The model has trim lines, is well proportioned, and meets all the required specifications too. The airplane ain't bad either! The author's wife, Lanny, presents a top view of the ship.

CONTINENTAL 600

FORMULA II RACER

Already a seasoned contender in the Formula II races when the rules were provisional, this deBolt originated 600 incher still meets all specs for the official 1969 AMA Pylon Racing category.

Bob Noll, an active competition flier in northeastern U.S. and AMA Contest Board member, poses with loot. He also won NMPRA's 1968 Championship trophy for 1st Place in Formula II.

By BOB NOLL

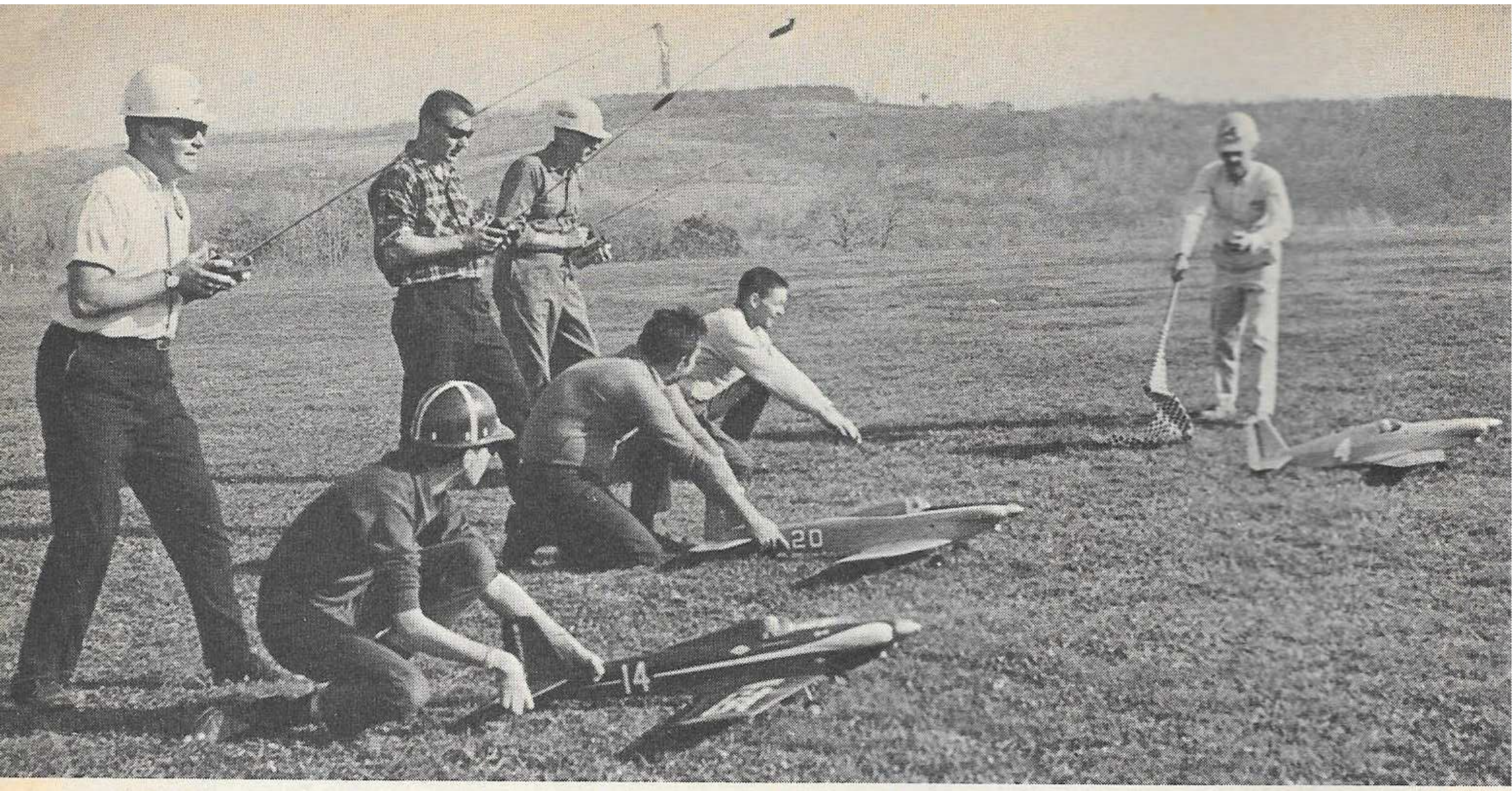
► Ya say ya can't land that hot Formula I racer at your club field without rollin it up in a little ball! Ya say ya can't have any fun with your Formula I pride and joy except in a race because each flight takes a year off your life! Is that what's botherin ya brother?!

Tell ya what I'm gonna do. I'm gonna tell ya about a racer that can put you in the winner's circle without decreasing your life expectancy and still give you a plane that ya can fun fly and land safely on that beautiful green field.

In January, 1968, a group of Formula I enthusiasts got together at the Buffalo Bison's Mid-Winter Conference to discuss the then popular Goodyear event and also the not so popular Continental event. Having flown the 450 square inch Goodyear racers for the past two years, I was looking for an event that would be more appealing to the less than expert flyer in terms of flying and particularly landing characteristics. The discussion that prevailed revealed the fact that we had the event but only a handful had built the Continental class airplanes and I wasn't one of them. Everyone assembled agreed that the 600 square inch class of racer would be the best way to go if we expected to encourage more flyers to get into the racing game. Many had tried the 450's over the past two years and had some experiences with them to the point that they got very discouraged with the whole idea of racing.

Well then, let's all build 600's for the 1968 season and encourage all C.D.'s to include the Continental event in their contest schedule. This is what we decided to do and as a result, 4 of the 5 major contests in District II added the Continental class to their list of events.

Well, now that we had the idea rolling, it was time to select an airplane to do the job. While speaking with Hal deBolt, I found out that he had designed a 600 in. racer sometime ago but never got one built. Since I am always looking for the easy way out and had been flying one of Hal's Midgets in Goodyear in 1967, which won several contests, I decided to take a look at his 600 design and before I knew it, the balsa chips were flying. Construction time was also an important factor and I am sure you will find that this has been reduced to a minimum in the Continental 600. Now, after flying the Continental 600 for a season I am very much enthused about the now so-called Formula II event. Not only has the Continental 600 been very successful for me in the Formula II races, but I was able to get third place at the New England Championships among a field of 18 racers which included only two Formula II types. Actually, I was surprised, to say the least, when I realized how com- (*Continued on next page*)



Depicted here is the main reason for Formula II, no difficulty racing from grass sites. Note right rudder on ship Myron Cary has flagged off.

CONTINENTAL 600 . . . CONTINUED

petitive the Continental 600 is even against the Formula I racers. So, if you think the 600 in. class of racer won't satisfy your desire for speed as well as the desire for a more controllable airplane, then build the Continental 600 and see for yourself.

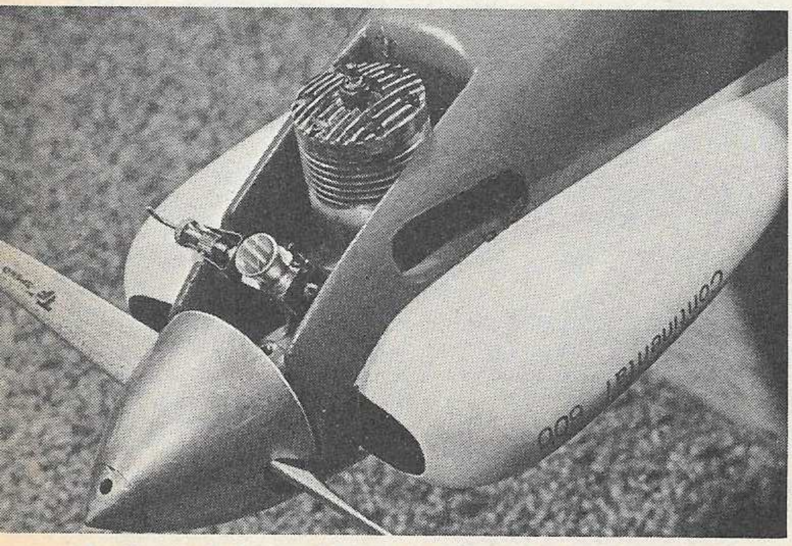
As I said earlier, the Continental 600 was designed by Hal deBolt, and therefore, much of the success of this plane must be attributed to him. It is essentially a modification to Harold's popular Cobra, since the areas and force set ups are identical. The plane is designed around the popular K & B 40 FR which has proven itself over the past several years.

The wing uses the NACA 65000 series airfoil progressing from 12% at the center to 10% at the tips. The sections are fully symmetrical and have excellent lift curves while maintaining minimum drag. This design, with a wing loading of just under 20 oz/sq. ft. results in a plane that can get up and go as well as slow up and land. It is also extremely groovey, and I find it much easier to fly in a race than the heavier wing loaded Formula I racers. Because of the lighter wing loading, it is possible to make tighter turns with the Continental 600 than with a normal Formula I racer and the acceleration coming out of the turns is one of the plane's greatest attributes. Strip ailerons are used for simplicity but are ended 25% of the way out on the wing to reduce the drag.

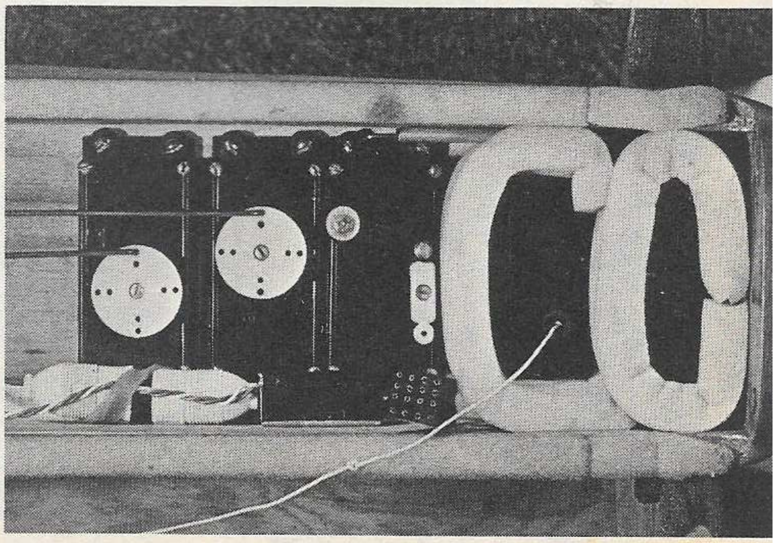
I won't try to give you a blow by blow description of the construction since those who are interested and capable of flying a racer can probably show me a thing or two. I would, however, like to cover some of the important steps and maybe share some of my ideas and building techniques with you.

WING:

The wing construction is extremely simple, using 3/32 sheet spar, egg crate rib attachment and 1/16 sheet covering. I tried a new technique for building this wing. With the help of a fellow club member, Bill Underkofler, we made a wing jig out (*Continued on page 64*)



Cowling detail is made clear by this close up. Field rack holds ship inverted for easier starting. K & B .40FR, Top Flite 10 x 8 speed prop.



It's hard to see bellcrank transferring throttle servo effort to proper direction. Neat and simple installation similar to Cobra in Feb. MAN.

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Continental 600

(*Continued from page* 36)

of foam. Just proceed as though you are cutting one wing panel, throw away the core and save the shells. Now glue the two halves to ¾" plywood which is set up with the proper dihedral and you have a very nifty jig guaranteed to produce a perfect wing every time. Oh yes, set up the dihedral so that the wing can be built upside down. This will permit installation of the landing gear blocks and all sheeting before the wing has to be removed from the jig. (Cobra wing built the same way. R/C Ed.)

Now get yourself some 3M Double Stick Tape or equivalent and lay out several strips as follows: One strip along each leading and trailing edge and about six strips laid chord-wise on each panel. Next, prepare the 1/16" top sheeting by gluing together several sheets as required for the proper size sheet. Do this by first truing up the edges and holding them together with masking tape. Now fold back each sheet and apply the glue. I use Hobbypoxy Formula II (what else for a Formula II racer?). Lay the sheeting on a flat surface until dry and then remove the tape and finish off the joints to minimize sanding after wing assembly. A sharp, single edge razor blade works very well here. Scrape the Hobbypoxy while holding the blade at a right angle to the wood and remove all of the glue from the surfaces of the sheeting, leaving the glue only between the sheets. This provides a fast technique and one which will not leave a bump or ridge as usually results from sanding the seams.

Cut the sheeting to the exact size and shape as the plans (a little oversize to allow for the curve) and mark the locations for all ribs and the spar. Now lay the sheet on the jig and press firmly onto the double sided tape. Next position the spars and the ribs and you're well on your way to completing the wing. Add the 1/16" plywood landing gear reinforcement pieces as shown, then the maple blocks and the landing gear blocks. Now is a good time to make the compartment for your favorite servo. The bottom sheeting is next and then the leading and trailing edges can be added. When this is dry, the entire wing can be removed from the jig and the pine T.E. and top tip sheeting can be added.

If you prefer foam wings, you will be happy to know that you can build a foam wing for the Continental 600 without any weight sacrifice. This was demonstrated by Bill Underkofler. After totaling his wooden wing in a mid-air collision at the Jamestown Contest, he quickly built a foam wing which weighed one ounce less, believe it or not. Several Continental 600's are being built with foam wings and I will supply a set of cores on order. Write me at 96 Pine Knoll Road, Endicott, New York, 13760.

FUSELAGE:

The fuselage construction is typical "deBolt" using 3/32 plywood forward sides which eliminates the need for any doublers. You will notice that the top of the fuselage sides are a straight line which makes it ideal to build on a flat building surface. After the fore and aft sides are

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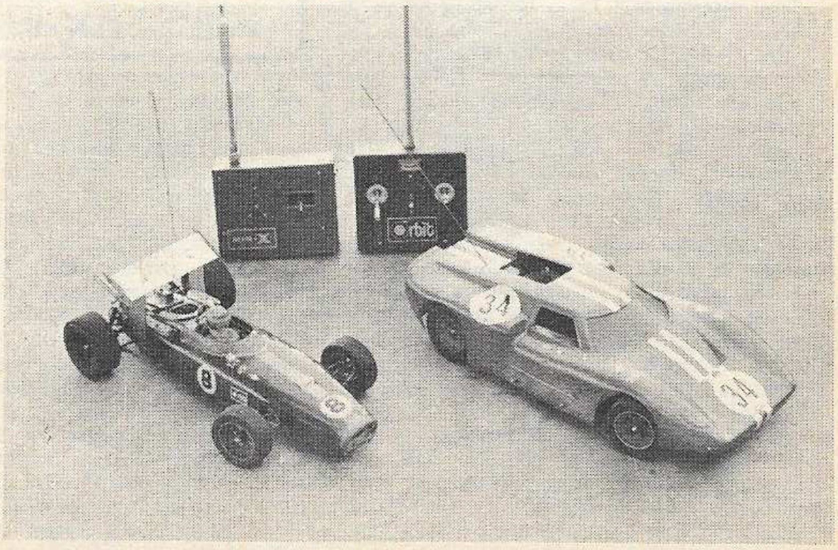

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spliced together, position them upright and place all of the bottom formers in position. The firewall can also be added at this time if you remember to let the nose end overhang your building surface. Be sure to install the gas tank before the firewall. I use RTV silicone rubber such as bathtub seal to glue the tank in place and it works very well since it can be smeared all around and bonds very well to the metal tank.

Now remove the assembly from the board or Magna Jig and add the top formers and 1/8" x 3/8" strips along the top of the sides. I used 3/32 sheeting on the top of my Continental, but planking will also do the job very nicely. If sheeting is used, I suggest you wet the outside and form it over the fuselage, holding it in place with masking tape until dry. THEN cut it to size and glue it in place.

This method of sheeting will produce a very even surface without any scallops between the formers that will probably result if the sheeting is glued in place before it is dry. The sheeting is put on in three sections as shown on the plans.

The one piece cowl is very simple and is cut from a 3 x 3½ x 4½ block of soft balsa. Cut the profile first by referring to the top and side views. Then lay out the "keyhole" (deBolt is an ex peeping Tom. R/C Ed) as shown on the cowl front view and use a band saw to cut it out. Bolt the engine in place using a deBolt universal mount and use it as a guide when gluing the cowl in place. A small cutout will have to be made inside the cowl to provide clearance for the tank outlet. Clearance for the needle valve and the exhaust cut-out can also be made at this time.

I like to form the tail fillets before attaching the fin and stab. To do this, just make spacers equal to the thickness of the fin and stab and spot glue them in place along with the fillet blocks. Now use your handy razor plane and shape the fillets to the contour of the fuselage. Remove the fillets when attaching the tail assembly and watch how nicely they fit back into place.

EQUIPMENT INSTALLATION:

You may be happy to know that the Continental 600 is built to accommodate the Orbit PS-2D servos and that the extra weight of the larger systems is not a handicap. Of course, the new mini-systems will do the job equally as well, but are not necessary in order to hold the minimum Formula II weight of 5 lbs. My racer weighs in at 5 lb. 1 oz., using an Orbit 4-8 and a 600 ma power pack.

To balance correctly, it is important to keep all RC gear as far forward as possible. The battery pack may be located over the tank if you need some tail lightener, but I have not found this to be necessary. I just stand the pack and receiver on end in front of the servos. This position is good for the receiver since the components will be pushed into the board if a crash occurs. Since the servos are mounted to a 1/4" plywood rail which extends the entire length of the fuselage, there is little chance that they will move forward in a crash and damage the receiver.

One important point here—Don't try to fly the Continental 600 with coupled aileron and rudder. Individual rudder control is a must to control the torque on takeoff. Coupled controls can also be very disasterous on tight pylon turns since a fast roll out may lead to a fast snap roll and a very fast crash.

FLYING:

As I said earlier, this bird handles easier than the Formula I's I have flown but there are a few things of which you should be aware. As with any racer, the control movement must be kept to a minimum. The throws listed on the plans are quite adequate for smooth racing. Pylon turns are made by using almost full up elevator. Some reserve elevator will still be available if you get yourself into a tight spot, as I occassionally do. Aileron deflection will result in a moderate roll rate which I find is beneficial to prevent rolling too far when you enter a turn.

It is also important to be sure that all surfaces are set at neutral for the first flight since the trim control is minimum and trimming may be a bit difficult when this bird gets moving.

Hold about 75% right rudder to control the torque on take off, easing off as the plane gains air speed. I like to hold some up elevator at this time also, so that the tail wheel provides some control until she gets rolling.

Landing may take a little practice if you're in the habit of landing hot. Unless you slow down before your final approach, it may be into the next country before the wheels touch. The trick is to throttle back at the beginning of the approach while a bit high, then do a series of 360 degree turns while killing off speed, by gradually raising the nose. When the speed is dissipated, break out of the circle into the landing path at a much more reasonable speed. You will find that the Continental 600 has beautiful landing characteristics if you kill off the speed and that it can be dragged in for a landing without any fear of dropping a wing or stalling out. (We'll verify this. The Cobra, with the same wing, can be slowed to a crawl for landings. R/C Ed.) This is a definite advantage to the flyer whose flying field is sod and who does not have a mile of hard surface to land on.

If you are interested in racing and winning, I do hope you will build the Continental 600. I'd be happy to hear from you if you have any questions or if you are interested in a set of foam wing cores. Please feel free to write me at my home address or care of MAN.