Top Flite's P-47D

by Frank Tiano

Top Flite has really come up with a winner in their new WWII P-47 Thunderbolt.

PHOTOGRAPHY: FRANK TIANO

The massive Republic P-47 "Thunderbolt was the first successful long-range fighter to escort the B-17 heavy bombers across Europe during World War Two. The aircraft, which was first ordered for the Air Force in 1941, was the largest and heaviest single-seat, single-piston engined fighter ever to enter service. It was designed by a design team headed by Alexander Kartveli who actually designed the huge fighter around the 2,000 horsepower Pratt and Whitney R-2800 Double Wasp radial engine and its supercharger. The most popular version and the one most widely used was the P-47D which featured a buble canopy and even larger radial engine. With a gross weight of 15,500 lbs loaded and a top speed of 473 mph at 32,500 feet, it didn't take Republic long to receive 15,329 orders for the new fighter. The wingspan of the "Jug," as it was affectionately called by its pilot and ground crew, was just a shade under 41 feet which was large compared to the P-51 Mustang which had a span of only 37 feet and the British Spitfire with only 36 feet and change. The Thunderbolt outweighed the Spit three to one since the Spitfire's gross was only 5,784 lbs. The amazing thing is that this new breed of fighter could fly and fight with any foreign fighter even though it weighed two or three times more and was, in some cases, one and a half times larger. Besides its normal eight .50 caliber machine guns, the Jug could also carry two 1,000 lb. bombs or ten 5" rockets. Long range fuel tanks were carried beneath the wings on escort missions deep into Germany. Needless to say, the enemy was very surprised when the first fighters accompanied the large bombers, blew their auxiliary fuel tanks, and proceeded to turn onto their attackers. To quote the Squadron Signal Publications book, "Thunderbolt in Action," will simplify in a few sentences what it might take me two pages to convey.

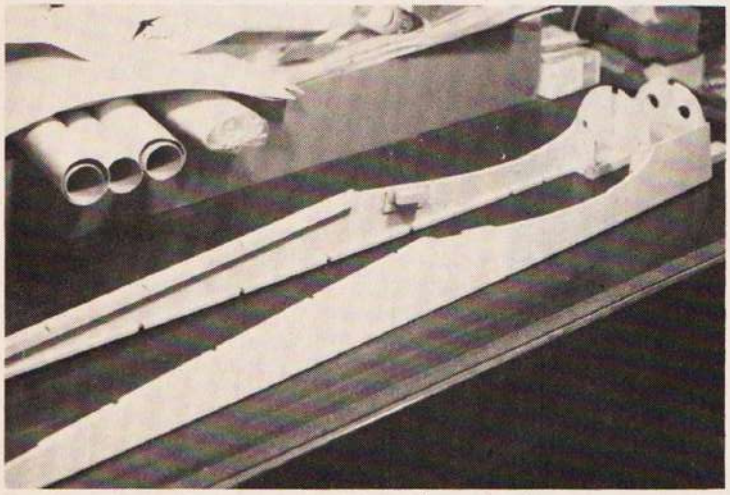
"In a horse show, the arena is usually filled with graceful thoroughbreds selected for nimbleness and speed of foot. The bulky lines of the Clydesdale seem so out of place in such sleek company you could hardly expect the big horse to compete on an equal basis. For the workhorse to hold its own and even outshine many opponents would be beyond belief. As far fetched as this analogy may sound, this is exactly what happened in the skies above Europe and the Pacific for much of World War II. In the midst of Mustangs, Spitfires, ME-109's, FW-190's, Reisens and Heins, was one "brute" of an airplane with the appropriate name of "Thunderbolt." Though nearly twice the weight of other single engine fighters, the Thunderbolt stood toe to toe with the best airplanes the enemy had and slugged its way to an enviable combat record. On every front, from 1943 until the end of the war, the Republic P-47 carried its pilots into the heart of the fight and usually brought them home. The shear size and mass of the Jug, tied behind a rugged Pratt-Whitney radial engine, meant a lot to the men who flew it, for it could take battle damage that would have felled almost any other plane. The German and Japanese aircraft that it faced did not fare so well. The hitting power of eight .50 caliber guns knocked large numbers of them from the sky making the men who flew the Jug some of Americas top aces."

The kit we are reviewing here is Top Flite's version of the Republic Thunderbolt, the P-47D. It's a .45 to .60 powered stand off scale model designed by Dan Santich and engineered by Sid Axelrod. With a wingspan of 60" and area of 720 sq. in., the Jug proves to be a stable aircraft despite its huge size. Included in the kit are everything one could ask for except the engine and radio. That's kind of refreshing in itself. It means that once you sit down and start to build there will be very few interruptions because you have to make a trip to the hobbyshop for some items not included in the kit. Besides the excellent quality balsa and plywood that is cleanly diecut, the P-47 kit features four preformed fuselage shells that save a whole lot of time over the normal planking method. Two of the shells go on the bottom and the other two on top to form a perfect fuselage. Also included in the kit are all necessary hardware, hinges, hardwood motor mounts, bellcranks, horns, pre-bent landing gear wires, an exquisite set of mylar markings, canopy, full size detailed plans and a very complete and elaborate construction manual to make things easy for even the not so experienced builder. Of particular interest are the decals, instruction booklet, and plastic accessories. The mylar decals are for Maj. Glen Eagleston's

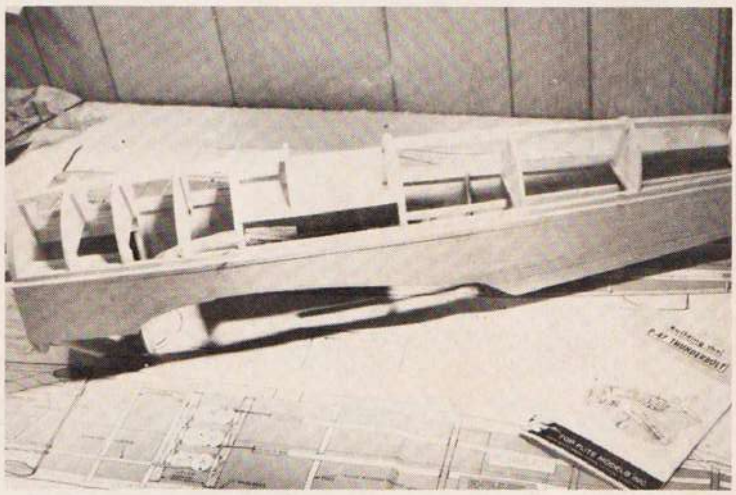
P-47 which features a silver (aluminum) and yellow aircraft. These decals, or markings if you will, are very complete and include scale size stars and bars as well as elaborate squadron lettering and numerals. Particularly impressive is the huge Eagle which is positioned on the forward cowl. As for the instruction booklet, it is among the finest I've ever seen. There are pages of accurate drawings for each step of construction with everything spelled out so clearly that even a dummy like me could understand it if I were still back in the second grade. It appears that Top Flite and Dan Santich have gone to much trouble and expense to insure that their P-47 will be built properly. Last but certainly not least I must say a few words about the plastic cowl included in this kit. It is a two-piece, injection molded (the expensive kind) cowl that actually will fit perfectly to the front of the fuselage. There is a novel way of mounting the cowl with four screws that makes removal a snap. There are no ugly screw heads showing on the outside of the airplane to mess up its appearance. Another bonus is that the cowl is extremely rugged. The plastic is so thick that it can take an enormous amount of punishment. Without a doubt it is the finest cowl that I've ever seen offered in a scale kit, so much better than the usual ABS plastic which is so prone to cracking or snapping with the least bit of rough handling. The kit is manufactured by Top Flite Models, Inc., 2635-45 S. Wabash Ave., Chicago, IL 60616. The retail price at the time of this writing is a very competitive $79.95.

Fuselage

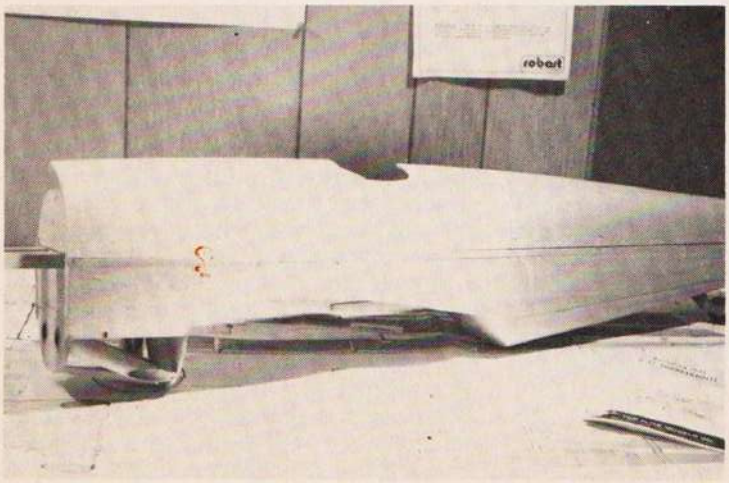
The fuselage is a breeze to build with the new super glues such as Hot Stuff or Zap. In fact with the exception of the motor mount areas, the entire plane was built with a total of six bottles of Hot Stuff. Epoxy or Titebond were used in areas requiring a bit more strength. The fuselage is built from a crutch which includes the hardwood motor mounts. If care is taken in the first steps, the rest of the construction should come out warp free. Bulkheads F-3, F-5 and F-7 are secured to the basic motor mount structure and should be set up with a square before cementing in place. The balance of the fuselage is built using two narrow sides and ¼" stringers. Incorporated into the fuselage structure is a means of getting rid of some of the heat that normally builds up when we have a cowled-in engine. This method, which is the first I've ever seen offered by any kit manufacturer, is simply two rolled paper tubes, coated with epoxy, that run down from the inside of the lower cowl and exit at a scale opening in the lower fuselage. These two tubes should provide cooling for even the warmest engine. As I said, this is the first time that I've seen provisions for cooling in a scale ship. Normally, we have to find our own method of preventing overheating. As with the rest of the kit, Top Flite has really given a lot of thought to the modelers problems. After completing this funny looking box, the rest of the bulkheads are added on top and bottom and then the preformed balsa shells prepared for installation. When I say prepared, I mean that these shells must be trimmed somewhat for a proper fit. Don't be alarmed, Top Flite has thoughtfully provided plenty of excess so that the shells can be trimmed for a perfect fit when placed on the crutch. Between the top bulkheads F-2 and F-6, the shells must be helped a little by slitting them so that they will conform to the compound curve in this area. For an easier installation, I chose to install the stock pushrods just before permanently mounting the fuselage shells to the crutch. I also thought that a scale tail wheel housing would look better in the scale location so I mounted a D&B tailwheel housing to a wooden dowel for a very realistic appearance. A D&B scale cockpit interior available for the P-47 was installed and also added to the overall realism of the model especially when coupled with a scale IM Products pilot. The tail surfaces are sheet balsa and need to be sanded before they are installed. One word of caution, be sure to make up a plywood scab for the top and bottom of the stab center section before permanently fastening it to the fuselage since the stab may have a tendency to snap off in some violent maneuvers, especially if it has already been stressed in a minor crash. I took the extra time to build up the rudder so that it appeared to have scale hinges for a few extra

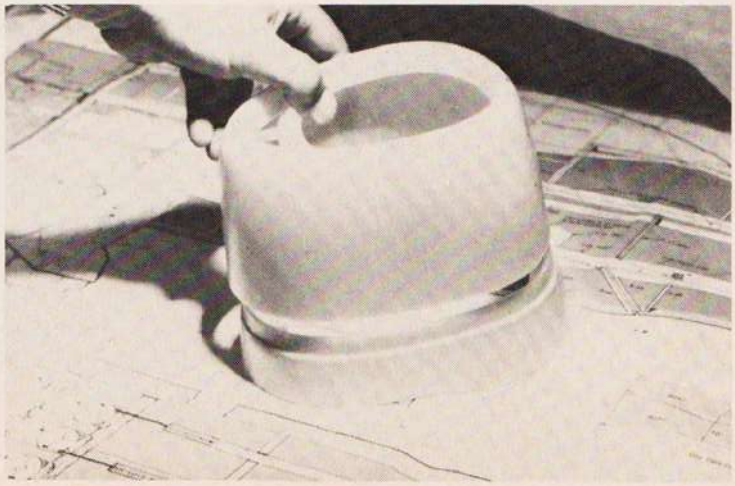


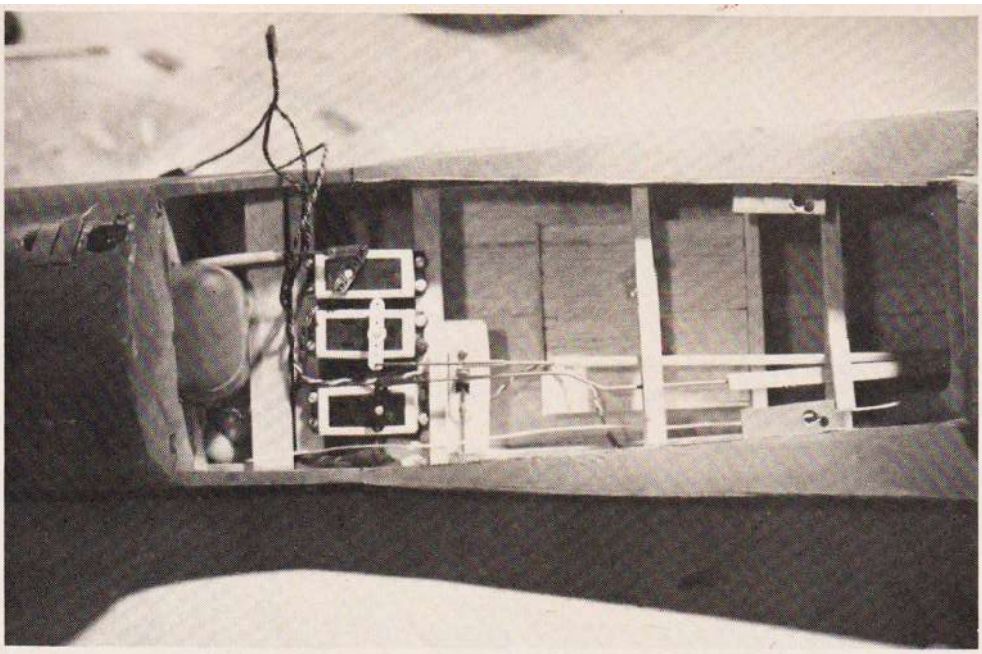
The fuselage of Top Flite's P-47D is built upside down on your flat building board **(above)**. Then flip it over **(below)** and finish the deck area.

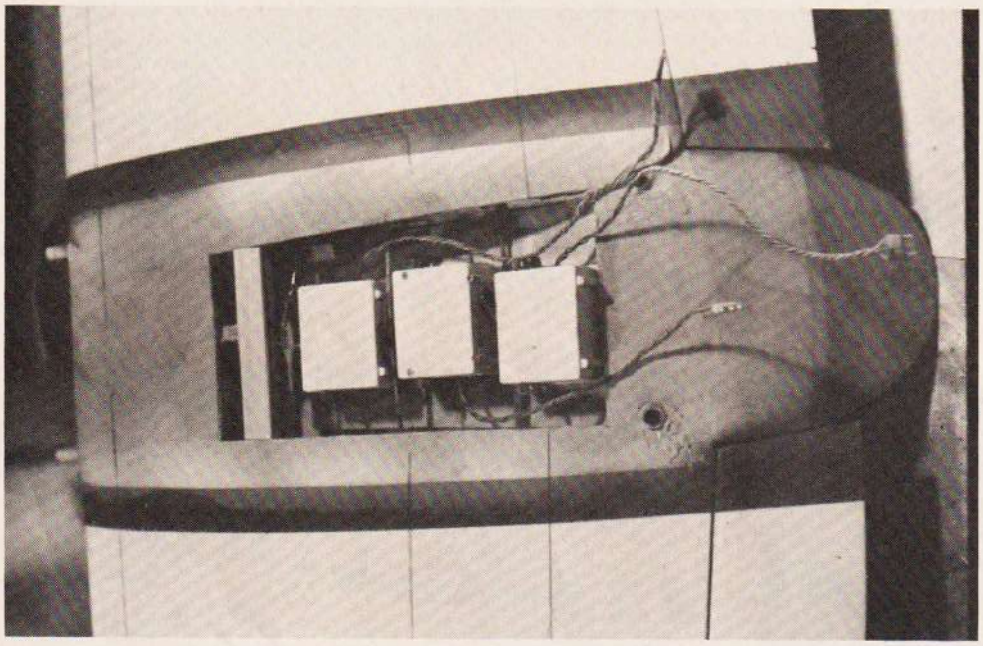


Now the pre-formed sheeting is applied to finish forming the basic fuse **(above)**. The cowl for the Jug is one of the real pluses in this fine kit.

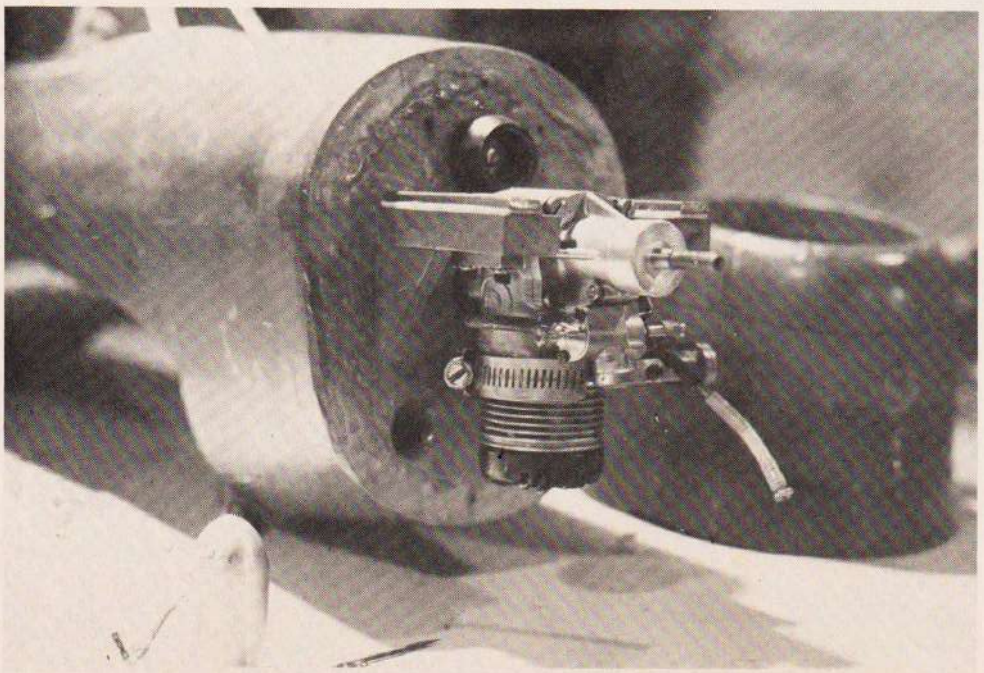








The big fuselage makes radio installation a snap in the P-47 (**top**). Even in the wing center section (**above**) there's plenty of room for servos to control the ailerons, flaps and tank drop functions. The nose (**below**) is weighted with a Prather 2-ounce spinner weight and two 2-ounce strip self-stick weights.



static points at the contests. I'll tell you about the other modifications that were made on the Thunderbolt a little later on in the review.

Wings

There really isn't much to say about Top Flite's method of wing construction. The wing panels are built over the full size plans with the proper washout jigged in automatically. The trailing edges are preformed to give the P-47 its distinctive appearance. If retracts are to be installed, they should be carefully placed over the plan view and all details for their installation worked out since there is no diagram or suggestion shown for their placement. I chose to use the fixed gear and have since found them to be just like any other .60 sized scale model's gear, inadequate. After some so-so landings on our grass field they had a tendency to spring back towards the trailing edge of the wing. After bending and rebending them forward about a dozen times I finally made a new set from 3/16" wire and this has helped considerably. I will never understand why kit manufacturers still insist in putting 5/32" gear wire in their kits when it is so prone to failure. I am not singling out Top Flite. In this case, as far as I'm concerned, most all kit companies are guilty. Anyway, the entire wing is sheeted, the flaps and ailerons hinged and that's about it, except for covering.

Finishing

Here is the section that can either make or break a model. In the case of the P-47, since I wanted to use it for the '77 contest season, I made many small modifications to enhance its appearance. First of all, the rear doors for the supercharger exhaust were cut out and a thin piece of printers aluminum put in place and bent outwards. The cooling exits up under the nose were also dummied up to look like doors. After sanding the fuselage down really well the canopy was fastened with RC56, an adhesive made by Wilhold just for this purpose. On the wing I installed different lengths of aluminum tubing to represent the four .50 caliber machine guns. The gear struts were made from commercially available Robart units while the gear inner and outer doors were fashioned from 1/8" plywood. The gear doors were fastened to the Robart struts with a simple landing gear strap and two 4-40 bolts and nuts. Care was taken to insure that the doors did not ride against the underside of the wing so as not to cause any damage during a hard landing. The wing tank mounts are simply a sandwich of three balsa pieces similar to a wheel pant with a cable routed through them from the center section of the wing. The wing tanks themselves are available from D&B Model Co. in Mentor, Ohio. After sanding everything smooth, Super Coverite was applied to the entire plane and a light coat of automobile gray primer was sprayed on. After sanding lightly, a second coat of primer was applied and sanded. This formed a very good base for almost any type of finish available. Top Flite naturally suggests their own method of covering with Monokote. Flat silver Monokote can be applied and trimmed with dope as required for a super light finish. There is one gentleman in the Chicago

area that used Monokote, fixed gear, no flaps, and light building methods and succeeded in producing a P-47 with an all-up weight of only 5½ lbs. Needless to say, his model will fly with a .40. Since I chose to model Lt. Col. Francis E. Gabreski's personal P-47, I needed a dark grey, deep olive drab, some flat white and flat black. All of these colors were obtained from R&S Perfect Paints and matched perfectly with the color three view I had chosen. First the entire airplane was sprayed with the dark gray. Next, an airbrush was used to spray on the dark olive with a streaking motion. The area for the invasion stripes was masked off and sprayed flat white. When the white had dried, the black stripes were painted on after masking. The forward portion of the cowl as well as the rudder were painted red. Even though I didn't use the stock color scheme offered in the kit, I found that the stars and bars markings were still the same size and therefore used them. The small numbers located on the fin were painted with Testors Pla enamels for plastic models. The large lettering on the fuselage sides was painted free hand using Perfect flat white right out of the can. After about two full days, the entire model was sprayed with Perfect flat satin which toned down the bright red and gave the rest of the airplane an almost metallic look which appeared very realistic. For the finishing touch, a four bladed prop was made from four Top Flite 14" props notched together, painted flat black with yellow tips. Universal 3½" wheels were installed and the hubcaps added. All weathering was done with a Binks airbrush and very thinned out Perfect paint. This includes all exhaust stains and oil streaks as well as the stains from the machine-gun muzzles. The panel lines were done with Testors silver paint and a thin brush. To show wear and tear on the leading edges of all flying surfaces, Testors silver was brushed on and rubbed with my finger to appear as worn aluminum panels. All of this extra detail work was done in a couple of evenings and was a ball to do. I strongly suggest that you try it on your next scale ship and I'm sure you'll be pleased with the results. It sure takes the model look away from a model.

By the way, all the books that I used for historical reference are available from Carstens Publications Book Servie through this magazine and Skybooks International in New York City.

Flying

Instead of going through the first flight routine, I'll get to the nitty gritty and tell you what had to be done to make the Thunderbolt fly as well as it looks. First of all, I had to add about 6 oz. of weight to the nose to make it balance right and fly well. This may be do to the extra weight I added by putting in the scale tail wheel housing and turbocharger doors. At the proper balance point, the model is a dream to fly and it grooves around like a pattern ship. With the ailerons set up for maximum throw the ship rolls like a bandit, much too fast, so I finally wound up using the outside hole on the horn for best results. The same goes for the elevator, the outside hole or one up seems about right. Very little rudder correction is needed for smooth, realistic takeoffs. Another nice thing is that this plane doesn't jump off the ground and want to skyrocket upwards. Takeoffs are smooth and flat unless one deliberately hauls back on the stick. I found the Jug to track straight through all maneuvers including a large loop which required no aileron or rudder trim changes to complete. Taking the plane up to a considerable altitude and throttling back produced no adverse conditions. When the stall does occur the plane falls straight ahead. When using the flaps it's a horse of a different color however. With almost full flaps the model sinks earthward at a nice rate while all control is retained—as long as you keep the power up a little. If the throttle were to be retarded to idle, the plane will simply fall off on one wing. The first reaction is to add full throttle, rightly so, but unless the flaps are brought up at the same time, you'll have a bear on your hands. In other words, the model reacts just like a real airplane. If the flaps are used, keep the power on to retain full control. About ⅛ throttle seems to work best with my engine, a Super Tigre Blue Head. Landings in a slight breeze can be accomplished very smoothly without the aid of the flaps. On a dead calm day the flaps will help get the thing down because with all that wing the plane has a tendency to float. If your landing gear is strong and the grass not too high the Thunderbolt will make very pretty wheel landings with the tail in the air. A little up elevator will set the tail down for a perfect landing everytime. After 15 flights I would have to say that the P-47 is a "pussy cat" to fly. All it takes is to build it true and balance it right. At eight and ¼ lbs. mine has proved to be a very rugged ship and after a few rough landings there aré still no signs of stress cracks or wear and tear. The most impressive thing about Top Flite's Thunderbolt is the way it looks in the air. You can almost hear the whine of the big Pratt and Whitney radial engine and hear the clatter of those eight .50 caliber machine guns. It's deceptively fast while retaining a very scale like appearance. The only thing I regret not having added to this otherwise fine kit is a set of retracting landing gear. But, maybe one the next one, because there is definitely going to be a next one!

Frank entered this new P-47D in the Central Jersey R/C Club annual meet and got 90 points in the static judging. Top Flite has really done their homework on this one and it looks like it's a real winner.