



Just before take-off, the author adjusts the needle valve on Torp .15. Spinner looks good.

Lil Dynamite



**For the much neglected .15,
a clean looking, high per-
formance stunter. The top.**

by LARRY SCARINZI

► The Lil Dynamite is a clean looking and excellent performing model designed for a much neglected engine size. A Torp .15 was used in the original. With a .19 it should be "red hot."

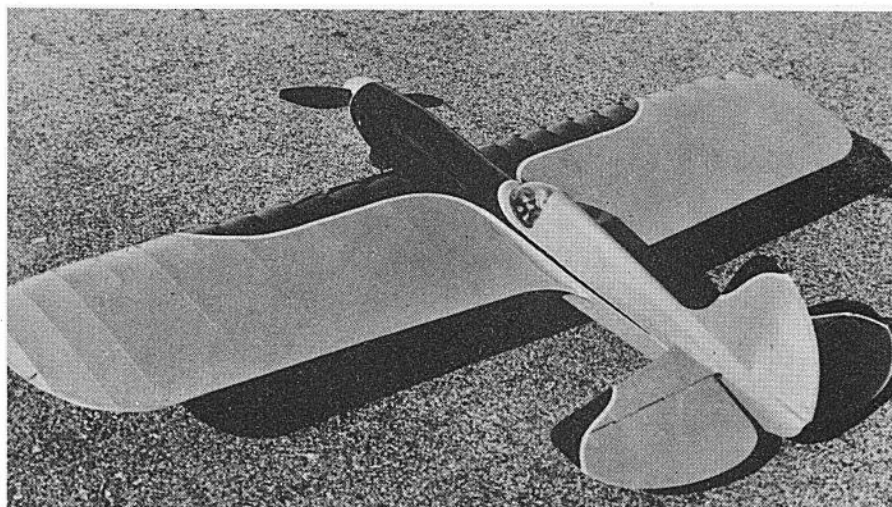
The value of this prize engine was proven to me last winter when I mounted a Torp .15 in one of my smaller Fox .35 stunt models. Surprising to me, the ship still did the full stunt pattern reliably, only at a noticeably reduced speed.

Because this engine would haul a bulky 22 ozs. stunt model through the stunt pattern, it was quite obvious that this engine would be capable of high performance in a smaller, more trim design. To put a .15 ship on a competing level with bigger stunt models, the design had to be efficient to utilize the power available.

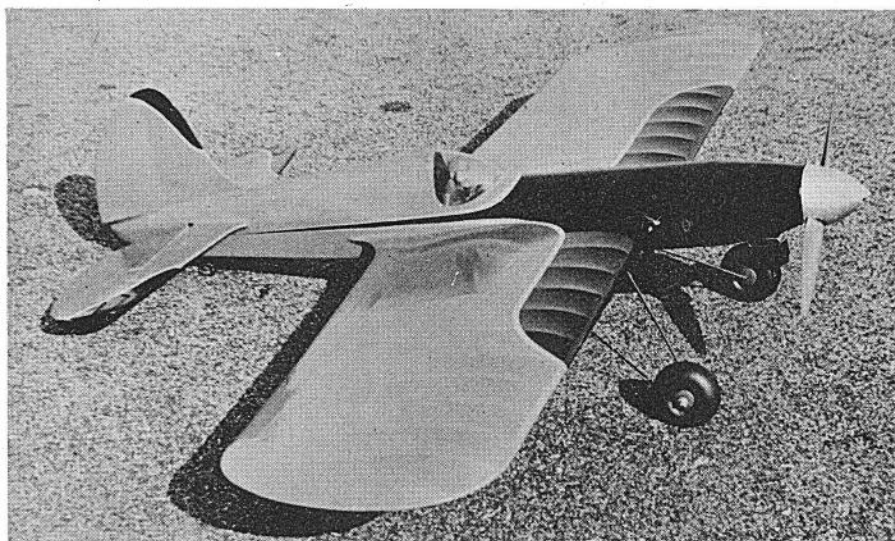
To satisfy my desires, I wanted a small, light model with clean lines and good finish which would also perform well. Also I wanted it to be simple to build. Getting the most out of our building time is probably what the average modeler is working for.

The biggest single simplicity factor in this model is the wing construction. The fuselage is partially constructed and then the spar is slid in place. Only the mainspar, leading edge and trailing edge extend through the fuselage sides. As you notice, the mainspar is only a 1/2" square balsa strip with a center doubler. This type of spar has been used for many years in .35 powered combat models and later in .35 powered stunt models by myself and has proven very successful. The wing was not

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Wing taper and rounded surfaces do amazing things for the looks of any controlline stunter.



Intrepid pilot looks set for another wild ride. Sharp fliers might try a .19. But stand back!

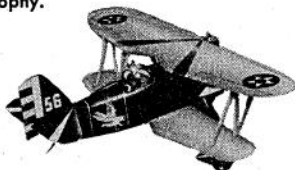
COMMAND THE SKIES



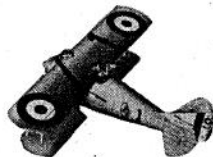
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For all small engines .039 .049 .074

Lil Dynamite

(Continued from page 14)

designed to be rigid, but instead to "give" or flex somewhat as the airloads increase, as when pulling square or sharp maneuvers.

The method of achieving the tapered wing was simply to taper the trailing edge. This greatly simplifies the job of cutting out wing ribs.

The landing gear mount makes use of the mainspar by using it as a sound mount, eliminating the need for an additional bulkhead.

The original model's performance was surprisingly good. It was flown on 52 1/2 foot, .010" diameter lines and acted just about identical to the bigger .35 powered stunt models that I had been more used to flying. The speed of this model was just about 67 miles per hour, which, on these shorter lines, made it quite comparable to a .35 stunt model on longer lines. One distinct advantage can be claimed for shorter lines, however. I feel that it is much easier to fly a model extremely close to the ground through maneuvers when you're closer to the model.

On its maiden flight, the little engine screamed and refused to miss a beat through any of the maneuvers performed with this ship. It seemed as though it wanted to say "there, I'm as good as those big .35's any day." It flew reliably enough to make any .35 flier feel at home.

Before starting on construction, let me discuss one more point. A lot of models built from magazine plans do not perform as well as the original. The designer knows what he's after and follows a definite course to achieve this. If other builders understood his goals, then they would most likely get results as good as the

designer's, and possibly better, because they have the designer's ideas plus their own.

When building this model, aim to build it as light as possible. Take care in your choice of wood and applying your finish. The original weighed just under 17 ozs. It will carry more weight, but will probably come out tail-heavy if too much weight is added. Remember a .15 has to fly this.

Balance is the final point I want to bring out. No matter how you prefer to describe it, a tail-heavy model is sensitive to fly. This model should balance where it is indicated or forward of this point. With just normal care this is easy to accomplish.

Start construction of this model by cutting out all necessary parts. The wing ribs may be easily cut out if a rib template is made of scrap tin. It is an easy task to make up a set of ribs by cutting around this template on 1/16" stock.

Pre-glue the 1/16" balsa nose doublers, nose section of the 1/16" balsa fuselage sides, and motor mounts. Note that the grain runs vertical on these nose doublers. This makes for a solid, split resisting nose section. (If an engine from .19 to .23 is used in this model, it is advisable to shorten the nose by 1/2" to 3/4". In doing this, move the necessary nose formers back). Glue the nose doublers and mounts in place. When dry, join the fuselage sides at the tail and formers F-2 and F-5. Pre-glue and then glue the 1/2" square balsa doubler to the mainspar. Note that the inside wing is 1" longer than the outside wing. Slide the mainspar through the proper holes in the fuselage sides and cement. Next, slide the 1/4" square leading edge into place and cement. The center

section of the leading edge is to be cut out to allow for the gas tank, but only after the wing is completely assembled. Glue the 1/4" thick root ribs in place, followed by all of the 1/16" ribs. Use only a spot of cement to hold the 1/16" ribs in place. This is to allow the builder to twist the wing if it is a little out of line. After this, slide one side of the trailing edge in place and cement to all ribs. When dry, slide the other trailing edge piece in place and cement. Now is the time to check the wing for warps. While the trailing edge cement is wet, twist the wing as necessary to remove any warps that may have come in. When dry, go over all the rib joints that were only spot-cemented and cement permanently.

The greater part of constructing this model is now complete. Sandwich the center section of the mainspar with pieces of plywood as shown. This acts as a solid bellcrank and landing gear mount. Before installing the 3" Veco bellcrank, it is a good idea to put a bushing in the hole to be used by the 1/16" dia. pushrod. This can be done by drilling out the hole with a 1/16" drill, inserting a 1/8" steel rivet, and then drilling this out with a 1/16" drill to accommodate the 1/16" pushrod wire. It is advisable to use this same technique on the control horn. Now mount the bellcrank and insert the 1/16" dia. pushrod. Slide the 1/16 x 1/2 x 1/2" plywood pushrod stiffeners over the pushrod. Now install the remaining fuselage formers. Assemble the elevators and cement in place, paying attention to proper up and down control. Shave out motor mounts and fuselage sides where necessary to allow for bellcrank travel. You should have close to 30° up and down control.

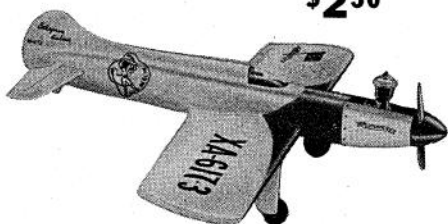
Drill the motor mount holes and insert

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blind mounting nuts. Install lead-outs and assemble wing tips. Glue in the $\frac{1}{4}$ " x $\frac{1}{8}$ " hard balsa fuselage braces just below the pilot. The top fuselage sheeting and planking may now be put in. Use light $\frac{1}{16}$ " balsa for this. The rudder and outside wing weight may now be put in.

Construct the gas tank as shown ($\frac{1}{4}$ " deeper if a .19 or .23 is used) and mount it. Bend and mount the landing gear. Use light $\frac{1}{16}$ " sheet on the bottom.

Finish on this airplane is important. As I mentioned earlier, we want a light model, but still want a good finish. Cover the wings with silk. This is important for strength. Brush several coats of fuelproof dope on the wings and one thin coat on the fuselage. Cut 1" wide strips of Silk-span and stick them to the wings adjacent to the fuselage. This is to protect the silk when sanding the fillets. The fillets are made by forming Aero Gloss plastic balsa with fingers and rubbing out high spots with thinner.

Now mix talcum powder in thin clear dope and apply three coats to the wood areas, sanding after the first and third coats. Apply one thin coat of clear over the wood areas and finish applying clear to the wings. Use enough clear to seal the pores in the silk. Sand well and apply three thin coats of fuel proof orange dope. If necessary, add another coat of orange. The original model was trimmed with two coats of black and a silver pin stripe. Check for balance and your ship is ready to fly.

When filling the tank, hold the fuselage vertical and pointed outward. Start the engine and point the ship slightly out to launch. There are no tricks to flying this model. Feel it out through several wide maneuvers and then "give it the works."