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T-18 NEWSLETTER #41 1 July 1974

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OSHKOSH 74 - The T-18 Forum will be held Aug 1, Thursday, from 4:00 to 5:00 in Forums Pavilion No. 1. I shall also conduct a forum entitled, "Reduced Diameter Propellers" on Friday Aug 2 from 4:00 to 5:00 in Forums Pavilion No. 1. At the T-18 Forum you will have an opportunity to hear some first hand experiences from builders, get your questions answered and see some photos of the first T-18 folding wing being assembled. For a change, it will not be followed by another event in the Pavilion, so we should have time to hear from everyone who has flown without being rushed. At the propeller forum, I'll give a full report on the propeller development program and you will hear reports from Dick Walen and John Shinn who have also been testing wooden props on the T-18.

FOLDING WING PROJECT - I have completed a sufficient number of drawings for the T-18 Folding Wing to permit a prototype to be built. John Thorp stress analyzed the joint and spar, and a prototype being built by Ken Knowles will be tested before plans will be made available. Ken plans to be at Oshkosh (in his own T-18) and bring a set of pictures which he took while building the new wing. Today he told me that he had completed most of the parts and is starting assembly. It will not be completed before Oshkosh, in all probability.

There are very few completely interchangeable parts between the standard and folding wing, but the center section spar is the same (except that the new one is shorter). Ailerons have been shortened and flaps lengthened to help lower minimum speed a bit. If all works as well as planned, the folding operation should be a one man job.

PROJECT FOR SALE - Jeffrey Voelz, 2820 Indiana Ave, Fort Wayne, Indiana 46807 bid on a Messerschmitt BO 209 in order to salvage a Lyc O-320 from it for his T-18. When he got it, he found that it could be re-built, so he has decided to keep it and sell his T-18 project. No major assemblies are completed, but lots of parts. All ribs, tail parts, fuselage frames, all fittings, walking beam, pedals, dynafocal ring mount for 150 Lyc, Lord mounts, Main spar extrusions for center section, rivets, hardware, misc and one sheet aluminum. He will sell it all for $900. which he says doesn't even break even for the cost. Sounds like a real time saver.

WHEEL PANTS - B C Roemer says he can't get at his tire valves without removing the wheel pants so he cut a 1" hole in the side of the pant for access. He then got two long plastic valve extenders from a service station, forced them into one another, glued them together and spun onto the valve. Then he removed the extender and installed a snap plug in the hole. I lucked out and can reach mine from the bottom. John Thorp would probably say he doesn't have any problem with his design!

SERVICE TIPS - B C Roemer sends this list of service items he has found necessary in the first 400 hours. You other owners should also send in any items you may have.

1. 2 1/2" rubber washers on landing gear failed. Replaced with belting type.
2. Oil cooler bracket, carb heat valve, carb heat box and mixture control wire all failed or cracked.
3. All rivets from skin to horizontal tail tube had to be replaced, were pops and he replaced with cherry structural type. Also a number of pops in leading edge wing ribs were replaced.
4. Horizontal tail tabs next to rudder are flexing with air loads and need strengthening. (Ed note; This is a very important point and relates to the flutter modification. My observation is that an .020 thick tab is much stiffer.)

It has not been previously reported that so many rivets have come loose. Usually, the only cracks in paint around rivet heads occur in the main spar to skin rivets near the fuselage but they have never seemed to really get loose.

John Shinn reports that everyone should frequently check alternator brackets for cracks. It is absolutely essential that the nose piece be easily removable.

TAILSPRING ATTACHMENTS -
Bill Johnson just had a failure of the front attachment point for his tailspring. The bracket cracked off right through the bolt hole and the two rivet holes for attaching the plate nut. He also found cracks in the aft attachment fitting near the two 1/4" bolt holes. It would be wise for the two fittings to be inspected immediately. The 591 bracket was made of .092 as recommended. Bill says that since the brackets are difficult to inspect, you should be on guard for another clue. He had a loud rumbling noise during taxiing but assumed it to be sloppy tail wheel bushings. After repair, it was gone. Bill beefed up the 591 bracket by making a new one from two layers of .063 plus a radiused washer of .125 steel. The nutplate was deleted. An .063 steel doubler was installed over the 583 bracket. The ends were made long enough to tie into the lower longerons to pick up side loads. 1/4" inch bolts were replaced by 5/16" bolts. Total time on the airframe was 220 hours. About 300 landings were made on mostly rough runways.

MORE ON BILL JOHNSON'S RETRACTABLE T-18- Bill has sent me some additional information for inclusion in the Newsletter which was not in the article he sent to Sport Av. "My first speed check with gear up gave a cruise speed of 190 TAS at 6,500 feet. The center gear doors had not been installed, and the left flap was stuck down 1.25 ". A considerable amount of cross control was necessary to maintain straight and level flight. After some rework to get the flap to fair, installation of the center gear doors and changing the rigging of the outboard panels to minimize some twist, the second speed check was made. The speed at 73% cruise power and 7500' was 203 mph TAS. Top speed in level flight is about 225 mph TAS.

The handling of the airplane is greatly improved. Directional stability in flight is noticeably different. The airplane will hold the heading once trimmed out quite well. On a recent 70 mile flight, I made only one heading correction of about 5 degrees. The main gear tread is about eight inches wider than the fixed gear. This plus the larger fin and rudder make ground handling very easy.

NACA data indicated that the airfoil change should cause an increase in stall speed of two or three mph. A pleasant surprise was instead a three mph reduction in stall speed with flaps, and no measurable change with no flaps. This effect may be due mainly to the Hoerner tips. However, the aerodynamic twist which was built into the root section between Buttock lines 210 and 385 may also be contributory.

An unexpected problem occurred during preliminary flight tests with the gear retracted. Blast from the exhaust pipes pressurized the wheel wells so that the gear stopped eight inches short of the full up position. The problem was isolated by taking some inflight movies. The gear would retract only when the throttle was closed so the exhaust pipes were modified so that the outlets are now about six inches outboard of the original positions. Now, at full power the gear can be completely retracted. Relocation of the exhaust pipes resulted in a 12 mph speed increase with the gear down at 70% power. I don't understand why, but the effect may be due to circulation effects in the wheel wells. It would be interesting to see if the exhaust pipe relocation would have an effect on a fixed gear T-18.

A problem with this very clean configuration is that it exceeds the present red line so I am conducting a flutter investigation. The analytical characteristics of the wing structure will be calculated using a digital computer. This will be followed by a static shake test and an inflight test with strain gage instrumentation Sufficient data will be obtained to determine gust response and damping characteristics of the structure. I hope to establish a redline of at least 250 mph at 2000 feet altitude. If not, the analytical program will show what needs to be done, as well as what the redline IAS should be."

CANOPY SEAL AND MOLDING - Sorry, but it is all gone.

FIRST FLIGHTS- Max Pendergrast, 1611 SW 26th Street, Ft Lauderdale, Fla reported the first flight of #419. He made the following modifications: "wet leading edge of the wing, using Fuller Obrian sloshing material (12.5 gal per LE section, 50 gal total), full 74" constant speed prop from a Mooney, 2.5" longer landing gear, .0 32 in lieu of .025 on wing and fuselage. The entire plane was flush riveted or counter sunk. Low profile rivets on .032 or counter sunk on anything under .032. All riveting was 1" apart. Also, some modifying was done on the cowling. The little jewel flew on April 9, 74 and about the only statistics I can give you now is that it was light at 60 and airborne at 65 indicated. It is quiet enough to carry on a conversation without raising your voice too much."

He doesn't say, but it is probably powered by an O-360 engine. Empty weight is probably the highest yet, 1,117 pounds. Forward CG is 68.2 and aft CG is 71. Max sent a list of installed equipment that is just too long to print. No, it doesn't have a restroom, ladies.

Worthy R Warnack, 189 Bayshore Dr, Baytown, Texas 77520 flew his round back T-18 March 16th, 74 (SN 772). It took him 3 3/4 years to complete and $4,000 +. "It has an O-320 swinging a Hartzell HC-C2YK-1 of 70 inches length. Modifications include: Round back, roll bar 3/4" higher, canopy 3" higher, right pedal moved to clear tank support, tunnel rounded, dash set back 3 1/2", canopy similar to Derringer, mounted on three arms, moves up and back. The larger headroom is comfortable but the added cross section cancels out cleaner back. It is neither the fastest nor slowest T-18. It has fantastic climb out (2,000 fpm), no upholstery yet so it is loud. I have taped on stall strips and have decided to instal them permanently. They do wonders for the stall - give a nice warning. 4" of 3/4" angle mounted midway out the center wing on each side works fine.

My goal was to cruise 150 mph in comfort and I think this has been surpassed easily. The plane is a dream to fly (as all T-18's seem to be). I cannot claim any real advantage for the round back other than esthetics. My plane is very stable at high cruise, maybe because of the smooth flow aft of the cockpit - I don't know. I sacrificed alot of visibility and the construction of the canopy was a major project in itself. Earlier T-18 experience pretty well proved that a constant speed prop adds climb performance, but little speed. My plane is no exception. But I really do enjoy the lower RPM (1900 - 2000) performance - much quieter and vibration free."

This airplane was completed in my garage which is located in a flood prone area on the coast. During construction, I evacuated N2WW three times due to storm threats. The last time, my shop was flooded with 3 1/2 feet of water during tropical storm Delia. Fortunately my ship was evacuated earlier. I'm moving next month."

#716 Flies - Ron Kuyoth, Jr., 6128 Secor Road, Toledo, Ohio 43613. Finally after 4 years and 2 months, #716, N8RK, went to the airport Feb 25, 1974. The FAA, out of Vandalia, Ohio, made their inspection on the 21st of February. The plane was still in the garage, wings removed, awaiting its trip to the airport. I had called FAA the previous week after being informed that there was at least a three week wait on inspections. When they called and said they would be here on the 21st, I explained to him that the plane was disassembled, but he agreed to inspect it anyway. He was very formal and did his job without much comment. Then he went out to the airport and inspected Max Dauer's Teenie Two which was built in my garage alongside the Thorp. The buddy system worked well as we were able to share ideas, help eachother, and then there is always someone to praise and encourage you. Both planes were approved!

The trip to the airport was uneventful and after assembly, there in 20 degree weather, taxied it down to the active. I made a few high speed taxies with it and found that it handled beautifully. After checking things over for the first flight,

#716 cont'd - they changed runways so had to taxi to the new runway. Made a final check of everything, rolled out onto the runway, gave it full power and after a short roll was off. It climbed right out and I made 3 trips around the airport. My final approach speed was 11[illegible] mph because I was not certain the airspeed was correct. I found after the flare that the airplane floated about half the length of the runway since the speed was so high but proceeded on to make a 3-point landing.

The plane had a slight tendency to roll to the left and the pitch trim was not adequate in the forward direction. Bob Dial and Parker Miller advised me to bend the trim arms a bit and this cured the pitch trim problem. Now, for the roll problem, several other owners have had this problem. I went to great lengths to build my wing without twist. I jigged the center wing onto the fuselage, the main spar bolted to the fuselage, the rear spars bolted to the fuselage and all the ribs on the spars. I put redheads into the concrete floor of my garage, bolted 2 x 4's onto the A frame and bolted the A frame right to the floor using all threaded rods. On the outside of the wing, I riveted an angle on the rib with a hole in the bottom of it and put an all-threaded rod through the angle into the redhead in the floor. I leveled the main spar and rear spars and jam nutted them together with an all-threaded rod. Both main and rear spars were perfectly in line and absolutely could not move. I had the holes in the skins, center lines on the ribs and stretched the skins over the wings while still in the jig and stretched them tight with truck inner tubes. Transferred my holes onto the ribs and clecoed it together. I cannot see how there could possibly be any twist with this method.

There is a slight twist in my outer panels but the way it is twisted, I expected the plane to have a tendancy to roll to the right, but just the opposite happened. Would like any suggestions on correction of this problem. I have heard of guys lowering their left wing slightly and raising the right at the fitting. (Ed note: I'm glad to hear that someone else had this problem even when they went to all the trouble to jig up the wing. I just built mine with matched hole tooling and checked it with a big level before riveting. To cure the left wing heaviness I just Massaged the aileron, as John calls it. That means bending the trailing edge a bit (up on the left aileron and down on the right of course for left wing heavy. This gives the appearance of flying with the left aileron drooped a bit, but it doesn't seem to slow me down any.)

I have an O-320-D2B, 160 hp engine with a 180 EM hub which I purchased from Andersen Propeller Co. The prop was never damaged but I had it cut to 70" length. The pitch is 74". Since my landing gear is 2 1/2 inches longer I still have 9" clearance in level attitude. I don't have performance data yet after only 3 hours. It was a long 4 years, but in my opinion the wait was worth it. I think the T-18 is one of the finest homebuilts ever designed. See you at Oshkosh. N8RK, Wt.-885#

PAINT AND PRIMER- Several months ago I got to see Bill Lawson's T-18 while in Seattle. His paint job was so outstanding that I asked him to send me information on it. Bill will try to make Oshkosh so you may see for yourself. He used 3815 zinc chromate metal etching primer. He found that combining one gallon of the primer with two gallons of its catalyst (3816) is enough to do both sides of all the aluminum for the T-18. It is made by Fuller-O'Brien Corp, So San Francisco, Calif. 94080. Instructions say "mix only as much as can be used in 8 to 12 hours as the mixture will gel after a time." He used DuPont Imron polyurethane enamel for the finish coats. Grumman uses it on the Yankee. Bill lives at 2419 SW 150th Seattle, Wash 98166.

LANDING GEAR SOURCE - George Byard, 5354 Ocean View, La Canada, Calif 91011 says he made 15 landing gears on John's tooling and 3" longer. Price is $225. FOB.

CUTTING PLEXIGLASS- Doug Hilton, 1608 NE 120th, Portland Oregon bought an abrasive disk from "Gee Bee" that cuts plexi like butter with a 3/8" variable speed drill.

MATERIALS - Dick Baxter of Spencer Aircraft, 8410 Dallas Ave So, Seattle, Wash 98108, 206-763-0210 says he will send a materials list of homebuilders supplies to anyone requesting it. He has all sorts of hardware - especially PROP BOLTS for the new wooden props which are 5 3/8" thick.

Ken Knowles Sport Aircraft, 27902 Alvarez Dr, Palos Verdes Penninsula, Ca 90274 says he has just about every raw material for the T-18. Today, I asked him if he was having trouble getting materials and he said he was, but at present he had everything. As mentioned earlier, Ken is putting his 30 years in the aircraft business to good use for he has offered to build the prototype T-18 Folding Wing. He will supply a price list upon request. Ken has beautiful Tie Tacs of the T-18. (They were $3.95 last I heard.)

ENGINES - Gibson Aviation, P.O. Box 880, El Reno, Okla 73036 sent me a catalog of all their engines, parts and manuals. They would probably send you one on request.

YOUNGEST T-18 PILOT - I hear that George Leider's 16 year old son soloed his T-18 with only 21 hours total time. Both George and his brother had low time when they first flew the T-18.

#929 (N 8786) FLIES - John Thorp reported that on 10 February 74, he and Kay flew out to Chino airport to see Bill Warwick fly #110 T-18 to take to the air. It was built by Don Phelps in a time that would almost rival Irvin Faur . He bought the plans 20 July 1973! In addition, 10 more T-18's flew in to see the event: 1. Bill Warwick, 2. Ken Knowles, 3. Ollie Smith, 4. George Leider, 5. Earl Odie, 6. Chuck Borden, 7. Lyle Fleming, 8. Don Taylor, 9. Howard Culbertson and John. All 11 ships were lined up for pictures and Kodak really made out. Now lets see a good shot get sent to Jack Cox for Sport Aviation you guys!

FLANGE REINFORCEMENTS - Roy Sweatman, who makes the clamp-around reinforcements, is now incorporated under the name Presque Isle Air Inc. See Sport Aviation Ad.

FIBERGLASS PARTS- Leopold Porlaky, 6301 Somerset Rd, Riverdale Md 20840 says he has fabricated a nice set of molds for fiberglass wingtips, nose bowl and tail tips. He is willing to supply a few sets of these parts to other T-18 builders if he doesn't have to bother with packing and shipping. In other words, they must be picked up in the suburbs of Wash, D.C. He has about 10 years experience in fiberglass fabrication, mainly in boats and associated parts.

#671 FLIES - Paul Stanley, 2012 - 29th St, Galveston, Texas 77550 flew for the first time 9-17-73. The only problem after the first 3 hours was a heavy left wing and a weak mag. (Does everyone have a heavy left wing?) He took 4 1/2 years to build it, has an O-290-G, no electrical system and weighs only 752 pounds. (Wow, that is really light, but I still wouldn't want to prop a big Lycoming.)

OSHKOSH SHEET METAL WORKSHOP- For a number of years we T-18ers have been manning the sheet metal workshop at the Fly-In. Last year we got a vacation and actually kicked some tires and did some flying. But again we have been asked to help out. The workshop will be arranged to demonstrate each phase of building a metal aircraft:

- Layout and reading drawings
- Use of transfer templates and matched hole tooling
- Cutting sheet and plate stock
- Dimpling
- Riveting
- Forming ribs (stretch forming and recess forming)

A chart will be made explaining each of the above and posted by a work area. Thus it won't be necessary to interrupt a demonstration to go back over a step every time a new person walks up. Hopefully we can have tables to cover each of the demonstrations. There will be a continuous demonstration again on forming

ribs Pazmany style. Will someone volunteer to loan us a set of good durable T-18 rib form blocks? It would be fine if we could keep the workshop manned by at least 2 people each day from 9:00 to 5:00. The team could consist of one experienced builder and someone less experienced. So this means all of you are candidates. So, if you will volunteer to spend some time, please drop me a note indicating which days you will be available and I'll make out a schedule. There will be two shifts a day: 9:00 to 12:30 and 12:30 to 5:00. The store will not need to be attended during our forums, so don't shy away from Thurs and Friday. If possible, try to sign up for a half day shift. If enough of you sign up, then it won't tie some of us down all week. If anyone has suggestions for the workshop, please send them to me. Some of you might have components ready for riveting which you would like to bring and get some expert help assembling. If so, bring them. If you want help on your rib forming, bring the raw material and templates. You can have experts like John Shinn, Dick Walen and many others give you a hand.

T-18 CENTERFOLD FROM PLAY-AVIATION- When I saw the centerfold of John Shinn's beautiful T-18 in the February issue of Sport Aviation, I thought it would be nice enough to frame, especially if it didn't have the crease down the middle. So I obtained 400 copies of this nice color photograph from the printers of Sport Av assuming that many of you would like to have a copy also. They are printed on the same paper stock as the magazine. I have ordered mailing tubes for them so they can be mailed without being creased. You may obtain one by sending me $2.00 for the first copy and $1.00 for extra copies. The tubes should be here before long. If you overseas builders wish to order copies, I will indicate excess postage with the order.

WOODEN PROPELLER TEST PROGRAM - We have tested 4 different propellers on 4 T-18's, as a part of a formal test program for Sensenich. Each prop was first made with brass leading edge and tipping and then the brass was removed and replaced with a smooth plastic (with the exception of the W66LM76 which had only plastic). Tests were run on my O-290-G, John Shinn's O-290-D2 (135 hp), Bob Daniels' O-320-E2A (150 hp), and Dick Walen's O-360 (180 hp). I don't have all the data collected yet, but here is a brief summary. I'll later publish more complete data.

PRELIMINARY DATA

Propeller	Tipping	Engine	Max Static rpm	Max rpm at 7,500 ft
W66LM74	Brass	O-290-G	1975	2550
"	Plastic	"	2075	2625
W66LM76	Plastic	"	2025	2525
"	"	O-290-D2	2100	2725
"	"	O-320-E2A	2200?	2800
W68LY80	Brass	O-360	2000	2800
"	Plastic	O-360	2150	2700
W68LY82	Brass	O-360	1950	2700
W68LY82	Plastic	O-360		

The most important piece of information is rpm at 7500 feet, full throttle. Rated rpm for the O-290-G engine is 2600, so the 74" pitch in plastic is about right for that engine. Rate of climb isn't quite as high as with my metal props. It is about 1,000 instead of 1200 fpm loaded. It is quite noticeable in the 90 degree weather we have been having this week. But I like my cruise at low rpm. The significant thing is that changing to the plastic tipping increased rpm about 100. And if you look at T-18 Airspeed vs RPM Controlled by Throttle curves, you will see that a 100 rpm increase gives nearly a 10 mph increase in speed. Dick Walen and I both realized over 5 mph increase in speed when changing from brass to plastic tipping on the same propellers. The only strange thing about it is that

on the O-360, the higher drag brass leading edge and tipping gave a higher rpm, even though the airspeed was lower. The W68LY82 hasn't been flown with both types of tipping yet so we don't know whether it will do the same. Just talked to John Shinn and found that the 2725 rpm for the O-290-D2 was for 3,000 feet and at 7,500 feet, the maximum rpm was around 2650. His engine is rated for continuous operation at 2600 rpm, however, he thinks he should have a 74" pitch. It is strictly a matter of preference. That engine could use either a 74" or 76" pitch prop. He says he also misses his "show-off" high rate of climb. John has thus ordered a W66LM74 prop. He figures his maximum speed is 184 mph with the 76" pitch. This is about 4 or 5 mph faster that the metal M74DM-4-68, data taken on the same day within 1 hour period.

Bob Daniels from way out in Oregon, does high altitude photography work. He tested the same W66LM76 on his 150 hp T-18 and reported a 5 mph increase over the metal prop he had been using, (195 mph vs 190 for the metal). He checked this out over a 7.5 mile measured course. The metal prop is 68" long x 75" pitch. The wood prop is also much smoother but won't climb quite as fast as the metal one.

Dick Walen favors the 80" pitch on his 180 hp T-18. He really raves about the wood props and gets around 210 to 213 mph with them. Maybe the plastic will help the 82".

I did not list true airspeeds in the table because no direct comparison has been made of the various test aircrafts' airspeed systems. About the only way for meaningful data can be deduced from airspeed readings is for readings made on the same system within a few minutes of one another. I developed a leak in my pitot line between tests of the 76" pitch and 74" pitch props and had to recalibrate the system. Both of them were checked against the metal prop on the same day and both were faster than the metal one. At 5,000 feet altitude, full throttle, I can cover my 6 mile measured course in 2 minutes average with the 74" pitch plastic tipped prop.

Conclusions: Use of the plastic tipping gives a 5 to 10 mph increase, so I would recommend ordering it unless you expect rough service in rain. Sensenich has been quite cautious about converting to plastic because of the durability question. Ray Hegy and Ted Hendricks use nothing but the plastic and report that it is very durable and easy to repair. John Shinn flew through some rain with the W66LM76 and the clear polyurethane peeled off the plastic, but it didn't hurt the plastic. Sensenich had failed to use the proper primer on the plastic. Since then it has been recoated and has held up OK although it probably hasn't had a good rain test yet. Those of you who purchased props with the brass tipping can change it over very easily. Just remove the brass, remove 3/8" from the leading edge of the wood, remove 1/16 inch layer of wood under area where brass covered, apply Sears Roebuck boat two-part polyester to the leading edge and tip filling in all rivet holes and sand down. Then apply a polyurethane finish. Balance on knife edges by adding or removing plastic before coating, then check again after finish coat is applied. I discovered how Sensenich gets such a fantastic finish on their propellers. They soak the bare birch propeller in the polyurethane (which has been thinned down well) for about 20 minutes. Then they just spray on the polyurethane and air dry.

BOB DIAL GETS INSTRUMENT APPROVAL - Bob had been unable to get his T-18 approved for instrument flight so he decided to bring the matter to a head. He obtained a copy of Dick Walen's instrument waiver and sent it to Washington. Dick figured he would be up the crick and probably lose his approval in the process. But, Bob got a favorable ruling from the FAA in Washington saying that his aircraft simply had to comply with FAR Part 91 to obtain the instrument waiver. So, if anyone has trouble with their local FAA, you can write to Washington for help. But just make sure you have an aircraft which is worthy of the waiver. There are now so many T-18's with this waiver that I have lost track of the number, far more than any other type homebuilt.

TRIM SYSTEM FLEX COUPLING - John Thorp says that Aeroquip 601 fuel line hose works very well as a replacement for the flexible steel cable in the trim system.

WING ATTACH BOLT ACCESS - Recently John had occasion to remove his center section (after a connecting rod bolt broke) and he discovered what a number of people have been saying for some time; namely, that you have to be double jointed to get the wing attachment bolts removed. So, John is changing the plans to show an access hole behind each main spar attach bolt in the 592 bulkhead.

SWIVELLING AIR VENTS- Lyle Trusty, MS 2-17-06, Fairchild Republic Co, Farmingdale, NY 11735 says he found a good source for swivelling type air vents, McElroy Acft Salvage in Shelbyville, Ill. A set from a late model Musketeer cost $5.00. They mount in the panel, flush.

PREPARING SHEET METAL - Robert Clayton, 1783 Harvard Ave, Salt Lake City, Utah 84108 As a new builder, I have more questions than helpful hints, but I do have one thing that might be of help regarding washing down sheet metal to get rid of the coating. Basic H from the Shaklee people is a terrific organic cleaner, highly concentrated that will do a better job safer, than any soap or detergent. It has anti-magnetic properties in that it reduces the tendency for a surface to build a static charge and attract more dirt. It is fantastic for washing planes. It was the only cleaner to go to the moon on all Apollo flights. There will be no residue.

MATERIALS - Received a listing from AIRPARTS INC, 1430 So. 33rd St, Kansas City, Kansas 66106 which shows they carry all thicknesses of 2024-T3 sheet, rivets, bolts and all sorts of other goodies.

TUNED EXHAUST - Ric Keller, #332 has written an article on calculating the length of tuned exhaust stacks, but it is too long to print here. For anyone interested in picking up some extra power in this manner, it may interest you to know the required length - would you believe 10'-6" stacks, two side by side? If you could get them running under your wife's seat, they would make excellent heaters too. It will be interesting to see if the plusses win over the minusses in this set-up. Ric lives at 3284 Bayside, San Diego, Calif 92109.

FLIGHT RECORD - Here are the persons who have made first flights since John Shinn first flew in early 1973. I'll print first flights between 87 and 100 when I get the list from John. If anyone knows of a T-18 which has flown but has not been listed in the Newsletter, please have the owner notify John Thorp for he keeps the master list of first flights and assigns numbers. John just notified me that the third Eckel brother has bought a set of T-18 plans, SN 100. Gene Eckel had his at Oshkosh last year. In total number of plans sold, the T-18 has not broken any records. Some homebuilts have had plans sales in the tens of thousands. There are few which can rival the T-18 in total number of aircraft completed and flown however. The BD-5 has been threatening to eclipse the T-18 by the thousands since 1968, but it still has a long way to go to even catch up. (I hear the BD-5 with a Japanese water cooled snowmobile engine and a flexidyne coupling to the prop shaft has been virtually free of burnt pistons, drive shaft problems and mixture problems which have plagued the Hirth engine model.)

T-18 FIRST FLIGHTS

100 John Shinn, SN 131, 835 John Anderson Dr, Ormond Beach, Fla 32074
101 Ron Lee, SN 439
102 Bob Dawson, SN 244, N-45Z, 211 Savoy, Sugarland, Tex 77478
103 Paul Stanley, SN 671, N-4588, 2012 - 29th St, Galveston, Tex 77550
104 F J Carter, N-3124
105 G C Beauchamp, SN 232, 21 Simon Crescent, Calgary, Alberta, Canada
106 Wm E Lawson, SN 774, N-24WL, 2419 SW 150th, Seattle, Wash 98166
107 Bob Daniels, SN 216, N-55WA, 1418 Barton, RT 1, Box 740 Eugene, Oregon 97401

FIRST FLIGHTS CONT'D

108 Stan Piszkin, SN 474, 1638 Pepper Dr, El Cajon, Calif 92021
109 John H Cooper, SN 749, VH-UJC, PO Box 318, Bankstown NSW, 2200 Australia
110 Don Phelps, SN 929, N-8786, 1522 Kimberly Ave, Anaheim, Calif 92802
Carl Hoots, 2120 Athens Ave, Redding Calif.

SN 374 FLIES - Carl Hoots sent this report of his first flight. I started building in January, 1966 and my first flight for N-18CH was May 18, 1974. Not the fastest builder in the world for sure. It was built exactly to plans except for a flush gas cap and different seats. I used flush AN rivets except for a few pops in tight spots. It has a 180 Lycoming with a light weight Hartzell constant speed prop. I used John Thorp's metal cowling and prop extension and my bubble came from GeeBee. It has full 24 volts electrical system but no radio yet. Empty weight is 951 lbs. (Ed: John Thorp tells me he still has 20 prop extensions - #1072 type.) Performance is spectacular. It is off the ground before you get the throttle all the way open and by the time you get the power and prop back, you are at pattern altitude. Rate of climb is 2000 fpm or more. Wheel landings are out because of my 72" prop and standard length gear. This combination gives 4 1/2" clearance in level attitude, not hardly enough for a poor touchddwn or bounce.

My exhaust system is the crossover type made up out of old aircraft pipes with 2" tail pipes. I cracked two header pipes before I found out that you cannot anchor the tail pipes down tight. I had run a triangle of braces down from the back of the engine to each pipe and joined them together. This combination is guaranteed to break a pipe every hour. (Ed: Amen! See back Newsletters for a description of ball joints and a flexible attachment clamp which is guaranteed to not crack.) I am afraid the T-18 has ruined me for any other type of aircraft, the whole package is so delightful that anything this side of a P-51 Mustang or Bearcat would be old hat.

NEWSLETTER FINANCES NEEDED - With the cost of postage, paper and everything else more than doubled since I started putting out the Newsletter, the money goes pretty fast these days and the old kitty is about empty. I have been doing some mighty serious thinking about just closing the doors because it has become a really big job. Then I get a letter from someone who has received alot of help from the Newsletter and I change my mind. If you folks are willing to put up with receiving issues very infrequently, I will continue. So, if you wish to stay on the mailing list, please fill out the attached form and make a couple dollar donation. If you have recently donated your share, just fill out and indicate this so you will stay on the list. Each mailing, I receive a dozen or so returns with no address known, so if you move, be sure to send me a change of address. Donations for a complete set of 40 Newsletters has been $3.00, but effective immediately this will be $4.00.

T-18 QUESTIONNAIRE 1 July 74

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See Baldwin at Osh.

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