



AILERON & FLAPS

1. Cut thru T.E. cap strip and thru ribs 10-14 behind rear spars to separate aileron from wing. Glue rib 9A into end of aileron. Sand stubs of ribs remaining on wing will level with rear of spars. Glue $\frac{1}{4} \times \frac{3}{4}$ cap, carve and sand level with spars top and bottom. Repeat this sanding, capping and leveling process on the aileron.
2. Sand bevel into aileron L.E. to allow movement. Mark center of aileron and wing and install hinges. Check for free movement. Repeat #1 & 2 for other aileron.
3. Cut a strip of $\frac{3}{32}$ " sheet to approx. 1" wide, $24\frac{1}{2}$ " long. Glue this strip to bottom of wing from W-1 rib out to end of flap. This piece is to be glued to wing rear spar and ribs, and touching but **NOT GLUED TO** flap bottom W-20.
4. Turn wing rightside up and separate flap from the wing, cutting thru ribs 3-9 and T.E. cap strip (as done to ailerons). Glue W-2A in flap.
5. Sand flap ribs level with front of skins W-19 and W-20. Trim away stubs of ribs in wing, remove as far forward as rear of webbing pieces.
6. Bevel front of W-20 and rear edge of wing skin strip on underneath to allow flap movement. Lightly tack-glue L.E. block in place, sand both ends level with skins. Using templates FL-1 and FL-2, mark ends of block. Carve L.E. block to shape, then remove the block from flap.
7. Using fabric hinge strips (old nylon shirt will do best) hinge the flap back into wing. Glue fabric to top of W-20 and top of wing skin strip. Check for free downward movement.
8. Install flap horn: cut a slot thru flap L.E. and install Kwiklink and rod on horn before fixing it on back of block. When correct, glue L.E. block permanently onto flap. Repeat all procedures 3-8 for the other flap.
9. Install flap and aileron servos, connect surfaces with pushrods and test for good function.
10. **BOMB/TANK DROP OPTION.** If you intend using this option (shown on plans) install servo, W-25's, bellcranks and pushrods in the wing at this time. The bomb clip (Vortac) will be added later after sheeting the bottom of the wing.
11. The area of the wing between the flaps is now sheeted top and bottom. Add the trailing edge cap and sand level with the flaps.

LANDING GEAR

The inner landing gear door of the P-51 is a somewhat more complex arrangement than it first appears to be, and thus provides the designer with a stiff challenge to duplicate properly. Note that we said *properly*. A simple up-and-down door action can be used in this model if desired, but we have included on the plans the details of the door-closing mechanism, and the parts are in the kit, for those who choose to make the true scale action. This system is designed to be linked directly to the Dave Platt Y-Lock landing gear unit. Therefore the doors require *no* extra servo, or separate prime mover, featured in past answers to this problem. The doors are driven by, and timed by, the gear unit itself.

Figure to spend a couple of evenings making this system and you'll be rewarded with a neat feature that will be admired at the field, and is a sure point-getter at a contest.

Proceed in the following order:

1. Install the RLG units in correct position on their rails. Remove legs for the time being. Install all air hookup and RLG servo. Test for proper function, using the radio. Remove W-2 ribs ahead of rear mainspar webs.
2. Drill a $\frac{1}{16}$ " hole thru the end of the cylinder shaft projecting from end of unit, as shown.
3. Make bellcranks from $\frac{1}{16}$ " phenolic, assemble onto ply mounts W-28 and glue assembly in position between W-7 and W-8. Make long pushrod, thread thru ribs and connect to bellcrank. Bend short pushrod, connect from bellcrank to cylinder shaft. Adjust pushrod lengths so bellcrank is chordwise at L.G. mid-travel, and at an equal angle at each L.G. limit.
4. Drill W-23 for eyelet (pinion shaft bearing), Zap eyelet in place, and glue W-23 into wing between spars and against rear webs. Glue scrap epoxy-glass sheet against W-23 for slick bearing surface.

5. Zap a small plastic tab onto the end of the rack. Cut $\frac{7}{8}$ " length of $\frac{1}{8}$ " wire for pinion shaft. Press pinion onto shaft; the grip is sufficient for operation of the device (but a little Zap will make sure).
6. Place pinion shaft in W-23 bearing. Connect rack to long pushrod, solder #2 nut to retain.
7. Release short pushrod from bellcrank to leave latter free for manual movement. Now carefully sand top edge of $\frac{1}{8}$ " ply rack-guide to a straight and smooth surface. Hold guide under rack, pushing rack into engagement with pinion.
NOTE: The teeth should not be fully bottomed against each other for the smoothest action. Test for smooth easy movement of the rack and pinion by moving the bellcrank back and forth, while holding guide under rack. When perfect, Zap the guide against glass. Glue plywood rack retainers to front face of guide.
8. Drill W-24 ply for eyelet pinion shaft bearing and install eyelet. File rear edge flush to backside of W-24. Hold W-24 in place with pinion shaft passing through, and recheck for easy movement. When perfect, drill W-24 and hold in place with 4 small screws.
9. Reconnect pushrod to bellcrank. Put LG unit in up-and-locked position. Slip door arm onto shaft and tighten screw.
10. Now you can test the entire mechanism. Actuate the LG units using the radio. Observe that the door arms make a downward swing thru slightly under 360° . The doors will be built later, so this is as far as you can go for now. The rest of the mainspar forward webs may be glued in place.
11. The bottom of the wing may now be skinned. Join $\frac{3}{32}$ " sheet and cut panels to size and sand well *before* attaching to wing. The first "panel" to be attached will run from W-1 out to W-4, and from the middle of the mainspar forward to cover the L.E. Next panel goes from W-4 out to the tip rib, and again, from spar to L.E. The last panel runs from W-1 all the way to the tip rib and is cut to fit exactly before attaching to wing.
NOTE: The "gull" that results in the L.E. bottom sheeting at W-4.
12. Make the LG doors from laid-up fiberglass (see Finishing Booklet) and cut to size. Make cutouts in lower wing skin, hinge inner doors. With LG installed, check operation of entire LG and door system.
13. When LG operation is ok, sheet the top of the wings with $\frac{3}{32}$. Add tips and sand to shape.
14. The wing should now be bolted up to the fuselage. The model is now ready for detailing and covering.

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