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L.D. Sunderland, 5 Griffin Drive, Apalachin, N.Y. 13732

BACK NEWSLETTERS: Nearly all recent purchasers of plans have requested back issues of the Newsletter. I have the stencils for all back issues except 1 and 5 and Ray Remy has kindly agreed to run off 300 more copies. When I started printing the Newsletter Dick Cavin suggested that we make at least several hundred extra copies even though there were only about 150 sets of plans out then. This I did, but now we have nearly 350 sets out and they are still going strong. Since we have no good record of who has which issues, if you want back issues we shall send them to you if you will send me an order listing all missing issues - even if you asked for them previously. The worst part about publishing the T-18 Newsletter is the bookkeeping. It is really tough to keep everything straight and make sure the varied requests of 350 people get filled. It is much easier if everything is uniform. So please make out your orders as follows: Take a plain piece of paper (8-1/2 x 11) the size of this Newsletter, and write on it the following and mail to L.D. Sunderland, 5 Griffin Dr., Apalachin, N.Y., 13732:

1. Number appearing on your plans.
2. Name
3. Complete address including ZIP Code.
4. Date
5. I want issues --,--,--,--, of the T-18 Newsletter.
6. Write nothing else on the paper.

Since all of the newsletters weren't numbered here is an identification of each: 1 - #1, 2 - More on T-18 Club, 3 - #3, 4 - Forming Ribs, 5 - #5, 6 - Dec. 30, 1964, 7 - T-18 Building Instructions, 8 - May 17, 1965, 9 - 12 all numbered. A total of 12 have been issued.

The T-18 Newsletter is prepared for T-18 builders to help exchange information and building tips. It is not meant for the general public since it is prepared strictly free gratis and if it were opened up the work load would make it necessary to drop the whole deal. I have a mailing list which includes the original purchasers of T-18 plans. Occasionally I hear from people who bought someone else's plans but haven't been receiving the Newsletter. One reason for the questionnaire was to get all the addresses straightened out. The new mailing list includes only the names on the returned questionnaires, plus some new purchasers.

Until now we have asked each builder to contribute $2.00 for newsletter publishing costs. Some people have suggested that we set a fixed subscriptio rate for the Newsletter, like $2. per year. Maybe we can do this later but we are pretty well fixed now. It costs about $20. per issue for paper and stamps. We have $250. in the kitty so it should last for quite a while.

Mrs. Thorp has just sent me the latest additions making a total of 350. Welcome to the T-18 Mutual Aid Society fellows. If you have any questions or problems, let us know and we'll try to help out - but wait until you receive the back newsletters before you ask a lot of questions. They should answer most of your questions. If you write a letter which can't be answered in the Newsletter, please enclose a stamped, self-addressed envelope.

T-18 SURVEY: The T-18 survey has been quite surprising. Less than half of the questionnaires have been returned in two months, 120 out of 298 sent out, although some are still coming in. This means that 178 people have either given up their projects or at least aren't interested enough to fill out a questionnaire. Guess I'll make one more try and send out 178 more questionnaires to try to determine what happened to the lost sheep. If you know of anybody who has purchased a set of plans from someone else and hasn't been receiving the Newsletter, please notify me.

assemblies. A typical comment is "This metalworking business is new to me and I can't find anyone in the local EAA chapter who knows anything about it." Many do not even know how to do the simplest operations like cut sheet metal. But this is no disgrace. I didn't know the best way to cut aluminum or even how to properly buck a rivet when I started the T-18 and I had built a SkyCoupe and had been a chapter president for 5 years. So here are a few simple steps which everyone building a metal aircraft must learn.

1. Layout - In order to do a good job in laying out sheet metal parts it is essential that you have a smooth, flat work table. As a minimum, you need a 4' x 12' surface because this is the size of the aluminum sheet stock used in the T-18. For this, build a wooden framework with 6 legs and place on it a 4' x 12' piece of 3/4" chip-board which costs about $10. Check the ends for squareness. If it is true, you have a convenient, giant-size drafting table.

Lines can be drawn directly on aluminum sheet with a soft pencil. A pencil is ok until you need to mark a line accurately for cutting. Then you must use a scriber. This is a pointed instrument that can be made of any good hardenable steel. But use it with extreme care. Don't ever scribe a line unless you are sure you want to cut along that line. Never leave a scribe mark in a finished part for it acts just like a mark from a glass cutter on a piece of glass and invites cracking. If you scribe a line in the wrong place, you may have to scrap the part unless it can be sanded and buffed clean.

An absolute necessity for layout work is a decimal scale, preferably at least 18 inches long. This is marked in tenths and hundredths rather than eights, sixteenths etc. You should be able to work to an accuracy of 0.010" easily and even closer with a little care.

Marking dye can be used on smaller parts to help show up the scribe marks but it isn't really necessary.

You will need a straight edge at least 4 feet long. For this you can scout around a sheet metal shop and find a piece of scrap steel about 3 in. wide and preferably at least 0.060" thick.

Perhaps the most confusing thing on the T-18 plans at first is the dimensioning system, i.e., the use of WL, BL, and STA instead of dimension lines and arrows. This is standard aircraft practice and has proven much superior to other means of dimensioning. To get a dimension, just subtract two numbers, so keep a pad and pencil handy. WL means water line - a vertical distance in inches from an arbitrary reference line. BL is butt line, a lateral (sideways) distance from the centerline of the fuselage and STA is station a distance measured aft of a reference point usually somewhere out ahead of the nose. Many people get upset by the fact that dimensions are given out to 4 places. That doesn't mean you should work that accurately - unless you have good eyes, but at least all the numbers add up right. Just ignore what you can't read.

.2. Cutting Aluminum - Sheet aluminum of thicknesses below 0.040" can readily be cut with shears. The ordinary straight tin snips work alright for straight cuts, but you really should have a pair of right or left hand, preferably both, aircraft sheet metal shears. These are the "double jointed" type available everywhere. It is nearly impossible to cut sheet aluminum without somewhat deforming the edge of the cut. You can minimize this by helping to curl the metal away from the jaws of the shears with the left hand and by never closing the jaws completely. I always cut to within about 0.025" of the scribe line and then take the excess material off with a Stanley Surform Raspplane - the small type which can be held in the palm of the hand. Pull the raspplane rather than push it to prevent chatter. This tool gets my vote for the handiest tool in the shop. Cost - $1.65. It is an absolute must.

4. Straightening: It is virtually impossible to form a bend with a mallet without getting some bowing. This can be taken out of flanges (which will later be riveted) with a crimping tool which slips on the jaws of vise grips like was described in a recent issue of Sport Aviation. Crimp between the rivet holes.

5. Making Holes: A Whitney punch is a must for transferring all edge holes. A hand drill is used for all other holes in sheet stock. To transfer holes from templates, use a nibless Whitney punch for edge holes and transfer punch all other holes first with a nibbed Whitney punch and hammer, deepen with a center punch and then drill. Virtually every hole in a fitting which will receive a bolt must be drilled undersize and then reamed.

6. Bending Skins: To bend all leading edge radii, simply mark the center line of the bend on the outside of the skin, fold over by hand and clamp the two trailing edges in the proper position with a board and C clamps. Lay another board near the bend and work the bend down by pressing on the board until C clamps can be slipped on. Screw down clamps and make proper adjustments to keep the bend in the proper position.

I've just discovered that inside flanges in fuselage frames can easily be bent down to almost 90° without cracking. This gives a much stiffer frame than the 45° bend. The corners don't need to be bent down as far as the straight portions.

If you like this type of information to help you get started, let me know.

Goodyear Wheels: Here is an announcement from Sport Aero, PO Box 1394, Brunswick, Ga.: "Can get the Goodyear wheel and brake, PD 933-4 which supercedes -2, for $186.92 the pair including tubeless tires spec 5W1 if I can get 32 checks for $186.92 between now and Nov. 30th. These will be escrowed and returned if not enough replies by Nov. 30.

Canopies: Bob Gaede, 1702 Orlando Rd., Baltimore, Maryland, 17509 is tooling up to make canopies. He plans to spread the cost of tooling over the first 10 canopies and then give kickbacks to the first 10 purchases if he sells more than 10. He is predicting a cost of about $100. We wish you luck Bob. More on this as work progresses. Costs - There is an interesting variation in the predicted cost of completion of T-18's. In general, the nearer to completion a builder is, the less he expects to spend. Prices vary from $3500. down to about $2000. Those nearing completion who use GPU engines expect to get by for around $2000. I spent $1670. on the SkyCoupe with a metal prop and full electrical system. The way my costs are adding up, I predict a similar number for my T-18.

Tri-Gear Versions: Many requests have come in for information on various modification such as retractable or tricycle gear. I have information on only two projects involving tri-gear, one a retractable version and one a fixed Cessna type. The first gear is completed and the second is only designed. If these fellows want to send me some advance information I'll publish it, otherwise you'll have to wait to see it at the fly-in.

Goodyear Brakes: Al Patton, 2131 McDowell St., Augusta, Ga. says he has a stock of Goodyear Brake Units part #9521626, new in sealed cartons (made for Cessna 195) at $20.00 per pair plus $1. for postage. Does anyone know how these could be used on a T-18? I'm not familiar with them.

Pop Rivets: Many builders want to know if pop rivets are as good as AN's. In some ways they are far better and in some ways probably not as good. In any case, the monel pops are structurally sound, stronger than AN's, and a dickens of a lot easier to install -like about 10 to 1. If John Thorp recommends them, don't hesitate to use them. I personally think AN's make a smoother job and of course are much cheaper. It all depends on what you call "better".

Aft Tunnel: I just completed my aft tunnel and it worked out fine. Instead of making a flat top I rounded it. For added strength, since it is used as a step, I made it in two pieces, one piece extends from the bottom skin up around the top and down the other side to the angle. The other piece is a mirror image which overlaps the first over the top between the two angles. This smooth tunnel feels much better on the hip than the square cornered version, and it is stronger.

Prop Extensions: $60. FOB Minneapolis., Includes Zygloed and anodized extensio and 6 ea. Heat-treated, plated and baked #1071 drive lugs. This price is possible only by making 8 or more at a time. So order far enough ahead to allow the orders to build up. For $15. extra the extensions can be shot-peened which will increase the fatigue life up to 1000%. Send your order and check to ZIMCO Plastics, 7714 Colfax Ave. So., Minneapolis, Minn.,55423.

Next Month: An article by Don Carter on how to make a fiberglas fuel tank and one by Merle Soule on how he made his fiberglas cowl. I also hope to hear from Otto Zauner on how his ship performs with flaps.

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