

ADVENTURE NEWSLETTER #6 and #7  
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Combined Newsletter The pace of activity this summer finally caught up with MEC and the July newsletter wasn't ready for print until after Oshkosh so, We have consolidated both the July and September newsletters.

OSHKOSH 1980 The Adventure prototype was at the 1980 fly-in with hopes of spending most of the time in the fly-by pattern demonstrating the capabilities of the design. Unfortunately the bulk of the show was spent sitting in Fond du Lac with a broken engine. The Adventure was racing in the 1980 Oshkosh 500 (L.B.F. competition) and dropped the head off of the #4 exhaust valve. Number four cylinder was completely destroyed and had to be replaced before flying home. We're sorry if we missed anyone wanting to see the airplane. We'll be at the Tullahoma flyin the first week in October and maybe we can see everyone then.

TRIM QUADRANTS In newsletter number 5 we announced that the Quadrastat trim control specified in the plans would not be available and that a substitute would be designed and included with the powerplant installation mailout. Since that time a substitute quadrant has been located which mounts and operates in a fashion similar to the Quadrastat. These "Slimline" quadrants are being stocked by Aircraft Spruce and Specialty company and will be included in the Adventure kits.

NOSEWHEEL FAIRING Two attempts have been made to fair the Adventure nosewheel. One effort was made in 1979 when the main wheel fairings were added and the latest was just prior to the 1980 Oshkosh fly-in. Both of these attempts ended in failure. The additional inertia of the wheel pant overpowered the capacity of the friction damper on the nosewheel assembly and catastrophic shimmy was encountered which demolished the fairing. The nose gear strut and attachments were not damaged but the fairing was a total loss. The fairing was worth about 3 MPH in top end speed and its loss is regretable. Unfortunately I'm fresh out of ideas for overcoming the shimmy problem without completely redesigning the nosewheel pivot assembly.

O-200's IN THE ADVENTURE? We've recieved a surprising number of inquiries about using the 100HP Continental O-200 engine in the Adventure. The additional cost of the O-200 over the "A" and "C" series engines is almost enough to buy the airframe material. The O-200 also weighs a minimum of 30 pounds more than the "A" series engine used in the prototype.

Well, you ask, what if I happen to already have an O-200 that my great uncle left me in his will? You could sell the beast, buy a first class C-85 and pay for most of the airframe with the leftovers. I won't tell you that you can't use the engine, but you should be aware of some desirable changes to be made along with the heavy engine. The additional weight of the engine will cause an extreme forward C.G. problem if it is simply installed without any other changes. Unless the pilot of your airplane is unusually heavy (225 or more) you should move the wing and main landing gear forward on the fuselage (about 1.5 inches for a standard 170 lb pilot). The empty weight of your completed airplane will be higher and the usefull load will be lower (without flying over the gross weight).

The changes in the airplane aren't all on the negative side. The extra 20 horsepower will have a dramatic effect on performance increasing the maximum speed at sea level to about 204 mph and driving the initial rate of climb up to about 2200 fpm from the prototype's 1600 fpm. Of course, you have to pay a bigger fuel bill to have all of this.

FALSE ALARM-WE'RE NOT MOVING I mistakenly spread the word to some of you at the fly-in that we were moving to Florida. 'Taint so. We had an opportunity to work for PIPER at the Lakeland plant but decided to stay in the Wichita area and build a prototype for another firm. So, the move is off.

LIGHT WEIGHT ALTERNATOR SYSTEM If you live in one of those dreadful places where radios and flashing lights are necessary for survival, you can go with a rechargeable battery pack system or add a generator or alternator system to your airplane. The standard equipment generators for the C-75 and C-85 engines are really overweight and overcapacity for most practical uses. A friend of mine has developed a very light weight 10 Ampere alternator system that looks ideal for most uses. The system can be purchased to bolt up to the standard C-85 accessory drive or as a belt driven unit that can adapt to any flanged crankshaft on the "A" or "C" series engines. We are considering developing a method for adapting to a tapered crankshaft engine as well. You can get more information on all of the available systems by writing to B&C Specialty Products, 518 Sunnyside Court, Newton Kansas 67114.

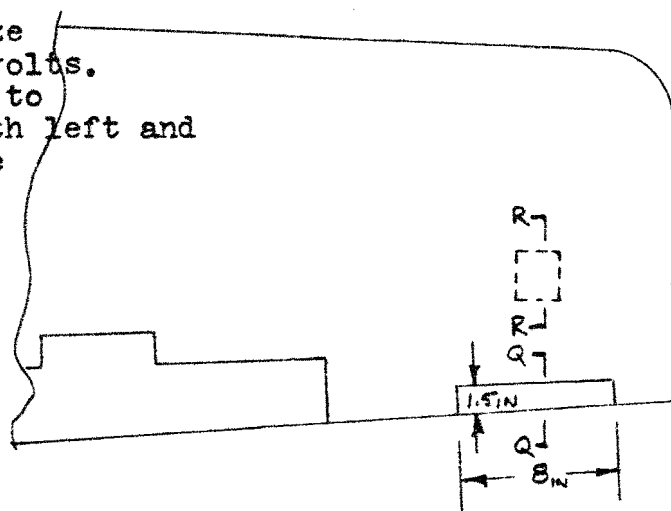
OIL LEAKS AND VISIBILITY Quite a few folks have voiced concern that minor oil seepage could cause a degradation of forward visibility in the Adventure because of the location of the cooling air outlet in front of the canopy. This appears to be a groundless fear. The prototype airplane has experienced many minor oil leaks like seeping pushrod housings, leaky rocker box covers, and leaking oil temp bulb nuts and none of these minor leaks has produced even one drop of oil on the canopy. The major engine failure experienced this summer during the Oshkosh 500 dumped more than a quart of oil into the bottom cowl, but only a light film of oil collected on the canopy and no serious loss of visibility was experienced. The airplane was flown for about 10 minutes after the failure occurred. The lower cowl and cooling baffles appear to act as an inertial separator, where the oil droplets are flung into the accessory case area when the cooling air makes the turn to pass through the cooling fins of the engine.

The old timers who have experienced numerous catastrophic engine failures where massive oil leaks occurred indicate that a "normal" downdraft cooling setup still covers the windshield with oil. My impression is that the updraft cooling arrangement is as safe as the downdraft from this standpoint and possibly better.

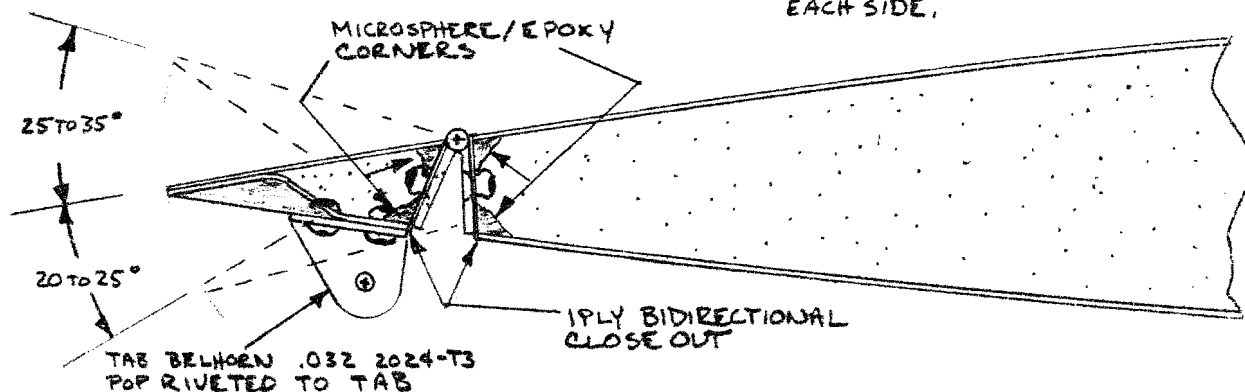
HOT WEATHER OPERATIONS The Kansas summer has been a real scorcher and asside from being bearily tolerable has provided me with a chance to demonstrate that the Adventure is no "ground lover". On one of our mild 105 degree days I find that the proto type will consistantly takeoff and comfortably climb to 1000 ft. AGL (5700 density) in the length of Newton's runway. The standard herd of Wichita iron is usually hardpressed to get over the tall grass at the departure end.

ROLL TRIM A couple of builders have asked why the roll trim system installed on the prototype wasn't included in the plans. The big reason is that the roll trim system isn't required. I installed the prototype trim system to go along with the spoileron roll control system that was later abandoned and haven't removed the system. You can certainly have the roll trim if you want it, but it isn't a required piece of equipment. A section view sketch showing the trim servo and tab geometry are shown on page 3 of the newsletter for those of you who wish to install the system on your own Adventure.

The trim servo is available from Aircraft Spruce and Specialty Co. The servo is powered by three AA size batteries in series to provide 4.5 volts. A double pole, double throw, spring to center switch is used to provide both left and right roll commands by reversing the polarity to the servo motor.

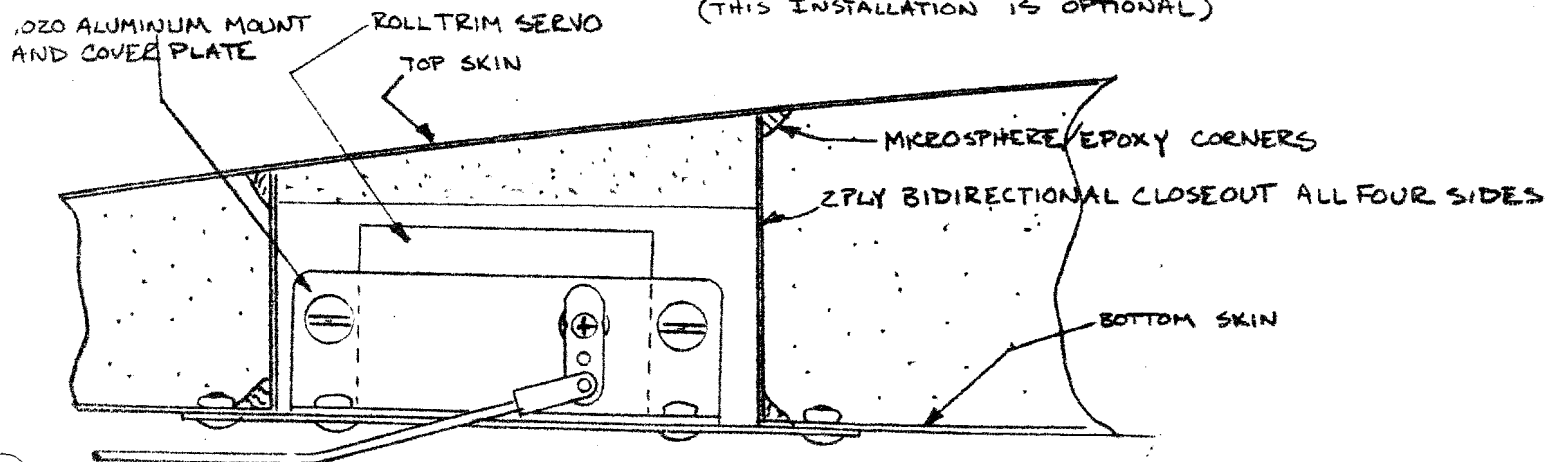


ROLL TRIM TAB IS CUT FROM COMPLETED WING. MS20257PZ HINGE FULL LENGTH OF TAB. ASSEMBLE TO WING AND TAB USING 4 FLUSH POP RIVETS IN EACH SIDE.



### SECTION Q-Q

ROLL TRIM TAB DETAIL  
(THIS INSTALLATION IS OPTIONAL)



### SECTION R-R

ROLL TRIM SERVO MOUNTING  
(OPTIONAL INSTALLATION)

MODEL A/C TYPE  
PUSHROD TO TAB  
SLOT COVER PLATE  
TO CLEAR ROD