

As the old saying goes, "Better late than never". The past three and a half months have been what might be a masterpiece of understatement, a "Learning Experience", so to speak. In other words, it has been hectic. I know it's hard for many of you to believe, but here it is the middle of November and I'm just now finding time to get the newsletter out. I came home from OSH '88 completely exhausted and spent one solid week just resting and sleeping. I probably shouldn't have tried to make OSH this year and stayed home and recuperated from the auto accident and as usual I guess I push myself too hard at OSH. I had planned to spend a lot of my time on the T-18 flight line, since it was the Silver Anniversary year for the T-18, but we had so many new and interesting airplanes show up this year that the editorial staff was pushed to the limit to get them all covered and photographed before they left for home. Almost 3/4 of them stay no longer than Tuesday and getting interviews or pictures on Sat. or Sun. is a zoo with such a mob scene going on. I had almost caught up by noon Tues. and hoped to spend the entire afternoon and evening getting interviews and pix on the T-18 line, but it wasn't to be, as I got a last minute "must" assignment to cover the scale Warbirds, in particular the Honda Prelude engine installation in a scale P-51 that Rex Taylor (Hapi Engines) had done. Incidentally this engine might conceivably find its way in some T-18s, as it may put out as much as 125-130 hp.

Anyway, I did get loose long enough to go down to the flight line and watch our much modified fly-by and finally to get over to Butch's Anchor Inn in time for our annual dinner with my tongue hanging out. Incidentally, we had 216 attendees at our dinner this year, an all time high. It was again ably emceed by Lee Skillman.

The sad part about OSH this year was that just a few days before opening day we lost our dearest friend, JOHN WALTON. Just when things looked the most hopeful that he had whipped the dreaded cancer it was a sudden bout with pneumonia that did him in. John had been thru sheer hell with weeks and weeks of hospital treatment in Boston, where it was a constant round of chemotherapy and radiation treatment that made him horribly sick. Not only does the treatment kill the cancer cells, but it also destroys the body's ability to fight off almost any kind of infection. When he got the pneumonia, even antibiotics didn't turn it around. John never gave up, tho'. He displayed an inordinate amount of both courage and cheerfulness right up to the end and his goal was to get his T-18 back into the air again and bring it to OSH again, even tho' he probably couldn't legally fly it himself. Oshkosh was always the high point of his life in his later years. John was the one who started the annual T-18 dinner and always made all the arrangements, including the speaker, program, etc, getting the ball rolling months in advance.

John and I were as close as family to each other...maybe closer than some family members are. Some of my fondest memories were our trips to and from OSH in our T-18s, where he always flew in trail with me. There were times when the weather just got too lousy and we had to hang it on the hook for the nite. I remember one trip back from OSH when we only got as far as Janesville, WI, on a Friday and we had to RON there until Sunday morning before it was good enough to go. He always had his youngest son, Lee, with him and loved the T-18 as much as John, and who became a walking encyclopedia on airplanes as a result of his complete devotion to his father and his hobby. It's always with the greatest fondness that I recall the many pleasant hours we got to spend together and altho' I've met a lot of fine people in the T-18 group I can truthfully say that John was

JOHN WALTON

JOHN WALTON, cont'd

one of the finest people in every way that I have ever known..a true Prince of a man, one who did everything he undertook in the RIGHT way, whether it was building something on his airplane or taking care of his family and home. It was the same with his business life, too.His big grin, his generosity, his willingness to give of himself unstintingly,his loyalty and unfailing kindness to all, were his hallmark. As you may remember, John was a true craftsman in every respect and a few years back he got the recognition he so richly deserved when he was selected as the outstanding T-18 representative at the Wright Brothers Annual Awards at Dayton and that was indeed a signal honor. John took his son, Lee, with him to Dayton, as he did to Oshkosh, and I know how proud of his father he was.

Actually, I don't know of anyone that ever got to know John (even casually) that didn't think he was a super person in every way.That's a pretty fine recommendation for anyone to have, I'd say.

It seems so totally inadequate to say that all of us will really miss John, but mere words fall so far short of expressing our deepest inner feelings. He made our corner of the world a much better place. Our deepest sympathies and condolences go out to Barbara, his warm and lovable wife, and his sons.

Since I wrote the above two months gave gone by. I'm sure most of you would find it hard to believe that I couldn't spare a week during that time to write and get the newsletter out, but first of all I've had to put my writing duties with EAA first and for six months after Oshkosh is the busiest time of our year, as we report on all of our interviews, award winners, etc. As you know, we publish 5 magazines each month and each month I have a deadline to get all my articles in by the 15th and each month I just barely make it by the skin of my teeth. I often have to get up at 4 am to get in some work. To make this long story short, this almost 73 yr. old codger has been under too much stress for the past three years and my tread is wearing mighty slick. Common sense says I've got to make some changes. Instead of pulling 9Gs all the time, I've got to back it off to a couple. Trying to play catch up all the time keeps one's adrenalin going full tilt all the time, and that's no good for someone whose health is no better than mine. My wife's health is even worse and with her ongoing heart problems (and age) it puts an additional load on me for prosaic household things that can be time consuming.

We are going to take a long vacation this spring, driving first to So. Cal, and then visiting Honolulu again, then driving up the West Coast to SEA and on up to Victoria and Vancouver, then across B.C. to Calgary, down to Idaho, SLC, and to visit our son in Aspen and then home, taking time to smell the roses on the way, as they say.When that's all over I will then make a decision on how long and at what pace I will continue writing for EAA and also the final disposition of the T-18 Newsletter. I'll do my very best to get four issues out this year, time and health permötting, but after that it may be that I'll have to hand it over to someone else. If any of you have any thoughts on the matter I'd appreciate your sharing them with me. I would like you (someone that might have the time or the inclination to take over writing the newsletter...or at least part of it) to be thinking about it. We have enough in the kitty right now to make it thru theyear and possibly thru part of the next year and I'll turn whatever balance we have over to a successor at that time and also advise him on the mechanics of the publishing and writing if he so desires.

JOHN WALTON

M.L. FORTNER

## NEWSLETTER FUTURE (cont'd)

JIM HIDALGO, of Wimberly, TX, who bought my T-18 a little over a year ago, called me recently to volunteer his help on the NL. Jim has a large mail order business in custom-type sun glasses and he has a sophisticated computer set up that he uses to print up his catalogues. (I'm sure you have seen his ad each month in Sport Aviation). Jim has offered to type up any hand written letters on his computer, which will save me a whole lot of time. I have never learned to touch type and you can imagine how long it takes me to type even a single page using the two finger hunt-and-peck system and I've never had time to stop and take a typing course. I write all my copy in long hand and send it to OSH, where one of the girls in the steno pool types it up. Jim's doing this will be a big help to me, if I don't have to take the time to type the handwritten letters sent to me.

We still have the ongoing problem of only a trickle of input material from you guys. This is in spite of the fact that I plead, cajole, beg, etc, in every issue I write. I always get a lot of mail that says, "Here's my dues for the year," followed by, "You are doing a great job on the NL. Keep up the good work". Or I get a lot that say, "The Newsletter has been invaluable. I don't think I could have built the T-18 without the NLs!" Most of the time that's the last I hear from them. I appreciate the kudos, but I'd appreciate them even more if the builder would just sit down and write an account of his building or flying the airplane...or even some little part of it. I well appreciate the average guy just simply doesn't know what to write and also perhaps He is afraid if he writes anything that he'll make a mistake and the others will think he's a Klutz or something. Just plain shy, I'd guess you'd say. I've gotten letters that I've had to make some corrections on spelling or grammer, but that's no big deal. A lot of the smartest people in the world have trouble with 'speling' or grammer, so don't let a little thing like that stop you.

ANOTHER NEW T-18 FLIES! JOHN MIHAILA, of Wichita Falls, TX, is passing out cigars since his new T-18's first flite the first weekend in Jan. '89. His buddy and fellow builder, DAVE EBY, called me the evening of the 1st flite day to give the good news. Dave flew it for him, since John still has to go get a new medical, and he said it flew perfectly. Dave said he had started initial takeoffs with it on two previous occasions, but he aborted both times when he got a strong odor of gas in the cockpit at about 40 mph. After the 2nd time John went thru all the agony of taking his instrument panel out and dropping the tank and having it leak checked (again). The tank was perfect, so on the 1st flite day Dave AGAIN had to abort. The light came on when both of them realized that the tank had a VENTED CAP (with a hole in it). The acceleration made it squirt a good sized stream out of the 1/8th" hole. John then went back and welded the hole shut and that was the end of problems. The airplane flew great, trimmed out perfectly, with no squawks of any kind. It has a Lyc. 0-360 in it and is loaded with \$4000 worth of avionics in it. His paint scheme is identical to Dave's, which most of you have seen at OSH, and was also a Wright Bros. attendee a couple of years ago. There's an interesting story behind these two airplanes, that began 11 years ago, and Dave promises to send in a full account "soon". This is the third T-18 in Wichita Falls, making it have about the most T-18s per capita of any city over 100,000 in the U.S I'd guess. 'Course Jim Hidalgo and Jim French live in Wimberly, TX, and two T-18s in a city of maybe 2 or 3 thousand probably gives them the prize for the most per capita...or do any of you know of others that might challenge?

JIM HIDALGO'S ADDRESS: P.O. BOX 1390  
WIMBERLY, TX, 78676-1390 (MARK "PERSONAL")

JOHN MIHAILA'S T-18 FLIES

5 March, 1988  
Tom Kerns, N10TK  
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Eden Praire MN 55346  
(612) 934-6833

Dear Dick;

In N.L. 67 you posed some specific questions as a poll to us T-18 builders. Following are some of the lessons learned in building and flying my T-18.

"Tuck" with flaps My T-18 exhibited disturbing flight characteristics matching those described by T-18 builders who have a problem with uncontrolled pitch-over with full flap and forward C.G.. While my airplane did not actually depart controlled flight, it displayed the symptoms of pending stabilator stall. In newsletter #59 I described small "floors" in my wing root fairings which eliminated all undesirable symptoms after installation. At least two other T-18's have had success with the modification; however, this should not be taken as a sure fix, be careful! My T-18 does not use the original full flap travel. My flaps have always been limited to 30 degrees deflection. Beware that stabilator stall symptoms may become worse at higher approach speeds with full flap and forward C.G. (solo with full fuel). The full flap extended speed range should be investigated at a safe altitude with most forward C.G. (be sure to check slips with flaps).

Brake lines As I wrote in an earlier newsletter, my T-18 uses plastic brake lines of the sort used in the Vari-eze and Glassair designs. This stuff is light, cheap, and easy to install. I have now developed a leakage problem with the plastic lines where they join to the calipers. I modified my wheel pants to provide less than 1/4" gap between the pants and the tires for drag reduction. The resulting poor brake cooling pushed brake temperatures up to the point where the plastic brake line suffers from creep, and I get a persistant weeping of brake fluid where the line seals to its metal fitting at the caliper. Tightening the fittings will stop the leakage untill the next landing in which I use any more than very light braking. I instrumented the brake line fitting at the caliper and measured a peak temperature of 240 degrees F.

The plastic lines seem to do well in a well cooled installation, but if you plan to use tight wheel pants, I strongly recommend a short length of standard aircraft flex line at the lower end of the gear legs to take the heat. The nylon lines seem to work well in the (cool) cockpit. Remember to insert a 3/8" length of brass tubing inside the plastic lines before installing the brass compression fittings. The internal brass tube (available in model airplane hobby shops) will be squeezed by the compression nut action and will not subsequently creep with temperature. This should help maintain joint integrity at moderate temperatures.

Tail wheels Eddie Eiland is building a beautiful T-18 in Red Oak Texas. One change he made was to taper the steel tailwheel springs from the clamping beam forward. The weight savings is considerable without too much softening of the spring. I intend to modify mine on the next annual.

Flight rigging Because of the problems I have seen in other T-18's with building a perfectly straight wing, I built adjustable cams in the rear wing spar junction between the inner and outer wing panels (non-folding wing). The cams allow me to adjust the incidence of the outer wing panels as required for trim. Experimenting with the rigging has provided



Tom Kerns Letter

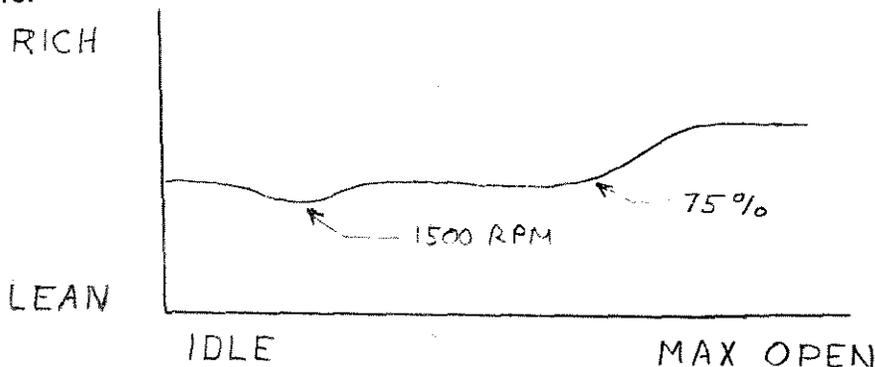
## TOM KERNS LETTER, cont'd.

some surprises. My original trim would fly hands off with pilot and passenger on board, and the airplane would stall straight ahead. When I flew solo, the T-18 required considerable right stick pressure to fly wings level (no roll trim), and would stall straight ahead. I tried compromising by washing out the right outer wing panel, raising its trailing edge about 0.050" with the cam. The revised trim resulted in near hands off trim when flying solo, heavy left stick pressure when flying dual, and a break to the right when stalled. My model airplane days tell me that washing out the right wing should cure right wing drop in a stall, not cause it! Apparently, reducing the incidence of the outer panel forces the inner panel to carry a greater share of the load, and the stall occurs earlier on that inboard wing panel. Bob Dials first T-18 N5BD showed similar symptoms. If you are having trouble trimming a T-18, you may be a victim of this apparent "backward" response in stall behavior.

Cockpit controllable roll trim is essential in the T-18 due to the significant roll trim change with and without passengers. My airplane has electric flaps, which eliminated John Thorps standard roll trim mechanism. I have since installed a light weight jackscrew and trim tab on the left aileron with a model airplane servo motor for power to provide roll trim.

Carburetor matching For the first 170 hours I flew my T-18, I had trouble with a rough engine. The problem was that my engine/carburetor combination which had flown smoothly in a Piper Tri-Pacer for many years was not suited to the T-18. My engine would run smooth anywhere except between 72% and 80% power. The problem was a too lean mixture caused by differences in the carburetor air intake systems.

The Tri-Pacer provided relatively low ram air pressure to the carburetor inlet due to low flight speeds and an exceptionally inefficient air filter and air box system. My T-18 has a modified Thorp banjo box induction system which provides considerably more ram air pressure to the carburetor inlet. With increased air pressure at the carburetor inlet, the carburetor throttle valve is in a more closed position for any given engine power output when compared to the original Tri-Pacer installation. Fuel/air ratio in the carburetor is governed primarily by throttle valve position and was factory set to give the Tri-Pacer a schedule as shown in the figure.



The carburetor was set up to work in the Tri-Pacer, but would not work properly in the T-18 because more carburetor airflow (and power) was achieved for any given throttle valve position (fuel/air ratio). The T-18 installation was running too lean at 72% to 80% power. I fixed the problem by drilling out my power jet (main jet) orifice from its original 0.0935 inches to 0.0980 inches. Engine operation has been flawless since enlarging the power jet orifice.

My engine is an O-290-D2 with an MA3-SPA carburetor. My hangar mates Glassair with an O-320 and MA-4 carburetor experienced an identical problem and cure. Walt Giffens T-18 N78WG had the same symptoms with its O-290-D2, but Walt re-engined with an O-320 before it occurred to any of us to enlarge the main jet.

TOM KERNS LETTER, cont'd: (page 3 of 3)

If your T-18 provides substantially better intake air than the airplane for which your carburetor was built, you may also require a richer power jet. The symptom of a lean power jet is an occasional engine stumble felt in the rudder pedals (not heard) at moderate power settings. The engine will probably smooth out at higher power settings where the fuel/air mixture goes rich for full throttle engine cooling. Some leaning will be possible at lower power settings, but any leaning in the rough power range will make matters worse. It may take a couple of minutes for the symptoms to develop when moderate power is first applied because of the time lag as the lean engine heats up. Walt Giffen noticed a correlation between OAT and roughness in his airplane.

Fuel contamination When I had my fuel tank welded up, the fuel inlet fitting was inadvertently positioned so that it sticks up 1/8" above the tank bottom. This created a condition where 1/8" of water or other contaminant could pool in the bottom of the tank without entering the fuel lines-until disturbed by flight motion. I fixed this by adding a tank sump and drain. I purchased a weldable 1/8" pipe thread flange from Wag Aero, machined a recess in the flange to provide a small sump, and welded it to the bottom of my tank. A 1/8" pipe thread quick drain with an overboard drain hose allows pre-flight draining of the sump (I also have a conventional firewall mounted gascolator to drain). Any contaminant sloshing in the bottom of my tank drops into the sump rather than remaining trapped or entering the fuel lines. Check your own tank outlet geometry to see if you have a potential problem.

Temperfoam seat cushions Temperfoam is great stuff. It is energy absorbant (may help in a crash) and exceptionally comfortable. The only drawback I have found (other than cost) is that Temperfoam is temperature sensitive. When flying in New Mexico in the summer time, the seats are soft, like I would imagine sitting on a bag of jello. The seats are firm and comfortable at "normal" temperatures, and rock hard in a Minnesota winter. The result is that my seating height changes with temperature, yielding minimal clearance between my head and the canopy in wintertime. The seats start out rock hard in winter but within 30 minutes body heat softens the cushion surface to drop me down 1/2" in height and the seat becomes comfortable. If you plan use Temperfoam in cold climates, allow for sufficient headroom when the cushions have the elasticity of concrete! On the seat backs, I used 1" of medium temperfoam and am delighted with it. The 1" on a contoured seat is all that is needed for a very comfortable fit.

Wingtips for sale Chuck Larsen of EAA HQ (414) 426-4800 has a pair of T-18 wing tips for sale or swap for an ELT. He says they are a well made set of "droop" tips.

Fuel feed problems I detailed my gravity feed fuel system and problems encountered in a previous newsletter. Basically, if I have good ram air to the fuel tank vent, the fuel flow is entriely adequate. If I have only static air pressure to the tank, fuel flow is inadequate and my engine will quit at higher airspeeds when ram air pressure to the carb air intake (and carb float chamber) rises to the necessary level.

THANKS  
AGAIN,  
TOM!

TOM, that was a super letter in every way. I especially hope it will serve as a guide for other members. I well know that every single T-18 flying has had some little problems come up during the building or after it has flown. If you're one of those guys that says, "I'd be willing to write a piece for the NL, but I don't know what to write about...and it seems like everything has been covered.", then this letter of Tom's ought to stimulate the old brain cells. Start with the spinner and work back. ....(i. e. "How did you go about installing YOUR spinner?"

(cont'd)

TOM KERNS

(cont'd)

How did you go about fitting it to the backplate? How did you accurately lay out attach holes and blade cutouts? Did you install front plate in the spinner shell? Did you fasten the front plate to the shell? (you really should) How did you lay out and locate the holes in it? Maybe your letter would say, "I read the NL comments on this and also Tony Bingelis' recent column in Sport Aviation on it and both were very helpful, but I found a little different way to do part of it and I.....etc". Now I know that each and every one of you has had some problems with making engine baffles. How did you go about that job? Where did you install the oil cooler and how did you plumb it with what size fittings and hoses, etc? You could go on and on about every accessory in the engine compartment, what make and type of engine controls you bought, their size, how you routed them where you located them on the panel. We could fill several NLs with accounts about air boxes, filters, & other intake system parts. The same certainly goes for exhaust systems. And FUEL systems...start at the carb and go backwards to the tank, detailing EVERYTHING, including the cap, the filler door, the scupper drain, AND the indicating system, its calibration and type and make. Now take a close look at YOUR brake system from top to bottom, going into every detail, including hardware callouts, how you routed the lines out of the cockpit, etc. As for instrument panels...every one is different. Why not make a drawing of yours, showing what instrument you placed where, how far apart they were, how you wired them, where you got a good deal on them, how you lighted them, and maybe a note on your own philosophy on how you arranged things, etc. Very little has been written about radio placement and installation, about antennae for Lorans and the results. What make Loran did you buy, why, and your candid opinion of it, its limitations, accuracy, ease of use, etc. And how about where you plug in your headphones, locate a speaker, what brands, along with what type of interphone you have? Or you might want to go in great detail on your baggage compartment, where you located your battery, what kind of box it's in, what size and type solenoids and wiring from the battery to the starter.....we all would especially like to have the numbers on your WEIGHT AND BALANCE, HOW YOU WEIGHED IT, WHAT EACH WHEEL WEIGHT WAS!

Perhaps you may think that those items above would only be of value to the brand new builder....well, they are....but you know we have a lot of T-18s flying that are no longer owned by the builder, sometimes there may have been three or four previous owners....and these people have only a limited knowledge about T-18s and their log books may not give many details. Such info would be of excellent value to them. By the way, WEREN'T YOU DESPERATELY LOOKING FOR ANY AND ALL SCRAPS OF INFO WHEN YOU STARTED? Just HOW grateful are you?

Okay. Again, I've laid out a whole lot of subject matter for you to light a fire under you (no not you..I mean YOU)! How long do you think a magazine or newspaper would last if the "reporters" all leaned back on their thumbs and let George do it and only a tiny trickle of copy came in???? Well, gents, your (our) NL is no different and, yes, it indeed will go down the drain if there is no info to fill its pages with....and I'm not blowing smoke!

In response to several requests to repeat some of the monthly "Tin Bender" articles I write for EAA's "Experimenter" magazine, I'm doing a foto reprint of one of these articles that I used the T-18 as a reference, so the next 4 pages are typical of the articles. (They were originally printed on gray paper, so the xerox comes out dark, too). In case any of you are interested, yes, back issues ARE available from EAA at \$1.25/copy. There are now a total of 31 Tin Bender articles to date. If time permits and there is any interest

(cont'd to page 12)

OPEN LETTER (PLEA) TO M.A.S. MEMBERS

and back and also at each end.

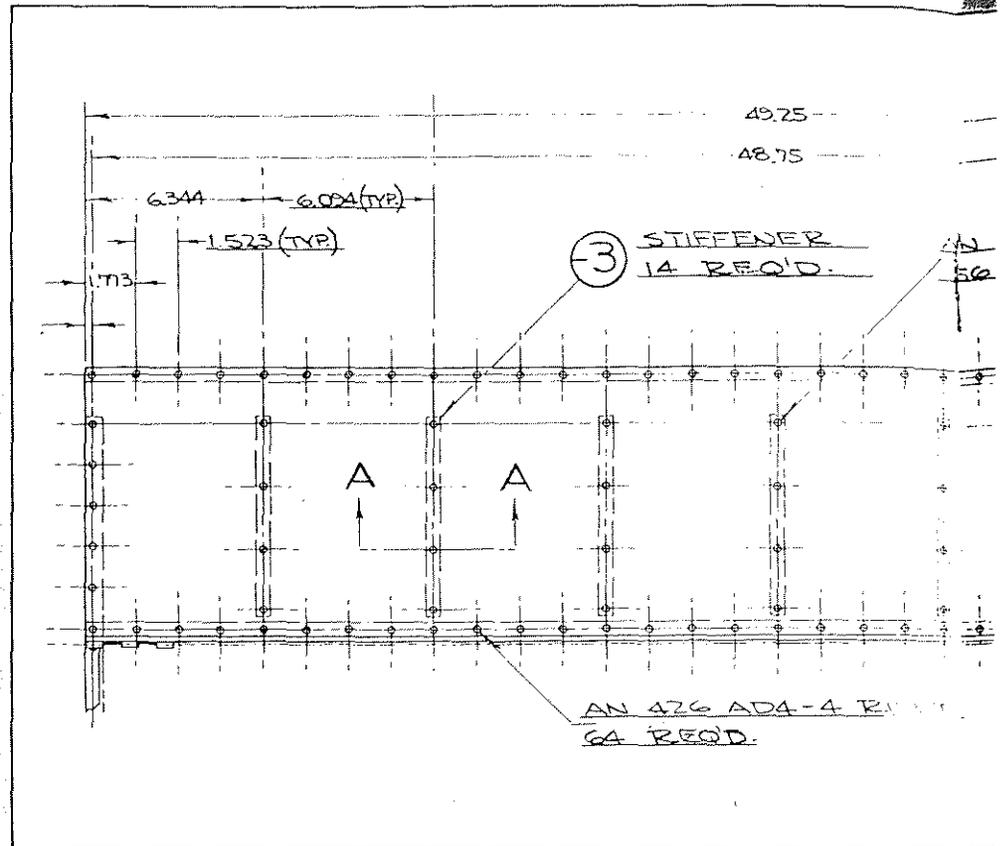
We chromate the aileron all over inside, so no accumulated moisture can start corrosion. This is important on a tail dragger that sits for long periods of time in a three-point position. The chromate also allows us to draw plainly seen lines we need for layout. If you use a sharp lead pencil for this you really should erase them and lightly sand the lines when finished with them.

At the ends we can use our flat layout of the aileron rib as a hole template, but take note while the typical rivet spacing on the rib is 1.48 inches, there is one spacing at the front end of the top flange that is 1.62 inches. To use that template we would measure 2.00 inches forward from the aft edge of the sheet to locate our "anchor" hole for the rearmost aileron rib rivet hole (as shown on the aileron assembly drawing).

We will use the "peek through" method in using our .040 layout template. Using quick release clamps (i.e. nu-vise) we sight through the holes in our template, using the old "eyeball" method to see that the holes are centered over the rivet line. (Yes, the eye is a remarkably accurate tool).

We can now use the nibbed Whitney punch and a small hammer to tap a tiny hole center mark on the sheet, or we can use the non-nibbed punch to go through the hole in the template and actually punch out a perfectly round hole. The punch method is more accurate, of course, even if we use a sheet metal grind drill bit that fits into the tiny center punch mark.

Here again you will find many metal workers prefer to drill (or punch) 3/32 inch (No. 40) holes first. Upon assembly with clecos they then ream them out with



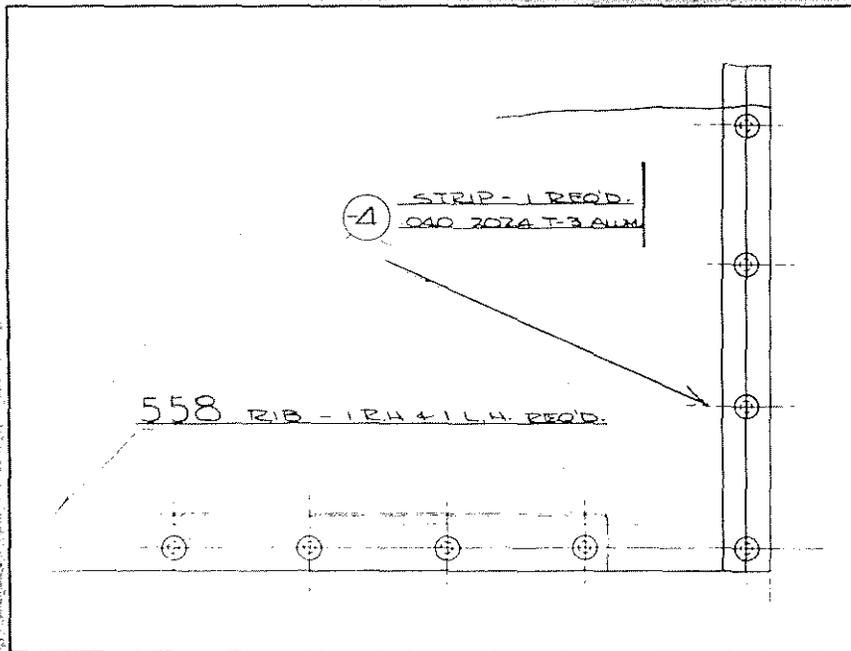
an 1/8 inch drill bit, if the holes are to be dimpled (which stretches the hole so that a 1/8 inch rivet will slip in with a tight fit). If the rounded universal head rivets are to be used they ream the No. 40 hole with a No. 30 drill bit.

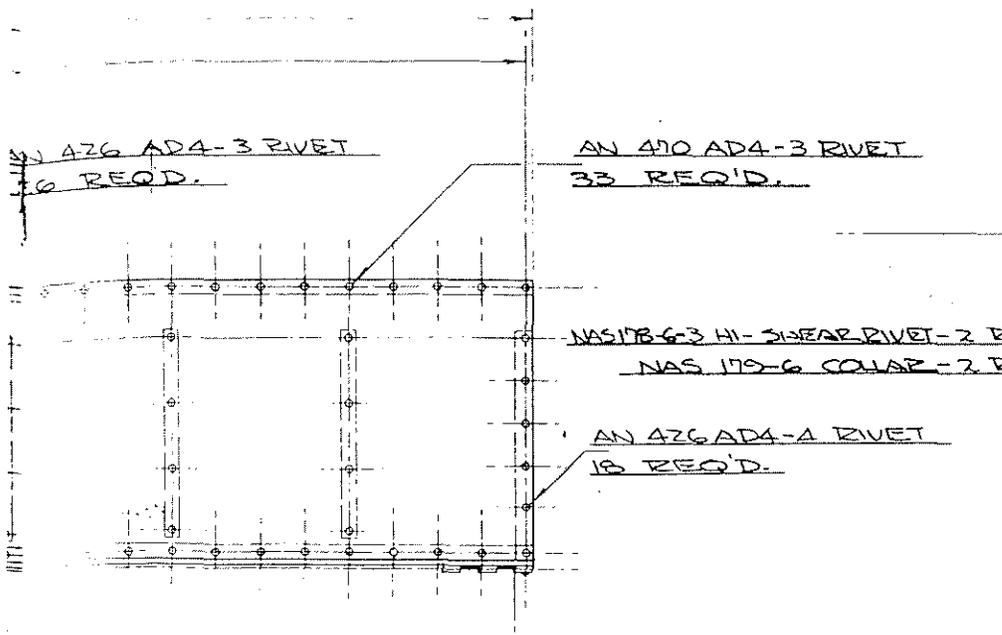
To regress a bit, we haven't yet used our stiffener template to locate the four rivet holes on the skins. If you will look at the Aileron Assembly drawing (the part that shows the flat layout of the

skins) you will note that the stiffeners are located on a line that connects every fifth rivet on the spar and trailing edge. All we have to do now is draw a line on the skins that connects each fifth rivet and lay our template on that line and peek through it. Of course, we have to be sure to put the center of the template's rear hole where it crosses the line that's 2.00 inches from the rear edge of the skin that is our starting point, or "anchor hole."

If we already have No. 40 or 1/8 inch holes in our stiffeners we can skip using the template. Here we can position the rear hole of the stiffeners over the 2.00 inch line and drill through it and the skin simultaneously, cleco it, then do the same thing with the front hole and cleco it. We then do the remaining two holes in between, repeating the process down the line until all 28 stiffeners are clecoed to the skin.

Seems as if all sounds complicated doesn't it? Well, it really isn't. It's actually very simple in actual practice, but if you have ever had to write a manual of any simple operation and describe things so that every facet of the operation is accurately described in detail, you will know that it takes thousands of words to describe. You can't assume that the reader knows much more than which end of a hammer to pick up, even though 90 percent are at least already semi-skilled workmen. It always takes ten times more time to describe it than it does to actually





to appreciate what a labor saver it is. The building of the aileron is the first place we advise the new T-18 builder to start. It gets him acquainted with the value of making and using layout templates, the use of the nibbed and non-nibbed Whitney punch, accurate drilling or punching holes, familiarity with the use of the decimal measurement system, the proper use of dividers, and where and when to use a scribe or other marking method. If he gets careless and screws up an aileron skin or spar, he hasn't cost himself very much money.

In our T-18 newsletters we often point out that the new builder should expect to have to pitch parts in the wastebasket pretty often at first. It's sort of like poker in a way. You'll have to pay to learn at first, so it's better to start on things that are much less expensive.

Before we wind this epistle up for this month I'd like you to mentally walk through the sequence of riveting the aileron, keeping in mind that the entire T-18 was designed to be riveted with regular AN rivets, with access for the bucking bar in all units. While some have been built using blind rivets, 100 percent of the airplane can be built either way. Write down the sequence and check yourself as we finish up the ailerons next month. For instance, *when* and *how* would you rivet the stiffeners to the skins?

We're going to get deeper into the easy way to use a brake, too, and we are still going to look at a homemade brake or so. Until next month then, amigos.

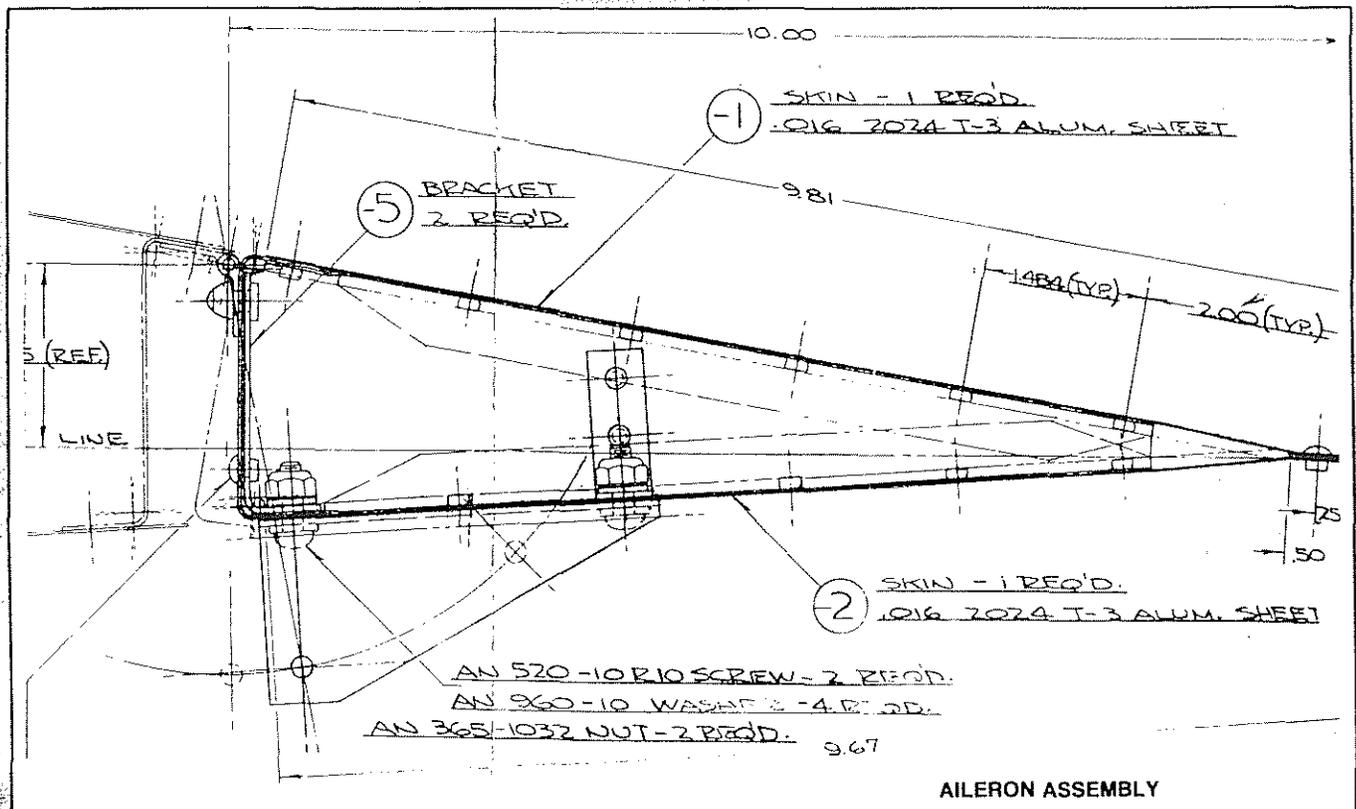
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do it.

Therefore, I hope you will overlook the volume of verbage it takes to unravel the mysteries of making anything as simple as a stiffener. In the main we have been walking through an educational drill

on practical use of matched hole tooling, as introduced by Mr. John Thorp, the outstanding advocate of simple sheet metal construction.

Once you get your feet wet with this type of construction you will really begin



AILERON ASSEMBLY

EXPERIMENTER ARTICLES

we might be able to get foto reprints of the entire series of articles for whatever the costs per page, binding and postage run. I wrote the entire series directed at an absolute beginner, who scarcely knows which end of a hammer to pick up, so to speak. My follow on series will be a step by step story of the design, stress analysis, building, and flying of a super easy to build all metal, high wing parasol mono that will go ultra-light or homebuilt .

Just to illustrate how my time for the NL seems to evaporate, since I wrote the above paragraph that over three weeks has gone by. First, my wife's brother in a nursing home died suddenly and we took up four days going thru the funeral process, since he had no family. Two days later I was on the way to Hendersonville, NC, on a story assignment on an engine and a line of three very light airplanes. There went five days, which included two long and hard travel days. After a day to rest up, I started in on three long stories for Sport Aviation and the Experimenter. One of those stories was a Tin Bender article on layout and building of fins, in which I used the mathematical method of flat layout of T-18 fin skins. I used a photo repo of the T-18 fin assembly drawing as an illustration. All of this took up a week, so here I am on another day to "rest and relax", before it all starts all over again.

I'm taking up all this valuable space in the NL to tell you these things, because I feel that I owe all of you an explanation as to why you haven't gotten a NL for several months and I hope you understand and forgive.

After I finished my last story yesterday I called EAA HQ and explained to them that I couldn't keep up <sup>the</sup> I've had to keep the past three years and that from now on my wife and I were going to take time to take some vacation trips and smell the roses some in our remaining years. This will give me time to get T-18 NLs out at a much better rate. I'm going to make the supreme effort to get three more NLs out this year after this one. After that time I don't know. We'll just have to play it by ear. I would appreciate your input on how we can keep the NL alive.

COMING

Just today I received a marvelous and authoritative dissertation on T-18 airfoils, their history, the various modificztions, graphical comparison of their performance parameters, plus a study of the possible use of an alternative airfoil. I got this from HARRY RIBLETT, an authority on airfoils and well known author, with several of his articles appearing in Sport Aviation the past year or so. I plan to use it in the next NL and I think you will find the information quite fascinating.

HARLO MCKINTY

A couple of weeks ago in the midst of all our bitter cold weather I finally got to see HARLO MCKINTY's new bird for a few brief minutes. He and his wife had been here on a dental convention for several days while I was out of town, but we did finally get together for lunch Sunday before he had to leave for home. Harlo hasn't had time to put gear leg fairings and wheel pants on, nor upholstery, either, but he's making up for lost time flying it now. He says he'll get it all prettied up this spring in time for summertime flying. Looks pretty good right now, Harlo. He's got it loaded with radio and inst'ts. He's been flying it IFR quite a little and is really pleased with how well it does IFR. He had to file IFR to get out of here that Sunday, too. We all say, "Congrats, Harlo, and we'll be looking forward to seeing it all prettied up at OSH this year. He'll also be sending in a story on it for the NL "soon", he says.

JUST IN CASE YOU DID NOT RECEIVE THIS MAILING WE'LL REPEAT IT HERE.

Mary Holt had major surgery last month, but is recuperating nicely.

T-18 SPRING ROUND-UP AT LAKE TEXHOMA

Dear T-18er:

We'll have our Spring 89 T-18 weekend again at Lake Texhoma. We've made reservations at Lake Texhoma Resort for the 2nd and 3rd of June.

For those of you who have not attended our gatherings at Lake Texhoma, it is located on your Dallas-Ft. Worth sectional approximately 10 miles West of Durant, Oklahoma and 20 miles North of Sherman, Texas. The Lodge has a 3000' paved runway within walking distance. Dining arrangements will depend on the number attending.

IF YOU PLAN TO ATTEND, PLEASE:

1. Call the Lodge at 405-564-2311 before the first of April to make reservations. Will only hold rooms 60 days in advance. (Holt/Green party)
2. Call or write Gary Green, 2530 Bellechase, Granbury, Texas 76048. Phone 817-579-1995. Give name
3. and number of people in your party. If you later find you cannot attend please cancel with Gary as well as the Lodge.
4. Bring your own tie-downs.

The Holt and Green Clans in co-operation with Mr. Richard Levin

BEN CUPP & V-G. POWERED T-18 WILL BE THERE

The following received after our last Texhoma fly-in. Rick is a former Braniff pilot, now on active duty with the AF at Wright-Patterson AFB, who bought Ron Zimmerman's T-18, which has a Modified gear, that uses tapered steel rods (Wittman gear) plugged in the A frame. His wife is just about checked out in it now, as you saw on the Texhoma 111 tape. Dick,

Just a short note to tell you how much Louann and I enjoyed the fly-in at the lake. We didn't get to spend much time with the group on Saturday as Louann's sister and family drove up and we were obliged to spend the day with them. We did enjoy the hospitality of the group though and look forward to many more.

The attached fax copy of N13117's first few log entries shows the results of Rob Zimmerman's trials of flight with one flap disconnected. Dave Eby asked about this.

I would like to add a few thoughts about some of the things I have added to my Thorp:

The ACK mode C - just a perfect system, cheap, easy to install, light and worked without calibration  $\pm$  20' all the way up Compatible with almost every Txp on the market.

Gyro package - Century Instruments sells a light-weight complete package (Attitude, DG, vacuum pump, filter, regulator, guage, hoses, fittings, clamps - and a one year no hassle guarantee). Good people to work with and all new or yellow tagged parts.

Fuel gage - My Thorp has a clear plastic fuel line for a gage. Sort of a stand pipe system - very accurate, fail safe but the plastic did not hold up to the effects of the fuel for very long. It would get brittle and start to go opaque in about three months time. I tried several types of tubing with little success. Then I discovered a medical lab supply house that carries clear tubing called Tygon R 3303. The catalog says that it is impervious to virtually all chemicals and comes in all sizes. Mine uses 3/8" od 1/4" id. I finally found some in Clarksville, Tenn (Clarksville Medical Supply). Fairly cheap too.

That's about it from here. Winter is coming, trying to get the last minute outdoor things done before the snows come. This climate is rough on a Texas boy.

Take care, see you soon.

Also, please sign me up for the newsletter. Attached is \$10 for that. Thanks. And thanks for the time you spend putting it out, great job.

*Rick Jones*  
Rick Jones  
7155 N. River Rd.  
S. Charleston, Ohio 45368

Thanks, Rick. Looking forward to seeing you again soon. Thanks, too, for for the tips & the info from Ron's log on the flap. Nice to know the T-18 has the aileron power to combat the asymmetric flap.

RICK JONES REPORT

EXCERPTS FROM RON ZIMMERMAN'S LOG FROM RICK JONES, Ron did a lot of serious test work when he had the bird.

| REMARKS   | DATE |
|---|------|
| Disconnected right flap. Can be turned right & left in stall with power off to full power. Did landing with 2 left flap & 1 with full left flap. Stalls from a steep attitude. To the left - stalls over the top. To the right - stalls over the top & enters spin. When with 2 flaps, difficulty full flaps. | 7-15 |
| Still climbing 700-800 FPM @ 11000 ft @ 45°   | 7-17 |
| Attempted to calibrate alt temp gauge. High temp read 520 for 450 true  | 7-20 |
| Stability check Pitch dampers out for almost nothing in 3 oscillations (G 16-172)   | 7-21 |
| Roll stability in normal - will hold 30° bank in 720° turn. Left & Right of cross power   | 7-22 |
| 5 watermills & a watermill. High density flight -<br>alteration and covered a normal test<br>of operation. Limitations dated 7-22-1967  | 7-22 |

Take note of the  
reaction out of a  
crossed-controls  
slip.

~~James K. Zimmerman  
CF-GH80-70~~

From Ron Zimmerman's Log Book

SIGNATURE

LICENSE NUMBER

DATE

INSPECTION - MAINTENANCE - REPAIRS - ALTERATIONS

20704 BIRCH MEADOW DR.  
MT. CLEMENS, MI. 48043

from Dick Amsden:

DEAR DICK, (T-18 BUILDERS &amp; OWNERS ASSOC.)

AUTO GAS? I HAVE BEEN USING UNLEADED 87, 89 OCTANE IN MY THORP THE PAST 5 1/2 YEARS. IT HAS A LYCOMING 150 HP 0320 E2G. ALSO I USE 100LL ON MY TRIPS. (CAN'T CARRY MY CANS) HOWEVER, I UNDERSTAND PETERSEN'S STC RECOMMENDS USING SOME 100LL EVERY 75 HOURS. DON'T KNOW WHAT EAA RECOMMENDS.

STARTED FLYING IN MARCH, 1983 USING 100LL. IN 43.5 HOURS THE BOTTOM PLUGS WERE SOLID WITH LEAD. CLEANED AND REGAPPED BUT HAD A MISS AT CRUISE RPM.

BOUGHT A NEW SET OF PLUGS EM40E. SWITCHED TO UNLEADED AUTO GAS AND RAN 144 HOURS (INCLUDING 16 HOURS ON 100LL) CLEANED AND GAPPED, RAN 161 HOURS, (INCLUDING 20 HOURS ON 100LL) BUT ON A TRIP BACK FROM TEXHOMA THE PLUGS WERE FOULING. (FORGOT TO LEAN ON THOSE LONG TAXIS IN ST. LOUIS.) GOT HOME OKAY THOUGH.

THEN I BOUGHT A NEW SET OF PLUGS REM 37BY. THESE WERE DEVELOPED FOR USE WITH 100LL. FLEW 123 HOURS (INCLUDING 37 HOURS ON 100LL) PULLED PLUGS AND THEY WERE JUST LIKE NEW EXCEPT THE GAPS WERE .018-.019, SO REGAPPED TO .016. THESE PLUGS RUN BEAUTIFUL ON 100LL OR UNLEADED.

DICK AMSDEN'S REPORT

PAGE #2 from Dick Amsden's letter:

I ONLY USE AMOCO OR SHELL UNLEADED 87-89 OCT. AND ONLY BUY FROM HIGH VOLUME DEALERS. HAVE A 5 GAL. AND 2-2 1/2 GAL. METAL CANS WITH PLASTIC SPOUTS AND A PLASTIC FUNNEL WITH A SCREEN. (COULDN'T FIND RIGHT SIZE METAL FUNNEL) I USE A 12' JUMPER CABLE FROM THE METAL HANGAR TO THE TAILWHEEL SPRING AS A STATIC GROUND. ALSO, I ALWAYS TOUCH THE METAL CAN TO THE FUSELAGE BEFORE POURING.

LAST WINTER WHEN I WAS TIED DOWN OUTSIDE IN FLORIDA, I USED A JUMPER WIRE FROM THE TAILWHEEL SPRING TO THE METAL TIE DOWN STAKE THAT WAS 4 FEET IN THE GROUND.

THE FISH SPOTTER IN FLORIDA HAD A CESSNA WITH A 150 HPC. AND WAS PUMPING UNLEADED OUT OF 2-16 GAL. PLASTIC CANS IN A STATION WAGON, USING THAT AERO FUEL TRANSFER PUMP ADVERTISED FOR \$295<sup>00</sup> WITH ALL PLASTIC LINES AND NOTHING WAS GROUNDED TO NOTHING!

INCIDENTLY, I HAVE BEEN USING A GELL CELL BATTERY IN THE THORP SINCE 1982. SAME BATTERY. NEVER HAVE TO WORRY ABOUT WATER ADDITIONS. A COUPLE OF TIMES IT WENT DOWN FROM NOT BEING USED, BUT A QUICK CHARGE 20-30 MINUTES ON HIGH (ABOUT 20 AMPS) AND AWAY WE GO. THAT BATTERY IS 6 YEARS OLD.

SEE YA IN THE SPRING.

Dick Amsden  
N32 AH

DICK AMSDEN'S REPORT

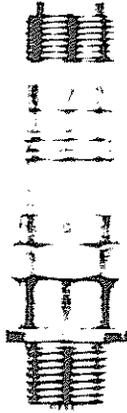
**CHAMPION**

# AVIATION SPARK PLUGS

## SPARK PLUG TYPE DESIGNATION SYSTEM

All Champion Aviation Spark Plugs are identified by type designations selected by virtue of the plug design as applied to the following Spark Plug Number and Symbol Chart. The symbol is composed of a rating position number together with prefix and suffix numbers to indicate major plug design characteristics.

- RESISTOR**  
None - No Resistor  
R - Mil-Spec. Resistor - Erosion protection
- BARREL STYLE**  
None - Unshielded  
E - Shielded 5/8" 24 Thread  
H - Shielded 3/4" 20 Thread (All Weather Plug)
- MOUNTING THREAD - REACH - HEX SIZE**  
B - 18mm 19/16" / 2.06cm 3/4" / 2.22cm  
M - 18mm 1/2" / 1.27cm 3/4" / 2.22cm  
J - 14mm 3/8" / 0.95cm 19/16" / 2.06cm  
L - 14mm 1/2" / 1.27cm 19/16" / 2.06cm  
U - 18mm 1 1/8" / 2.85cm 19/16" / 2.06cm
- HEAT RATING POSITION**  
Low number - cold High number - hot
- ELECTRODE DESIGN**  
None - Conventional single  
E - Two prong massive  
N - Four prong massive  
P - Fine wire (Platinum)  
W - Fine wire (Iridium)  
B - Two prong massive, Tangent to Center  
R - Push-wire - 90° to Center



### A TYPICAL SPARK PLUG NUMBER WITH SYMBOL EXPLANATION

**R H B 37 E**  
↑ ↑ ↑ ↑ ↑  
② ③ ④ ⑤ ⑥

### HOW TO INSPECT SPARK PLUGS

Remove seat gasket from plug and inspect it. Severe deformation in the form of gasket collapse indicates it was overtorqued. Inspect each plug for the following defects, any one of which will disqualify it for re-use:

- Cracked insulator tip at firing end
- Severely rounded shell hex
- Cracked insulator in connector well

Spark plugs are often discarded long before their usefulness is ended. Plugs that have undamaged threads, shielding barrels, shells and ceramic insulation are good for many hours of reliable service as long as they are periodically cleaned and regapped.

If a spark plug is accidentally dropped, discard it. Internal damage is likely, even if no damage is visible.

Look inside the ceramic insulator well at plug top for grey pencil-like lines. These carbon tracks indicate ignition flashover from lead connection to shielding shell, causing misfiring and power loss. It occurs most often during full power operation, as at take off, but can also occur at high altitudes with somewhat less power.

Black, soot-like deposits in the well usually show that abnormally high temperature has caused lead insulation to deteriorate. Ask for help to find the cause. Have the lead replaced if insulation is badly damaged. A too-short lead, brought on by a missing or broken spring, can cause misfiring by preventing firm contact between connector spring and contact cap at bottom of plug's insulator well. It will also cause contact cap burning or pitting.

Factory Price List Dated 1/31/85

REM40E PLUGS (5/8-24) WITH BUILT-IN RESISTOR - EQUIVALENT TO AC PLUG SR-88 FOR USE IN MOST CONTINENTAL AND LYCOMING ENGINES.  
LIST PRICE \$16.30 OUR PRICE \$9.95

NEW REM37BY SPARKPLUG LIST PRICE \$16.30 OUR PRICE \$9.95

### CHAMPION SPARKPLUGS

| Spark Plug Designation      |         |             | List Price | Our Price |
|-----------------------------|---------|-------------|------------|-----------|
| Shielded                    |         |             | Each       | Each      |
| 5/8-24*                     | 3/4-20* | Unshielded  |            |           |
| <b>MASSIVE ELECTRODES</b>   |         |             |            |           |
| REJ38 (14MM)                |         | M41E (18MM) | \$15.60    | \$9.45    |
| REL37B (14MM)               |         |             | 16.30      | 9.95      |
| REB37E                      |         |             | 16.30      | 9.95      |
| REM37BY                     | RHB37E  |             | 16.30      | 9.95      |
| REM38E                      |         |             | 16.30      | 9.95      |
| REM40E                      | RHM38E  |             | 16.30      | 9.95      |
|                             | RHM40E  |             | 16.30      | 9.95      |
|                             | RHU27E  |             | 20.50      | 13.49     |
|                             | RHB29E  |             | 16.30      | 9.95      |
| REB32E                      | RHB32E  |             | 16.30      | 9.95      |
|                             |         |             | 16.30      | 9.95      |
| <b>IRIDIUM ELECTRODES**</b> |         |             |            |           |
| REM38S                      |         |             | 39.80      | 24.45     |
|                             | RHB32S  |             | 46.30      | 28.30     |
|                             | RHB36S  |             | 46.30      | 28.30     |
|                             | RHM38S  |             | 39.80      | 24.45     |

\* Shielded barrel thread size. Check barrel size - 5/8x24 or 3/4x20 threads - before ordering and select proper plug number. See page 161 for Champion/AC Cross-Reference Table and page 163 for Sparkplug Application Table.

\*\* The new "Iridium S" sparkplugs replace the Platinum and "W" Iridium types. Increased bore diameter improves scavenging action. Greater clearance volume can accept more combustion deposits. Single Iridium electrode offers greater resistance to lead attack. Easy to clean - Easy to gap.

### CHAMPION SPARKPLUG ANTI-SEIZE

Apply sparingly to second and third threads. Do not contact electrodes as it could short out the plug. Do not apply to shielding barrel threads. Unbreakable 2 oz. bottle with applicator brush top.

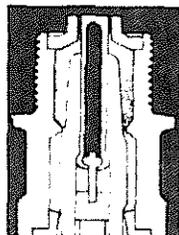
#2612 \$2.50

### SURPLUS SPARKPLUG BARGAINS

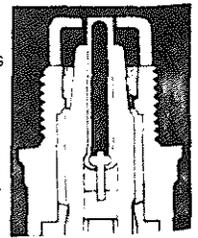
- BG341 (New Surplus) 18MM long reach, shielded, 3/4-20 barrel. FAA approved for Continental IO-470, G10-470, TS10-470, IO-520 and G1S10-520. Not for O-470, which uses short reach plugs. \$4.80 Ea
- C10S (New Surplus) 14MM short reach, shielded, 5/8-24 barrel. For VW, Franklin. \$4.50 Ea

### NEW REM37BY SPARKPLUG

Designed specifically for Lycoming O-235 K/L/M engines. Approved for O-230 and O-360's of 180 HP and less (not turbo). Performance has been sensational! Notice that firing tip is raised well beyond the bore with extended insulator and center electrode. This allows plug to fire dependably even though a build-up of lead fouling deposits may occur. Assures longer plug life and less cleaning. Promises to replace the REM40E sparkplug in all applications.



Standard Spark Plug



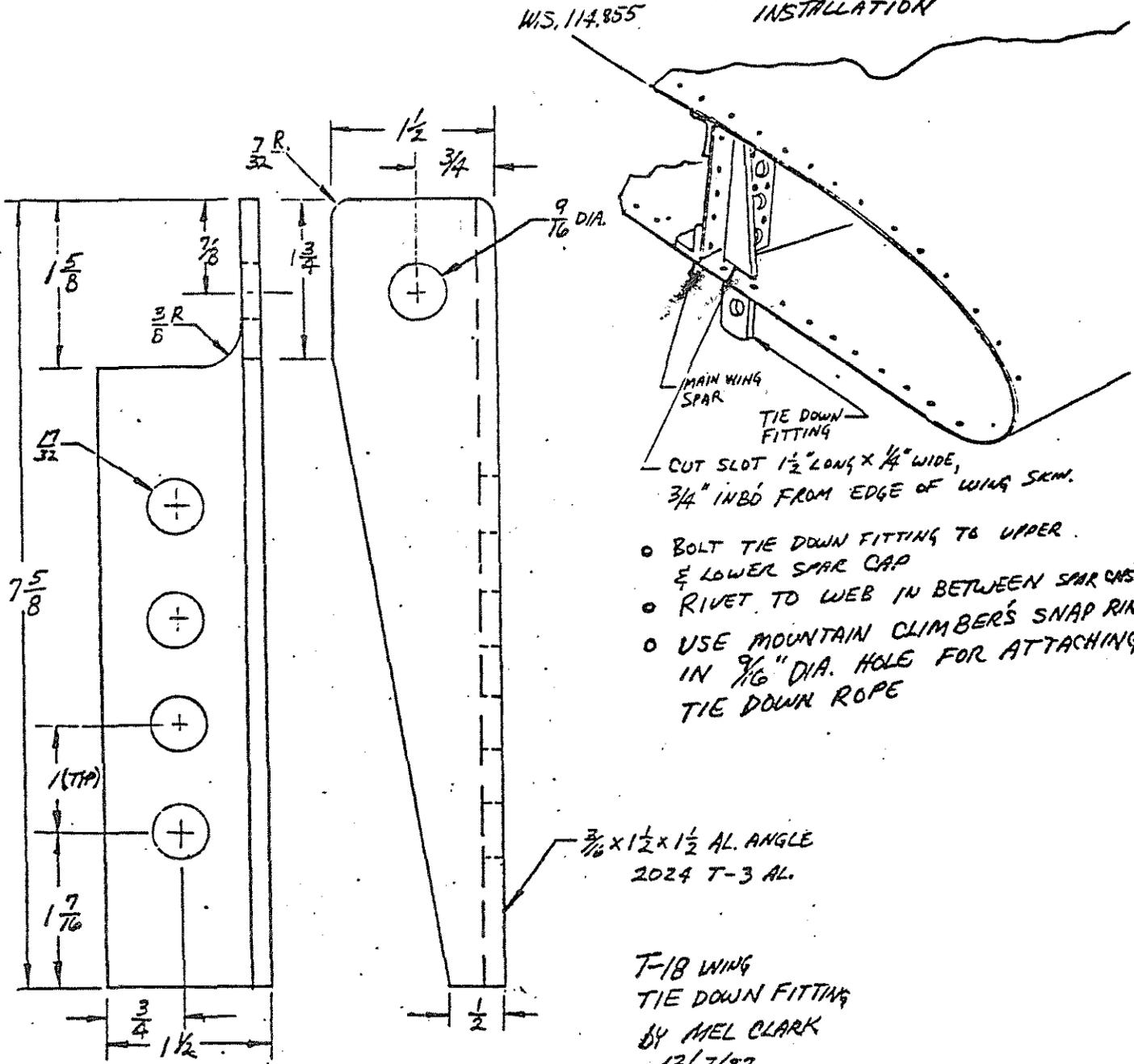
New Champion Spark Plug

August, 1988

FROM Chapter 92 Hangar Flyer

SOME BUILDERS HAVE ALSO USED AN I BOLT THAT SREWS INTO A HEAVY PIECE OF ANGLE BOLTED TO THE SPAR (is removable).

TIE DOWN FITTING INSTALLATION



LIGHT WEIGHT  
TIE DOWN FITTING

(Rec'd at last minute)

310 Oakwood Court.  
Lutz, FL 33549  
March 7, 1989

Dear Dick,

Here it is 1989 already, and I haven't sent in my Newsletter subscription money nor have I made the progress that is desired on my S-18. Enclosed is my check, and I hope to see you at Sun N Fun or Oshkosh again this year. Meanwhile, keep on writing; the Tin Bender articles and the Thorp Newsletters are great reading, especially for beginners like me.

By the way, Bill Williams of Tampa, Florida is moving right along with his project, a Thorp S-18, and he sure has been a big help to me. At the end of February, he had completed the wings, flaps, ailerons, horizontal tail, rudder, and vertical fin. Bill says that the newsletters have provided a lot of useful information, and I sure agree with that. Bill recommends the following sequence of steps for assembly of the outer wings (little has been published before on this so it might be a good item for a future Newsletter). Please note that this is written for an S-18 with fuel tanks in the outer wings:

OUTER WING ASSEMBLY    S-18

1. Assemble the front spar; install 315 spar fittings.
2. Rivet splice on rear spar (if splice is used).
3. Cleco all ribs to front and rear spars. Do not rivet any hardware to aileron bellcrank rib (320-1 rib).
4. Rivet ribs to front and rear spars. Do not rivet the 310 and 201-2 ribs or the 320-2 and 201-1 outboard ribs yet.
5. Rivet fuel tank hardware to the nose ribs.
6. Rivet doublers, inspection cover plates, & fuel tank drains to wing skins.
7. Rivet lower skin to main spar.
8. Continue by riveting lower skin to rear spar and to all ribs except the 310 and 201-2 ribs and the 320-2 and 201-1 ribs.
9. Fold upper skin forward and seal the fuel tank.
10. Rivet aileron hardware to 320-1 rib; install bellcrank (while it is accessible).
11. Rivet upper skin to main spar.
12. Rivet all nose ribs including the 201-2 and 201-1 outboard ribs.
13. Rivet skin to 320-2 rib and the 320-1 rib beginning at main spar and working back to rear spar.
14. Rivet 310-2 rib.
15. Rivet second 320-2 rib.
16. Rivet third 320-2 rib.
17. Rivet 310-1 rib.
18. Rivet trailing edge of rear spar.

THANKS, LES, FOR  
YOUR REPORT

Sincerely,

Les Connell

P.S. Just got my "Sport Aviation" - Great article on the T-18

SWING DOWN INSTRUMENT PANEL

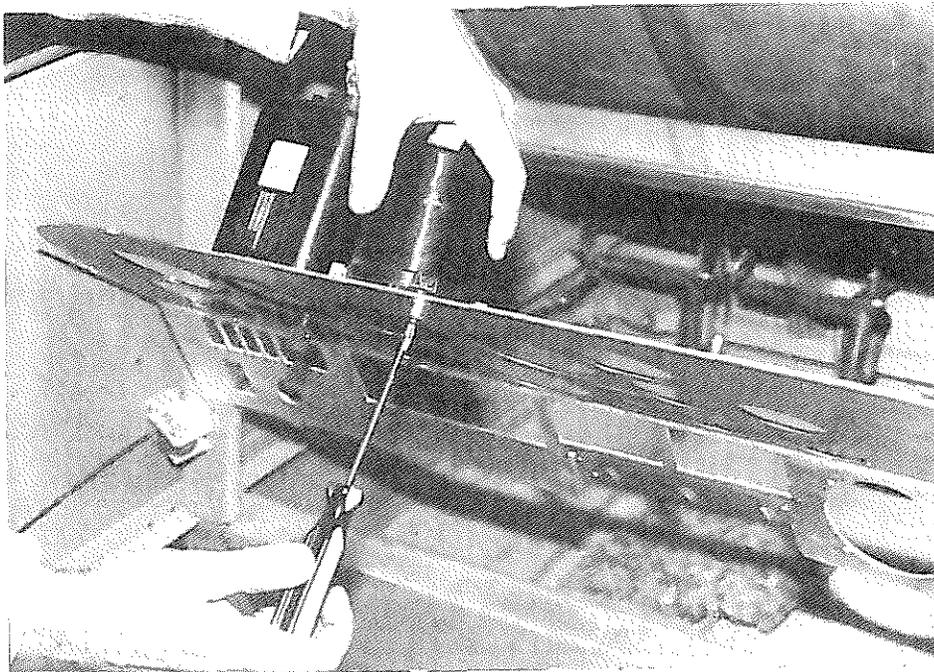
Don't climb in the hole no mo'. By means of unique engineering, instruments and connections can be serviced from either a comfortable standing position or sitting position. Design includes shock-mounting of total panel. No change is required in length of hoses, tachometer drive or propeller and throttle control push-pull cables..

Fabrication is inexpensive, simple and fast with little or no modification to standard panel. The panel illustrated has the usual full IFR setup with Nav-com, Loran, and Transponder. Switches and circuit breakers are Cessna standard.

A detachable "eyebrow" glare shield with dark naugahyde top is incorporated with the 4½" aft-mounted position of the assembly for avionics clearance.

An automotive type 6 cylinder engine is planned for this T-18 w/ Dave Blanton reduction unit to obtain the full potential of the engine.

OWNER INSTALLING INSTRUMENTS



INSTRUMENT PANEL IN  
SERVICING POSITION

from:  
Robert Yeakey  
9729 Bellewood  
Dallas, Tx, 75238  
214/750-7438

(note rudder  
cables/pulleys  
on sides)

send a S/SA to  
Yeakey for a  
hinge drawing

HE ALSO HAS A PAIR  
OF 500X5 GOODYEAR  
WHEELS & BRAKES FOR P125.

← RUDDER CABLES

THANKS BOB



## FOR SALE PAGE: (FREE LISTING TO MAS MEMBERS)

JOHN WALTON's FAMILY have now decided to sell John's T-18 (the one he built and later installed a 180 and constant speed prop in ). DEL HAINLY, a family friend and former owner of a T-18, has generously offered to take over the finishing of the airplane, installing the new upholstery and other cosmetic items. If you remember, this one has the new airfoil, folding wings, aux fuel tanks in L.E. (wing flew some 50-6- hrs before). This is an immaculately built airplane in every respect and at the \$21K price is an excellent buy for someone. Serious inquiries call Mrs. Walton at 713/440-8093, for details. If I could get my physical back I'd buy this airplane in a minute.

Hurant Karibian, 621 Woodstock Rd., Virginia Beach, VA, 23464, 804/420-5606. is close to flying his #1 T-18, but has another partially completed one for sale for \$6500, WITH a 125 Lyc. 0-290D (1300 TT, 380 SMOH). He also has two Hartzell HC-82XL-2C C/S props for sale. One is 69" dia. for \$900, the other is 72" dia. for \$2500. Space doesn't permit complete listing of all items on project, but looks like good buy for someone in that area.

EDDIE EILAND, 140 Burkett, Red Oak, TX, 75154; 214/576-5268 K Has a #479 welded engine mount and engine mount ring (#478-1) fully machined, bought from Leisure Aircraft for sale for \$200...plus miscellaneous other T-18 parts, including GPU parts. He also has a couple of VW Slick mags, one new, the other with 200 hrs.

CRAIG CAESAR, has a complete project for sale. I don't know how much is riveted, but maybe I can get further details before I close out the NL. If not, call him at his brother's house in the pm after 7 at 817/457-7037. The project was bought from Warren Spencer in Chicago within the past 6 mo. and is a good one. Craig is in a financial tight and may even have to sell his Super Cub, too. He and David drove all the way from Arlington, TX to bring it home.

CHET WELLMAN, 406 Napoleon St., Rockford, IL, 61105, 815/ 963-0015, has a project that could fly in very few months. It is a wide body fuselage and has John Walton's former standard wing. John also built the horiz'l tail. Chet has given up on getting his physical back (heart), so will sell for what he has in it (under \$10k, with Lyc. 0-320 low time engine). As I remember, it needs only a canopy to complete. Has canopy frame & roll bar.

Dan HEERSMA, 2680 Terrebonne Ave., San Dimas, CA, 91773 (~~XXXXXXXXXXXXXXXXXXXX~~  
~~XXXXXXXXXXXXXXXXXXXX~~ 714/599-3406. Has a folding wing partly assembled, all other parts, some duplicates, ailerons, flaps, center beam, outer beams, all assembled. All parts bought from Ken K or Phil Tucker. No price was quoted.

Larry Cresse, 2647 Bent Spur Dr., Acton, CA, 93510, 805/269-1291 has a project he's asking \$5k for & has o'hauled 0-290G with it. 90% complete.

Sam Stokes, 2616 Laguna Dr., Endicott, New York, 13760 (didn't send phone#) has most of parts for st'd T-18, but only outer wing panels & ailerons are complete. He lives close to L. Sunderland & Lou made a lot of these parts he said. Since Lou died he has lost interest in finishing. A/C is 607. Price is negotiable, I think. *ALSO HAS 0-290G, DISASSEMBLED.*

BEN CUPP 's JAVELIN V-6 powered T-18 update: I talked to Ben a couple of days ago and as you might expect, the engine just runs and runs and just gives no problems. He has about 70 hours on it now and it does what it does in your car....it starts on the first blade, whether it's cold or hot and from then on you just about forget it is there. The V-6 is smooth from idle to full power. Now that he has the radiators in the aft fuselage theres no longer a cooling problem. As you may have noticed in a previous NL, the automotive air cleaner does stick up above the normal cowling line, so Ben's original cowl had a hump in it and that didn't look too slick. He has since built a new cowling that he says looks a good deal better. Ben considered lowering the engine so that the air cleaner would clear the cowl, but he was apprehensive that the lowered thrust line might affect the flight characteristics adversely. The air cleaner location and type isn't a major problem to solve, so no doubt it WILL be solved.

It certainly appears that ol' Dave Blanton has a winner in the Javelin engine. It has taken a long time to get the message thru to the troops and get them to use it, but you are going to hear lots more about Dave and his engines in the future. For a lot of people, his engine will be the deciding factor as to whether some people can afford an airplane or not. The liquid cooled aircraft engine is here (or should I say, back?)

Any aircraft engine NEEDS a variable pitch (or constant speed) prop to enable it to perform efficiently in all conditions. That, too, is now here and at a price and weight that many can afford.

The prop is called "LECTRO PROP". I just turned in a short story on it to be used in next month's "HOT LINE" in Sport Aviation, so I won't repeat all the info, except to say that it will weigh 28 lbs. complete and cost about \$3000. (That's light and that's cheap compared to a new Hartzell c/s prop). It's electrically controlled via solid state electronics and is available in either a toggle switch controlled variable pitch version, or a constant speed version that maintains a pre-selected rpm. This prop may well be a perfect complement to the Javelin engine, enabling the pilot to get maximum horsepower from a standing start, plus a markedly better rate of climb, adding up to a big safety plus on every take off. It also will pay for itself in better fuel consumption in cruise.

The Javelin engine doesn't lend itself to the use of a Hartzell c/s prop. In addition, the weight would be prohibitive. The LECTRO PROP can be an "add on" item, with very little effort involved. I'll be doing a complete story on it in the near future.

The history of EAA and aviation progress has been inseparately wedded to forward looking men with vision, men like Dave Blanton, who despite many setbacks, keep pressing on. Call them modern day pioneers, men who deserve our respect and plaudits. This list also includes people like Ben Cupp, who is equally deserving of our appreciation and congratulations.

Incidentally, Ben told me that he definitely will be at our June reunion at Texhoma. Hope you'll be able to join us there, too. It will be a golden opportunity to observe and compare the Javelin T-18 performance with the others. There is an outside chance that John Popejoy will also be there with his Javelin T-18, if everything goes as expected.

That's it for now, gents. Again, I apologize for the long delay. In the next NL, #72, we will have pix of all OSH '89 T-18s, etc. Sayonara.

BEN CUPP  
LECTRO PROP  
KUDOS TO DAVE & BEN