T-18 NEWSLETTER #73

KENTUCKY LAKE -- FALL 1989

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IN THE NEXT ISSUE:
Repair bolts, what they are and where to get them
Send your stories, for sale items, safety tips and what ever you would like to say

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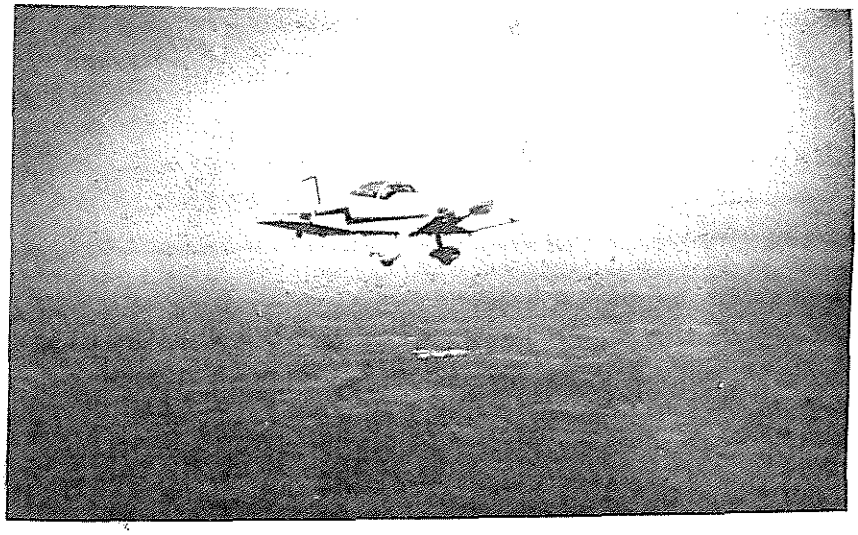
Kentucky Lake a great success "A Dawn Attack"
by Richard O. Snelson

The 1989 Fall T-18 Event at Kentucky Dam Village State Park, was acknowledged as one of the best T-18 get togethers ever, by everyone present. It started for me with an invitation from Paul Kirik to join him to fly down for the fun. Frankly, I needed some fun! After many years of building the first T-18, "and never flying it", 2 more years on a Pitts Special "and never flying it", plus over a year on the current T-18 project, made me ready for all the fun I could get. At that point, I didn't realize just how much fun and action was to come. "Combat in Kentucky" and "Aerobatics", to only hint at part of it. Having met Paul at the Springfield, Illinois Airport Saturday morning, we departed southeast for Kentucky, when level at 7000 (IFR), his beautiful beige with orange/dark brown trim T-18 started clicking off 145 knots true, a check of the Loran showed our ground speed to be 178 knots -- not bad folks. Trimmed out the bird just set there, stable, solid and fast.

Paul's Beautiful N11PK

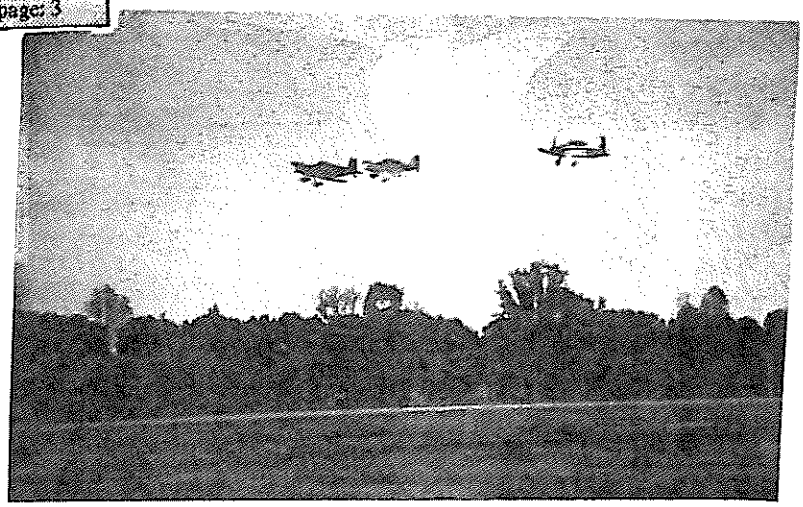
Paul had won the 1989 **Wright Brothers Memorial Award** at Dayton, Ohio for his craftmanship on this ship. For those of you not familiar with this award, it is really quite an honor. An individual must be selected, nominated, and then voted on. Paul had been recognized for his 1988 "**Best T-18 Award**" at Oskosh, which put him into contention for the Dayton honor. The award was then presented at Dayton, in the Wright Brothers Mansion on Hawthorn Hill, by a distant relative of the brothers, Mr. Wilkerson Wright. N11PK is one fine airplane, Congratulations Paul!



Jack Hull's N55P in "action"

Paul's fine workmanship had paid off: in just one hour and ten minutes "Kentucky Lake Airport", much to soon for me, as I was still waiting to just hold that stick and feel what this whole T-18 thing is all about, Oh well maybe later! We were greeted at the ramp by

four other T-18's and several individuals that had arrived by auto and commercial air. The ramp was bare, not a single building. When the get together was originally considered an office and lounge, with fuel, phones, and restrooms existed, now they were all gone, bulldozed for progress, since the state had provided money for all new facilities.



The T-18 Attack Force in Action

Soon the five T-18's had lots of company, the sky thundered with fly-bys as two, and three birds arrived together. There was nothing to warm the heart of the "stuck in the basement" homebuilder then a flight of three T-18's crossing the field, wing tip to wing tip. Twenty T-18's, arrived to complete the gathering. After greetings were exchanged and everyone got over the initial euphoria caused from seeing so many T-18's in one place, the birds were arranged in a large circle so our professional photographer Jack Hull, from Blue Grass, Iowa could take the impressive photo that is a part of this newsletter. Jack climbed the airport beacon tower to shoot it, not me! (Jack has sent a copy of this photo to all persons attending the fly-in, Thanks Jack) He happens to be the owner of N55P, a beautiful beige with brown/dark brown trim T-18. The air to air photo is Jack's bird in action.

Saturday afternoon was spent with cowlings removed, and everyone getting their chance to ask questions, and to note the various builders' approach to T-18 construction. Any builders wanting/needing a T-18 ride was given the opportunity to jump aboard one of several planes offering this chance. I rode with Gary Green of Granbury, Tx in N118GG. Gary got it off the ground and promptly said OK! it all yours. Well first of all, I had spent many years of thinking what the T-18 controls would feel like, I had the impression that this would be like sitting in a BD-5 Jet with nothing but a toothpick for a stick to control the darn thing. Not true folks! ailerons are responsive, and do require moderate pressure to make the turn happen, pitch is stable but sensitive. My first turn resulted in a climb, since the T-18 nose is built to droop and needs to be below the horizon, not on it for a level turn. Very little rudder was needed for cruising turns, so feet can be kept on the floor. Gary explained that he does only gentle aerobatic, with no snap maneuvers to cause wear on the crankshaft, which is amplified by the long prop shaft extension. Using an entry speed of 160 mph, Gary demonstrated the loop, he only completed one, my ears and sensory system did at least one more, the G meter showed 2.5Gs max. Next the barrel roll entered from a slightly nosehigh attitude at an air speed of 110 mph, very smooth with only positive Gs. Thanks Gary! for the chance to experience T-18 aerobatic action!

After returning to the ramp, strange sounding engines were heard coming from the north, "enemy aircraft", three Long Ezs, intent upon a low pass, scrafing run that caught our T-18's all on the ground. Several of the more aggressive T-18 Warriors had to be physically restrained from leaving immediately for air-to-air combat. Hold on fellows we may have lost this battle, but not the war!

Rumor had it that the Rutan crowd was having a fly-in at Rough River State Park, 95 miles away. This sort of counter attack needed planning and coordination, it had to include the element of surprise, "Sun-

day Morning at Dawn", or on second thought, after Brunch, a 10:30 Launch.

In the mean time Saturday evening featured a fine buffet dinner with all the trimmings and the great company of over 50 T-18 enthusiasts and their families. Kentucky Dam Village State Park turned out to be a great place to stay, dine, and enjoy the get-together. The group present decided that another get-together in the Spring at the same location would be great, plans are for May 12 and 13. Call the Lodge early to make your reservations that number is 502-362-4271, ask for the special T-18 Group Rate. That evening the group moved to Room 246 to hold a strategic planning session for the "Rutan Payback Attack" to be held Sunday morning. This meeting quickly deteriorated into a "can you top this story" session, the best of the evening follows:

A certain husband had spent months in his garage working on his T-18 project without a break (whats new here?) to take his red-headed wife to a movie or even to dinner. After promising the evening out, he went to the garage and promptly became involved in more important T-18 matters and frankly forgot his date. The wife appeared at the door, dressed to go out, and quickly got the message that her husband had forgotten their date. Being a red-head, she picked up the closest thing she could find and threw it across the T-18 at the husband. Quote by husband."You know when someone throws a chair at you, it is going to hit you somewhere!" Next she crossed behind the plane and proceeded to throw the chair twice more. Quote from husband. "Honey, I don't think you're taking this very well at all." Thanks to Leroy and Mary (Mary is a good-looking redhead).

On with the new days events: Morning came with an excellent brunch, country ham, eggs, biscuits and gravy, bacon, more food! more food!. A quick trip to the airport and a short hop with Paul to fuel-up and back for the departure for Rough River Park. Twelve T-18s bound for a brave journey of 95 miles to let those Rutan guys know that the T-18 bunch is one outfit not to reckon with. Can you imagine "centers" reaction to 12 transponders from the same area at the same time! The first wave of "fighters" flew a tight formation of three ships, followed by a second group of three, and all us nonmilitary types spread over several miles of sky. Surprise was on our side! We caught them on the ground! Three fly-bys convinced them that we meant business. One poor unlucky fellow actual got off the ground, but didn't last long against the T-18 superior turn rate. Now we would all be able to paint fiber-glass stars on the side of our T-18 cockpits! What a weekend to remember...

This weekend had shortened my building time by at least a year, provided that every day has 5 extra hours and my wife can give up movies, and dinner dates (no problem she doesn't have red-hair). The trip back to Illinois was great, since Paul gave me the controls and worked my tail off with navigation and T-18 flight control. Thanks Paul!, Gary, Jim and Judy Paine and everyone that made this get together so great. I hope that someday I'll be able to pass on the same sort of T-18 experience "in my T-18" to some other builder.

Until we fly again T-18 Warriors!

FOR SALE :

Fiberglass spinner shells for replacing aluminum, call Jim Payne 513-426-9671

Dick Cavin's old T-18, about 450 TT, 325 smoh, Lyc 0-320-b2b,
Loran, KX145, Xponder, Alt Encoder, etc. $15,900. Call Jim Hidalqo at 1-512-847-3881 after 5 pm.

T-18 plans, one set wide-body, one set standard, and folding wing addition. Wide body templates, wide body bulkheads, many misc parts, standard fuselage, gear, canopy, roll bar. Call Rich Snelson 217-935-4215

Your Add can be here next issue.

Kerrville a sellout crowd by Dick Cavin

KERRVILLE 89

It's nice to start this newsletter on an upbeat. The past weekend was the 25th annual Southwest Regional Fly-in at Kerrville Tx. and it just couldn't have been any more perfect. The weather was gorgeous, not a cloud in the sky, a light wind, daytime temps in the mid 80's, and in the high 50's at night.

I don't have all the figures yet, but the airport was close to being full, both in the display area and across the runway in the area reserved for Wichita Wallflowers and other such prosaic transient. I would estimate we had as many as 1500 airplanes there all told.

To make my cup runneth over, I got to go to and from the Fly-in in a T-18 -- and not just any T-18 at that! I rode with Wendell Green, who is the proud new owner of John Walton's former beauty. We alternated flying and navigating. We climbed to 6500 MSL going and 7500 returning, and with a light crosswind we were averaging about 190 mph each way, pulling 24" and 2400 one way and 23" and 2400 coming back. A little better than 3 miles per minute and that was verified by ground speed read-outs on both the Loran and the DME. My thoughts kept going back to the times John and I flew formation to and from OSH, back when he had the 150 hoss engine and fixed pitch prop in it. The 0-360 engine and C/S prop make quite a difference. I particularly noticed it in take-off and climb.

Wendell and I had to leave Saturday, the 2nd day, and come back home, as Wendell had a trip out on Sunday. (He's a TWA pilot and commuter to St. Louis from his home in Argyle, Tx, near Denton.

Friday was really my day. I got to fly in 3 T-18s the same day and this not only make my day, but my month, too. Jim Hidalgo, who bought my T-18, made a special seat and seat back so big guys like me can fly it comfortably. Jim is shorter that I am and he re-uphosltered it and made new seats with thick upholstery for real comport, which was just right for him and his wife, Marty. He was going to let me fly it last fall, but I couldn't close the canopy then. Jim, bless his heart, went to all that trouble to make that extra seat just so I could fly it at Kerrville. What a nice guy! and boy! oh boy! it was a real kick in the head to fly the "Yellow Bird" again. There's just nothing like a T-18. It just plain spoils one for anything else.

No sooner had Jim and I gotten down than Jim French loaded me in his bird and I got to see how his bird flew with the new LectroProp , that I'd been telling you about in the newsletter for the past year or so. It was quite a revelation, too. His takeoff run is drastically shorter and his rate of climb is about double what it was before! I was also pleasantly suprised at how much smoother the engine was and I believe it is a little quieter too.

One nice thing about a variable pitch or C/S prop is how quickly you can get slowed up to pattern speed when you flatten the pitch a little. I also noticed the landing roll is considerably shorter, with the prop's flat pitch acting as a 1st class drag brake. A friend of mine with a Mustang II had told me he cut his landing roll in half when he changed to a C/S prop.

French will contribute a short report on the prop later in the N/L, so I won't dwell on it here except to say that I think you'll see a lot of these LectroProp on a lot of airplanes in years to come. Bear in mind that Jim's airplane has the big 600x6 tires and correspondingly larger wheel pants, which cost him about 10 mph.

You might also want to know that Wendell's bird was the winner of the Grand Champion Award in the Plans Built Category! It also won the same award it Kerrville about 5 years ago when John had it.

Just before OSH '89 I made a trip to Harrison Ar, to do a story for Sport Aviation on Ben Clapp's V-6 powered T-18. You'll read about it in S.A. so I won't go into great detail here except to say it flies great! Without gear leg fairings on a 95 degree day, @ 3500 ft-msl it indicates 195 mph and Ben says he has verified the A/S indicator. Wow!

LECTROPROP NEWS

That same trip I went over to Wichita to witness the installation of the LectroProp on Dave Blanton's V6 Ford engine in his Cessna test bed 175. This was the culmination of nearly 300 hours of running the prop in one of Dave's engines by Tom Foster, the national distributor for the LectroProp. During the 290 hour grueling ground run an automatic set up cycled the prop from stop to stop every few seconds, thousands and thousands of cycles. Both the engine and prop performed flawlessly. Since then an independent lab in Mich. has done "pull tests" on the blades and hub, with the result that i took a pull of 51,000 lbs to pull it in too - and the blades stayed in the hub even then! All these tests are far in excess of FAA requirements to certify a prop, which they plan to do soon. They also want to accumulate several hundred hours of active flying on five or six different types of homebuilts before certifying it. They are now getting an STC on a 3 blade installation on a Cherokee 180. Just think what a difference it will make on Cessna 150s and 172s, as well as Cherokees, etc.

DUFLUNKY CUB

That same trip I got to fly in one of the "Duflunky Cubs" that Dave has talked about for years. It is a stretched (2 ft) Tri-Pacer on conventional gear, with 18" extensions to the outer wing panels, with the V-6 engine in it. It, too, flies great, a real STOL. Both Ben's T-18 and the V-6 STOL will soon get the LectroProp installation and I believe it will make skyrockets out of both on T/O and climb.

V-6 ENGINE NOTES

On that trip I found out why some people have picked on Dave's engine, saying it didn't put out the power he claimed. It seems Ford put out a bunch of V-6 engines with an 8.1:1 compression ration, while all of Dave's dyno and flight testing have been on engines with an 8.8:1 ratio, so if you are going that route on yours T-18, *be sure you have the 8.8:1 engine.*

NEW FAA TACTICS

In case you haven't heard the news in your area, you need to be aware of a drastic change in policy in regard to a wave of nit picking enforcement activity by field inspectors. To begin with, they have hired who knows how many new inspectors. In the Southwest region alone they have added 15 new ones and guess what their main activity is -- checking the paperwork of pilots and their airplanes! all that in the name of safety and motherhood, of course.

They are doing what they call "ramp checks" and they are hitting every airport in their region and they proclaim they are doing it day and night, Saturday and Sundays & holidays. They are already swarming fly-ins. They are lurking around airports, just waiting for someone to come taxiing in, or preparing to get in their airplane and leave. (I don't think they have the authority to enter a parked airplane without the owner being present.) As a pilot, be sure your license is current and valid. Don't forget to see if your medical is also current.

To justify this new enforcement and harassment program the FAA is proclaiming that homebuilders have taken too many liberties with maintenance and alteration of airframes, engines, and props, etc. Maybe we have from their standpoint. Anyway, they want us to execute Form 337s each time we make some alteration, just like a certified airplane, and if any major changes are made, submit it for re-licensing (just like at first) and we may have to go through a new test period, etc. You may want to contact your nearest FSDO and get a copy of a new (free) bulletin directed at the aircraft owner & operator of general aviation types. It's called "Aircraft Maintenance Responsibilities" and is 18 pages long. Here in the SW Region the address is "FAA FSDO", 8032 Aviation Place, Love Field, Dallas, Tx, 75235. If you don't have a local FSDO (no longer a GADO) close by you can write to the above address.

Flight and Safety Tips for the T-18 Operator

Jim Paine 4240 Wagoner Road, Dayton, Ohio reports more T-18 gear welding cracks, both in his ship and in one owned by Dan Wolf. Jim's gear has a small crack on the front of the lower weld where the cross member is attached, he has stopped drilled it and will watch its progress. Dan Wolf's ship had severe cracking damage to both front and back welds and is grounded as a result. Jim is investigating the problem and will report the results, he has a potential fix that is being analyzed by an aeronautical engineer. Make it a point to check your plane for this cracking before your next flight. Call or write me (address/phone # below) about this problem as I would like to know more about the details, type of welding? , extended gear? , hard-landings? , etc....

Review old news letters for all the many safety tips contributed in the past. Then do something about them! That's all for now, Richard Snelson

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Editors Trim Tabs

I'm very disappointed that only 5 of the Performance Data Survey slips were returned. I'm not too surprised, tho I guess. I don't quite comprehend just why the great majority of you simply will not pick up a pen - ever for a simple little letter. It really gets discouraging. We have the potential to exchange a huge amount of information that would be of inestimable value to each and every one of the members, whether they have a flying airplane or a project.

When - and IF - we get a sufficient number of returns of the Performance Data Surveys we will publish a tabulation.

Come on guys! I'll give you one more chance, but if you let me down again I'm washing my hands of the whole thing! If you're too lazy and indifferent to take 5 minutes to fill out a simple form and buy a 25 cent stamp I'll be forced to conclude that you have no consideration for your fellow pilots and builders and your only interest in the N.L. is to be mildly amused - or something like that.

I just received a bound listing of all the T-18s that are flying, the Thorp T-18 section of the Experimental Aircraft Model Directory, published by "Air Data", 408 Evergreen Ave, Glen Ellyn, Ill 60137 phone number (312) 858-2428. They list about 200 airplanes that are identified from FAA listings as a T-18. I'm quite sure there are at least twice that. many more that do not use T-18 in their name listing. The list is published in a bound booklet of 4" x 11" size, so we had to reproduce the pages vertically. Please look at the list carefully and if you know of corrections to be made, I would appreciate your sending them to me.

in N.L. #74

If you have airplanes, projects, or parts for sale please type details up neatly. Leave a good margin on left, give your complete name, address, tel# day or night, price etc. If you have a good picture of complete airplane we'll try to include that too.

Sincerely,

DICK CAVIN

My name is Richard Snelson, after having used the newletters from this Mutual Aid Group for over 25 years I've decided to lend Dick a helping hand with the writing and publishing of this excellent media. I feel that it has saved me hours on both T-18 projects that I've worked and is the best "money" a builder or operator can spend. I started my first T-18 in St. Louis about 1963 Or 64 with Howard Henderson, Lee Skillman and Sylvan Keebler. By 1975 when I went into business for myself it was on the gear with the engine tested and the instrumentation all in. Needing money! I ran an add in trade-a-plane and sold it very quickly. I know it went to California and may have had it N number changed. (Old number was N685RS) Any one have any information on this old ship? After a number of factory built airplane the lure of OSH! got me again, so it was back this time with a Pitts Special. About a year ago, the old T-18 Bug got me again and here I am with another project underway. I have purchased several incomplete projects, and have a lot of parts, but basically I'm building the new ship with Sport Aviation Parts. Center wing is about ready to rivet, in a jig, so I'll do a story with picture about that later. I'm getting set up with a photo scanner, and desk top publishing software to do the newletters, so hope you like the new format. It may change some more as I develop the different features of the software. I also have photography as a hobby so hope you like the many pictures that I'll provide. My goal will be to get a newsletter out before each major T-18 event, and after each if possible. Feel free to send articles to me as I plan to do most of the letter publishing and formatting. Give me a call and discuss your ideas for this great tradition. Richard Snelson, Route 3, Box 295 Clinton Ill. (217) 935-4215

By the way Sylvan Keebler has been very sick, hope your better "Keeb". H is wife Peggy tells me he still looks forward to getting the newletters. I'm sure he would like to hear from all his old T-18 buddies so drop him a card fellows. Address is RR 2, Box 139, Bentoina, Miss. 39040

Rich.

First Flight by Russ Ross

Here's still another First Flighter report. This one is from Russ Ross. He also sent in a 3/4 rear picture of his new bird, N45RR and one of our T-18 "Performance Data Surveys" slips and the numbers he got sound about right with no gear leg fairing or wheel pants. His paint scheme is very attractive. It's basic white, with flowing blue stripe with narrow gold feature striping outlining the blue.

Dear Dick;

Inclosed is a picture of my T-18; N45RR, which I 1st flew on July 11th which happened to be my 60th birthday; 34 years after my 1st solo on my 16th birthday. Talk about elated ! It was absolutely tremendous. Made the front page of the local newspaper.

It is a standard T-18 with electic trim; basic panel, Cochran SS crossover exhaust, dual EGT; dual CHT; VSI; Terra Nav Com with electronic CDI and a Terra TCL-120 loran. Has Rosenhaun wheels & brakes & master cylinders. I have a Sensenich 76EM metal prop cut down to 68" x 74" pitch.(Bob Dial recomended) Scott tailwheel. The empty weight was 901 lbs. Imron paint with corlar epoxy primer. I installed a NASA intake vent on the bottom of the cowling (Rattray) and ducted it to my cabin heater intake which gives excellant cabin ventilation.

At this time I have about twenty hours on the airframe and am still debugging. Gear fairings and wheel pants have not been installed. I am using a piper pitot tube located on the wing gap cover at about 3/5 th chord length. Top speed indicated in level flight at 2650 RPM is 170 mph. I seem to indicate about 1700 FPM climb on takeoff. The engine is an O-320 150 HP.

Thanks Dick for your dedication to the newsletter and all the valuble information contributed by other T-18ers. Especially Ed Rogers formerly from Sioux City and now in Phoenix Arizona, who built the 1st T-18 here in Sioux City. The T-18 is really a super airplane.

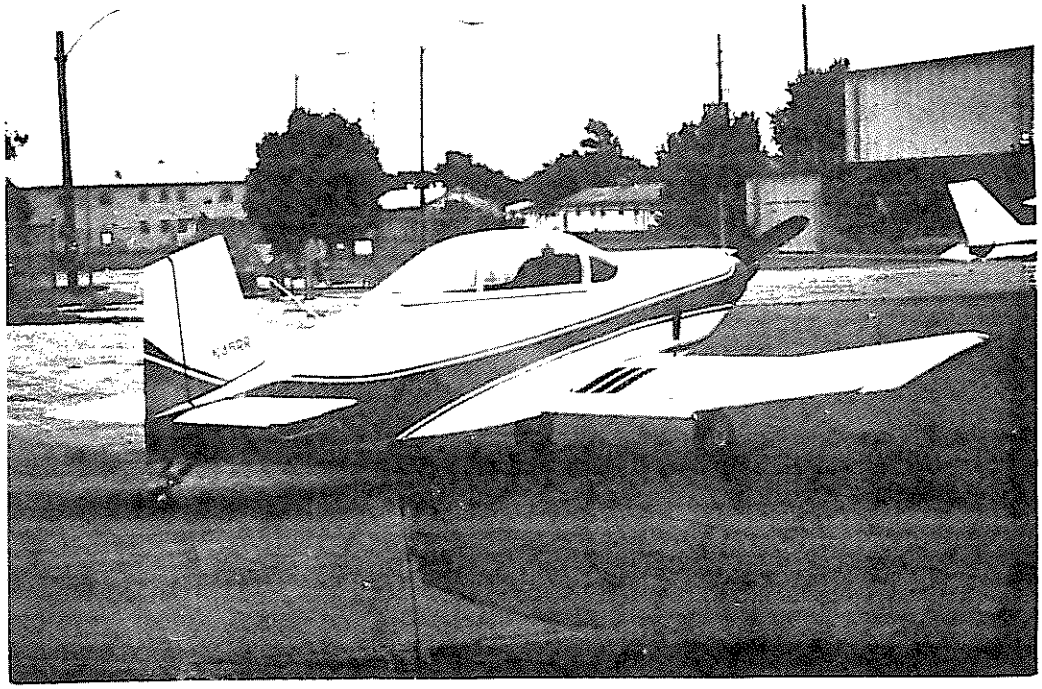
Best wishes,

Russ

Russ Ross

Russ Ross
RR#1 Box 411
Sioux City, Iowa
Sept. 13, 1989

Again, our very sincere thanks and congradulations to Russ for the report, the picture, and the Data Survey slip.



T-18 Performance Data Survey

Aircraft number N45RR Pilot Russ Ross Engine Lyc.O-320 Horsepower 150

Propeller brand Sensenich 76EM Diameter 68 Pitch 74

Test data: Has your tachometer & Air Speed Ind. been checked for accuracy? ☐ yes, ☐ no

Please indicate Static performance on ground: RPM 2100 MP none Altitude 1100

Altitude	1,000'	2,000'	4,000'	6,000'	8,000'	10,000'
Temperature (F)		80				
Maximum Indicated Air Speed (mph)		170				
Rate of climb (FPM)(MAX)		1700				
RPM		2650				
Manifold pressure						

Notes: No gear fairings or wheel pants

by Russ Ross

Glare Shields and Canopy Trim by Terry Adams

I just received the following letter from Terry Adams re glare shields and canopy trim strips and this is an excellent example of what I've been trying to get you guys to write for the N.L.

Dick Cavin
10529 Somerton
Dallas, Tx 75229

Terry Adams
4364 Boulder Creek Circle
Stockton, CA 95207 478-7379

Re: Canopy and windshield installation

This was easy spaced out over a year, but really only 20 - 30 hours. I purchased my canopy in 1980 and finally had time to install it in 1988. To install the windshield: use a hardwood block approximately 3/4x2x4 with a saw blade cut 3/4 deep near one end. Use this block to flare the front skin up to approach the angle of the plexiglas. This must be massaged very slowly working back and forth across the edge of the skin in small increments to avoid crimping the skin. Always work the full 3/4 depth. The bend angle will be the greatest on the top of the skin and less as you move toward the side till it is left straight. Use a straight edge from the roll bar down to the skin to check the angle. Next take the plexiglas (untrimmed) and lay it in position from the outside across the roll bar and top skin. Simply mark the approximate shape and trim with a flex cut off wheel mounted in a drill motor, or on a router table. From this point either masking tape the edge of the skin or the face of the plexiglas and slip the windshield in place to mark exact trim lines. Using a #40 (not sheet metal grind) drill bit and a back up block, I transferred the holes from the skin through the plexiglas. Next I masked near the roll bar and marked on the plexiglas using a straight edge the line of contact with the roll bar then layed out the holes from the spacing on the plans. Keeping the drill perpendicular to the plexiglas I drilled through the glass and pitted the roll bar. I chose to trim the back (at the canopy) edge of the windshield so that a vertical level would touch the plexiglas and the back edge of the roll bar.

To make the trim strip above the roll bar start with a 6-8 inch wide strip of poster board etc. long enough to go from side to side over the roll bar. Tape it in place lying flat against the plexiglas, then mark the underside of the poster board at the back edge of the plexiglas and a CL. Remove the poster board and mark a parallel curved line forward 2+" apart (at least wide enough to give screw hole edge clearance) and another parallel curved line +-1/2" rearward to provide overlap of the canopy trim strip. Lay the strip back on the plexiglas and mark the front edge onto the masking tape, remove the pattern and examine the pencil line on the tape compared to your line of screw holes, this will allow you to widen or narrow the strip. Transfer to 6061 al. Remove the plexiglas and position the strip at the CL and with the pencil line on the masking tape, clamp. Using a #40 and a backing block drill through the plexiglas through the al strip. Check for fit, remove, polish the edges of al and plexi, drill and tap holes in bar, and use a bullet grinding stone to open holes in plexi to 7/16", dimple the al strip and skin for #6 countersunk screws and pad with chafe strip. I personally used #6 screws rather than #8. On the front edge of the windshield use a backing strip to distribute the pressure of the screws. Canopy installation in my next letter.

Dick Cavin
10529 Somerton
Dallas, Tx 75229

Terry Adams
4364 Boulder Creek Circle
Stockton, CA 95207 478-7379

Re: Newsletter material - Glare shield, Canopy trim strips

I was unable to obtain much information on constructing a glare shield and attaching the top of the instrument panel so I proceeded to develop the following.

Once my windshield was temporarily in place I also located my panel approximately six inches back from the dash frame to allow clearance for flight instruments located at the top of the panel. I mounted the bottom of the "Knowles" panel using two 2 inch spare pieces of strip hinge riveted to the bottom lip and then shock mounted to the horizontal longeron. This provided a tilt down panel for easy access.

I thought about using shock mounted spacers (long) off the dash frame to secure the top of the panel but then opted to construct a glare shield which would allow for mounting the panel at the top.

Using a 40" x 15" piece of poster board I curved the two ends down and slid it in across the top of the panel until it reached the dash frame. I then roughly sketched the layout of the glare shield including the front to conform to the bottom edge of the plexiglas, and trimmed until I was satisfied. I wanted the front edge to be secured with the windshield screws, and since the front upper skin is massaged up into an angle to conform to the windshield at this point small wedge shaped slits allowed the poster board to follow this flange.

I used a piece of .025 in the shape of the pattern and crimped the front edge to turn down a flange to be able to meet the windshield screws. I tapered the amount and distance I crimped and the final piece fits very nicely thank you. But then I have this head slicer sitting right on top of my panel! I used a 4' length of 1/2" soft aluminum tubing from the plumbing dept. I gently bent this to the exact shape of the glare shield. Using a router bit in a high speed drill press I cut a 1/16" slot in the tube so the edge of the sheet would slip into the tube and be epoxied in place. Now this was no easy task and I'm sure there are easier ways, but I had another reason for doing it this way. In the center 30" I used a 5/16" router bit which made room for 15 red 'grain of wheat' mini lights to be inserted and thus I have eyebrow lights for the panel.

Once my canopy trim strips were made I used 1/32" rubberized gasket material (from 3M distributors) as the chafe material. I merely sprayed 3M adhesive onto the back of the strips and onto the rubber strips, put them together and trimmed off the excess.

Has anyone ever made approximate patterns available? I will

if anyone wishes them.

Is anyone contemplating the use of the Mazda engine with the Ross planetary drive?

Thank you for providing the back issues I had missed, in between graduate school, moving, opening a business and a baby, the T-18 project has been sitting off the back burner. As I read one previous newsletter there was a note from a gentleman who had sold his project after becoming discouraged about finishing, but purchased a flying T-18. His comments were to those flying T-18s and how much impetus they can provide to those of us still building by providing a quick ride. Perhaps because I would wait for an offer of a ride I am still waiting. Thankfully I see the building as rewarding as the flying.

Question: I asked a gentleman this at OSK 88 but would like confirmation. My fuel tank was from Knowles and unfortunately the outlet is tapped too small for a finger strainer. The gentleman indicated most tanks were that way (his also) and that it was perfectly acceptable to redrill and tap for the larger size though most of the material would be gone from the flange, and further (like his) mount the fuel shut-off directly on the tank outlet with the necessary actuator extension and flex hose.

Thanks for providing the clearing house of ideas

Terry

Thank you very much Terry. We really do **appreciate** your efforts! That's one subject we have never had any N.L. info on. Maybe this will inspire **some of you** to tell how you did it

FOR SALE

"Ford V6 engine and related parts to make the Javelin Ford Engine conversion. $2200.00 invested. Open for offers to re-coup some or all of investment."

955 Angelo Drive
Pittsburgh, PA
15236

I won't bother you with my reasons for dropping the project at this time. Let's just say that I lost interest.

Thank you,

Ken Coleman

Ken Coleman

T-18 Builders & Owners Association,
10529 Somerton,
Dallas, Texas.

September 13, 1989.

ATTENTION: DICK CAVIN

Hello Dick!
I've been working on my S-18 projet for 2 1/2 years - my god, time really flys! So far, I've completed all the machined parts; the ailerons, inner wing assembly and outer wings (wet). I'm about to start the fuselage. As I've profitted greatly from the newsletters containing articles written by other builders over the years, I felt I should take the time to contribute.

Although you scared me in NL50 when you related "it is almost impossible to form a 6 foot piece of aluminum by hand" - for the outer wing skins - I've trudged ahead and found my approach to be a piece-of-cake! (Back in '75 I'd successfully formed 8 foot leading edge skins for a Zenith CH200).

As I had elected to go with John Walton's Wet Wing concept, I didn't like the idea of a lap joint on a rib in the fuel tank area, as is the normal fashion.

Instead what I've done is to use the 60" x 180" x 0.032" 2024 T3 sheet which I'd bought for the fuselage side skins and folded it as you see in the photos. Actually we need about 59 1/2" of the 60"- close but adequate. This gives a full one inch lap along the length of the spar which has two staggered rows of rivets. The 0.032" skin goes from the top rear edge forward and under to lap on the lower main spar with an 0.025" skin which continues to the bottom rear edge. Note: The rear skin is "BENEATH" the front skin -the airflow can adhere easier this way.

"Assembly/Sealing Procedure S-18 Wet Wing" (per John Walton) half standard rivet spacing, flush solid rivets, but "spar-wise lap joint".

1- With the wing rib spar assembly inverted, apply PRC A-2 to faying surfaces of spar lower surface only not the top surface at this time, as well as to the nose ribs up to and including the 1st three rivets on the upper nose rib surface - also to the skin mating surfaces.

2- Cleco skins in place on lower surface with front skin hanging over worktable as shown in Fig A.

3- Flip over and finish clecoing upper surface of front ribs and main spar. Fig.B

4- Set all rivets on the lower surface nose ribs working thru the "access" holes, as well as the 1st three rivets on the upper nose rib surface.

5- Delicately remove the clecos on the upper main spar surface and upper rib surface. Note the three rivets at the front upper surface have locked the nose radius.

../2

6- We can now lift the upper skin high enough to have good access (A) to set the main spar lower rivets to the skin as well as (B) to seal with PRC B-2 the inner lower surface of the "fuel tank" everywhere necessary. Remember to leave the lower rear corner of the rib junction to skin and main spar web **"OPEN"** so that fuel can empty from one bay to the next, otherwise we trap a few gallons we'll never be able to use. **Fig.** (C)

7- Apply PRC A-2 to the nose rib upper flange surfaces, to the upper main spar surface and to mating skin surface, then close and cleco all in position.

8- Invert wing on worktable supports and proceed to set rivets along nose rib upper surfaces. We can at this stage remove the two outer rear ribs for better access. With these two rear ribs removed and working thru all the access holes in lower nose skin surface, as well as thru the access holes in remaining rear ribs I was readily able to set all rivets on main spar and nose ribs. **Fig.** (D)

9- Apply PRC-B-2 to the inner upper surface of the fuel tank "thru access holes" everywhere necessary.

10- Return wing to upright position, check for paralelism with a good level along main and rear spars.

11- Remove clecos from top rear skin area.

12- Lift skin high enough to allow access to rivet lower rear skin to ribs and rear spar. **(Fig (E)**

13- Close and cleco upper rear skin in place.

14- Invert wing on worktable. With both the inner most and outermost rear ribs having been left out for the time being, we are able to reach in thru the lightening holes to rivet all the rear ribs to the upper skin, moving outward as we go. **(Fig (F)**

15- The last step is to insert the two outermost ribs and rivet these in place. All went well.

As I progress further, I'll write in again as so many T-18'ers have done, to the benefit of all of us.

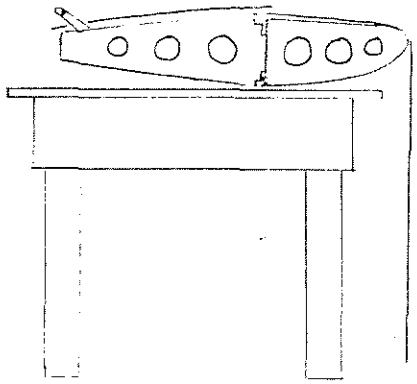
Have a good day.

W.T. Forsythe
(S-18 Serial #39)

W.T. Forsythe,
10907 Tanguay,
Montreal, Quebec
Canada.
H3L 3H3.
(514) 331-3615

P.S. Please find 30.00 $ to cover
my dues thru 1990.

FIG."A"



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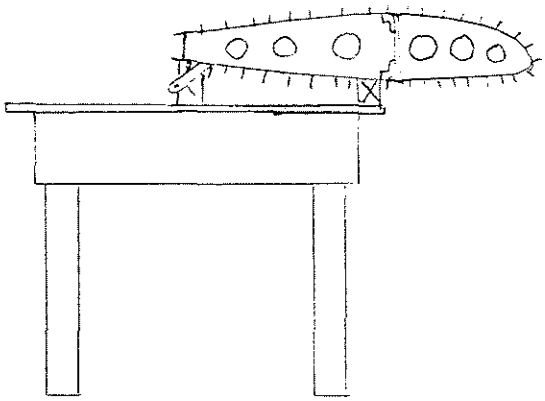

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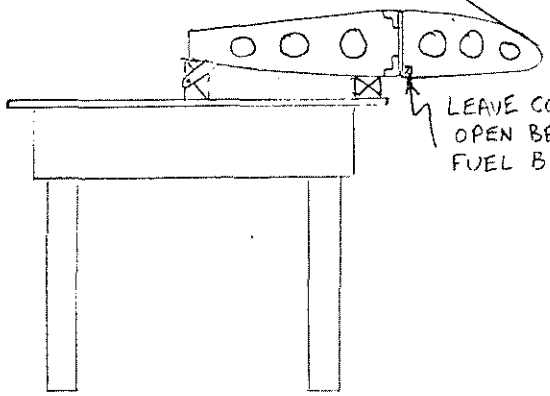

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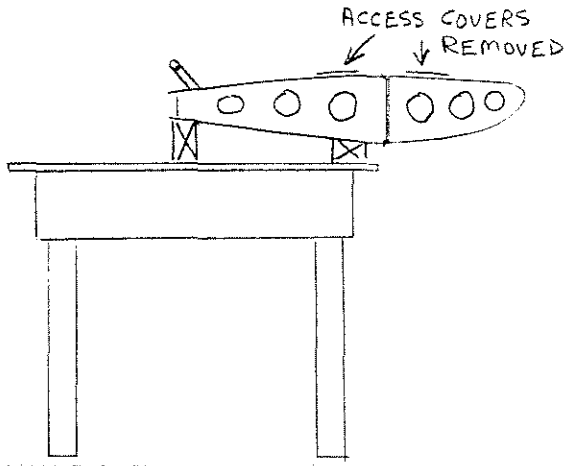
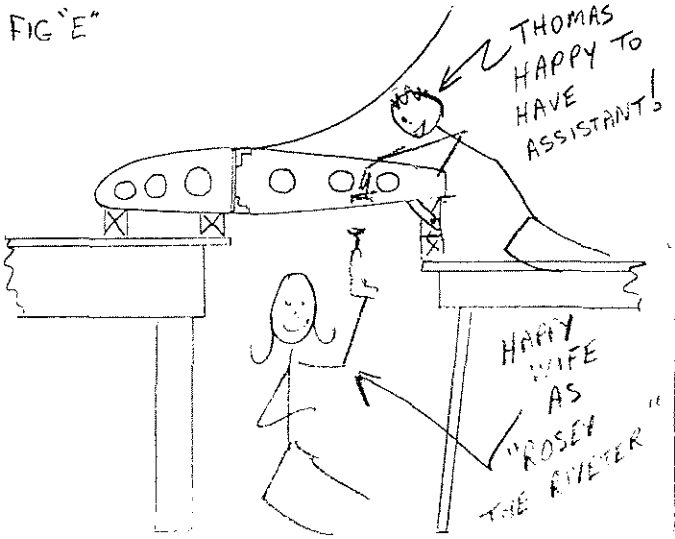
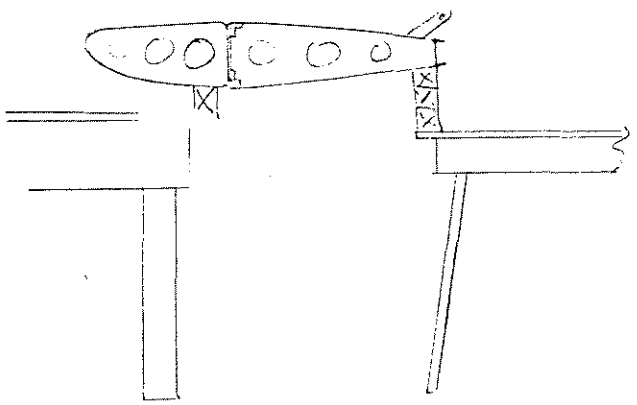
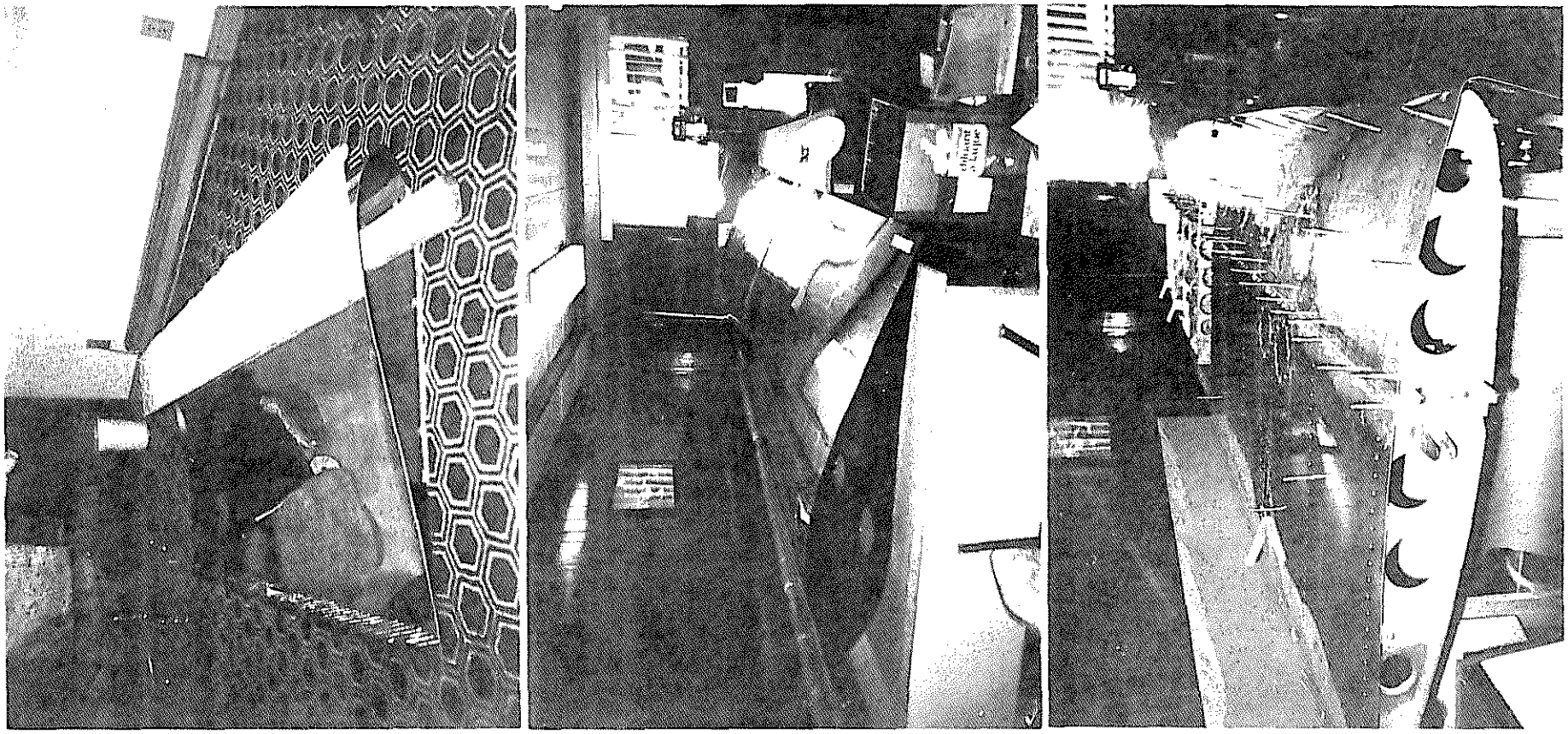


FIG"E"



FIG"F"





4/20/89

Dear Dick,

Your impassioned plea finally got to me; the Lord knows that I gleaned a tremendous amount of knowledge from the newsletters; I couldn't have built m without all the help from so many contributors.

I'll go ahead and write a reply covering some of the topics that you listed, and my comments so far; I've just go 77 hours on the bird now, so I've got a lot of evaluating yet to do. I had a nice visit with Paul Kirik and Bob Olds over in Davenport the other day. Paul gave me a lot of good ideas to plug the holes to let my heater work better.

I really wanted to make it a good IFR cross country airplane, that's the reason I've sort of went overboard on the AVIONICS. I use the ADF quite a bit, and I plan to fly in Canada some.
PLANS# 1152, T-18 CW

BAFFLES; AIR BOX

I got these from George Lieder, 5017 Briarcrest, Lakewood, Ca 90713, (213)-866-2198. The Baffles take a lot of time with individual fitting but a cool engine is worth it. The rubber asbestos material I pop riveted on with an aluminum backing strip, and sealed the cracks and corners with RTV. I threaded 1/8" welding rod for the under cylinder hold down. I used the gummy gritty Duratest Locklite (sort of pink) to go around the carb mount studs after John Walton said that his vibrated loose. John Kleber (812)-877-4092 helped me with a S.S. bracket that extends down out and aft to serve as a mount for the mixture and throttle controls on the bottom and side. It goes on the 4 same studs in the crankcase just above the carburetor.

I also got a chunk of wet suit sleeve from George Lieder to go between the air box and the aluminum rectangular box that bolts to the fiberglass air intake. The air filter was from a automotive speed shop-the dense variety.

CONTROLS

I hung the controls under the panel - the throttle, prop, mixture in the top row, and the carb heat, parking brake, defrost heat, floor heat in a row under that row. The fuel shut off valve (Paul Kirik's idea in a previous newsletter) that goes immediately under the tank has an extension that is just below and behind this panel that holds the controls, out of the way from bumping it with your knee. I welded a L-shaped extrusion to hold the control cables firm on the aft tank belly.

TRIM CONTROL

I used two little switches mounted on the top of the stick grips with a center off for trim control, and a PTT button just forward from the trim switch. The wiring comes

out near the bottom of the stick and goes over to the push-pull tube cover and exits just ahead of the front aluminum cross piece just forward of the spar (I forget the number). I wrapped the small wires with spiral tie wrap for chafing protection and left large service loops for travel. The wiring goes to the side and comes up on the back side of 601.

ANTENNAS

I used the plans for the wing tip NAV antennas that have been circulated through the MAS - The strap of 020 aluminum. They work great, although I use the Loran mostly for navigation. Why use a horse and buggy when a Cadillac is available? I do use them for the localizer and identifying intersections. I hooked one NAV to the one radio, the other to the other.

The COM antenna for the one radio goes on top forward of the fin (20"), so it will clear the canopy. For backing I tied into the frames fore and aft with an .025 doubler. I used 3M Body Seam Sealer to seat the antennas to the skin. It can be painted, the radio shop man told me. The other COM antenna was bent and goes as far laterally on the belly as you can conceivably put it, just aft of the spar - 4" or so. The Loran antenna is in the same place on the opposite side.

The transponder antenna went on the belly about 6" aft of the firewall just to the right of the middle, inboard from the heat of the exhaust. I wanted to protect it from breaking off during a quick wash job.

The marker beacon went about under the back of the seat below 598, just to the side of the middle extrusion.

The ADF antenna went aft of that about eight inches. The reason for putting this aft of the baggage compartment was to help get weight and balance farther back. The battery is on the other side, on the back side of the frame that is the back of the baggage compartment. The battery box is stainless steel that I got from Sorrell (Hyperbibe) and I used #4 welding cable for battery cables - all copper. The goodies that go with these antennas: Encoder, Marker Beacon, ADF Coil, Glide Slope, ELT Box, mount on a tray in the other bay opposite of the battery.

The strobe power pack I put way to the back end, with an inspection plate (WAG AERO, $4.50 for both plates) for access under the stabilator. Its great to have a plate there for access to the trim motor and the stabilator arm and counterbalance. I didn't want to add any lead in the tail to compensate the constant speed prop weight.

One thing I sure would strongly recommend: don't rivet the aft belly skin on until you've got your rudder pulleys and cables in, and don't rivet the front belly skin on until you are completely finished with the instrument panel, rudder pedals, fuel lines, cables, wiring, brake lines, parking brake valve, heater ducts and controls, throttle, mixture, and prop controls, main tank vent arranged, etc. You can have the extrusions and pedals fastened in with clecos for planning, but working underneath sure beats standing on your head.

If you're going to put a wing leveler under the seat be sure that all the pulleys, bellows, cables, mounts are all in place before you rivet that front belly skin on.

OIL FILTER, OIL COOLER

I used the corvair filter, and mounted it on the upper left corner of the firewall and hooked it in parallel with the Stewart-Warner oil cooler with #6 oil lines. I mounted the oil cooler to the front baffle, and to keep the oil temperature up around 200°F, I put an aluminum plate on the front that I can cover with duct tape. I also used an oil separator in line with the oil breather to keep some oil off of the belly.

FLAPS

I used the set-up that Bob Dial first used, and others have used with a GM tail gate motor and a section of the up and down plate to pull the flaps, as pictured and written up in the newsletters. I used a Cessna flap switch and when I learned to instantly dump the flaps when all 3 wheels initially touch, it sure improved my landings. I outboarded the rudder pedals like Bob Dial's drawing, also; pulleys ahead of 601, aft of 598, and where the cable lines up to go through the aft slot; fairleads in other frames.

TUNNEL

I used a round section of 4" aluminum tubing opened up with a vertical .063 side and 3/4 x 3/4 extrusion base support to cover the push pull tube. It really lowered the tunnel. I have a flat floor in front, and I could use a bench seat if I wished. but its better to step on the center push pull tube cover.

TEMPERFOAM/SUNMATE

I agree with what was in the last newsletter, it is hard as concrete when you first sit on it in cold weather, but by the time you sit on it awhile, it is soft enough for long term sitting, and it really is comfortable. It is used for wheelchairs. For the backrest, Sunmate would be better - it is cheaper, lighter in weight, and not temperature sensitive. The reason it is not as good for the bottom is that it does not have the same impact resistance that temperfoam does. One inch of Sunmate will give as much comfort as 3 inches of polyfoam; its great for long legged people for the backrest; only 1" thick.

FUEL TANKS

I recall the accident where the fuel filter cap popped off (thermos type) so I wanted a positive twist on type, so I got one from a fellow in town that welds race car tanks. I made the tank by the plans, but he said he wouldn't weld the tank with the rounded ends out, so we reversed them for greater strength, but it did cut down the volume a little. I followed Paul Kirik's advice again and put one shut off on the bottom of the tank, with a #6 line going to a fuel selector valve (like a Cherokee 140) where I can switch either main or wing or off. I pressure tested the tank to 2 1/2 pounds - that is a lot of pressure.

For the wing tanks, Paul Kirik brought up a good point - don't have the fuel vent line out at the wing tip, in the case of catching the wing Tip when you were correcting for a cross wind, in a wing low position, and you did hit the tip on the concrete and got a spark; ideally you might bring the vent line back inboard to the dihedral break, or even farther in. My vent is at the tip. I have both wings cross feeding and the gravity flow will give out 15 gallons per hour, after the main fuel flow starts the siphon. I have intentionally run out of fuel at altitude and there is all kinds of warning time. I never take off or land on the wing tanks, though it should be o.k. I used .032 ribs and skin on the wing tanks, and of course plenty of coast proseal 890. I wet the inboard 4 bays for a fuel capacity of 34 gallons in both wings (32 usable). The floats do not work worth a darn, they read full until I'm within 4 gallons of being empty. (of the outer wing)

COLD AIR VENTS

I used Peter Hodgin's idea of mounting a SCAT TUBE on top of the cylinders on the right side and bring it back to a divider where I use 1-1/4 tubes coming to each side of the instrument panel. I found 2 eyeball vents at the fly market at OSHKOSH - see picture. They work great, along with cool air blowing in over your shoulders, and the leaks under the seat from the flap holes. A lot of air can sure go through a little hole in cold weather, but its very comfortable in the summer.

SPEAKER, HEADPHONES

There is a speaker between both seats, just behind on the 669 deck. I went to a good AIRCRAFT speaker after I flipped the RADIO Master on when all the radios were on and blew out the automotive speaker. I have a Sigtronics voice activated intercom and the headsets plug into each side of 601 just below the instrument panel.

INSTRUMENT PANEL

I lined up the radios along the bottom to clear the tank, except my one NAVCOM, where I had to cut a recess in the tank to give enough room.

The radios each have a circuit breaker with one on off Master switch to turn everything on and off at once. I also used rocker on/off circuit breaker switches for the pitot heat, panel lights, landing lites, fuel pump, etc.

I mounted the vacuum gauge as near the gyros as possible, with a little red light that warns of low pressure, and the fact that the alternate standby vacuum system is on (SVS-Bend Oregon, Now called Precise Flight 800-547-2558). There are 3 bus bars - one on 601 for most of the lights and instruments, and one for the radios, and one for the main rocker CB switches. There is another smaller one where the 60 amp line comes in from the alternator.

I do have my instrument panel on 2 lighting systems - the regular one with post lites, and then the eyeball lights on the sides in case of the other circuit failing.

I probably left a lot of questions unanswered, but you can see why it took me twelve years to finish it. It still isn't finished and I don't see how that I can get it done for OSHKOSH; I have to get the wheel pants and gear fairings on, and get the upholstery finished. I want to get that done before I paint it. Its too much fun to fly to take time out to finish.

Well Dick you may have got more than you asked for; I sure don't' say that all this is the best way to do things. You sure can wind up with a lead sled, it weighs 1,169 pounds, but it still cruises 180 mph at 24 squared and climbs great at full gross, so to say I'm happy is an understatement. As you see, most all of these ideas came from the previous newsletters, thanks to all the contributors for all help.

11/22/89

HINDSIGHT, WHAT NOT TO DO (126 HOURS) - If I had it to do over, I would attach my instrument panel so that it would slide aft as well as tip for accessibility. I used FRANK SNEDECKER's mount (newsletter) to have a tipping shock mount, but I would make it mount the same on a standoff from the extrusion at WL42 with a slotted track to slide aft before it tips so I could work on it much easier; I've had occasion to get back in numerous times and to put it mildly; its a bitch! Also, I would use an electric tach so as not to have a solid tie up to the firewall - ideally wiring on Jones plugs to disconnect easily. Also an access panel in the firewall to get at the front of the gas tank where the ram air hose connects.

What precipitated all my headaches was a faulty automotive voltage regulator. I was on a cross country and as I tied down I noticed the battery drain tube dripping generously. My alternator had gone wild and was boiling the battery. Coming home, I shut the master off right after starting and all went well until I momentarily flipped the master on (an avionics man had said a few minutes probably wouldn't hurt anything for just a navigation fix). He didn't realize that my 60 amp alternator was putting out full voltage. Anyhow, I had instant fireworks, smoke, and popped circuit breakers. It fried everything I had on of an avionic nature. I came home in the dark with no lights and no radios. Fortunately, it was good VFR. I would also build in a readily accessible capped "T" fitting in the static system that is easily accessible to get the static system certified IFR and to have the encoder checked for the FAA.

I'm all back together now after having all the repairs, with an over voltage regulator and I'm going to put in an aircraft voltage regulator instead of the temporary heavy duty automotive regulator.

I've also finally got the wheel pants on and the gear leg fairings bent up. Finishing the upholstery and the paint job are all that's left until I want to play with the cowl flaps.

Best Regards,

Harlo

Harlo McKinty

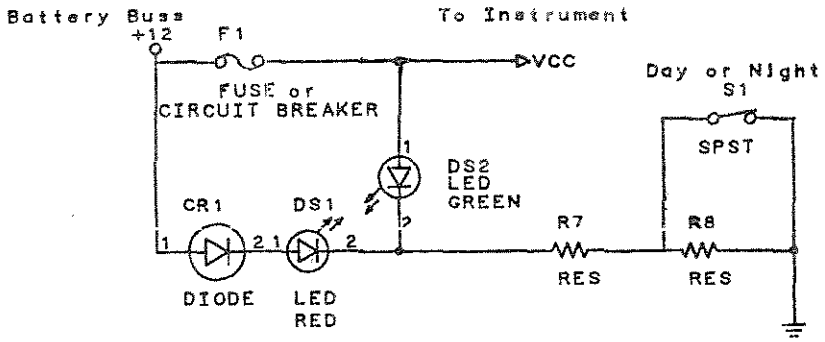
Dear Dick 6/15/89

My project is coming along fairly rapidly. I bought Plans #166, last spring, from Dave Simpkins who had completed the wings, tail and fuselage. The Lyc. O-290 G engine now has most of the accessories installed. I have used the tilt out instrument panel ideas from the past newletters. Final assembly will have to be done at the airport, since it is being built in a single car garage.

I have several questions, which I have not found answers to in the old newsletters. Can some of you provide answers thru the newsletter?

1. John Thorp suggests using the oil gallery plug (front right of the engine on the O-290 G) as a source of oil for the filter and cooler. He also recommended restricting the oil flow by using a plug, in the hose, with a .070" dia. hole in it. This works like a thermostat, as the oil changes viscosity. Do any of you have experience using this set up on your T-18?
2. How well does a 68 by 68 wooden prop work with the O-290 G engine?
3. Do any of you have experience using gell cell batteries? Is there a difference between automotive and aircraft gel cells? Gill Batteries recommends using a higher voltage and trickle charging a low battery to prevent heating damage.
4. Does anyone have a simple in-expensive way of lighting the instrument panel and cockpit at night? A rotary switch and high current diodes can be used to replace the dimmer potentiometer. Do not exceed the current or power dissipation limits of the diodes.

I am installing a visual monitoring system to indicate if the circuit breakers are functioning properly. The electrical schematic is shown below. The green LED is normally on, the red comes on if the circuit breaker or fuse opens. The reverse breakdown voltage of DS 1 should be over 20 volts, to prevent damage when the breaker is open. R 7 should be about 1 K ohm, 1/4 Watt, to operate most LED's. I am using a dual red/green LED (one package). S 1 varies the intensity for day or night operation. R 8 should be about 1 K to 5 K ohms and 1/4 Watt. R 8, could be replaced with a potentiometer and used with up to about 8 LED's (5K and 3 watts). The diode switch (#4 above) will work as well. S 1 can be deleted if you use the potentiometer or diode switch.



In the future I will be designing some simple circuits to monitor various functions like master ON and no oil pressure or a stall warning or other?

Thank you all for your contributions to the newsletter, it really does help those of us who are new builders.

Brad Chapman, 2855 SW 219th Ave, Hillsboro OR, 97123 Ph. 503-591-0377

THANK YOU, BRAD, FOR YOUR LETTER & TIP!

PLEASE DROP BRAD A CARD IF YOU CAN ANSWER ANY OF HIS QUESTIONS.

FOR SALE ITEMS:

Here's an almost completed project for sale that could fly with a very few months of work: It's a standard body and wing T-18, with all airframe complete. Windshield is installed and has canopy frame (no canopy installed), has fuel tank, controls, seats. Has Cleveland wheels & brakes, the long gear, Maule tail wheel, all tail group done. The price is EIGHT!....$5995. Call BOBBY COLLARD at 214/644-4333 (DALLAS) for further details.

DON LANKFORD, of Sherman, TX, has an extra Dynafocal Engine Mount, made by Ken Brock Co. and will sell for only $200 plus UPS cost. It's new and that"s quite a few bucks less than what he paid for it. He has asked me to sell it for him, so if you are in the market send Me a check made out to Don and I'll ship it to you.

Here's a clip from another letter I rec'd from Terry Adams (see his letters in another part of this N.L.). His address is on that letter and his phone is 209/478-7379

As I mentioned in my previous letter my WANT list includes:

Lyc. 0-320-D series -E series or -F series w/dynafocal mount
Exhaust system
Propellor
Prop Extension
Spinner
Oil Cooler
0-320 Baffle Patterns
Electric trim motors

And my FOR SALE list would include:

RATTRAY cowling for 0-320
RATTRAY wheel pants

CLOSING NOTE: I didn't have room to express my appreciation for all the articles sent in this month, but for all of you that did contribute for this NL I'd like to say that all of us truly appreciate your efforts and I again would like to encourage you individually to keep the NL going qith your articles. You now have a new NL editor in DICK SNELSON, so I hope you all will give the same support to him that I've received.

From the bad news dep't: I went thru a treadmill test yesterday, with an unpalatable result. It appears my arteries are not the greatest, so I'm scheduled into the hospital this next week for an angiogram and if the results of that aren't good it'll be one of those by-pass oper'ns. If everything goes okay in the op'n I'll be back with a portion of the next NL. After the first of the year I want to do A T-18 "FAMILY ALBUM", with nothing but pictures of every T-18 in the country (and other countries, too). If you haven't sent a color print of YOUR T-18 to date please send one to Dick Snelson, along with Eng., prop, Hrs. flown, when built, etc.....Guess that's about it for now, gang.

Dick

Just this moment I got some really bad news. FRANK LANIER, of Colorado City, CO, was killed in his T-18 while shooting touch and goes. Eng. FAILURE I THINK. I AM DEEPLY GRIEVED. WE LOST A FINE GENTLEMAN.

KENTUCKY LAKE -- FALL 1989