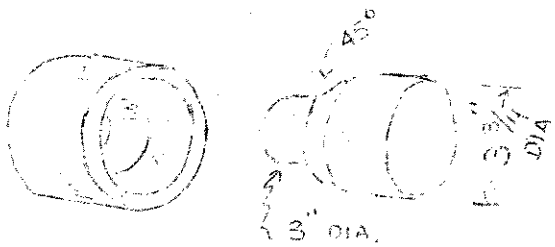
L.D. Sunderland, 5 Griffin Drive, Apalachin, N.Y., 13732

ENGINE MOUNTS - What is a Dynafocal mount? You have probably heard this term and wondered what it meant. A dynafocal mount can be identified by the orientation of each rubber mount. Instead of lying in one plane as they do in the original T-18 mount, they are oriented such that the center line of all mounts aim through a common point. If this focal point is at the c.g. of the suspended mass, then the engine will rotate about this point during vibratory disturbances without translating. That is, it can rotate in any direction without shaking. Thus there is less resulting reaction on the airframe. It perhaps can be compared to a well balanced car tire versus an out of balance one. Just how much better is the dynafocal? The original T-18 mount is already very good with the Lord mounts which have quite a bit of rubber cushion compared to the old cone shaped mounts. The best way to find out how good a dynafocal mount would be to see for yourself. T-18's are now flying with the old and new mounts so I'd appreciate hearing from anyone who has closely evaluated both. John designed a dynafocal mount and can have an engine mount made to this design for $200.

FORMING AN INSTRUMENT PANEL OVERLAY - You have no doubt eyed with envy the fancy control panels on some homebuilts and factory jobs wishing you could turn out one half as nice looking. It really isn't difficult if you know how. An overlay for your panel serves two functions, it provides a reflective surface for helping light the instruments and it also helps the appearance. The penalty is about a pound of extra weight. Now I'm not one to go in for a lot of extra weight like electric motors to do things the pilot can do with a flick of the wrist but then we all have our weaknesses. There are two materials which you can readily use, namely, aluminum or Royalite. It is more difficult to obtain a source for Royalite. I obtained mine from a local plastics shop. The built-in textured Royalite is probably more durable than aluminum with a painted finish and looks just as nice.

The aluminum overlay is made by first cutting out holes in a piece of .025 or .032 thick 6061 sheet which match the instruments in the panel. The holes are then flared with a wooden plug form which must be turned out on a lathe. See Fig. 1. Just insert and strike with a mallet. A different size form is needed for each size instrument face. The finished overlay is then painted with crackle-finish black paint available in spray cans at most electrical supply houses. If you can locate the material, I highly recommend a Royalite overlay. Use a piece of Royalite 18" x 40" x .040 to .060 thick. Piper uses this material for their panels. Also obtain two pieces of 1/4" thick hardboard or plywood. Clamp these three pieces together and drill two 1/4" locating holes along the ends outside the outline of the panel. Place the instrument panel over the two pieces of hardboard and drill #30 holes through both of them at the center of each instrument. One piece will be used as the male mold and one as the female mold. Use a fly-cutter in a drill press to cut out of scrap 1/4" hardboard one disc for each different size opening in the overlay. The opening should be about the same diameter as the instrument glass. These discs will later be screwed to the male mold one at a time. Cut holes in the female mold which are 5/8" in diameter larger than the instrument cut-outs. Screw one disc to the male mold. Place Royalite between the two halves of the mold and secure with 1/4" bolts through the locating holes.



Forming is accomplished with heat. Cover adjacent holes with scrap aluminum and heat the Royalite through the hole in the female mold with a

heat lamp. When plyable, remove heat and press down on mold until Royalite hardens. Cut out the center with a fly cutter and presto! you have a nice 45° flanged hole. Repeat for each hole. Caution should be exercised to insure even heating of the Royalite or the flange will be uneven. Also, don't make an upside down overlay by mistake.

To bend the flange along the bottom, clamp Royalite to the edge of a table with clamps and a 1" x 2" piece of wood. Let the portion to be bent extend over the edge of the table. Clamp two more 1" x 2" pieces on both sides of the Royalite flange allowing about 1" exposed for the bend. Heat the exposed strip with a heat lamp and bend down when soft. Try a sample first. The overlay is mounted to the panel with screws and spacers. The upper edge of the overlay can be hidden behind padded upholstery covering an eyebrow sunshade over the panel.

T-18 SURVEY - Out of 500 questionnaires sent in January, 1967, to those owning T-18 plans, 242 or about 50%, replied. Of these, 176 have done some work on their projects. It can be assumed that most of the 50% who did not reply are not actvely building a T-18. 79 had completed outer wings, 90 completed inner wing panels, 53 fin and rudder, with 30 complete fuselages. Since the last Newsletter at least two more have flown, making 16, and probably more that I'm not aware of. Many more will fly this year.

CANOPIES - M.R. Supply, PO Box 43, Wilmington, N.C. - At last I believe we have achieved what we were looking for on the T-18 canopy. Optics are excellent and shape conforms nicely. I made the first one out of a clear sheet and it was in and out of the mold and over at least eight times before we finally modified this and that to get everything right. We also have made a windshield mold and can now offer both canopy and formed windshield in green tinted plastic. The windshield is trimmed to the pattern used on Callbie Wood's ship and should need little, if any, trimming. We are leaving all flanges on the one-piece canopy bubble to insure that it will arrive in one piece when shipped. I'm working now on a mimeographed set of instructions for cutting and drilling plastic and a set of these instructions will be shipped with each canopy. The prices we have settled on after considering cost of production, etc., are as follows:

Canopy - 1/8" Plex G green tint (color code 2111) untrimmed	$110.00
Windshield - 1/8" Plex G green tint	$ 30.00
Crating - full plywood sheeting that can be used by builders	$ 25.00

These prices are FOB Wilmington, NC and shipping would be via motor truck lines unless specified differently by the purchaser. Orders would have to be accompanied by full payment and unless we are held up by delivery of plastic we can promise 30 day delivery. Currently I have nough plastic on hand for 12 canopies.

T-18 NEWSLETTER - For the information of you new plans purchasers, we now have a good supply of back newsletters which contain just about all the information you need to know to build the T-18. Master stencils for the first 12 issues were lost, but new ones have been cut which contain all the pertinent information extracted from them. The back issues contain articles on how other builders have done things, material lists and sources, tools needed, mandatory bulletins, flight reports, etc. The back 22 issues can be obtained from me for $2.00. I have also had the T-18 Building Instructions printed up as they appeared in Sport Aviation and these also can be obtained for $2.00. If you want to receive future issues, an additional $2.00 donation will put you on the mailing list as long as the money holds out. L. Sunderland.

Trim Indicator - John says there is absolutely no need for a trim indicator since the stick force needed to overcome full trim is very light. It is safe to take off with trim in any position. He convinced the FAA to license the Sky Skooter without an indicator. As a matter of interest, one of the Blue Angels told me they fly all their performances with full nose down trim cranked in. If anything happens this causes them to dive away from formation. This means they must constantly fight a 60 lb force. The T-18 trim force is about 10 times less than this.

Firewall Fittings - It is good practice to use a regular AN type bulkhead fitting where the fuel line passes through the firewall. We have all seen the various other cables, wires and hoses crammed through one big grommet with lots of sealing putty piled on to keep out carbon monoxide. A very convenient firewall fitting can be made with a 1-1/2 x 3-1/2 x 1/8 inch piece of neoprene. Holes can be cut in it to pass the various cables. It is clamped over a slot cut in the firewall with two screws and an aluminum or stainless back-up plate. For convenience use plate nuts or pop rivet nuts in the firewall. A 0.1" flange can be bent down on four sides of the plate for stiffness. If you haven't discovered it yet, you need about 200 No. 8 pop rivet nuts. You can obtain them for $1.66 per 100 from Silvo Hardware, 107-109 Walnut St., Phila., Penna. You'll need a pop riveter that takes the next bigger size stems than 1/8" rivets have. They are now available from Silvo for $3.95 with two sizes of adapters. They also have pop rivets. Unfortunately, Silvo has a $10. minimum for mail orders. Also add $1. for shipping costs.

Hot T-18 - Bob Kaergaard just sent a picture of his beautiful ship captioned "Hot T-18". I had just spent alot of time at Rockford admiring the excellent job he did on the new canopy with flush screws and a perfect fit on all the fairings. He said he made six sets of aluminum strips before he was satisfied. The canopy gave him a nice increase in speed of about 10 mph and it made flying in it a real pleasure rather than something bordering on torture with the wind tearing at your hair. So you can imagine my anxiety when I saw the picture of a pile of ashes that was once Bob's T-18. The wooden hangar had burned down leaving nothing but a landing gear and part of the engine case. Two other homebuilts were also destroyed. Bob is already hard at work on another one. This should make us all be very cautious about choosing a hangar for our planes. Good luck Bob. At least one consolation is that this time you will know exactly what to do next and how to do it.

Panel Layout - After just installing the various push-pull controls on my panel, I thought I'd pass on a few tips. While building a plane, especially the first one, you usually couldn't care less about maintainability. "Just get her in the air" is your motto. But with very little extra thought you can make it easy to repair. For example, run everything over or around the fuel tank so it can be removed easily. If you don't like the throttle up high like shown on the plans, it can be mounted below the panel on a slotted angle bracket which allows it to be dropped for tank removal. Also, hook up everything on the panel so the panel can be removed without disconnecting anything in the engine compartment. I mounted my push-pull controls in slots cut along the top edge of the panel. My panel is mounted on the pilot's side of the extra bulkhead which is located 3-1/2" aft of the dash frame. Clearance holes were cut in the bulkhead and dash. Thus, to remove the panel, just loosen the nuts on the controls and slip the panel out.

Make liberal use of plate nuts and pop rivet nuts for anything that might need replaced such as starter solenoid mounting, etc.

New Engines - Kent Hugus says he still has brand new O-320-A2B engines equipped with carb., mags., starter, gen., etc. which he has gotten approval to sell to T-18ers only for $1900. If you want one send certified check or money order to Aero Commander Inc., 1 Rockwell Ave., Albany, Ga., 31705. Attention Mr. Kent Hugus.

Battery Boxes - Don Carter has designed a very fine fiberglas battery box. To make it, first lay a thin layer of glass mat on a sheet of aluminum or mylar and saturate (using a roller) with acid resistant resin. After hard, cut out the various parts for the battery box according to the enclosed sketch. Sand a strip 1/4" wide on the smooth side of the parts along all edges. This makes the resin stick well. Then assemble the entire box using a good sticky tape like the cloth tape now available nearly everywhere. Face the smooth side of the parts inward with the tape on the outside. Mix up about 1/4 cup of acid resistant resin with plenty of cabosil filler to make a paste to use as cement. Just plain resin can be used but it is difficult to get it to keep from running away. It can be thickened into a paste by adding a white fluffy filler and some cobalt, both available at a fiberglas shop. Apply a little fillet of the resin cement along all inside seams. Just wipe the seam with your finger to remove excess resin. As soon as this hardens, remove tape and you have a one-layer battery box.

Cement four plate nuts under lip for securing lid. Apply one or two layers of mat on the outside depending on the weight of the mat. Don't make it too heavy. Attachment brackets can be cemented on and covered with mat for reinforcement. A round drain tube can be made over a collapsible cardboard form and attached with cement. Now you have a box which will never corrode or leak. It's very easy to make.

Fuselage Templates - The fuselage skin templates have spent the summer busily making the rounds from the Atlantic to Kansas and Canada to Florida. They are now waiting in Florida for the next customer. If you want to use them, let me know and I'll put you on the list. The first person to write will get them in a hurry, but others will have to wait in line. I'll make a schedule and let each person know his position. When you receive the templates, just pay the shipping and send me $3. to help pay for the templates.

If some generous person near L.A. would be kind enough to copy a set of templates from John Thorp's wing skin templates we could include them with the fuselage templates. I'll pay for the material if someone will make the template.

Forming a Bubble Canopy - L.D. Sunderland - There have been a number of articles written on the subject of forming free-blown bubble canopies but there has been very little published on forming complex curved plexiglass canopies with shapes which do not permit fabrication by free blowing. It should be made clear that a free-blown canopy is superior from the standpoint of simplicity of tooling and optical clarity. However, there are few existing homebuilt designs which can use free-blown canopies without modification of the airframe. Schweizer was so concerned about canopy fabrication that for the 3-place 2-32 sailplane they first designed a free-blown canopy and then designed the fuselage around it. If you want to know whether you can use a free-blown canopy, just cement toy balloon rubber to a model of your cockpit and inflate. The biggest problem will be bulges where you want flat spots.

Bill Johnson and Glen Moore have made free-blown canopies for the T-18 by blowing (or sucking) the bubble against a single degree curved surface located along the top of the form. This gives you considerable mark-off

if you blow the bubble hard enough to give a smooth juncture at the windshield. The canopy Glen had at the '67 Fly-In had no distortion but didn't quite make a smooth transition with the windshield. It also cut the corners a little by the occupants heads. But Glen will tell you that this type of canopy isn't the easiest to make for he tried for a long time before achieving success. He has a large oven and vacuum forming equipment. See the article by Glen in this issue.

There are several other techniques for forming plexiglass canopies which permit the formation of any desired contour. These are: 1. Hand stretching over a male mold; 2. Machine stretching over a male mold; 3. Snap back over male mold; 4. Pressure forming into a female mold. Of these, hand stretching is by far the easiest for the beginner so it will be described in the greatest detail.

In machine stretching, the sheet of plexiglass is clamped in a fixture around the perimeter and forced down over a male mold with a press. To facilitate clamping, the sheet may be clamped cold and the oven placed over the fixture and mold.

The snap back technique involves sucking a bubble, placing a mold under it, then letting the bubble come back against the mold. It gives the least mark-off of any except the free-blown technique because it applies the least force against the mold.

It is possible to vacuum or blow into a female mold but the biggest problem is attaching a padding material to the surface of the mold. Instead of padding, a special grease is coated on the bare mold. The mold must be very smooth and it must be heated.

Now for us average do-it-yourselfers, the hand stretching method is the simplest. All it takes is a mold, which anyone can make, an oven, and about five sets of hands.

The mold is made with plaster and fiberglas over a wooden framework. First cut out a 3/8" plywood base which is the size of the bottom face of the canopy less 1/4" on each edge. Now secure a 2" wide strip of 1/4" plywood to the left and right sides allowing it to extend below the base 1-5/8" for a clamping flange. Now attach the base to a 2 x 4 frame so that it does not come closer than 2 inches to the inside edge of the base. This allows room for clamps on the plexiglass. For convenience, attach 2' legs to the frame and brace well.

Make a plywood bulkhead which is the exact size and shape as the side view of the canopy. From 3/8" plywood make 3" deep ribs according to the canopy lofting drawings. Notch the bulkhead to receive these ribs and assemble with tacks, and glue to the base. Firmly glue and screw a 1"x1" strip to the last rib's aft edge for clamping the plexiglass before stretching.

Before applying the plaster, tack a heavy screen or wire mesh between all ribs and about 1-1/2" below the surface. The plaster is applied to this so start stirring mud. A final coat of finishing plaster is required to obtain a smooth surface. You will find it very difficult to get a smooth enough surface on the plaster. Also, it will crack before long so for best results apply two layers of fiberglass cloth and resin. Follow this with one coat of white gel-coat and two coats of colored gel-coat, preferably black. Sand between all coats. Wet sand for the final finish. The wet black surface readily shows up any wavyness. If the surface doesn't feel wavy when you rub your hand over it, then you have arrived.

The mold is covered with soft outing flannel available at any fabric

shop. It has a hard finish on one side and soft on the other. Stretch this over the mold, wrap around and tack to the inside edge of the 2" flange. The flannel doesn't come in wide enough rolls to make a one piece cover so it is necessary to make a seam down the centerline. Accurately locate this seam so it can be used as a reference for trimming.

A clamp is made from a 2 x 6 to hold the plexiglass along the mold centerline during forming. The canopy is made in two pieces to minimize the amount of stretching required and thus, the mark-off. The 2 x 6 is trimmed along one edge to conform to the canopy at the centerline. The first 10" at the front should not conform to the centerline contour. It must be given 1/2" clearance. During the stretching operation excess plexiglass material must be pulled through this opening by hand. Install 3/4" long round-head screws along the centerline of the curved edge of the 2 x 6 at about a 1-1/2" spacing. These act as teeth in the clamp to hold the plexiglass. These screws can be adjusted to give a perfect fit with the mold. The 2 x 6 should be hinged at the back to facilitate alignment during clamping. The 2 or 3 seconds saved by this hinge makes the difference between success and failure. For this hinge, use a bolt in an oversized hole to allow for vertical movement during clamping. An upright post is constructed at the rear of the mold to support the 2 x 6. The 2 x 6 should be about 1 foot longer than the mold. The centerline of the 2 x 6 should be adjustable at the hinge. It should be 1" to the left of center when forming the right half and vise versa. Thus, the screws heads don't deform the plexiglass at the centerline.

The plexiglass halves can both be cut from one 52" x 80" sheet. Allow three inches excess in width. Clamp with a broad-bill vise grip at the front edge and suspend in the oven. The material will try to curl around and touch itself in the oven making a severe blemish so clamp a stick along the front edge to prevent this. Make sure they can be removed in one second. Heat the oven to 375°F and let soak for several minutes. If the glass is heated to higher temperatures it will be weakened.

You will need at least five persons to pull a T-18 canopy. Each should be wearing new cotton gloves turned inside out. You will need two large C clamps for clamping the front and back ends of the 2 x 6 and one small C clamp for clamping the outer aft edge of the glass to the 1" x 1" strip. You also need six broad-billed vise grips and five heavy spring clamps.

When the plexiglass comes out of the oven it is nearly as plyable as freshly rolled pie crust but it doesn't stay that way for long. You have about 30 seconds to stretch it and get out all the wrinkles. Place it on the mold with at least two inches extending past the centerline. Adjust the position so that the outer edge doesn't extend too far below the mold to get on the spring clamps. Quickly clamp the glass at the aft outer corner with a C clamp to the 1" x 1" strip. Clamp the aft end of the 2 x 6 to the 1 x 1 strip with a large clamp. Man #1 and #2 should install these two clamps. Man #3 should pull forward on the glass along the centerline while Man #4 clamps the front of the 2 x 6 to the front of the mold. Man #5 is pulling forward at the lower front corner while No. 1 and 2 start at the rear and clamp down the outer edge with spring clamps. By this time it will be cold so you will have to put it back in the oven and start over. After six trys, I got a good right half canopy. The left half canopy came out good on the first try.

The formed halves are placed back on the form one at a time and scribed for trimming. Now comes the delicate business of sawing and drilling plexiglass. The best way to cut it is on a table saw using a

fairly fine tooth blade. But curved surfaces and shapes can't readily be cut on a table saw. A band saw works well, especially if it can be slowed down. A high cutting speed causes the chips to melt and weld the glass together behind the blade. This can really cause trouble, especially if your blade freezes when the saw is stopped. If this happens when you are trimming your canopy, send someone for the tin snips because a new canopy is more expensive than a new blade.

Everyone will need to use a sabre saw at some time on the plexiglass, at least when cutting out the material from the sheet stock. This is the trickiest part of the whole deal. No matter how careful you think you are, you will undoubtedly get some cracks. When cutting the blank from the sheet, leave the paper on but keep pealing it away from behind the saw to check for cracks. A crack here isn't so expensive since you will be cutting the blank oversize. But on the finished canopy, there is no room for error. So, use the slowest running sabre saw you can find. Borrow a variable speed type if you don't have one. Use a fairly fine tooth blade and go easy! Apply paste wax to the blade every six inches.

The halves are joined with regular plexiglass cement available from any plastics shop. This is a thick syrupy cement. Don't try acetone, etc. which just softens the plexiglass. Start by taping the two halves with a strip of tape down the center on the inside. (Use clear scotch tape to get a good seal.) If you leave a 1/16" gap between the halves the cement will fill in better. To keep the cement from running away from the joint area, build up a trough as wide and as deep as the reinforcing tape using two rows of Scotch tape, each several layers high. Reinforcing tape approximately 1" wide will be cemented to both the inside and outside of the joint. Fiberglass tape is best if you can locate it, otherwise, dacron is alright. Now mix up some cement and apply to the joint. It is extremely difficult to get out all the air bubbles. Some people have extracted them with a hypodermic needle. If you get out all the bubbles, this joint is as strong (even without the tape) as the plexiglass sheet. We made a test sample with two pieces of plexiglass joined with the cement. After the cement hardens, sand off any rough spots and then cement the outside reinforcing tape in place. Cover with a strip of clear mylar or celophane to help work out the air bubbles. Then remove the Scotch tape from the inside of the seam and repeat the process to apply the inside strip of tape.

When attaching plexiglass it is necessary to use very large clearance holes for the screws to allow for the tremendous expansion with temperature variations.

Always dull the drill by grinding off the cutting edge. Try a number of samples before attempting the real thing. Above all, never drill plexiglass while any stress is being applied to the sheet because this is almost certain to result in a big crack.

Windshields - Some people have bent their T-18 windshields in place without heat forming. The ones I've seen installed this way soon developed crazing. Maybe you'll never attempt forming a canopy, but forming a windshield over a simple sheet aluminum form is real easy. Just make two plywood bulkheads the shape of a cross section of the windshield, nail to a frame and wrap sheet aluminum over them. Cover with batting flannel and you have a mold. Heat plexiglass to 340°F, droop over the form and hold down edges until cool. Sounds simple after the canopy - and it really is!

CG Limits - Don't get the forward cg ahead of station 61. Most have been over 62. The limiting consideration is not elevator effectiveness but rather possiblity of nosing over on the ground - especially with full tank and no passengers sitting on the ramp with gusts. Aft limit is 31% or station 70.5. Empty weights vary from 750 to 1050 pounds. Keep that weight down if you want performance.

Fuselage Templates - The fuselage skin templates have spent the summer busily making the rounds from the Atlantic to Kansas and Canada to Florida. They are now waiting in Florida for the next customer. If you want to use them, let me know and I'll put you on the list. The first person to write will get them in a hurry, but others will have to wait in line. I'll make a schedule and let each person know his position. When you receive the templates, just pay the shipping and send me $3 to help pay for the templates.

If some generous person near L.A. would be kind enough to copy a set of templates from John Thorp's wing skin templates we could include them with the fuselage templates. I'll pay for the material if someone will make the template.

1967 Rockford Fly-In - This year we assembled the center wing of the EAA T-18 during the fly-in. This completes all of the main structural assemblies. Now someone must take over the job of completing the project. MR Supply donated a one-piece bubble canopy for the project.

BENDING WING SKINS - John Thorp demonstrated how very simple it is to bend the leading edge contour on the wing skins. This is accomplished on a skin for a wing with flaps by first adding two inches to the rear edge of the bottom skin. The bottom rear spar holes are all duplicated exactly 1.7" behind the normal spar holes. After the skin has been prepared for assembly in the flat, it is folded over and this extra row of holes is lined up with the row of holes for the top of the rear spar and a cleco is inserted in each hole. This clamps the top and bottom edges of the skin together in precise alignment so that when the skin is "squashed down" to form the leading edge bend, the bend location is exactly right. Caution should be exercised so that you don't get the wrong holes clecoed together like we did on one skin. This makes awfully expensive scrap.

Now get a 4 foot long 2 x 4 and some newspapers. Lay the folded wing skin on a smooth surface and cover the top with newspapers to protect the skin from scratches. Place the 2x4 at the highest point on the skin and press down with your knees. As the skin begins to bend, progressivly move the 2 x 4 toward the leading edge always keeping it horizontal. As the bend progresses the 2 x 4 will end up right over the bending edge. One person can bend a skin in just a few minutes. It is surprising how sharp the bend must be in order to fit the nose rib properly. Uncleco the skin and try a rib to determine whether the proper bend has been established. If the bend is not sharp enough the nose rib rivets will pull the skin down and cause unsightly depressions in the skin.

As a general rule, to bend any skin just cleco two rows of holes together along the trailing edge which are exactly the same distance from the leading edge "radius".

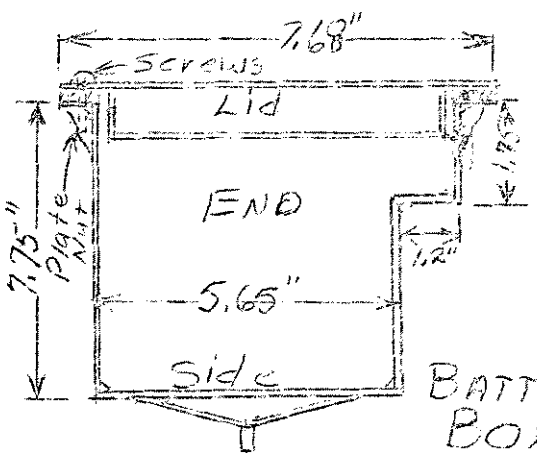
There were 5 T-18's at the Fly-In belonging to: Kaergaard, Faur,

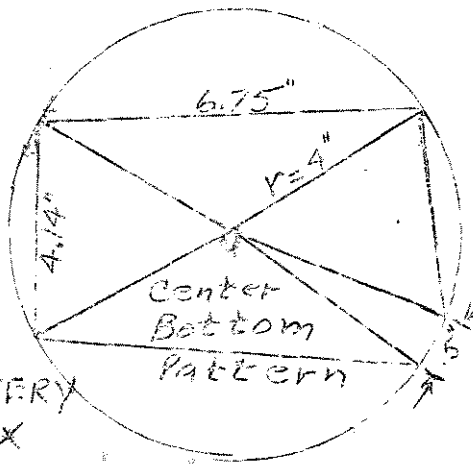
Wood, Zimmerman and Johnson. Bob Kaergaard had done a really fine job on his canopy installation but still had the open cowling. Irvin Faur's drew quite a lot of attention due to the nice photo on the back of Sport Aviation which drew everyone's attention to the 6-mo. building time. Bill Johnson's ship was flown from Seattle by Cecil Hendricks. The extra long gear legs really made the ground ride much smoother and surprisingly did not block off over-the-nose visibility very much. The outer leg tube was tapered and the inner tube was untapered but 4½" longer. Otherwise the gear was standard. I could not tell what effect the leading edge fillet had. It started to buffet at about the same speed as the others--perhaps several mph sooner. Otherwise the stall was about the same. I didn't have time to make a meaningful comparison.

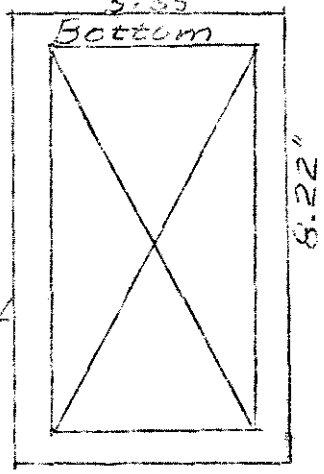
Ron Zimmerman did give me a most spectacular stall control demonstration. After I gingerly did a couple of stalls he said, "Now watch this." He held the stick all the way back with the throttle almost closed and the airplane just shook like a scared rabbit while we mushed down for several thousand feet. Ron had perfect control with the ailerons although he had to work fast to keep the wings level. I began to feel a bit uneasy when we got below 1,000 feet in this peculiar flight condition so suggested we move on. Ron did a very fine job on his T-18. The paint job was very eye-catching and his workmanship professional. He used 100% pop rivets. The fuselage didn't have flush rivets and yet it looked exceptionally nice. His tailwind type gear legs were quite soft and John Thorp thought they were the best he had seen. They were a little softer than Johnson's but both were fine. Ron found the cross tube in the canopy frame was too flexible so ran an extra vertical support from it up to the center tube. This cross tube should be made of 7/8 or 1" tubing. I beefed mine up with a bent-up aluminum channel pop riveted to the cross tub along the bottom. Pops

Calibie Wood also had tailwind type gear legs but he had two problems which kept him from doing any extra flying at Rockford. The bolts holding the legs in the A-frame worked loose and the A-frame got bent slightly in a hard landing. The A-frame had not been heat treated. The bubble made by MR Supply looked very nice. Was sorry I didn't get to fly in his ship.

The T-18's must have made quite a hit this year because there are many new T-18 builders being added to the ranks every week.







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