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VISIT WITH THORP AND THENHAUS, May 19, 1965

Propellers - Ralph Thenhaus is using a 65-65 propeller which Thorp says is fine for the T-18. It allows the 125 hp GPU engine to turn up 2600 static and 3000 maximum level flight. It was a 150 TriPacer prop cut down. Here is a list of good T-18 prop blanks in their order of preference: Cherokee 180, 150, 140; TriPacer 150, 135. Apparently the props at the top of the list are closer to the proper pitch and possibly thinner in cross section. With the 65-65 prop, John says the T-18 performs so well that there is really no need for an adjustable pitch propeller.

Performance With 125 Engine - Ralph Thenhaus now has 75 hours on his ship. It has a canopy installed which is practically identical to the one shown in the latest prints. In fact, he says that Dave Gengenbach used his canopy as a reference when making the canopy drawings for John. With the canopy and a 125 hp engine John reports that the ship will do an indicated 165 at full throttle. This is a true airspeed of 172 which isn't bad at all. 75% cruise would be at 155. Furthermore, Ralph says he has checked his airspeed against other aircraft and he is indicating about 10 mph slow. John says it climbs at 1500 fpm solo and is a real hot rod which doesn't have to apologize for anything.

Ralph's T-18 empty weight is 835 lbs plus canopy which adds about 20 lbs. It has a full electrical system and a radio. Stall speed is 68 mph and landing speed is somewhat higher to minimize sink rate at touchdown.

Everyone who has flown the T-18 without a canopy says that it is too turbulent and that everyone should have a canopy even from the beginning.

The ships flying don't use the 625 balance weights on the anti-servo tabs. John says that if 0.020 aileron skins are substituted for 0.016, the aileron balance weights should be increased in weight by the same percentage.

About the only disappointing feature I have found in all the T-18's is the limited space due to cockpit equipment location. All have radio consoles mounted between the pilot's and passenger's knees. With this obstruction I cannot get more than 3/4" stick motion toward the center of the aircraft. Also, the aft tunnel cuts into the seat space making it uncomfortably tight; so, I plan to round off the corners of the tunnel and not waste any seat width with the upholstery panels.

The latest canopy drawing shows the top of the rear deck sliced off in the same plane as the canopy rails. This cuts down on baggage space but looks much better. John says it will be perfectly alright to cut a hole in the skin underneath the canopy for a baggage access door. In fact, he said a jump seat could be added for a small child.

Both Bill Warwick and Ralph Thenhaus welded up their own gear with regular acetylene torches. They used a lot of gas but claim it wasn't bad after they got the joint heated up. John says that regular arc welding would be suitable if a low carbon rod were used and the joint were pre-heated with a torch to alleviate localized cooling stresses. With regular gas welding it is better to use a mild steel rod, like number 6, since it has less tendency to crack during cooling. All welded up 4130 steel parts should be magnafluxed, especially engine mounts and landing gear. On a recent tour through the Piper Aircraft factory I found that they magnaflux these parts. I saw a large stack of gear and engine mounts which had to be re-welded usually at many points on each part due to cracks. This really sold me on the need for magnafluxing critical welded parts.

Ralph says he welded up his own aluminum gas tank with a torch and the proper flux. He had never welded aluminum before but didn't have any trouble. He also welded up his aluminum canopy frame. He did a real neat job filling in the flush pop rivets with a two part epoxy available at auto supply stores and called Restin. After painting you can't even see where the rivets are located. The epoxy wouldn't adhere without a primer being applied first.

Fuselage Skin Doubler - Cracks have shown up on all of the 3 ships now flying at the forward upper corner of the main spar cut-out in the fuselage side skins. This is caused by the fatigue stresses set up during taxiing. John has recommended that a 0.063" 2024T3 doubler be added to all T-18s. The doubler can be put on the outside or inside. It extends up 5 rivet holes, down 5 holes, forward 2 holes and aft 2 holes from the upper front corner of the spar cut-out. Connect the four extreme holes with straight lines and cut with 1/4" edge distance all around.

Flight Reports - There are three T-18s now flying. They belong to Bill Warwick, Dick Hansen, and Ralph Thenhaus all of the Los Angeles area. There should be several more flying before the summer is over.

T-18 Newsletter - For those of you who are wondering about the number of Newsletters which have been published, there have been eight prior to this one. We have not been numbering them because Dick Cavin and I have been putting them out from different ends of the country and we didn't want to get the numbers mixed up. However, this seems to be causing confusion so all issues henceforth will be numbered. Send us information to publish.

Rivets - If you want a good deal on rivets, Spencer Aircraft, 8410 Dallas Ave. So., Seattle, Wash. has round heads for \$.65 per lb and \$.55 per lb for over ten pounds. They don't have any 100° flat heads at surplus prices but they do have some 87° flat heads. They have all sizes from -3 to -16.

Flaps - John has discovered on the Sky Skooter, the flap is more efficient if the rear edge of the wing butting against the flap is not faired smoothly to fit the leading edge contour of the flap. (He would change to this on the Sky Skooter if it were possible without FAA complications.) The best arrangement is just as shown on the drawings. It is necessary to cement a rubber seal along the rear spar to provide a good seal when the flaps are up.

Brake Pedals - The pedals are designed without sufficient clearance to permit simultaneous application of full rudder and brake. If you are short, you can move the pedals aft, otherwise, clearance can be made in the tank support.

Floor Boards - Clearance slots for the exhaust stacks have been cut in the floor boards for drag considerations. These should be cut from 0.040 aluminum and welded in place to seal up the cracks.

Progress Reports - John would like to hear from anyone who expects to make a first flight in the near future. The way it looks now, the next two ships to fly will be those belonging to Otto Zauner, Vineland, N.Y., and Bob Kaergaard, Glenn Ellyn, Illinois. I just talked with Bob on the phone and found that he has had the final inspection and is nearly ready to go. To speed things up, he is using an open cowling and no canopy for the first flight. The rest will come later. To give you an idea of the variation in requirements between FAA agents, Bob was told to get about 7 or 8 hours taxi time on the aircraft and then call the FAA so they can witness the first flight. When I got my SkyCoupe licensed the FAA did not require witnessing the first flight. Bob is making prop extensions and may have them available for sale later.

As you may have guessed, I am writing this Newsletter on a trip to Los Angeles, Seattle and Chicago. I spent a very interesting day with John and Ralph yesterday. Due to a mixup in plans, I didn't get a ride in Ralph's T-18 but did get to look it over. It had the restrictions removed today. John is busily working on final FAA certification of the turbo-prop twin Beech conversion. When that is over, in several weeks, he hopes to finish up the T-18 drawings and then get to work on his ship which has been sitting in a partially completed state gathering dust for a long time.

Now, if this 707 will just move a little faster, I'll get home and make the chips fly!!

There are now 269 persons holding plans. We will continue to publish a list of names and addresses in the Newsletter.

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