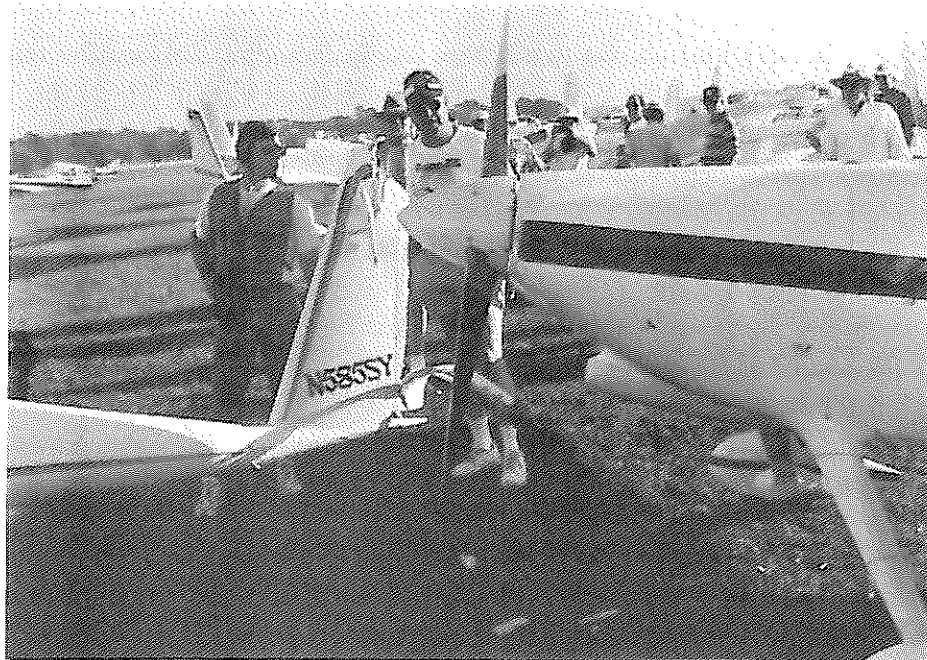
The more I talked to Bill about Sun & Fun the more I was impressed with the many traditions and fun things that go on there. These folks really do like homebuilts and go out of their way to make all feel welcome. Warbirds, were there too, but they weren't running the show like at Oshkosh. Bill suggested the Corn Roasts as one evening event I had to go to. One of the local EAA Chapters put it on each evening in the campground. They sell hundreds of roasting ears that are first soaked in water and beer then cooked in their husks over large pits. What a taste, a cold beer and hot roasting ears.

Sun & Fun has lots of little guys selling used aircraft parts and equipment, many more than you find at Oshkosh. I think it's because the cost of booth space is much more reasonable than Oshkosh. Sun & Fun also has a large warehouse that's used to set up a parts sales for anyone wishing to assign parts. Everything from engines to airframe were for sale. It's the place to go to find that part you've been searching everywhere else.

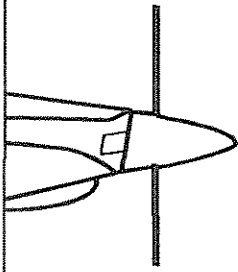
The food service at Sun & Fun is run by the "Boys Club". They service a great breakfast for a fair price. Lunch is another matter and doesn't come cheap. Food is good and selection isn't bad, but be prepared to spend a bunch for lunch. That's about the only thing I found to gripe about and only did that because several of my EAA chapter members brought it up at one of our meetings.

The Thorp forum was scheduled for Tuesday morning at 11:00, I really wanted to attend but with a new job I had to get home. A weather briefing showed a cold front heading for northern Florida and Georgia. I made the decision to leave Lakeland early Tuesday to get far enough north so that I wouldn't get caught in the peninsula. The plan worked, showing 195k GPS ground speed I got to Rome Georgia very quickly, landing into 35 mile winds as the front approached. Spent the night there to let the front pass. Got out the next morning and made it as far as Evansville, Indiana. Winds were high and turbulence was nasty. Got the Thorp in a hanger and drove home from there. Flew down the next day in club plane with my instructor, got an hour and half instrument practice on the way, so not all wasted time.

It was a great fly-in, I recommend we turnout the Thorps for Sun & Fun next year. We can all get together at one of the local restaurants for a feed and social roundtable one evening. How about it Thorp owners? Let's set a new record for Thorps at Sun & Fun 96? Thanks again to Bill and Debbie Williams for having me.



*Just threw this in to show the dangers of taxiing a tail wheel airplane.
RV-6 "ATE" the tail off poor little N585SY*



0-290 G ENGINE

BY Bob Hartmier

Back in 1991 Ken Morgan contributed an article on the Lycoming 0-290G engine. Since I had several reasons for tearing down my engine anyway, I decided to see what could be done about incorporating his suggestions during the rebuild. My engine had been built up from a GPU engine about 15 years ago, but it had been sitting all that time without being run or ever having been properly "pickled", so I decided that a tear down and inspection was warranted. Also, my father had used an adaptor plate over the vacuum pump pad for a breather, and since I intended to use a vacuum pump, I needed to split the case so a hole for the breather fitting could be drilled and tapped in the boss on the top left front of the case as per the standard aircraft engine set up. In the interest of smooth running, I also wanted to get the moving parts balanced. Since a member of my local EAA Chapter owns an engine shop, this could be easily accomplished. Charley will do any kind of engine work, but he and his brother specialize in building up the engines used in those off-shore racing boats that go about 500 mph, and he knows what he's doing when it comes to engines. And on top of all that, my engine also needed a cosmetic clean-up and paint job.

So anyway, since I was going to do a tear down anyway, I dug out Ken's article and began to do some research. I found out that the part number Ken referred to for the higher compression ratio piston was a little bit confusing. Just to review, the 0-290D2/D2A uses 7.5:1 compression ratio pistons, P/N 69841, and the D2B/D2C uses 7.0:1 compression ratio pistons, P/N 70396. Oddly enough, both engines are rated at 140 hp at 2800 rpm (take-off for 5 minutes) and 135 hp at 2600

rpm (continuous) using 80/87 octane fuel. Also, the timing for the D2/D2A is 18 degrees BTDC instead of the usual Lycoming 25 degrees BTDC. As far as I can tell, they are identical in every other respect. I discussed this with the folks at Don George Custom Engines, and they recommended that I go with the 7.0:1 pistons since the D2B/C engines have a better reputation in the reliability department. You can take this advice for whatever you think it's worth. It seems to me that a higher compression ratio should give higher power, but for some reason Lycoming doesn't agree. The 7.5:1 pistons seem to be fairly abundant from the used parts suppliers at about \$75.00 each, but the 7.0:1 pistons are virtually non-existent as far as used but serviceable is concerned. I ended up buying new ones from El Reno for about \$130.00 each. You pay your money and take your choices.

Enough about pistons, what about the valves? Ken's info was right on target as far as the valves go, although prices have increased in the last four years. Intake valve seat P/N 72057 P30 is required to allow enough material for the machine work to be done. This is an 0-290D part. The intake valve is P/N 73938 from the 0-290D2/D2B/D2C, 0-320, and 0-360. This valve has a slightly larger area in the face, and I'm also told it has a "venturi" shape to the bottom of the stem which aids in better breathing.

As Ken stated, the standard GPU exhaust valve can be retained, but if you want the "hot set-up", the sodium filled exhaust valve P/N 17235 can be installed. This valve aids in the heat transfer from the combustion chamber to the cylinder head

cooling fins, and hopefully helps to extend engine life. They were first used in the more powerful versions of the O-235, some of which went as high as a 9.7:1 compression ratio. This valve has a larger stem diameter of about 7/16" and will require reaming of the guides. They are also expensive at \$185.00. Each! The standard seat is retained, so long as it is the hardened "stellite" type. I might add that both valves can be used with solid lifters, although the intake comes from an engine with hydraulic lifters. Don't, however, under any circumstances, attempt to use the cam from the hydraulic lifter engines with the solid lifters in the GPU or the basic O-290D.

The combination of the D2 intake valves and the higher compression pistons gives us an extra 10 horsepower at 2800 rpm. if you want to experiment with props and carburetors, more rpm will give still more grunt. Note that the GO-290A helicopter engine(gearred) is rated at 170 hp at 3400 rpm. This engine has the 7.5:1 pistons, and requires at least 91 octane fuel. Can we plot 140 hp at 2800 and 170hp at 3400 rpm and interpolate? I'm not sure, but I guess we would be arriving at some sort of realistic figure. Does anyone out there know how to determine horsepower without a dyno? At present I have the wood Sensenich 66LM72 prop designed for the 125/130 hp engine which I'll use at first to get started. I'll report on the performance as soon as I'm flying and have some data.

Oh yeah, the cost. Don George Custom Engines in Orlando did my cylinder work for me. They are a certified shop, and will return yellow tagged cylinders, but they don't ask what kind of engine or aircraft you are going to install them on. They are also very knowledgable about what mods are practical to do, and the required parts to use. My cost to have new intake and exhaust guides installed and reamed, new intake seats installed, cylinders disassembled, cleaned, inspected, honed and reassembled, used intake valves and new sodium-filled exhaust valves was \$1,734.28. If you retain the original exhaust valves, you could save \$740.00, so it would come out to about

\$250.00 per cylinder, which is more than the \$160.00 that Ken stated, but reasonable considering inflation and the fact that I got completely reconditioned cylinders. Of course I strongly recommend that you have a GPU and O-290D parts manuals and an O-290D overhaul manual to refer to while undertaking the rebuild of this engine, and follow all standard aircraft practices. If anyone has any questions, my number is 908-521-3069, or perhaps you could try using Email at 70422.3151@compuserve.com. Bob Hartmaier S/N 573

FOR SALE

II MORROW Appollo 618TCA Loran, includes installation kit, Documentation and Manuals. It has been updated to the latest configuration, will be yellow tagged and data base updated at the time of sale. It is a great deal for someone who wants the best Loran receiver made, at a very low price. You can hook this one up to your CDI, Autopilot, and Altitude Encoder very easily. They are going for \$700 to \$800 in Trade-APlane but I will sell it to any member of the T-18 Mutual Aid Society for \$550. Call Lyle Trusty at (805) 949-1131

SENENICH 66/78 WOOD PROPELLER. BRAND NEW, NEVER INSTALLED. FACTORY PAINTED GRAY WITH LEADING EDGE "ESTANE". POSITIVELY RAIN PROOF. KEN BROCK T-18 SPINNER CUT TO FIT THE 66/78 PROP. SPINNER USED 300 HOURS. NO CRACKS IN IT OR FRONT AND BACK PLATES. 6 PROP BOLTS GO WITH SALE. A 66/78 IS THE PERFECT PROP FOR A 160 HP. T-18. VALUE \$1200 - ASKING \$800. 817 766 2523

LYCOMING 0290G overhauled with new pistons #68338 & #62916; 0320 oil pan with intake tubes; Camshaft & Tappets reworked by Aircraft Eng. & Acces-, Dallas Texas; 1/2" Valves; MA-4SPA Carb. not to latest AD; two Bendix Mags. reworked to latest AD as of 1985 & not used since. \$5000-00 FRANK RONCELLI (805) 943-7625

ENGINE TIPS

from Ron Gerrard

A couple of items I would like to pass along. In regards to rough running 4 cyl. Lycomings I think part of this is inherent in the engine but they really should run smoother than some I have experienced. My T-18 has a 0-320 B3B with the flat mount and never has been very smooth running. I have about 900 hrs. on it now and it has been trouble free except for the vibration. In fact at about 300 hrs. when I upgraded the panel for IFR the vibration was a problem with gyros and I had to use some innovative panel shock mounting to prevent gyro precession and accelerated bearing wear. I have done all the standard things such as prop balancing, both static and dynamic, installed the 12# weight on the ring gear support, changed the carb induction system, checked fuel flow, changed hydraulic lifters, checked cam lift duration, and valve timing, and even installed a new carburetor. Every one of these things seemed to improve the operation at the time but I think part of that was psychological.

At the same time I was doing these things another chapter member with an RV-4 was having the same experiences, doing all the same fixes. He finally called Lycoming and one of the engineers told him if he had done all these things and still had roughness it could only be one thing and that would be what he termed "dust" in the engine oil system, apparently a very fine metallic residue that causes lifters to malfunction. Anyway he pulled all the lifters out, drained and flushed the engine out as thoroughly as possible with solvent, and swears the engine runs fine now. I am currently doing a top overhaul and will flush mine out prior to reassembly also.

If anyone is interested in aileron gap sealing, I found on my first test flights back in 1987 the lateral stick forces seemed rather high at cruise speeds and in talking to a friend with a Christen Eagle he reduced his with gap seals. I installed a product called TUCK tape, available in automotive stores. It comes in clear or various colors. I used the clear, installed it in late 1987, and it is still functioning very well. It significantly reduced stick pressure and probably reduced drag to some degree.

Our T-18 N586RG has been a delight to fly. We have been to OHSKOSH four times and by last count have landed at over 85 airports in the central and western states. We fly out of the Willamette valley in western Oregon so we have a lot of fog and low stratus days, consequently I did all my IFR training and took the check ride in the T18 which was a very satisfying experience.

Well I have rambled on but one more thing. In the latest newsletter there are pictures of the Kentucky Dan gathering, and one T-18 appears to have a auto engine installation. I can't quite make out the N number. I would really be interested in talking to the owner. I have a 230 V6 engine and Blanton PSRU with a Skybolt project I'm working on but may end up installing an aircraft engine in the Skybolt due to inverted issues, etc. If so, I may sell the engine package or think about converting the T-18. I have enclosed a ssa envelope Rich if you could put me in touch with the owner. Ronald Gerrard
Phone 503-746-0452

Editor's note: Owner is Ben Cupp of Yellville, AR More pictures of his airplane in this issue.

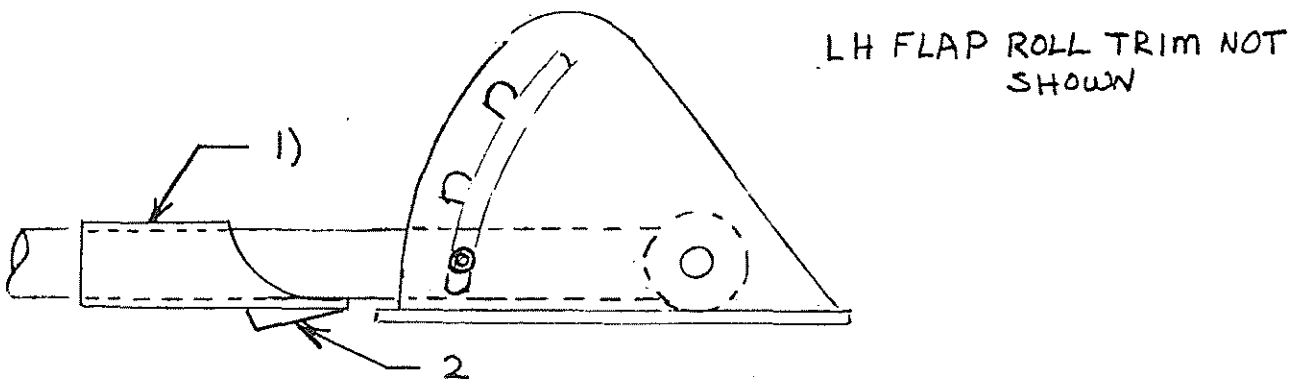
FLAP TRIM SYSTEM

by Doug Frantz

Hi Richard,

I was glad to read in #94 that extending your vent tube solved the lean-running problem. My T-18 still has the -32 carb, and has the reverse problem - too rich. I take off with the mixture out and about 1/2", and this works fine. I do have a 10-5009 carb which I plan to install if I ever get caught up with my procrastinating. My fuel vent is the same length as yours is now (3"+ or -) and provides plenty of ram air.

I am enclosing a drawing of the roll trim device we discussed on the phone. I have been using this for five years, and it works great. The downside is that it only works with manual flaps. My airplane always flew right wing heavy with another person in the right seat, but this allows the RH flap to be trimmed down in flight to compensate.



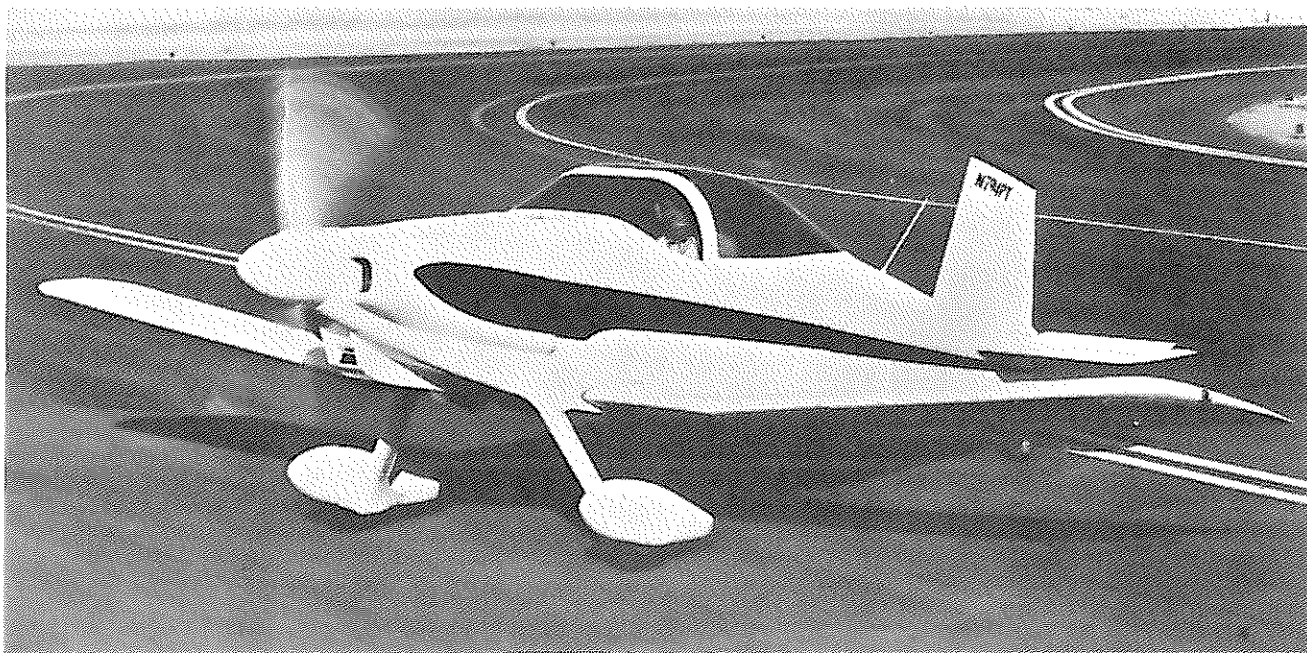
- 1) Aluminum Tube Sized For Slip Fit On Flap Handle
- 2) Weld (TIG or Lumiweld). File to wedge shape.
 Slide rearward to trim RH flap down. LH roll trim knob should be screwed OUT all the way.

OUR SUPPLIERS

SPORT AIRCRAFT Inc. and KEN BROCK MANUFACTURING

SPORT AIRCRAFT: Phil Tucker, Mr Sport Aircraft continues to be our primary supplier for Thorp T-18 parts. Making parts over the years for hundreds of T-18s, Phil has also built his own Thorp T-18, pictured below. Phil makes most of the parts he supplies himself but does purchase some items from other fabricators. This includes fiberglass and some welded assemblies. Phil is very helpful and will do his best to assist builders when problem arise. Including replacing items that are not correct. A complete parts list is available from Phil, it is very useful and make an excellent reference for any builder or owner. His address and phone follow:

Sport Aircraft Inc.
44211 Yucca, Unit A
Lancaster, CA 93535
Phone: 805-949-2312



Phil Tuckers Thorp T-18

continued next page

Our Suppliers (continued)

Ken Brock Manufacturing

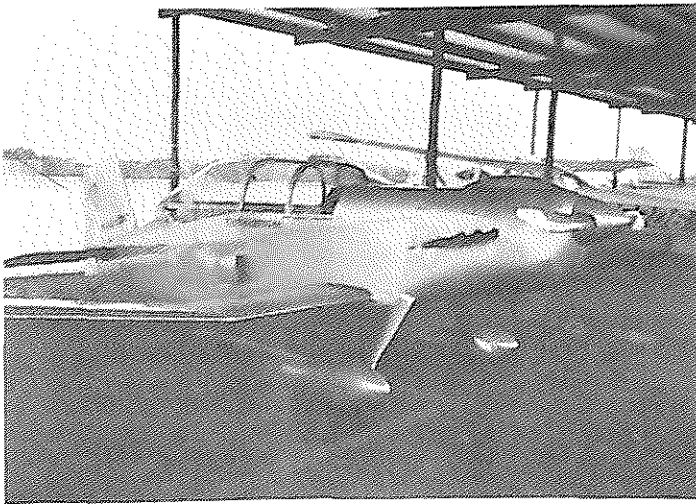
Ken Brock is no stranger to the T-18 bunch. He's been right in the middle of Thorp building and flying for years. Ken has two Thorps and doesn't hesitate to jump in one and fly clear across the country. Ken builds a number of Thorp T-18 parts and really believes in making quality parts. Ken builds the Thorp landing gear and I can say that I've never heard of one of his landing gears cracking. (Others will and should be checked at each annual for cracks) When you buy a gear from Sport Aircraft you will get "A Brock Gear". Need a Thorp Spinner? Ken build the only one that fits the Thorp Cowling correctly. He also supplies prop extentions, constant speed props and many other parts. Ken is best known for his pioneering work with Gyroplanes and flys in the airshows across the country.

KEN BROCK MANUFACTURING

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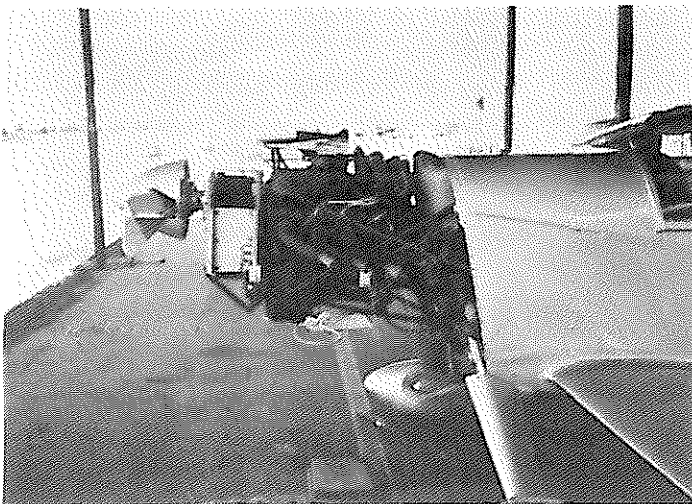
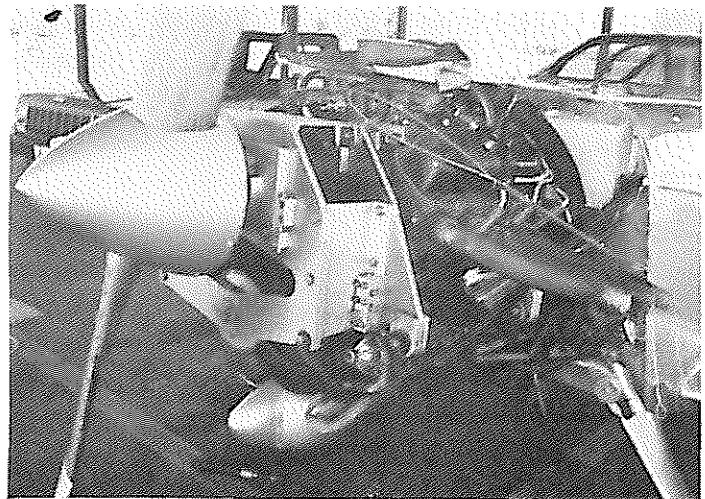
Ken Brock wiping down his Thorp T-18 at Sun & Fun 1995



BEN CUPP'S FORD POWERED THORP

Just behind the wing, you can see the air inlets for Ben's radiator. Ben's quote: "I have had no problems since I got it to cool" When this airplane made a low pass at Kentucky Dam last year, everyone stopped talking to watch and listen. It looks and sounds fast!

Ben says the cruise is 170 mph on about 10 gph. The rate of climb is 800 fpm. It stalls at 65 mph.

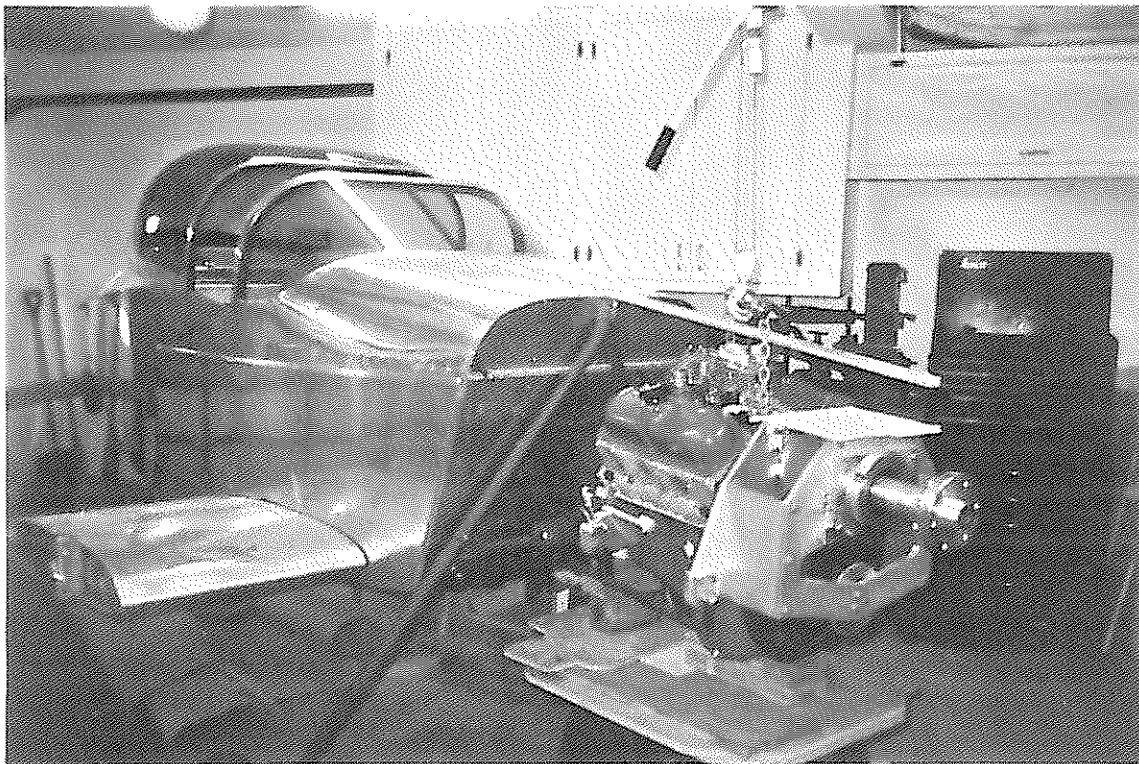


Ben's first flight in 301BC was in 1988 and his Thorp has 350 hours on it now. For those of you wanting more information on the engine installation Ben's address is RR 1 Box 300 Yellville, AR 72687.

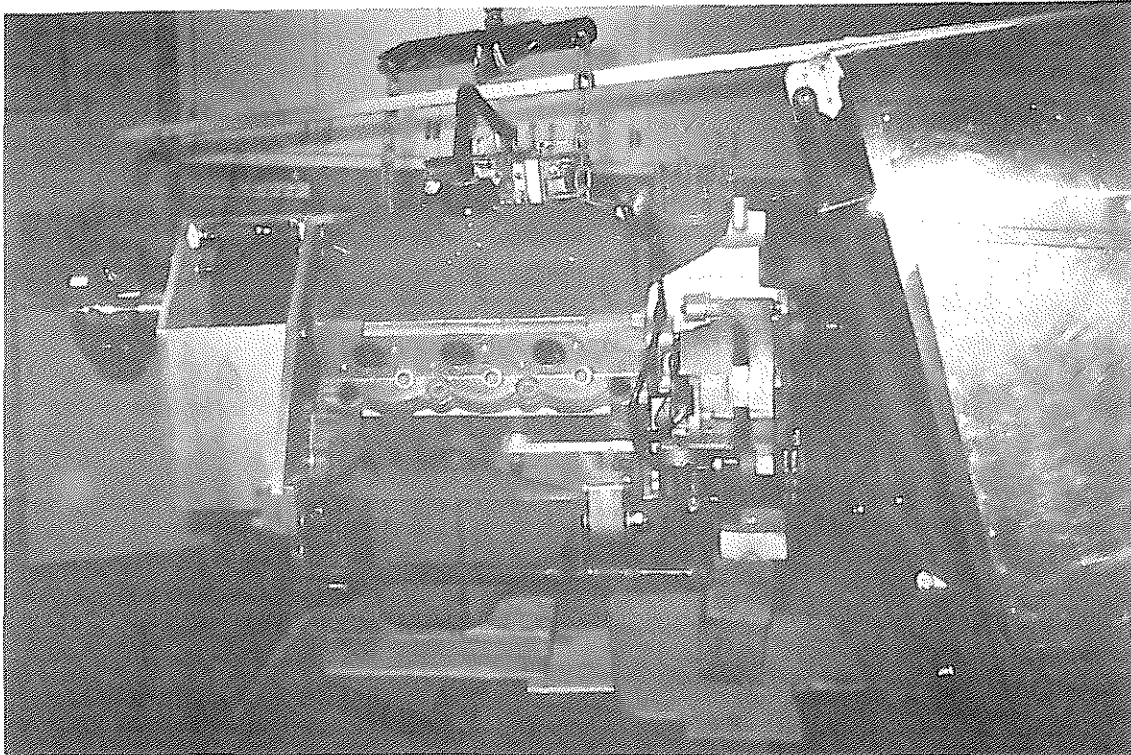
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S-18 PROJECT (FOLDING WING, WIDE BODY VERSION OF THORPE T-18)

- All metal AIRFRAME 98% COMPLETED - on gear, wings folded, trailerable.
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- Or ready for installation of Lycoming - by others
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 - T-18 to S-18 i.e. - 38" to 40" wide fuselage
 - 1" increase in headroom
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continued on page 19

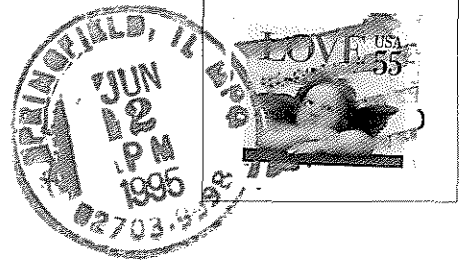


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Issue #95 May 95



25

Please check the mailing label for dues paid. A red circle means "NOT PAID FOR THIS YEAR". I still about 10% of the membership in this category at this time. I have been mailing the letters first class postage which is much higher so I need those due now folks! Please.....

OSHKOSH 1995 EVENTS

Friday July 28, 1995

11:30-1:00 pm Nature Center

Join us for lunch followed by

**1:00-2:30 pm Thorp T-18 Forum
in the Nature Center**

also on Friday

**6:00 pm Thorp Banquet
at Butch's Anchor Inn**