

SUM FUN

Just returned from the '88 Sun 'n Fun thing, where we spent Wed. and Thurs. The weather was just about perfect when we were there, but they had had one rain day on Tuesday that slowed things down a bit. I saw 5 T-18s while I was there, but I never did see even one of the T-18 people, darn it! Dave Eby had been there, but he left early Wed., so I missed him, too. There was one T-18 from Calif., which has a large "gull" painted on the side. I had seen a picture of it in a magazine article several years ago, but don't know the owner, since he doesn't belong to the M.A.S. I did recognize Bob Highley's bird, but was unsure of who the others were, since they didn't have a registration card on the prop. I also recognized the one and only single place T-18 (which also has a retractable conventional gear). It was built in Sugarland, Texas about 15 years ago. It was sold to someone in Calif. later. I saw it at a fly-in at Chino, CA, about 10 years ago, but again no registration card, so I have no idea who owns it. It still looks very good, too. Hope the owner brings it to OSH this year.

- PLEA FOR LETTERS -

In our previous NL we urged all of you to be sure and write letters of protest to the FAA about the NPRM and send a copy to me, also. I am sorry to say that I only received 13 copies of letters from the entire group of T-18 MAS members.....I certainly hope that the copies I received were not all the letters that were sent to the FAA.....If they were all that you sent, all that I can say is that's a lousy percentage from a group of men that stand to have their hobby done away with because they are too apathetic to spend a few minutes on writing a letter. I well know that getting the average person to write ANY kind of letter is very close to utter impossibility. I've begged, wheedled, cajoled, and pleaded for you guys to sit down and write a simple report on your project and to date I would guess the response is in the 3 to 5% range....so, yes, this is one thing I KNOW about human nature for sure. Even so, I simply cannot comprehend why people would shirk their duty on anything as important to all general aviation as this. Can you? Or maybe you think this NPRM thing and the Mode C are a good thing and that we can live with it? I sincerely hope you haven't been that badly misled.Not only will literally hundreds of private airports be rendered completely worthless and will go out of existence and probably fall into the hands of developers, but also the cost of services from remaining FBOs and fuel sales outlets will go sky high.....Consider, too, what kind of treatment you'll get from ATC when you ask for PERMISSION to penetrate their radar area, what kind of frequency congestion there will be, how far in advance you will have to file a flight plan before flight, how you will have to wait to receive approval of your flight plan, how you will be DIRECTED as to what heading and altitude you WILL fly... (regardless of weather)..how there will be so many blips on their scopes that it will be humanly impossible for a radar controller to safely separate traffic (like it is now in some areas). Now when all this happens and everyone decides to get out of private flying in disgust and sell their airplane....just who do you think will have any interest in buying it???? So if it's okay with you if you have to fly your airplane on a string or an R/C model (assuming Big Brother doesn't decide they, too, are a menace) just go right ahead and do nothing. Just go ahead and wait on someone else to write those letters and I can promise that you will get exactly what you deserve!!!

As of about a week ago the FAA had received over 35,000 letters of protest on the RPM and they were forced to extend the deadline to May 12th. When this NL arrives you will only have less than a week to write and mail your letter, so that it arrives by May 12. Not only should you write FAA (again if you wrote before) but you should write to your congressman and senator, too. THIS IS VERY IMPORTANT! The original impetus for the NPRM came from

WRITE!

Congress, but the FAA airheads seized on it as their golden opportunity to control everthing that flies....and in the process they can create lots of new supervisors, raise salaries, etc.You get the idea (I hope). We must MUST convince members of congress that this proposal will not only wreck a vital industry, cost thousands of jobs, etc., but we MUST also make it plain to them that airline safety will actually deteriorate.

Again, amigos, I beg you to spend a half of an hour suffering and get those letters in the mail....PLEASE! DON'T BE A QUITTER! . FIGHT BACK!

LAKE ARROWHEAD LODGE REUNION

NEXT ITEM OF BUSINESS: Our ANNUAL SPRING RE-UNION at ARROWHEAD LODGE on Lake Eufala, OKla.....As Leroy and Mary Holt explained in the special mailing, we had to move from Texhoma, as the lodge there was sold out up thru July. (I sincerely hope this won't be our last one). That's the week-end of MAY 14 & 15, with some of us arriving on the 13th (Friday). If some of you have delayed making your travel plans and reservations until the last minute, don't wait too long. You need to let Leroy and Mary know as soon as possible, so they can make eating arrangements, etc. If you drive in you might want to bring a couple of folding chairs, a thermos, etc. A folding table or so to have near the flight line would also be welcome. If you have a video camera bring it along, too. We plan to do a complete video on the procedings, with detailed interviews with the aircraft owners. Remember, no programs or activities are PLANNED, no invitations are being issued. We are just saying that a group of us with common interests are going to get together on that weekend and share a meal or two and some Bravo Sierra type visiting and we'll also be sharing some details of our building and flying of the T-18, so everyone is on their own. At our last get together Paul Shifflet started a trend when he brought in his fold-down instrument panel, a stabilator bucking bar, and his version of electric trim. If you drive in, why not bring some component of your project for new builders to study? If such parts aren't readily transportable, how about a video of it or some good fotos to show details? I just got a letter from Paul, with pictures of how he is going about making a metal cowling for his project. If he comes again he may bring the form blocks, etc., but if not I'll bring the package of fotos he sent (I'll put a couple of them in this issue, too). Anyway, we are looking forward to having another super-good time, like we had at both Texhoma gatherings. Hope to see you there,

OSH - COME!

OSHKOSH '88, THE T-18's SILVER ANNIVERSARY: We are also getting close to our annual convention time at OSH and I need to get your commitments as to whether or not you will have your airplane there. PLEASE send me a post cardTODAY....as to whether or not you will have your airplane there. If you are unable to make definite plans at this time, but hope to make it, let me know that, too, please. I have told Tom Poberezny that we hope to have as many as 50 T-18s at OSH this year and they are making DEFINITE plans to allocate enough reserved parking space at the north end of the display area (the regular area). They are also blocking off an airshow time on TUESDAY for a mass flight of all T-18s there in the Parade of Flight. We would urge you to make every effort to be there even if the paint is peeling off, the upholstery is ragged, whatever....just be there! If your bird is out of licanse, get busy and be sure it will be ready for OSH. You will never again have an opportunity like this to pay tribute to John Thorp for giving us the best homebuilt design going. A lot of you have often expressed the desire to thank John in some way, so this will be a superb way to pay tribute to a fine gentleman. You can appreciate that EAA HQ needs concrete numbers to make plans, so we must have some definite numbers right away. Hopefully, your card will say, "Yes, my T-18 will be at OSH '88". The T-18 dinner will also be on Tuesday nite at Butch's Anchor Inn, as usual, so please indicate if you plan to attend that, too.

(More on OSH later in the NL. In the meantime enjoy Cliff's report)

N18CR
Clifton Redden
609 Wise Rd.
Lynchburg, Ohio 45142

T-18 Mutual Aid Society

Dear Dick Cavin,

Since its a rainy weekend here in Ohio, and I can't go flying my T-18, here's my newsletter contribution.

N18CR (serial # 1330) was started in the fall of 1979 and was finished in the spring of 1987. It passed the FAA inspection on 7/14/87. Before the inspection I started a series of taxi test. Being a low time taildragger pilot, (4hrs. in a Cub) I had a lot of very exciting moments: almost ground looping, getting inadvertantly airborne, ect.

I got in touch with Jim Paine (N747JP) of Dayton, Ohio to evaluate the plane and give me some advice about the taxi test. I continued taxi practice untill I could get up and down the runway (3500 ft.) on the main gear, maintaining directional control. On 7/18/87 Jim came down and test flew the plane for me. The Plane required full nose down trim and forward stick pressure to maintain level flight and the engine ran rough in flight.

After Oshkosh, I rebuilt the magnetos, installed longer trim links, adjusted control surfaces, and installed a veriner throttle. On 8/12/87, Jim Paine test flew N18CR for the second time. This time everything was OK. With 6 gal. fuel, I went up with Jim to check out the trim. With this loading configuration, we had plenty of trim control.

Jim gave me a couple hrs. dual in his T-18, then we switched over to my plane for a couple more hrs. of dual. On 8/30/87 I soloed N18CR for the first time. WHAT A GREAT MOMENT THAT WAS! That one flight was worth the 8yrs. building time. THANKS, Jim and Judy Paine, "Great T-18ers"; THANKS, John Thorp, for a GREAT aircraft!

I have 73 hours on my T-18 at this time. I still have a little trouble landing once in a while. If I bounce too much, I just go around and do it right the next time. At first I did wheel landings, but now I have learned how to 3-point it on pretty good. In the pattern I slow to 100 kts. before putting on the first notch of flaps. This gives me about 90 kts. for the base leg. On final I pull on full flaps and hold about 80 kts. slowing to about 65 kts. over the fence, and touch down at 55 kts.

(ADD 15% TO CONVERT TO MPH FIGURES)

I recently did some measured course speed runs to check out my airspeed indication. At 140 kt. indicated, my measured /calculated speed turned out to be 143½ kts. (better cruise speed than I thought)

CLIFF REDDEN'S REPORT ON N18CR

(Cliff Redden report cont'd)

N18CR Specs:

Empty wt. 949lbs.
Gross wt. 1550lbs.
Engine 0320 E2A, 150 Hp.
Prop Hendrickson 68 x 72

N18CR has a full gyro panel, an Edo 360 Navcom, a Genave transponder, and an STS C110 Loran. In addition to the usual rear canopy vent, "ankle level" vents are provided. The plane is painted white, and is trimmed in blue. It has the standard body and standard wing with the Sunderland airfoil. The pitot tube is under the left outer wing, the static ports are located on each side of aft fuselage.

The engine will over rev in level flight with this prop at 3000' msl. Flight performance is 140 kts./2450 rpm, 150 kts./2700 rpm. This prop does not have enough pitch for this engine-plane combination. I have a Pacesetter 200 prop ordered, (should be here in December) which should match the engine better.

→ The Sunderland airfoil sure does its stuff on the low end. I have slow flew at 55 kts with full flaps, making 15 degree banking turns without it stalling. It stalls a little below 50 kts with full flaps.

(NOTICE KTS, NOT MPH)

Every time I fly the T-18, it makes my day! It sure is a sweet flying airplane. All the local pilots really like this little plane. Now if only I can get a couple of these guys started building their own T-18!

Thank you, Dick, for your dedication to the newsletter. I don't think I could have built this plane without it. Thanks to all you T-18ers out there for all your ideas and help.

Sincerely,

Cliff Redden

Thanks a million, Cliff, for an excellent report. We'll be looking forward to seeing you and your new bird at Arrowhead and also at OSH. You and Jim Paine should enjoy the formation flights together.
(See foto of Cliff's beauty this issue).

STANDARD DISCLAIMER: Since I have a small blank spot on this page I'll use it to advise our readers, new and old, that all past, present, and future newsletters of the T-18/S-18 Builders and Owners Association (formerly known as the T-18 Mutual Aid Society) that we would make you aware that these newsletters and/or video tapes we issue are ONLY presented as a clearing house for ideas, opinions, and personal experiences of both our members and non-members in both building and flying the T-18 or S-18 or any of its derivatives and anyone using these ideas, opinions, or experiences do so at their own discretion and risk and no liability is implied or assumed.

CLIFF REDDEN FLIGHT REPORT PG 2

DISCLAIMER

ED.

(Now here's a subject that a lot of have thought about when it came to start in building your ailerons and flaps. Many factory built airplanes use a bent up trailing edge, so many ask, "Why not the T-18?" Remember, the T-18 was designed to make maximum use of Matched Hole Tooling for the beginner builder. Several builders have gone this route with no problems, so you might consider it a viable option).

February 10, 1988

T-18 Builders and Owners Association
10529 Somerton
Dallas, Texas 75229

Dear Dick:

I've been working on my S-18 about a year now, and I'd like to share a couple of ideas with you.

I started building ailerons first, and I thought that I would try to make them with single-piece aileron skins. Somewhere I read that this could be done if one had access to a good bending brake. I don't have one of those, but of course I had to try it anyway. I made up sort of a homemade thing that "kind of" worked. After scrapping the first two skins I realized that it was necessary to become more resourceful. The problem was that I would get considerable curvature in the trailing edge. The cure for this was to bend the skin only about 20 degrees at first, then take the skin out of the brake and reverse it in the brake. In other words, the skin is put back into the brake and clamped on the half of the skin that was outside of the brake during the first bending operation. Then the skin is bent another 20 degrees or so. Then take it out, reverse and reclamp and bend a little more. I kept doing this until I got past the 90 degree point, and then I just finished the bend. I don't recommend using the matched hole system when making one piece skins. I cut out my skin blanks oversized, bent them, then trimmed them to size. Mine came out reasonably straight.

The next thing I did was build the outer wings, starting with the spars. I got my spar caps really straight by using the following method. Locate the top spar cap on the spar web in the approximate position and clamp. Do the same with bottom cap. Support the whole works on a 2 X 6 that you've sawed down to about 5" wide. Now drive two nails into your work table about 7' apart, and tie a piece of black nylon fishing line to the nails. Pull the line tight. About 15 pound test line works good. Slide the spar assembly close to the line, but don't touch it. Measure from the spar cap to the line with a good steel rule. Adjust the spar cap until several measurements along the length of the spar produce the same reading. Of course, you will have several clamps along the length of the spar cap. See the sketch below. One final

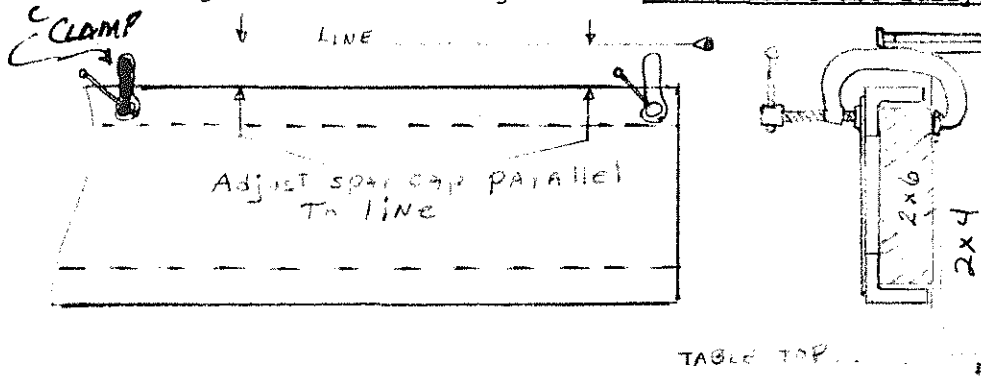
NEXT PAGE

DICK PURDUE'S TIPS ON SPAR CAPS & ONE PIECE AILERON SKINS

(Dick Purdue's letter, cont'd) (Ed. note): We have often pointed out that there are always several ways to build components of the T-18 and one of the functions of a newsletter is to present several ways to do things. When you excuse yourself from writing a report on something you built on the grounds that it wasn't anything especially new....remember how thirsty you were for ANY kind of info when you started, even knowing where to start would help. Surely you can come up with some little story on some component, can't you? WE NEED YOUR STORY TO KEEP THE NL ALIVE!

Page 2

word-this works if you measure vertically, looking down at the string. If someone were to do this looking horizontally, the slight sag in the line might influence straightness. Also, don't use fuzzy, white string.



I've really gotten a lot out of the previous newsletters, and I've enjoyed meeting several of you T-18 folks.

Keep on Riveting,

Dick

Dick Purdue

DP/cp

Dick Purdue
RR 1 Box 223
Byron, MN 55920

DICK PURDUE'S LETTER PG 2

Thanks, Dick, for your excellent report. Maybe it will galvanize someone else into writing action. I also appreciate your typing it up so neatly and leaving the L hand margin. It certainly makes my job easier, as all I have to do is type in the top line on the page and use it as is. I also appreciated your drawing a front and side view for clarity.

The next four pages are from Paul Shifflett. This is an account of his building of an electric trim system for the stabilator...plus a couple of tips on riveting and plexiglas. Take note, too, on how he has done the mod on a Piper brake cylinder to conform to Thorp's drawing for arc of travel, height, etc. Here's another area that confronts everyone, so how about a story of how YOU did it and with what result?

Next 4 PGS.

Paul R. Shifflett Rt 2 Ex 44, Earlham, Ia 50072
515-758-2621

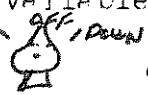
Nov. 17, 1987

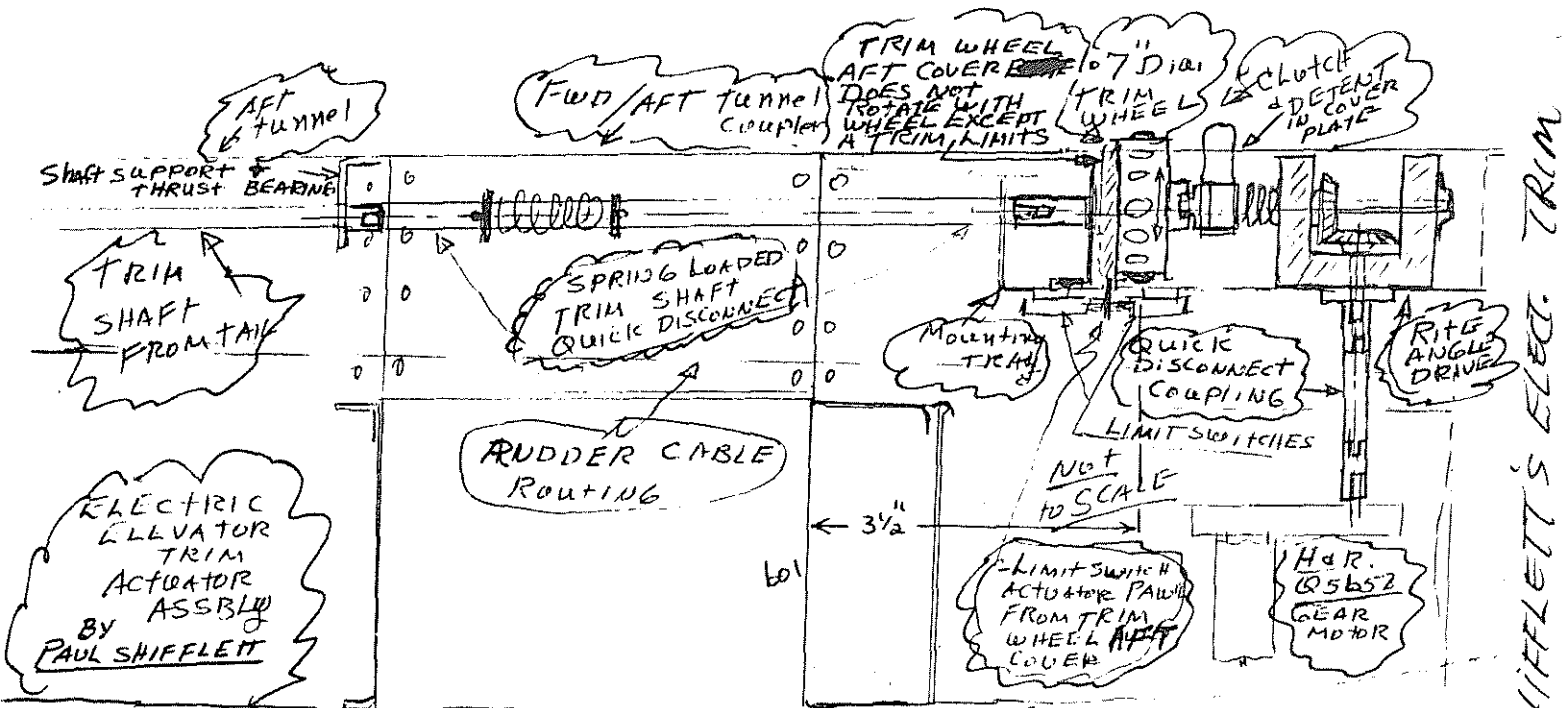
Dear Dick; We certainly enjoyed the Texoma get-to-gether, particularly the T-18 rides in the planes of Jim French and Bob Ebe. My last such ride had been about 10 years ago. I am sending you the pictures and ~~RR~~ negatives of my elevator trim system and instrument panel as I had promised. The electric trim uses a Herbach and Rademan, Q5658 gear reduction motor which turns 16 RPM at 21 inch-pounds full load torque. The electric drive maybe clutched out (not part of the motor unit) by a small tab protruding from the top surface of the front tunnel. Manual trim may then be accomplished by rotating the trim wheel which also protrudes above the top surface just aft of the clutch tab. This wheel is actually a shallow (about 5/16" deep) cup, with axis fore and aft, which contains a multiple disc assembly similar to that described in NL 56 pgl5E & 16A by Harry Wheeler. The Q5658 trim reduction gear motor is also the same unit used with the trim system described by Mr. Wheeler. - - - Full trim range between up and down limit switch operation is 5-7/16 turns and this total range may be reduced or shifted in 1/16 turn increments by relocating either one or both of two screws threaded into the outer rim of the trim wheel. These two screws go into two of 16 equally spaced tapped holes and serve to set the upper and lower trim limits. The two limit setting screws are about 5/16" long, whereas the other 14 holes retain short screws which are not long enough to engage the internal revolution limiting discs. All sixteen screw heads protruding from the rim surface of the Trim wheel aid in manually thumbing the trim wheel and counting trim turn increments by feel. - - - Also in electric drive this wheel turns and works as a visual monitor of trim changes. - - - For fine trim adjustment where there maybe an uncertainty as to just when to Toggle Off, the electric drive maybe clutched out and trim adjusted manually. Note: my latest flyer from Herbach & Rademan is just two years old. That issue still illustrated the Q5658 motor at \$25 each.

ANOTHER TRIM SUEJECT: Several T-18ers with electric elevator trim have commented on the on the irritation of having to Toggle back and forth between up and down switch positions in order to get trim set correctly. Baring a backlash problem, the difficulty is most likely due to coasting of the motor after the Toggle switch goes OFF. The best solution would be to be able to slow down the drive motor to a very SLOW speed. However easy means of doing this, particularly by inserting a resistor in series with the motor seriously reduces motor torque and the motor is apt to stall. If AC were available a variable speed control like on an electric drill would do the job. Such a motor retains full torque at the very low speeds. Another solution is to brake the motor to stop coasting over-run, by wiring in a resistor that is shorted across the motor input only when the motor is off. This is called dynamic braking and works because the motor is a generator when turning with no applied voltage, and will stop more quickly if an electrical load is placed across the motor input terminals. The smaller such a resistor the faster the motor will stop. Actually a wired in short circuit is fine as long as the operating switch contacts don't stick. This is unlikely with such a small motor(generator)***. I believe the switching of the motor and resistor would most simply be done by a SPDT relay in conjunction with a DPDT toggle switch - - - ON - Center OFF-ON. The relay and resistor would be wired as shown on attached sheet. Alternatively, to avoid using a relay, and if panel space is available, a 3 pole, three position rotary switch would do the job. UP OFF DOWN A single 12 segment wafer ~~switch~~ with a momentary ON-combination that would work. See attached sheet for schematic.

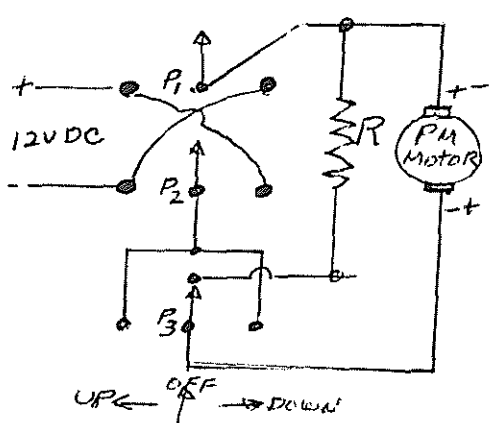
PAUL SHIFFLETT'S ELECTRIC MOTOR TRIM

↑
 NOT BUILT -
 NOT TRIED WITH
 Q5658 Gear motor -
 SUGGESTION ONLY



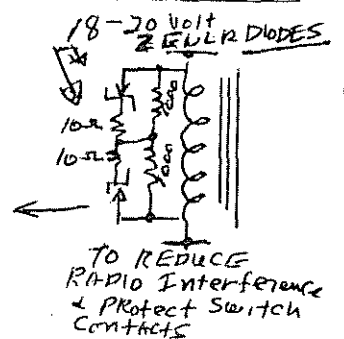
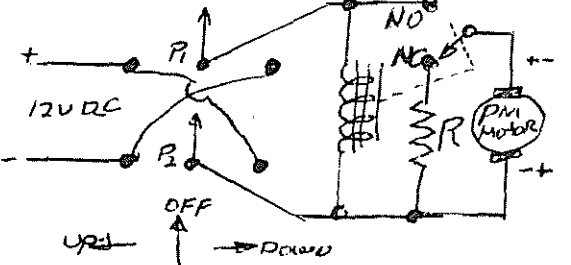


AS SUGGESTION ONLY
 NOTE: BRAKING CIRCUITS BELOW HAVE NOT BEEN TRIED WITH MOTOR Q5658



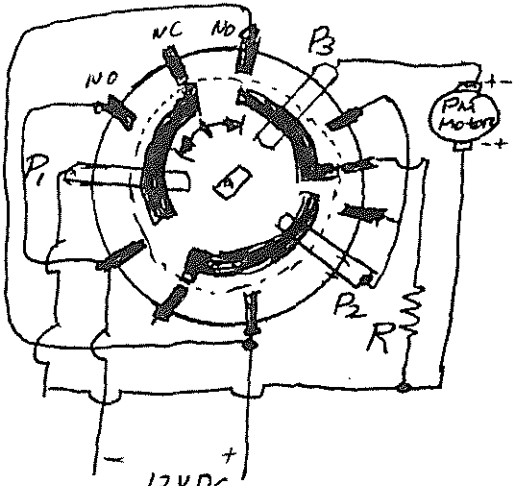
DYNAMIC BRAKING CKT without RELAY, USES ROTARY 3POS. WAFER SWITCH - 12 SEGMENT, 3 POLE, ON - ON - ON Momentary

TRIM MOTOR DYNAMIC BRAKING CKT:



TO REDUCE RADIO INTERFERENCE & PROTECT SWITCH CONTACTS

***Choosing value of R; The initial switch or relay contact current for R equal to 0, (a piece of wire) can be determined to not exceed the motor input current with the armature stalled or locked so it can't turn. For a small motor with a relatively high internal resistance the momentary surge of current through the switch or relay contacts during motor braking should not stick the contacts or damage them. However this depends of course on the switch or relay used. Check the Sw Mfg rating relative to the stalled current. *BE CAREFUL - DON'T BURN MOTOR OUT IN THIS TEST.



REF: SKETCH ABOVE
 A pair of Zener diodes connected back to back and shunting the relay may be necessary to prevent switch arcing. This will slow the opening of the relay. Also protects radio equipment.

Q5658 specifications:
 WEIGHT - 1#-1/23
 Output shaft 1/4" D x 3/4" L
 .22" flat.
 gear box 2.85" x 3" x 1.125"
 Motor 2-5/8" L x 1-7/16" D
 gear box die cast zinc alloy

12 VDC .5A no load
 .8A full load
 22 rpm no load
 16 " & full load of
 21 Inch- Lbs
 Starting Torque 75
 Inch- Lbs

Herbach & Rademan, 401 East Erie Ave, Phil., PA. 19134
 DEC 85 PRICE \$25 ea 275-426-1708

CIRCUIT DIAGRAMS - PAUL SHIFFLETT'S ELECT. TRIM

FROM:

Paul R. Shifflett, Rt 2 Box 44, Earlham, Iowa 50072 ; 515-758-2621

RIVETING TIP; This may have appeared in the newsletters before this. If so, I believe it worth repeating. To obtain flush contact between sheet material of small pieces when riveting- - to avoid a gap between riveted pieces- - when necessary. I place a rubber washer, or washers, over the shank of the rivet. The washers should be thicker than the protruding length of the rivet shank; enough to firmly hold the riveted pieces together when the rubber is compressed down to the end of the rivet shank. by the bucking bar or rivet set as the case may be. Riveting proceeds in two stages. (1) With washers in place, drive rivet enough so that the swollen rivet shank holds the pieces firmly together. (2) Remove the washers and complete the riveting. I use a leather punch to punch holes in sheet rubber of various thicknesses. I keep the washers in my tool box and use them regularly. It works great. Especially with a rivet squeezer.

PLEXIGLASS: Excellent product literature by Rohm and Haas, manufacturers of plexiglass sheet.

PL-7N Cementing Plexiglass

PL-3L Machining "

PL-ROK Annealing "

I walked in and picked up these items for free from Read Plastics 12331 Wilkins Ave, Rockville, Md 301-881-7900 20852

PL-7N is a prime source of information on how to do it, for fabrication and repairs. Covers application of both solvent type and polymerizable cements. Polymerizable cements can be used as a filler of a void- - Cures into an acrylic To repair a crack you don't contact cement it; you open the crack up into a "V" joint with a file and fill the V.

Regional sales offices are at;

- Independence Mall West, Phil, Pa. 19105 215-592-3000
 - 5750W. Jarvis Ave. (Niles), Chicago, Ill 60648 312-592-9100
 - 4585 Simontree Rd., Dallas, Tx 75234 214-233-1021
 - 1920 S. Tubeway Ave., Los Angeles, Ca 90022 213-722-5434
- Offices also in Atlanta, Detroit, Elmwood Park, NJ, And West Hill Ontario

READ PLASTICS STOCKS THE VARIOUS CEMENTS

RIVETING TIP

PLEXIGLAS INFO

RUDDER MODIFICATION

A note from Ken Knowles following the last newsletter indicated that all the rudder skins he had sold were from patterns transferred directly from John Thorp's own templates. It would appear from this information that John himself reacted to his own observations concerning the ample size of the T-18 Rudder and possibly reduced it himself.

SO DONT FRET IF IT DOESNT CONFORM TO THE DWG.

RUDDER INFO

CONSTANT SPEED PROP AND SPINNER

The beautiful spinner supplied by Ken Brock for use with the Hartzell constant speed propeller comes without filler pieces to install behind the blades. The necessary information to build these (2) filler sections are enclosed in this newsletter in the form of full size templates. It would be wise to leave a little excess metal on the dash 1 and dash 2 pieces and then trim after assembly so both filler pieces weigh the same. An electronic postage scale or triple beam laboratory balance should be used for this final weighing step.

URN TO PAGE 16 FOR DWG.

1/8 PROP TIPS

BY JOHN WALTON

KUDOS TO PAUL SHIFFLETT

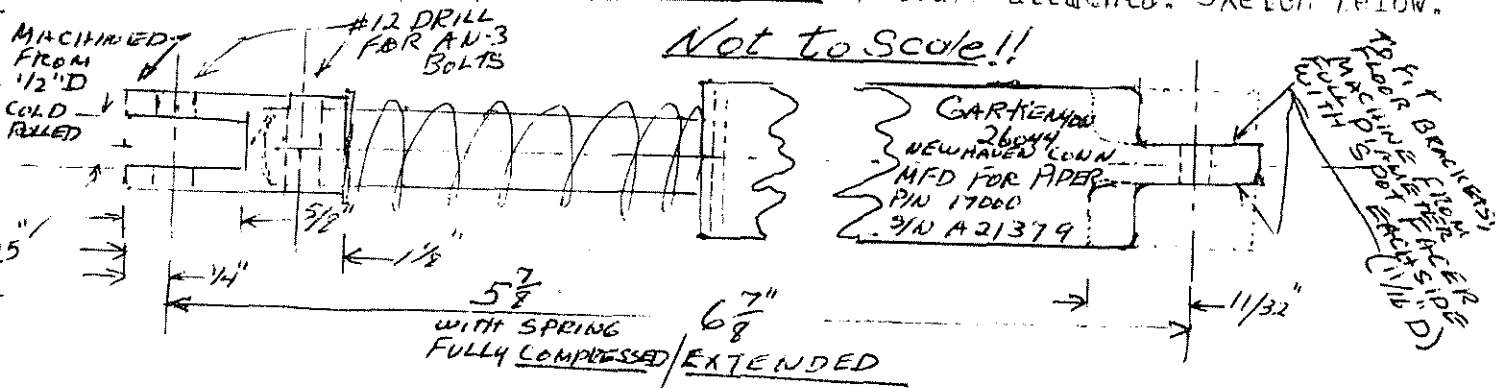
MODIFYING BRAKE CYLINDERS

Paul R. Shifflett, Rt #2 Box 44 Earlham, Ia 50072 515-758-2621

Selecting & modifying substitute brake cylinders. - - Having bought Rosenhan cylinders as being a correct and satisfactory replacement for the Thorn specified cylinder I decided I preferred something more substantial (no prejudice intended) . Substituting another brake cylinder requires comparison of piston diameters and travel. Simply equating displacements is not necessarily adequate. A smaller piston diameter will require a longer brake pedal travel for same braking action and will result in a softer pedal. The relative actions are in proportion to the ratio of the piston areas of the original & replacement cylinders.

The cylinder I am using is made by GAR-Kenyon and is labeled as #26044, with PIPER p/n 17000. I bought a pair newly removed from newly delivered Piper training aircraft. (Evidently the operator didn't want dual brakes in his training planes). The piston diameter is 1/16" larger than the Rosenhan units and so will require less pedal travel but more pedal pressure for equivalent braking. The shaft was too long to match Thorn mounting specs of 6-7/8" .Not sure of this dimension now, but anyway I cut the piston rod off and made a coupler as shown, giving a 6-7/8" dimension from the center of the lower cylinder attachment hole to the extended position of the coupler pedal attachment hole.

This permits no adjustment of the brake pedals. I preferred doing it this way rather than threading the piston rod. I feared damaging the shaft finish. If I want to change the brake pedal position I will make new couplers with appropriate dimensions. Picture attached. Sketch below.

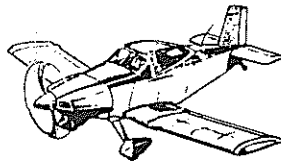


Paul, we are indeed grateful for your input on these subjects and for your bringing the instrument panel, electric trim, and bucking bar to the Texhoma event. We hope to see you again at Arrowhead and thank you again in person. Now if we had a couple of dozen more like you.....

As you may have suspected, Paul is an engineer (E.E.) and worked at the U.S.Navy Testing Lab for quite a few years before retiring to his old boyhood home a few miles west of Des Moines. We all have to admire the professional way that he goes about every phase of his project. I also well know that his airplane will have no peer for technical accuracy when it is complete.

I had intended to re-type Paul's report, but I am knocking my brains out to hurry up and get this NL in the mail, because of the urgency of getting letters in on the NPRM and also to get the latest info in on our Arrowhead reunion. I am such a slow typer (I use two fingers on each hand).

TEMPERFOAM - SUNMATE



JIM FIX
3710 AIR PARK ROAD
LINCOLN, NEBRASKA 68524
(402) 470-2346

HARLO MCKINTY
1310 IDYLWILD DRIVE
LINCOLN, NEBRASKA 68503
(402) 464-0570

#1152

Dear Dick:

Your constant reminder for us to send you comments for the newsletter pricked my conscience, so I'll send a few of the things that may be of thought to other builders. Lord knows that I've sure been helped by the ideas and all the help from Lu Sunderland, John Schinn, John Walton, Paul Kirik, George Lieder, Peter Hodgens, LeRoy Holt, Chris Fast, John Kleber, Frank Snediker, and many others. I've been plugging away, two nights a week for the most part all this time, but it should get airborne this fall. It was a ride with Al Nuntoufel (sp?) that got me hooked in 1974. I really enjoyed Texoma; I appreciated it as a builder more than Oshkosh (that may be heresy).

I had the earlier wide body T-18 and the canopy frame from Ken Knowles, so I had the wide skirt. The zippy-do grinder at high speed as GB recommended worked fine. I bedded all the canopy attach points with G. E. Silicone and sealed it with that, too. I did put in dual brakes, as Paul Kirik suggested, and a parking brake valve mounted in the center, left of midline with a choke cable control running over the top and back of the tank sheathed in plastic tubing. Heavy maybe, but it won't wear into the tank.

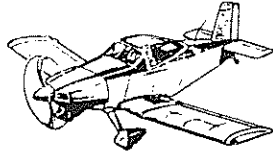
I lowered and rounded the tunnel with a 3" aluminum pipe, opened up and supported by .063 2024 on the sides, with 3/4 X 3/4 063 on the bottom running clear through to the first fr m aft of 598. This also serves as the support for GM tailgate motor and sector gear for the electric flaps as Paul Kirik and Bob Dial have proposed. It also serves as a support for the baggage compartment floor. This really lowers the tunnel; I could have a bench seat were it not for standing on the tunnel getting in and out. I out-boarded the rudder pedals and put little pulleys forward of 601, and fairleads elsewhere, like Bob Dial had in the previous N.L.

To help on the C.G., I put my ADF antenna, ELT (Pointer), marker beacon receiver and glide slope receiver and blind en coder aft of the baggage compartment, opposite of the battery. The wing leveler gyro is on the back of 592, and the bellows are under the seats, with cables running to the middle to pulleys where they tie into the walking beam assembly.

I used lawn chair tubing for my seat bottom supports as Lu Sunderland recommended and hinged them at the front to tip up for access underneath. I kept the backs separate and fastened the shoulder harness to the top of seat backs so that the straps don't cut into the neck. I used 1/4" plywood for the seat bottoms, reinforced with nylon webbing and a strip of .063 3/4 X 3/4. In the event of a pancake crash, I want the seat to deform. I did use 3" of Temperfoam on top of the 1/4" plywood. I also used 1/4" plywood in the backrest with a structural foam periphery for shape, covered with one layer of fiberglass cloth on one side with only one inch of Sunmate. The back pops in and out like Peter Hodgens' to give full

Pg. 1
HARLO MCKINTY'S REPORT

TEMPERFOAM - SUNMATE



JIM FIX
3710 AIR PARK ROAD
LINCOLN, NEBRASKA 68524
(402) 470-2346

HARLO MCKINTY
1310 IDYLWILD DRIVE
LINCOLN, NEBRASKA 68503
(402) 464-0570

HARLO MCKINTY'S REPORT - Pg. II

access to the baggage compartment. I used chair floor caster balled rods (male) in the seat backs and the female part on the back of 598.

The one Navcom antennae I mounted under the seat, and a Loran (Narco 820) also under the seat on the opposite side, bent of course. The transponder antenna is forward, 4" back of the firewall, just right of midline.

I used a scupper shield around the gas tank with a floor drain. I used a racing car gas cap (automotive) that should not come off. I sealed the scupper to the foreskin with rubber and proseal. I also wet the wings as you had previously written in the N.L.; all 4 bays in the outer wing panels, using .032 skin and ribs. It was really a job, sealing those wings. It took an extra four months, the way I work.(slow) I fastened the tie downs out near the tips--recessed screw in cast ring. I fastened in the upholstery with velcro.

I started the engine the other day with the windshield out and I sure felt like a hood ornament. Checked all the gauges, cycled the prop, etc. I only ran it up to 1300 to check. I'd cleaned out the preservative oil in Clardy's engine with Marvel Mystery Oil, setting overnight. It was a thrill just to know the engine would even fire up. I'll send you a report after I finish up a few things and get some time on the engine. Paul Kirik is coming over next month to go over everything with a critical eye before I rivet in the front belly skin and put on the gap covers like LeRoy Holts'. With all these added goodies, I may be overgrossed before I get in it, but I keep telling myself that Paul White got Kong off the ground.

This should be a long enough letter, Dick; chop it off or edit any way you see fit.

Best regards,
Harlo

Thanks again, Harlo, for this report and the one you did in #68NL We do appreciate your efforts.

I am especially grateful to Harlo for getting me started on a serious weight loss program. He told me about the success he had had on a program that is called "Medifast" and some other similar names. It is medically administered and supervised. Harlo has lost 85 lbs. in a six month period and is now close to his ideal weight. His diet was 5 glasses a day of a liquid formula (500 cal), but my Dr. has me eat 3 tiny meals per day, with an additional 3 glasses of formula between meals, because of my 72 years and being a diabetic, but I get about 700 cal per day out of it. I'm happy to say that I've peeled off 15 lbs. in the month I've been on it, lost 2" in my waist, and brought my blood sugar consistently down in the low normal range with a big reduction in the insulin used. They project I'll be about 50 lbs. lighter come OSH time and be off insulin completely, with a real possibility that I'll be able to get my medical back! Needless to say, I am ecstatic!



SLIDING TRACK FOR BATTERY BOX

FOR THORP T-18

N83MK

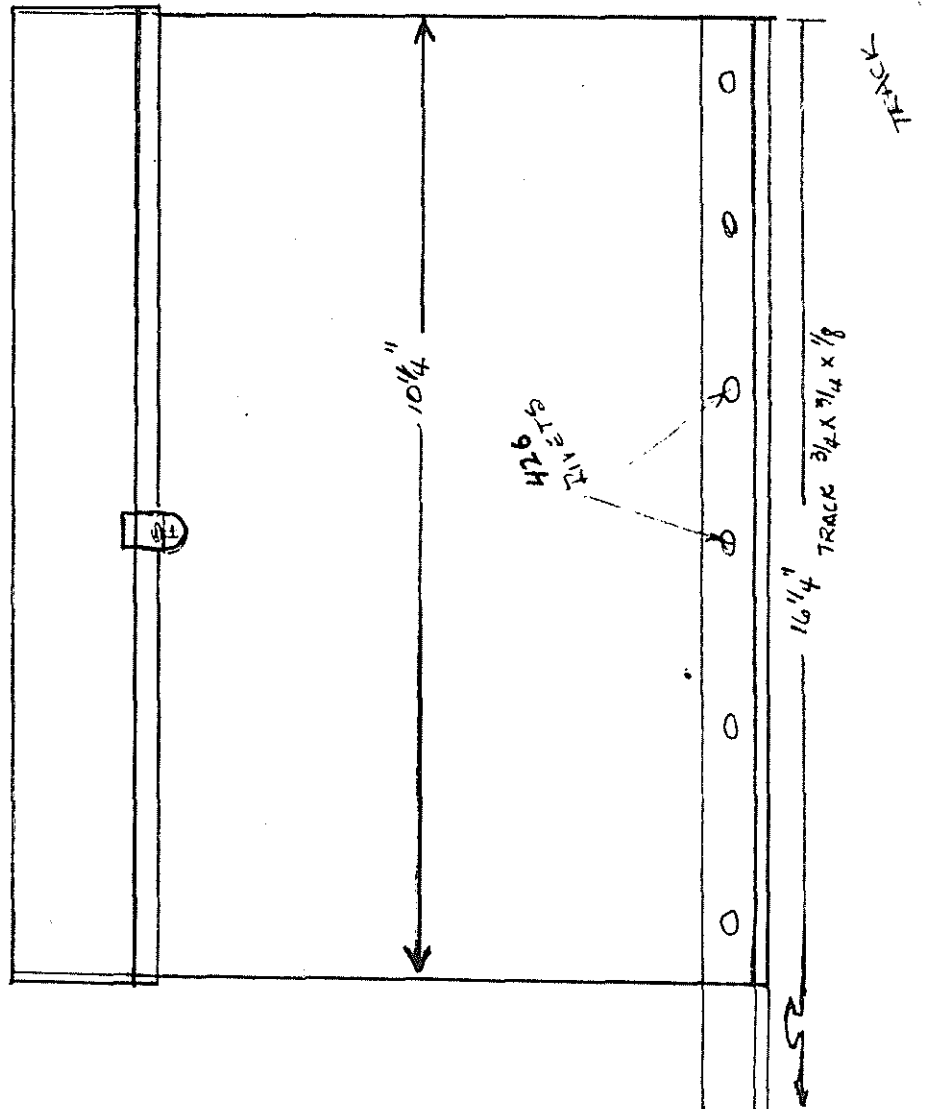
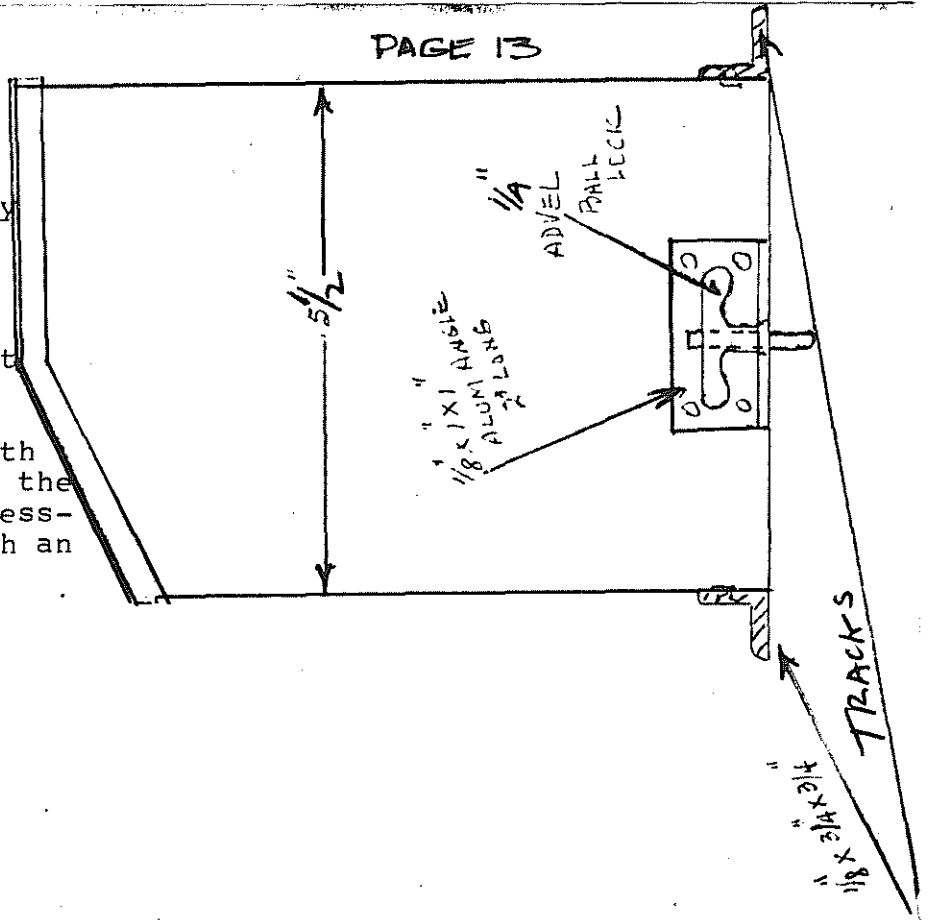
Karl has built an external access cover in the right side of the fuselage just aft of station 119.0, with this access cover removed, the withdrawal of a 1/4" ball-lock is the only step required to enable the battery / battery box assembly to be slid outboard for servicing. A neat idea, eliminating all the hassle of working back inside the cockpit to service the battery.

T-18 NEWSLETTER #69

page 13

The next 3 pages are drawings by Karl Lipscomb of his sliding track batt'y box for N83MK. These are excellent drawings and we thank Karl sincerely for the time and accuracy he put in. I've seen it and it works very well. Karl says the only drawback to it is that it would interfere with rudder cables running down the side. It's also easily accessible for jump starting with an aux battery in cold wx.

PAGE 13



TRACK

TRACKS

1/2" RIVETLINE

SLIDING TRACK FOR BATTERY ACCESS IN THORP 7-18

PAGE 2 OF 3

N83MK

FORE →

STA 139.0

MOUNT ON STAR BRACKET SIDE OF ANGLE

7-18 NEWSLETTER #19 PAGE 14

2" X 2" SQUARE ALUM TUBE

1" FLUSH RIVET FOR DOUBLER

NOT TO SCALE

PG. 14

8 CAMLOC FASTENERS

DOUBLER - .040 OF .032 AL

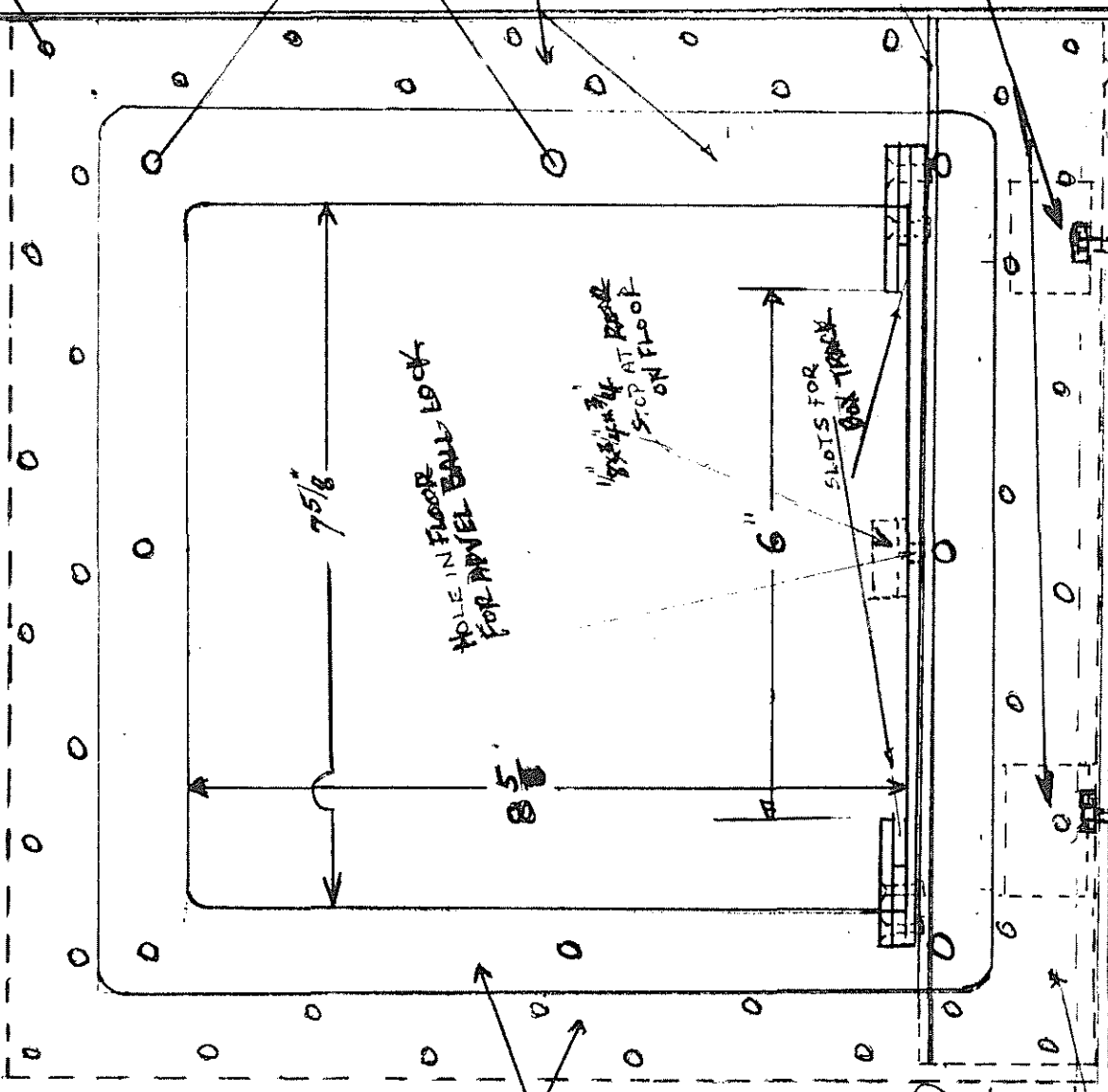
STA 119.0

1/8" ALUM. FLOOR ACCESS HOLE TO REACH BOLTS TO BEAM IN 2 PCS

1" X 1/8" ALUM ANGLE TIES TO 2" X 2" BOTH DI TUBES

BETINA LONGERAN

WL 42 →



HOLE IN FLOOR FOR RIVET BALL LOCK

1/8\" STOP AT POINT ON FLOOR

SLOTS FOR TRACK

1" X 1/8" ANGLE

FASTENERS 1/8" AL OR .003" H190

SLIDING BATTERY BOX - OUTSIDE ACCESS - KARL LIPSCOMB

FOR THORP T-18CIN NB5MK

PAGE 3 OF 3

NOTE: DIMENSIONS MAY HAVE TO BE CHANGED TO SUIT THOSE OF YOUR BATTERY BOX

DOUBLE

OUTSIDE SKIN

NOT TO SCALE

STOP $\frac{1}{8} \times \frac{3}{4} \times \frac{3}{4}$ AL. ANGLE APPROX. $1\frac{1}{2}$ " LONG

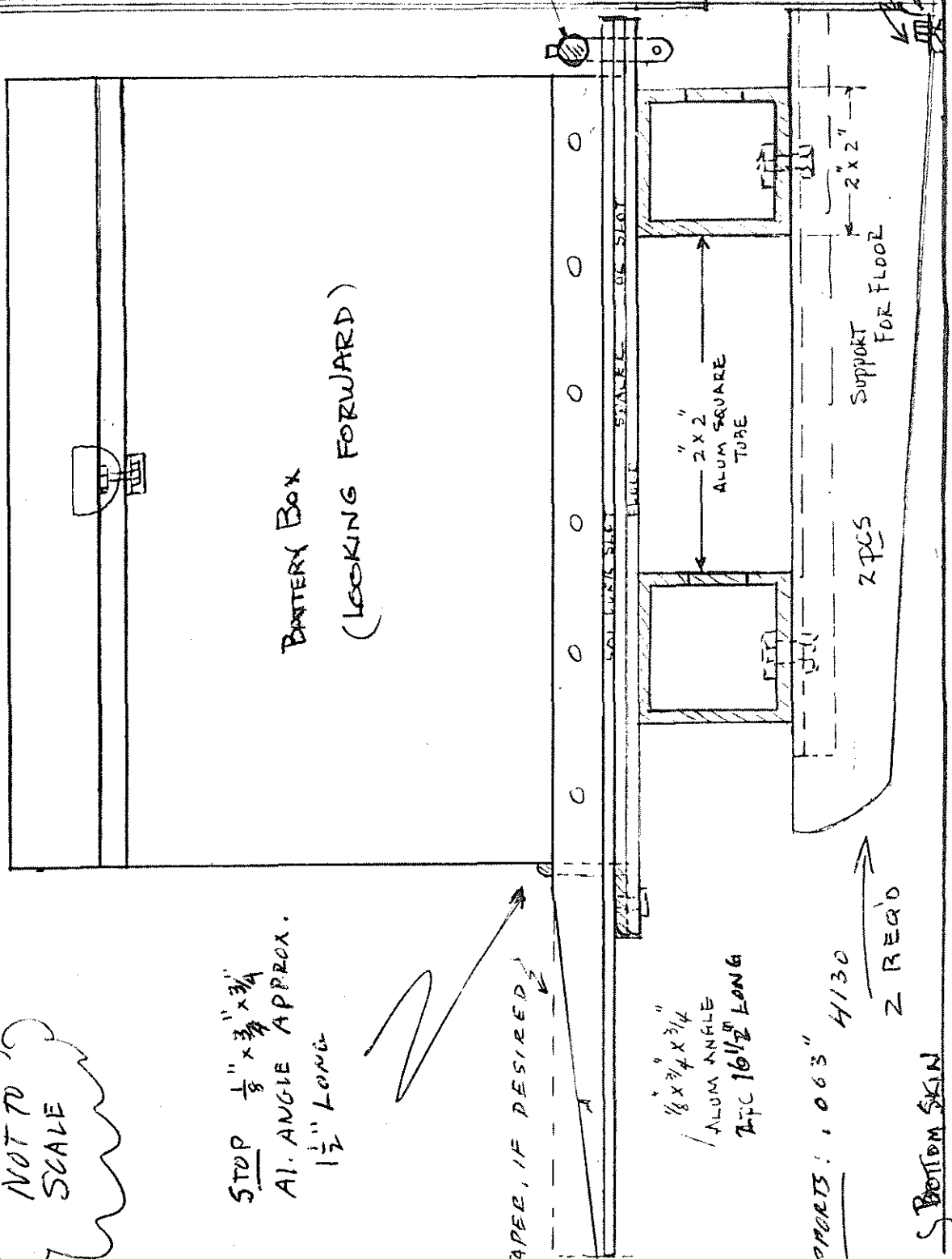
BATTERY BOX (LOOKING FORWARD)

TAPER, IF DESIRED

$\frac{1}{8} \times \frac{3}{4} \times \frac{3}{4}$ ALUM ANGLE 2 PC 16 1/2" LONG

SUPPORTS: 1.063" H130 2 REQ'D

BOTTOM SKIN



BALL-LOCK ADVECT

8-32 BOLT TO TAB PER THORP OR ANGLE 3/4 X 3/4 LOWER FOR LOWER FOR

SOLO LOCKS SET FLOOR STAIRS OR SEAT

2 X 2 ALUM SQUARE TUBE

SUPPORT FOR FLOOR

2 PCS

FROM THE RV-3/4 NL.

LORD MOUNT INSTALLATION:

submitted by John Walton

Procurement and installation of Lord Mounts on Dyna-Focal Engine installations in RVs is a subject which we have never researched and presented thoroughly. Just as we were finding the info sources we needed and were about to prepare a presentation, RV-4 builder John Groce, Kent, WA. sent in information and a drawing he had made resulting from the research he had done. Quoting from his letter:

"During installation of LORD Mounts #J-9613-45 (purchased from Will Neubert A/C Supply) I noticed some confusion among local builders as to the correct installation of them. #J-9613-49's are supposed to be similar, and are found on C-172's, so examining such an installation should clarify things.

The attached drawing (based on LORD drawing #5-6021) shows their recommended installation. Note that each set of mounts consists of a thick rubber mount (J-9612-8) and a thin rubber mount (J-7763-10). The key to their installation is in knowing that the J-7763-10 is stiffer rubber than the J-9612-8, and thus the J-7763-10 should be placed in compression by normal engine weight. This requires the bottom installation to be opposite in sequence from the top. Further, the J-2218-61 washers always accompany the J-7763-10 mounts. These washers are critical on the bottom mounts where they provide a flush surface for the rubber mount to fit over a tab on the engine case."

J.L. GROCE
7/24/86

LORD MOUNT INSTALLATION INFO

TYPICAL INSTALLATION OF DYNAFOCAL MOUNTING KIT

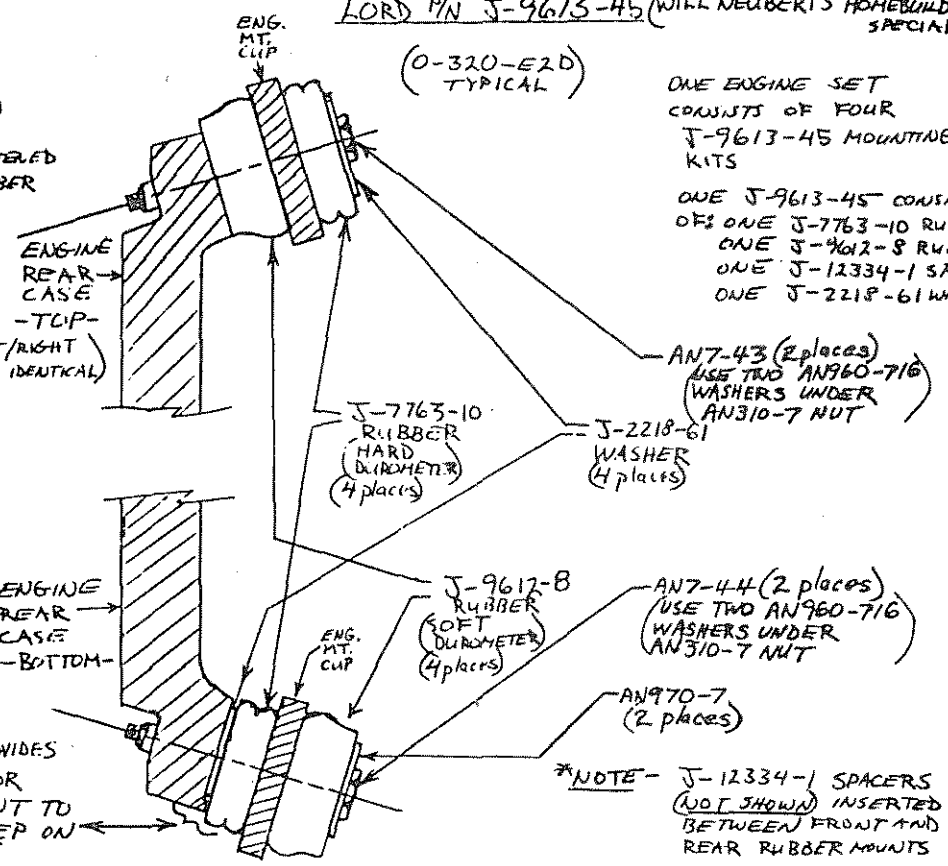
LORD P/N J-9613-45 (WILL NEUBERT'S HOMEBUILDER SPECIAL)

DATA FROM LORD DRAWING #5-6021 (DRAWING NOT TO SCALE)

*NOTE - BOLTS ARE TIGHTENED TO BOTTOM OUT RUBBER MTS. ON SPACERS. THEN TORQUED TO STANDARD AN7 TORQUE VALUES.

*NOTE WEIGHT OF ENGINE (POSITIVE G'S) PUTS ALL J-7763-10 RUBBER MTS IN COMPRESSION

*NOTE - WASHER PROVIDES CLEARANCE FOR RUBBER MOUNT TO FIT OVER STEP ON ENGINE CASE



ONE ENGINE SET CONSISTS OF FOUR J-9613-45 MOUNTING KITS
ONE J-9613-45 CONSISTS OF ONE J-7763-10 RUBBER ONE J-9612-8 RUBBER ONE J-12334-1 SPACER ONE J-2218-61 WASHER

*NOTE - J-12334-1 SPACERS (NOT SHOWN) INSERTED BETWEEN FRONT AND REAR RUBBER MOUNTS

THE NEXT 3 pages are full size drawings of Bob Highley's throttle quadrant. Bob is a military pilot and used to the Left hand throttle and R hand stick, so some of you may also want to use this system.

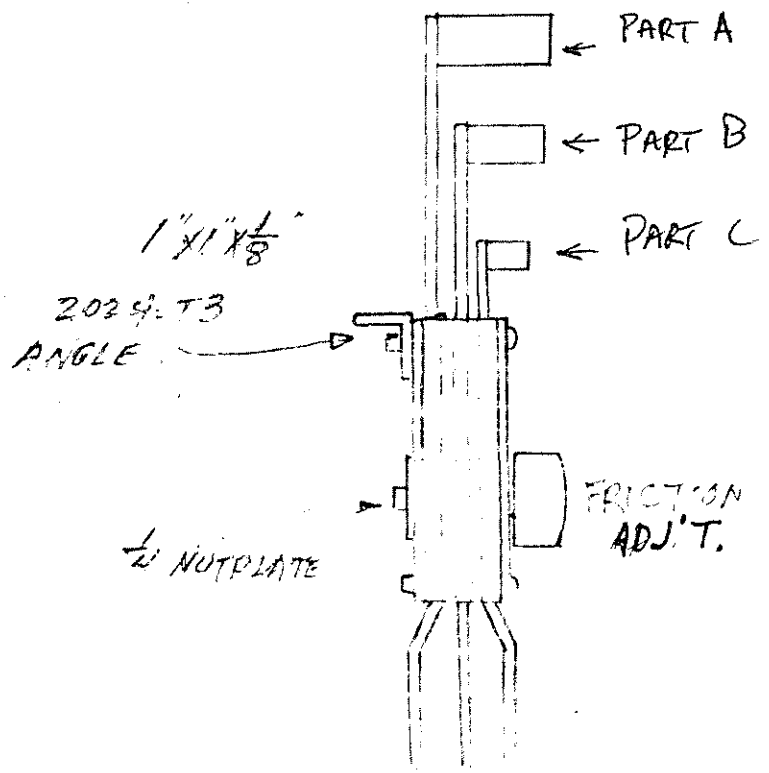
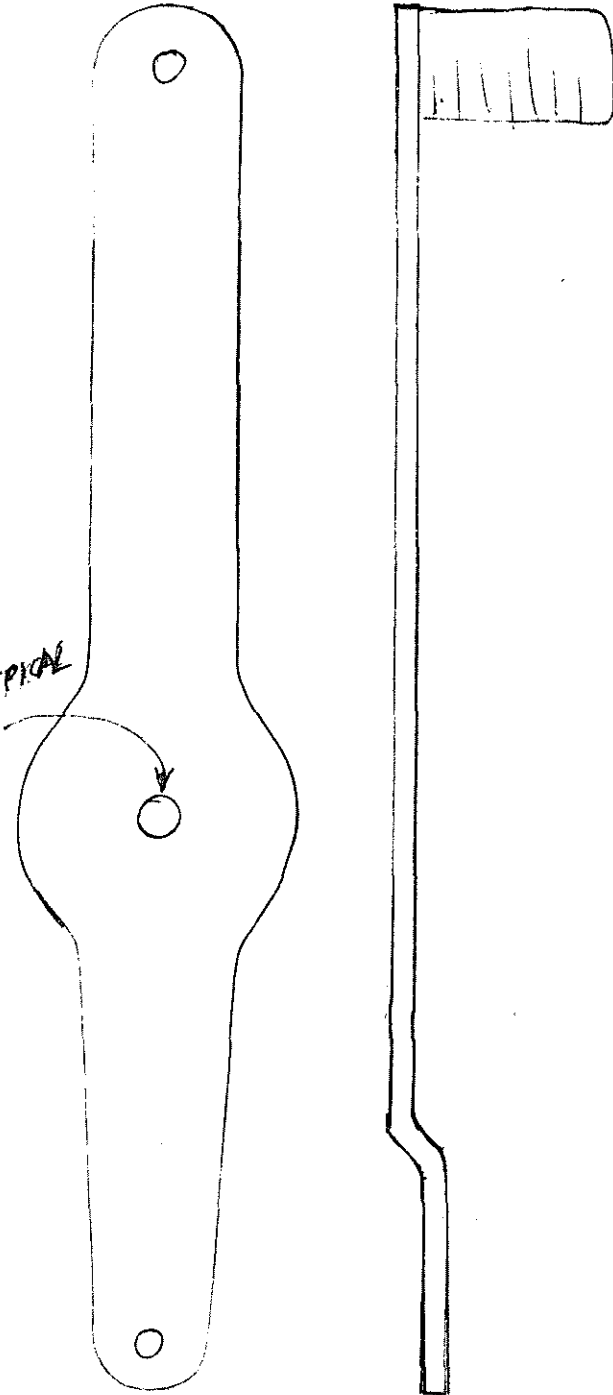
To have dual throttles with this method you would need to mount a cross shaft on the firewall and have a bell crank at ea. end, plus one in the center (that would operate a shaft to the carb'r. Firewall shaft could possibly fit between gear tubes and the firewall.

THROTTLE QUADRANT PG 1 OF 3

.125 2024-T3

1/4" TYPICAL

BOB HIGHLEY'S



① ASSEMBLE USING 6 8-32 X 1/4 SCREWS

② FULL SIZE

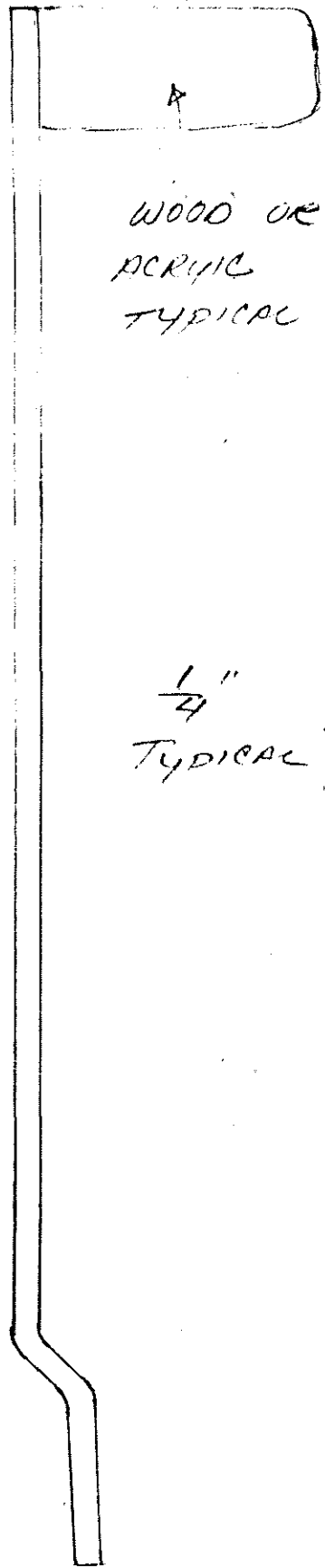
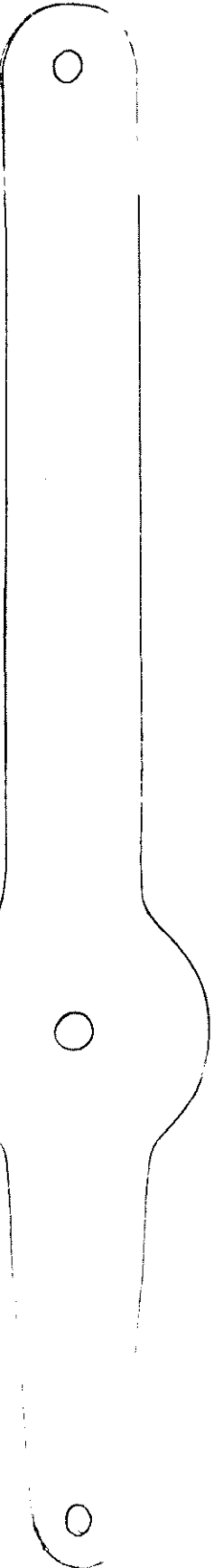
BOB HIGHLEY - T-18
THROTTLE QUADRANT

1 ea REQUIRED

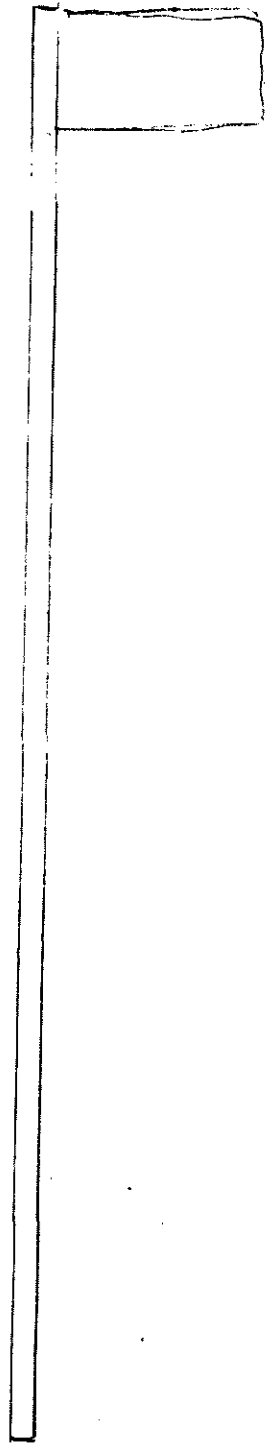
(B)

(C)

BOB HIGLEY'S THROTTLE QUADRANT PG 2 OF 3



1/4" TYPICAL



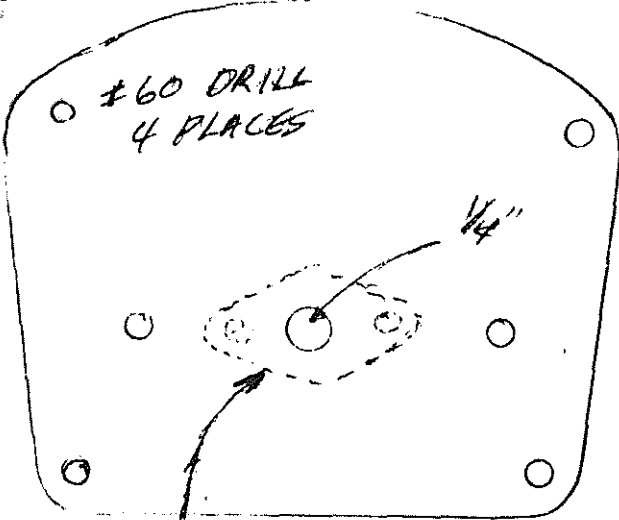
ACTUAL SIZE

.060 2024-T3
2 REQUIRED

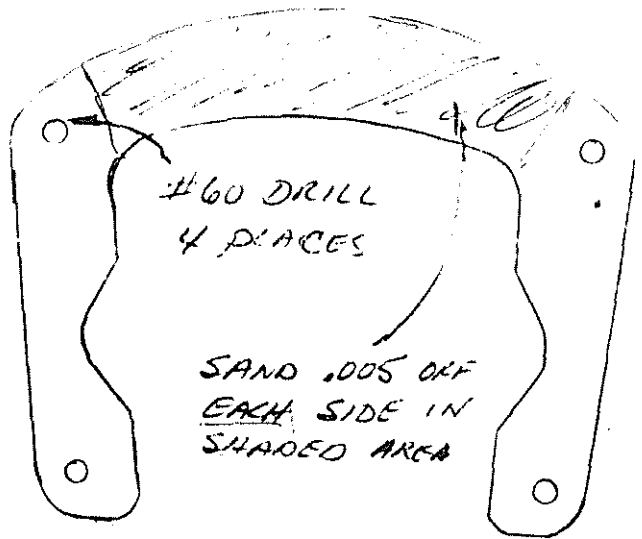
T-18 NEWSLETTER #69

.030 MICARTA
4 REQUIRED

PAGE 20



RIVET 1/4 NUT PLATE
TO ONE PIECE



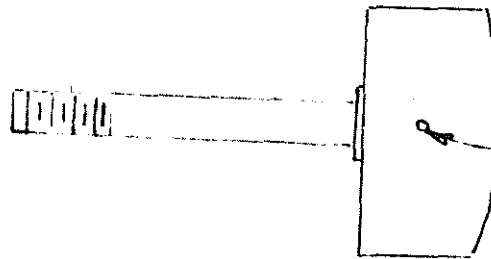
PG. 3 OF 3

TAROTTE QMOMAW

BOB HIGALEY'S

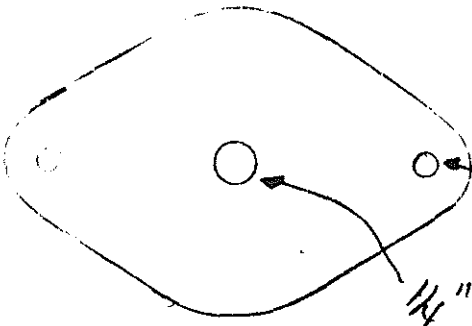


.125 2024-T3
6 REQUIRED



AN-4 BOLT OF SUFFICIENT
LENGTH

.030 MICARTA
4 REQUIRED



★
BOB, THANKS A MILLION FOR THE DRAWINGS..
AND ALSO FOR YOUR CONTRIBUTIONS TO THE FORUMS.
WE DO APPRECIATE !

LANDING GEAR MODIFICATION & REPAIR

LANDING GEARS: It seems that some of the landing gears have developed cracks where the gusset plates meet the gear legs, so you may want to keep a close eye on yours when you have occasion to pull the cowl off. It is too close to the firewall on the back side to easily inspect without using a mirror and strong light. You might consider using Dye-Chek on both sides at intervals. I've only seen two cases, but both seemed to be because an inadequate amount of welding rod was fileted in. Maybe cracks wouldn't continue to spread, as they are tiny, but who knows? Why gamble? Cracks were found in all four gusset locations on Vern Peppard's airplane and he elected to replace the entire gear with one from Ken Brock (who hasn't had any of his develop cracks, he says). ...When Jim French dismantled his airplane to repaint he found cracks in his. It was an early airplane, built by John Ferko. He also found one gear leg bent backward over 2" (but never had any control problems on landing or T/O). Jim bought Vern's old gear and had a local T-18er, Bobby Collard (who has a machine shop) re-weld the gussets. We first had it annealed at a local heat treat co. We next cut it into and added the 6" long splice tube in the middle of the cross-tube, using four 5/16" bolts, as per an older newsletter. At the apex of the Vee at the top we added an .090 x 1" strap to each tube that projected forward about 3/4" from the tubes and these straps were match drilled for a 5/16" bolt. The straps were welded to the tubes. This was Jim's idea, but it seems like a good idea, even tho' it might be a belt & suspenders approach.

Before the gear was sawed in two we bolted the axle pads to a section of steel angle mounted on a 2 x 6" board as a re-assembly jig. Bobby also made a drill jig out of a length of angle iron. Don't know if you have had the occasion to drill a hole all the way thru a tube, but it isn't the easiest thing in the world to have the drill come out on the other side exactly 180° from where it started, so Bobby used the jig to locate the hole centers on the other side, drilling under size holes and reaming to size. It's a scaled down version of matched hole tooling actually. The splice tube is the next size up from the cross tube and will slide on over it with just a very minimum of sanding of the cross tube. (Sand enough to allow for the thickness of a protective paint film, tho")......

I think most of you are aware that it's nearly impossible to find a heat treat co. that has an oven big enough to handle the complete gear. Many, tho' can handle one half of the gear. Even more important, they can hang it from the top bolt hole and this apparently minimizes warping. Jim's two gear halves came out of heat treat with no warping at all. The axle pad holes exactly match the holes in the jig angles and the engine mount went back on like it came off. While we were doing all this Jim was making up a pair of extensions to bolt onto the gear to give him the equivalent of a gear 3" longer than standard. The gear we used was about 1.5" longer than standaed, so he added the additional height to the extensions. At the same time he moved the axle center point forward a small amount, instead of projecting it downward in the same plane as the gear leg (thus moving the wheel back a bit. Jim uses 6:00x 6" wheels, with low profile tires, as he does most of his flying from a turf strip at Wimberly, TX. He hasn't flown it of this writing, but he is eagerly looking forward to having a longer gear. After he flew mine with the 3" longer gear he was sold.

To sum up, if you have occasion to take your engine off, that would be a good time to consider cutting your gear in two. It would save you a bunch of money if you ever damaged one leg of your rear and only needed to replace one side of it. Leroy Holt recently had this problem with a bent gear leg. ...We have included a couple of pictures of the rework on Jim's gear in the photo page section this issue.....

(LEROY ALSO HAD NO CONTROL PROBLEMS WITH HIS BENT GEAR)

JAVELIN ENGINE

JAVELIN ENGINE ITEM: In Dave Blanton's recent NL he published a report from an independent testing lab that did a dynamometer test on his engine for HP output at various rpms. The results agreed with his own dyno tests within 1%, so this should put a stop to doubters statement that proclaim the V-6 engine won't deliver the HP Dave claims. The lab actually showed the engine put out a little MORE hp than Dave said. Incidentally there is one flying in a Glasair in Kansas City, Dave said. You'll probably see it at OSH this year.

OSH '88

MORE ON OSH '88: We want to make the T-18 Silver Anniversary at OSH '88 a really memorable occasion for all of you and particularly for each and everyone that flies their T-18 there. For one thing, we are going to take individual pictures of every one of you and your airplane to put in a special OSHKOSH '88 Newsletter issue. It will be mostly foto. We will have shots of the Forum, shots of builders there that haven't completed as yet, shots of the wives, and shots of the T-18 dinner activities. We also will be doing some in-flite shots of the Parade of Flight, and maybe some air-to-air fotos, too. We would like to do a shot of each and every inst't panel, too. We are working on some kind of special souvenirs (that we can afford), so if any of you have any ideas on the subject give me a call or drop me a line. Any and all suggestions are welcome.

REGISTRATIONS

REGISTRATIONS: Now youse guys that fly in...here's something i'd like to ask you to do: WHETHER YOU SUBMIT FOR JUDGING OR NOT, PLEASE FILL OUT THE REGISTRATION CARD YOU HANG ON THE PROP! We would also like for you to fill it out COMPLETELY. PLEASE PUT YOUR STREET ADDRESS & ZIP (and your home phone no. if you don't mind. One more thing:....If you want to go off and see the sights, please put a card or note INSIDE on the deck that says when you expect to be back. We can't get your picture at the a/c if you aren't there, ya know!....I also will need some help on the foto bit, since EAA will expect me to carry on with my regular interviews and such, so if any of you have a good 35 mm camera please volunteer ASAP. I'll supply the film, so all you'll have to do is shoot. We will try to again have an info table on the flite line to coordinate. Anyway, let's make this the greatest year ever for the T18 at OSH....okay?

BOB DIAL

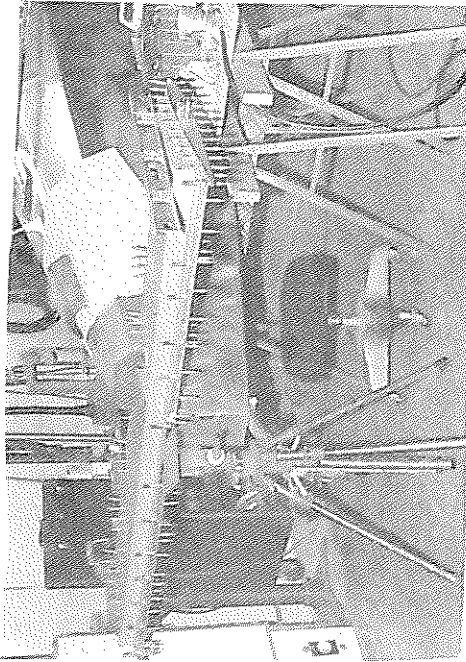
B.C. ROEMER called me the other day to tell me Bob Dial had had more heart problems the past year, plus another problem that affected the sight in one eye, so let's give ol' Bob a call or card to let him know we're still pulling for him, hey? B.C. said the paint on his bird was getting bad, but I talked him into bringing it anyway. The idea is for them to be there in numbers this year and if they look like the owners had used them, so much the better. (Bob's home phone is 313/ 626-7975)

JOHN WALTON

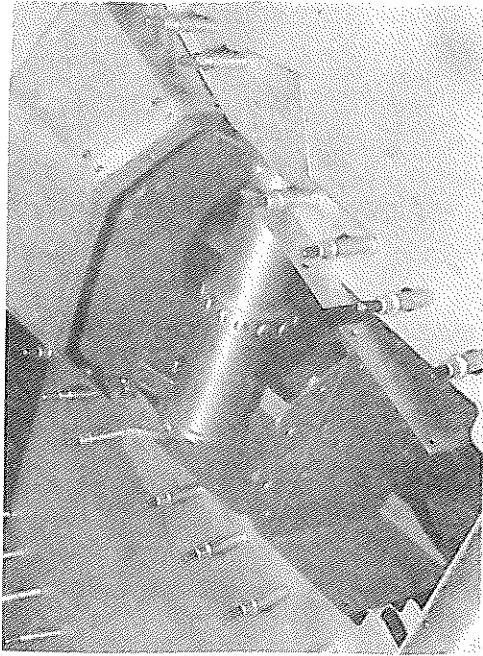
JOHN WALTON: Is staying in his brother's condo at 344 Ocean Ave, Marblehead, MA, 01945 (617/ 639-0187) while he is continuing his radiation and chemotherapy treatments. Mostly, he is an outpatient. He is making slow, but steady progress in his treatment of lymphoma and expects to improve enough the coming week to undergo a bone marrow transplant, which should put him out of the woods. I know all of you are pulling for his complete recovery, so a get well card or call would help his morale a bunch. He has a lot of time on his hands, so the hours drag for him. He has mentally rehearsed the completion of his new upholstery a dozen times or so, so when he gets back home it should go fast. Right now he thinks he might make OSH with it, if he continues to progress. HANG IN THERE, JOHN!

FOR SALE?

NEED AN ALMOST FINISHED PROJECT? I continue to get calls from people that would like to pick up an almost finished project. Let me know if you have 1. JOHN WALTON'S 2ND PROJECT STILL FOR SALE (A BARGAIN) IT FLEW IN & COULD FLY OUT WITH A DAY OR SO WORK ON IT. CALL HIM FOR DETAILS.



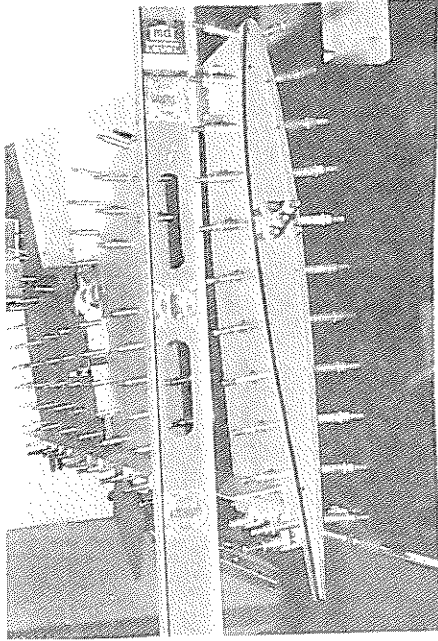
PRO PHOTOG, ROBERT CLAYTON, SALT LAKE CITY, SENDS 3 PHOTOS OF HIS STABILIZER UNDER CONSTRUCTION. GREAT PHOTOS!



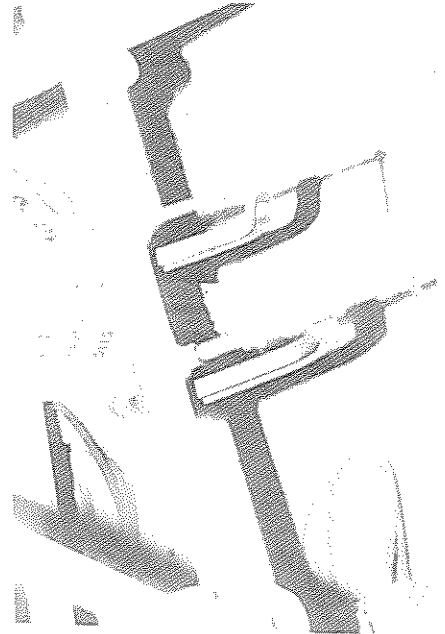
ROBERT CLAYTON'S



CLIFF REDDEN'S NEW BEAUTY



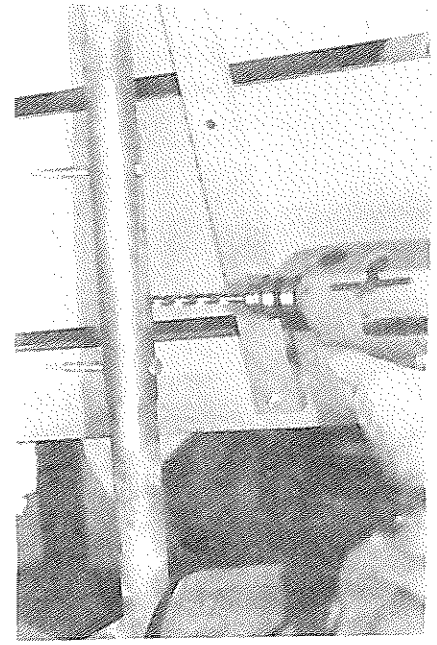
ROBERT CLAYTON'S



DRILL JIG IN PLACE PRIOR TO DRILLING



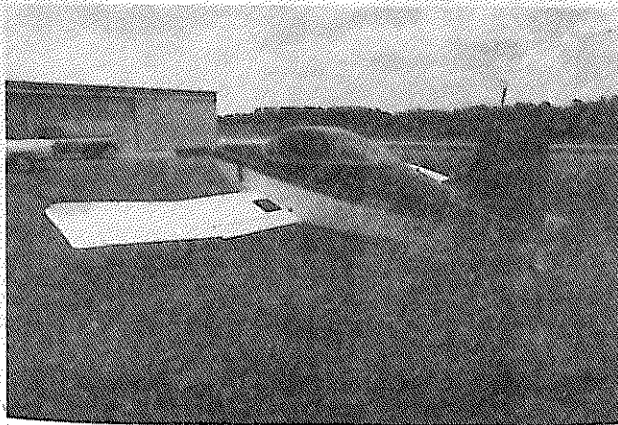
IT'S HALLOWEEN & MAXINE GREEN HAS THE SPIRIT AS SHE ARRIVES AT TEXHOM COFFEE GROUND BEARD AND ALL.



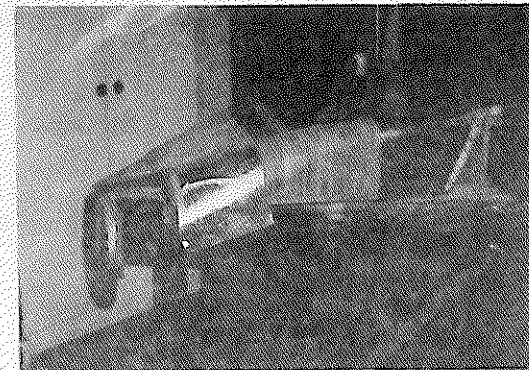
CROSS TUBE BEING DRILLED.



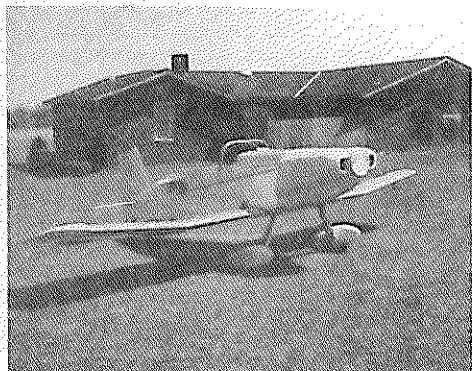
MARY HOLT AND THE FAMILY T-18



WORTHY WARNACK ADDS A T-18 CANOPY TO HIS ROUND BACK. LOOKS GREAT!



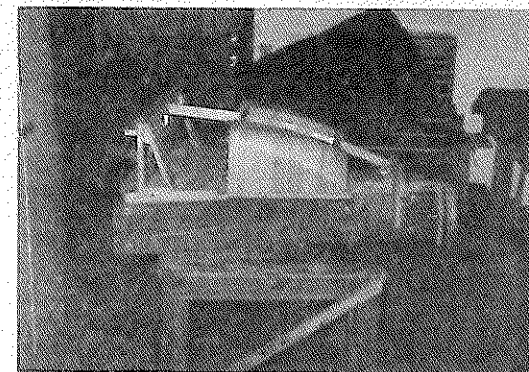
(ABOVE AND BELOW) PAUL SHIFFLETT'S FOTOS OF HIS JIG FOR MAKING A METAL BELLY COWL.



JERRY TINDELL'S T-18 (NOW FLYING)



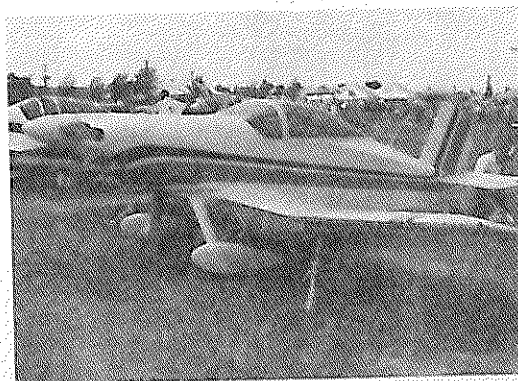
GARY HOLT (LEROY'S SON) AND HIS T-18



SIDE VIEW OF JIG



THE REAL MAXINE GREEN, SANS BEARD



ANOTHER MYSTERY PLANE. WHOSE BEAUTY IS THIS ONE?



JIM FRENCH DRAMATIZES THE END (of this newsletter)

DON'T FORGET TO WRITE YOUR LETTERS — TODAY!