



THE P-47N Thunderbolt as presented here is an ideal construction design. Rugged, easy-to-fly, it will give you many worthwhile flights. Those desiring to do so may activate the flaps and a flap in the main intake for two-speed operation. Surfaces are shown in glass-covered condition. Rounded-edge plank strips are included to simplify fuselage plating. These strips are used to align the other as they follow the curvature of the formers, eliminating almost entirely the need of fitting and squaring. All formers are shown as are the center, main, and side level miterbars, and all other surfaces are shown with 1/20" sheet, with all curved areas die-cut. The landing gear is shown, and is shock mounted with rubber to allow it to flex to the rear on impact. The main gear is mounted on a shock absorber and is set to retract.

WING PANELS: It is best to begin construction of the wing by cementing ribs W-2 to the forward half length of 1/2" 1/4" bottom spar. W-1A through W-1B units are not put in place until wing panels are joined. All other ribs units of the left and right panels are used to align ribs on the fuselage. They are trimmed off after the panels are removed from a plan. Rib W-6 is not cemented to the spar, and is pinned in place over the plan. Note the spar must be raised to meet the rib. Check up accordingly along the length and install rib W-3 through W-7. All three top spars and the 1/2" sq. leading edge may now be added. The die-cut trailing edge spar W-9 is now installed. Check and bend at points necessary, cement each area with cement stick. A 1/20" sheet reinforcement in die-cut (not pinned) is used to strengthen this area. Rib W-3 to W-7 to receive it. Remove panels from plan and construct other parts in like manner.

JOINING WING PANELS: These die-cut plywood sections are used to strengthen the center beam. These will give the correct dihedral angle (1/4" at bottom of rib W-3). Coat all end grain with a prime coat of cement to seal the pores. W-1A through W-1D units are next positioned. Remaining bottom spars are added at this time.

GEAR INSTALLATION: The gear is shock mounted. Laminated double layers of plywood (four rectangular pieces with protrusions on each end) and cement between ribs W-3 and W-4. Shim right between spars. Drill at point marks for guide bolts required. To hold the gear wire, pass gear wire through ribs W-4 as indicated in W-4 rib detail at center-right of plan. Side spars provided for gear wire, and side spars W-4. Allow the gear to slide freely when the spade bolts are drawn tight against the plywood with nuts provided. Four small ply rectangles are also laminated and cemented in position as shown to form a forward gear stop. Check slightly to allow gear to come forward to proper angle. Refer to section W-4 for hook and rubber shock absorber. Do not allow gear to travel too far forward or it might fracture bottom center-spar.

SHOCKING AIRPLANE: Material is provided for shocking the wing forward of the 1/2" x 1/4" spars. Strips are needed from the 1/20" sheet, using a straight edge. Note sheet piece at center of gear to strengthen the joint. The material for the all portion of the wing is die-cut. Remember that if flaps are to be activated, slight hump be laminated before sheeting. Also, to facilitate installation of control line leads, the top surface of the wing must be sheeted first. Leadouts wires enter wing sheeting at approximately the points indicated and back to the center rib. Note that the bellcrank is mounted on the fuselage. It is suggested that you proceed with fuselage construction to the point where the bellcrank is mounted. With the wing temporarily installed, you can better locate the bellcrank wire and W-4 rib passage through the rib. The bellcrank wire must parallel the ground line as seen from the front view. As seen from above, leadouts wires extend rearward 1-1/2 degrees toward the tip. If you wish to install "Monoline", mount the unit at the same point as you would give a bellcrank, and wire must be parallel to the ground line at the center of the wing. Reinforce aluminum underneath with acrylic celluloid at point where leadouts penetrate sheeting. Wire bearings are embedded in the sheeting at leadout points. Bend upper surfaces of wire toward leadout area, draw leadout wire through, then place lower surface of wire in like manner. Trim and sand entire structure.

WING AILERONS: The ailerons are easily assembled. All parts are added. Dowel sheeting edges to line indicated and cement W-3, W-4, and W-5 ribs in place. Leading edge is formed from die-cut W-4. Sheet upper surface and sand smooth, rounding leading edge as on the flap section. Trim cement in place for field adjustment if necessary. See the extra instructions for correct setting.

WING FLAPS: These are assembled in identical manner to the ailerons, differing only in that the leading edge is a double thickness, and cemented and sand slightly as indicated. These sheeting to activate the flaps must hinge them as shown, cement wire stops to the wire to hold them in neutral, and add a wire from the servo or third line to contact. Refer to extra instructions for further information, and to plan details for suggested operation methods as used on R.C. designs, with few identical problems in this operation.

STABILIZER: As on the wing ribs, the stabilizer ribs are equipped with alignment leas, later trimmed off. Cement

6-8 to 9-4, 9-4 to the rib ends, followed by the leading edge. 9-6 on the upper surface is added next, the slab then is removed from the plan, and 9-6 added to the bottom camber. Note leading edge assent. Apply sheet covering which has been die-cut, and 1/2" fill is indicated with. Hinges are shown on the plan. Level edges of sheet covering, but trim off.

ELEVATORS: The elevators are also similar to the ailerons and flaps in construction. Note double plywood cross-beam, hinge etc. Drill hole in the plywood.

FUSELAGE: The fuselage assembly has been made very simple by notching all center and side-keel units to position the former halves. Refer to assembly detail drawings above. To aid in fuselage alignment, the wing cutout through former F-2 and F-3 have not been drilled. Place over the cross-sections, draw at the upper right of the plan and using a straight edge, fill most of the way through, for easier removal later. Pin the center line units in place on the side view above the top view. Position former halves and with side level, holding an indicator. Cut the wing slots in F-6 and F-7 open now, remove fuselage side from plan and add remaining former halves. Note that it is essential to install the wing if the wing slot is cut free in F-6 and F-7 before cementing these former to the structure. In this case, as the dihedral angle will increase. Once the wing has been fully mated etc., it may be permanently cemented in place. Align carefully, and add the bottom portions of F-6 and F-7 at this time. The keel will align with the correct angle. The plywood firewall should be slipped into position at this time.

INSTALL MOTOR AND DELIVERABLE ASSEMBLY AT THIS TIME. Refer to cross-section P-6 for bottom assembly details. The stabilizer can also be installed at this time, with deflector and horn attached. Here again the keel will align the surfaces as the correct setting. Install pushrod and check for up and down elevator movement. This is important. Former F-2 has been partially cutout for motor installation. After fuselage assembly it may be removed as necessary to clear motor setting. The area below the motor, and forward of the firewall is to be made removable for engine servicing. This is cut free but top of the plating is all laminated. In this way, the plating holds the correct fuselage curvature, and maintains alignment. Boon each part of the plating as it is put in place so that fully laminated a clear contact line is visible. Drilling holes for cooling the engine should be provided along the bottom, forward of the firewall. Cool area may be tack-cemented in place, or keyed with wire or dowel and held in place with rubber tension.

The rounded edge plating strips should not be installed until all internal structure and batteries etc. if required are in position. Apply plating starting at the side level strip. Work up and down from there, until the strips meet in regard to the centerline. Promising edges will sand off easily, giving you a lightweight beautiful structure which will be stronger than a carved fuselage of similar thickness.

Note the plating to be released along the scale row line as detailed. Using a thin piece of flexible material for a straight edge, run off this row line and add: 1/16" deep, and two, with model tape or wax.

RUDDER FIN: Cement RP-8 in place as the rudder post. Align carefully. Install RP-1 rib, cemented to fuselage. Laminate the leading edge out of die-cut parts RP-5 and RP-6. RP-6 penetrates the plating and fits around the keel. Position remaining ribs normally. Dorsal sheeting is die-cut. It will fit over leading edge RP-5 and RP-6 against RP-6. Add shim indicated and cap top edge, with 1/20" sheet. Sheet the rudder as on the other surfaces.

RUDDER: This is assembled in the same way as the ailerons etc., differing only in that it must be offset to the right 1/16" to hold the model flit on the horn, and it has clearance that is not as necessary for elevator horn motion. Allow no possibility of binding at this crucial control point!

CANOPY AND TRIM: The bubble canopy should be carefully trimmed from the celluloid base, and be fitted. Paint out on sides at the base. Apply cement stick and Reynolds wrap or similar aluminum foil trim. Cover cover doors, optional leading edge trim etc. Now add to the base. One door is indicated on the wing, remaining sheeting and cementing to rib W-2 as indicated. Probe for rib position with a pin. Trim/draw door covers, make etc. are also added. Refer to plan for details. Round edge plating strips are used to form the wing flaps. Cement strips as necessary in place, and when dry, carve the flit to shape. (Refer also to 3-V.) First, sand entire structure.

FINISHING: No clear covering is required. If you wish to apply it anyway, it may be added, and will make a slightly more durable model. For protection of wood surfaces, apply several coats of a good grade of Ray-proof varnish, to all the parts. Sand between each coat until all grain etc. is hidden. Apply several coats of Ray-proof clear, to all of the plywood Ray-proof silver, with black anti-glare areas as indicated on the 3 view details. Apply decals as shown. Refer to possible a thin coat of Ray-proof over them. One in finishing. Cut exhaust outlet, and pop exhaust free line with the one stick.

FLYING: The first flight is best made in calm air. Check your model over thoroughly, for correct center of gravity, free-rotation controls, tight line connections etc. 1/2" down left aileron, 1/8" up right (outboard) aileron, 3/8" rudder offset to the right is recommended for the first flight. Trim as necessary as banking time etc. indicates. Other suggested adjustments include: 1 to 2 degree right track, and 3/4 in. ballast at right wing tip (outboard tip).

Use a prop of medium to medium high pitch. A four bladed prop may be fashioned by notching hubs of two conventional props half way through, and cementing together. We strongly advise however, that such props be used for appearance only, rather than during, as it is possible to lose a blade.

Select a smooth take-off site, and face model downward. Check wheel alignment - model should roll straight and true. Check up and down elevator movement at landing. Run engine wide open at all times for take-off, allowing for transient out of wind, controlling the model by raising and lowering your arm. This gives gentle elevator action. Once you have the feel of the model, most action may be enjoyable. Keep model low and level, as much as possible. Allow the model to glide in its own scale, do not try to stretch the glide. As it leaves the ground, fair out with gentle up-elevator, increasing up elevator as much as possible without causing the model to balloon upward.

FLAPS AND MOTOR CONTROL: Those desiring to actuate the flaps and a motor speed control device may do so in several ways. A third line to the motor, in which it has on the line control a motor speed control (like a Zap or other two-speed device). This line is also tied into the flaps, which are held in neutral by a stop. Rubber tension holds the flaps and motor speed control device to return to neutral. As the third line is pulled, the flaps also are lowered. Release of the third line, allows flaps and motor speed control device to return to neutral.

A better, the more complete method is to run 45 volts (from a battery and type battery attached to the 3 wire wiper) out the controller to a wiper. Controller must be installed, and if not available at your dealer, they may be made by applying a coat of coil wire lacquer or other lacquer to the controller. Bellcrank terminals must be installed. All the connections should be bridged with soft flexible wires. A button on the control board, against the relay, which is in turn a servo motor in the plane, lowering the flaps, motor speed etc. Model should be test flown before flaps etc. are attached.

REPUBLIC P-47N For 15 to 29 Engines - 32 1/2" Wingspan

"THUNDERBOLT"

Controlimer

DESIGNED AND DRAWN BY BOB MOUVRIEN
KIT ENGINEERED BY BILL EINHORN

FOR "CONTROL" OR "MONOLINE" FLYING
SCALE: 3/4" = 1" FULL SIZE PLANS
FOLDING SCALE: 1/2" = 1" FULL SIZE PLANS

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