118 Banbury Way
American Canyon, CA, 94589
November 20, 1989

Dear Walter,

I just got your letter last week about the Chipmunk, I guess the zip code I gave you was wrong. It has been a while since I built a kit Chipmunk so I'll try to remember what I did.

Fist, I think the .46 will be a great engine for the plane. One of the challenges will be to come up with a reliable way to ajust the needle through the cowl and not hit the muffler. I soldered extensions (as short as possible, the longer it is, the more vibration and bad settings you'll get) and a brass slot car gear on the end, or an allen head screw.

Now for all the airframe mods. The basic kit does very well, some simple changes will help a lot though. These were from my best airplane

Fusalage: ① Narrow it from the kit drawings. make it only wide enough to fit the engine.
② Change the balsa bulkheads from the nose back to the leading edge to plywood. ③ if you use a .46, use 1/16th plywood doublers on the nose, insulate the unused tank space with styrofoam (vibration damping)
④ Reinforce the nose - leading edge forward with 1 exterior layer of a fine mesh glass cloth - the 46 really shakes up the plane compared to a 35.
⑤ Completely seal the tank compartment from the rest of the fusalage, I've lost 2 airplanes due to fuel soaking + what I thought was a sealed compartment. If you can make the tank removable (sliding forward) it will help when trimming the upright vs. inverted engine runs,
⑥ lengthen the fusalage behind the wing by 1 1/2" - longer tail moment - better turns. 7) increase Stab span by 2". ⑦ Use a hardwood mount similar to the main gear - stronge and removable for travel.

(8) Fill in the gap under the rudder - stronger.
(9) This fusalage design flexes alot behind + at the wing trailing edge so, when you form the top blocks (along z - top of the fusalage) instead of using 1/8" balsa, use 3/32 and form 1 continuous top block - nose to tail - cover up the cockpit section. sheet right over it. this is where the fusalage flexes, right at the aft corners of the cockpit side wall. If you don't sheet it over + fly alot, you will get stress cracks. The large canopy still gives you lots of room to put in a pilot.
(10) The Cowl: Sand down and narrow the cowl to fit the new fusaloge width. Be very careful when carving and drilling support holes. The cowl can last the lifetime of the airframe if you make it a perfect fit. Alwolutely O stress on the sides. Also - extend the motor mounts to the front of the cowl and use 2 screws into the mounts, behind the spinner. (11) Seal only elevator hinge line with fast-clue - scotch tape.

That's all I can think of on the fuselage.

Wing: ① Span increase, lengthen inboard wing 1" and lenghthen outboard so you now have equal span wings. ② Flaps change the flaps so you now have 1 1/2" longer outboard flap. This means you'll have a fixed tab on the inboard side. ③ Gear - change the balsa doublers to 1/16" plywood for mounting the gear blocks, also tilt the blocks aft so it lays right up against the main spar. You can twist the gear wire later. ④ Center section planking - leading edge only, notch ribs on leading edge 1/16" top + bottom, then double plank leading edge. I have a 8 year old Chipmunk with a rebuilt center section that fatiged even with the double planking. It needs to be a little stronger. ⑤ Replace the bellcrank platform balsa rail mounts with spruce. ⑥ Outboard wing tip. build a small box + use lead shot for ajustable tip weight.

(7) Inboard wing tip - the plans have the leadout position very wrong. build the tips with 5 ribs (easier to cover) and the leadouts need to be ajustable from nearly th leading edge back to the rear leadout on the plans. Because of the leading edge sweep the lead outs will end up near the lead[illegible] 1" [illegible] the wing tip, or about 1/4" to the [illegible] of the CG - which is about the 1/4 chord point at the fusalage.

(8) You may have your own preferance on how to set up the controls, but I set them up for an average "speed", 1 to 1 flaps to elevator, and 45° up + down.

All these changes will give you a slightly larger airplane and should come in around 50oz, if your careful! Above all else if the kit wood is not very light, throw it away after using it as templates. If you keep it very light and strong,

you'll end up with a Nats Caliber machine. - Avoid quick links with the 46, it will shake them loose in some cases.

If you think of any other questions write again or call me at home or leave a message on my machine at (707) 552-3335.

Dave Fitzgerald.

If I think of any more I'll write again.