

RCM SPECIAL GOODYEAR SECTION



JOE MARTIN'S

DENIGHT SPECIAL



If you have already taken a close look at the plans for the Denight Special, you've probably noticed that they contain the phrase "—This model is designed to conform to the scale section rules of the National Miniature Pylon Racing Association." This issue will tell you quite a bit about the N.M.P.R.A. and its objectives — and about a racing event based on Goodyear type pylon racers that will probably be the greatest thing that has happened to R/C since the advent of multi equipment Imagine, if you will, four Goodyear type racers going down the straightway of a pylon course... a Bonzo, a Shoestring, and a Cosmic Wind... being lead, of course, by a Denight Special!

As an added bonus, these ships are excellent Sunday fliers, have enough room for almost any type of R/C gear, and are a radical departure from the tiresome run-of-the-mill multi design. In brief, they look and fly like their full-scale counterparts, and are designed for an event that captures all the thrills and excitement of the famous Goodyear event.

If I have convinced you to build

a Goodyear racer for the new event, I think you would find the Denight Special an excellent choice. The full size prototype was owned and flown by William "Bart" Denight, had a wingspan of 18'10" and a length of 17'11". It's racing number for the Goodyear-Continental Midget Race was #97, and its registration N9059N. The all yellow ship qualified at 189.7 m.p.h. and took second place in the second heat at the 1949 National Air Races at Cleveland.

Construction

Fuselage, Stabilizer, and Vertical Fin. After building about fifteen stunt ships, I found myself quite tired of the usual type of construction, so decided to change the method of building the fuselage to something more scale for this particular design. It has worked out quite well, came out lighter, and was an enjoyable departure from the more conventional construction. I think you will find it interesting to build.

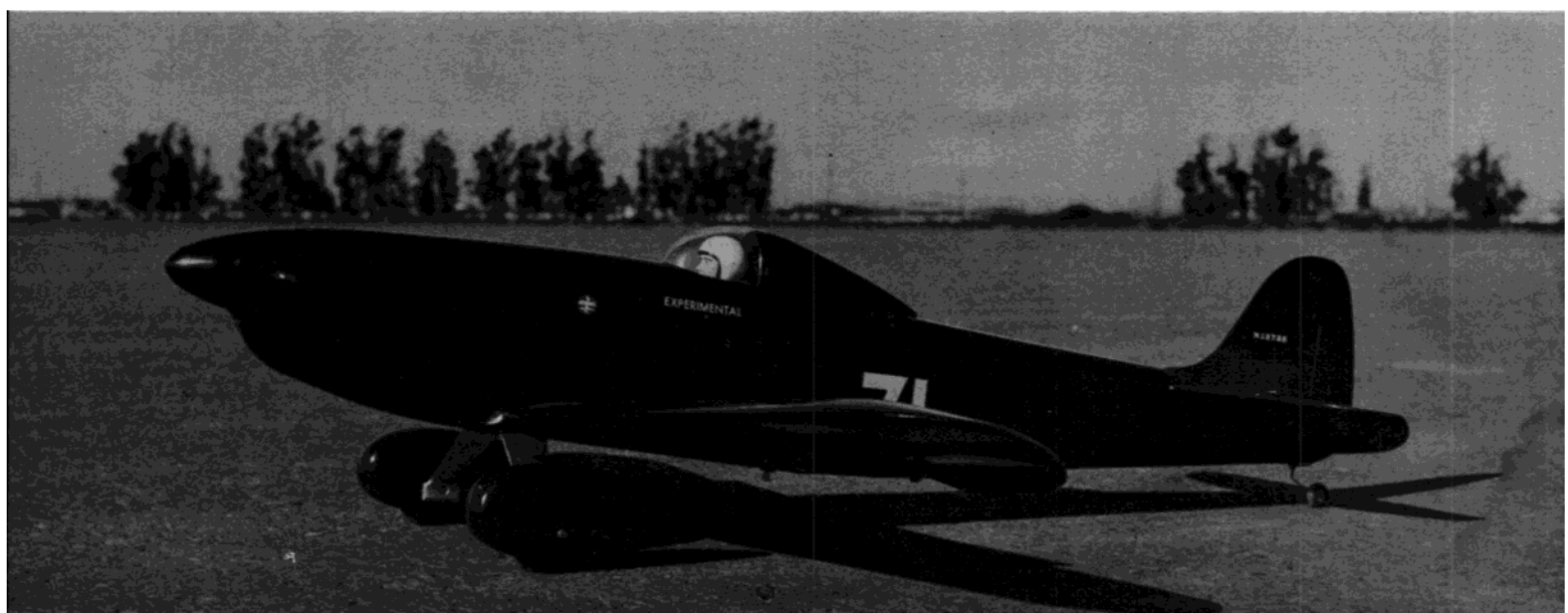
Study section AA and BB on the drawing, for these section views best explain the typical construction methods. First build the left hand side of

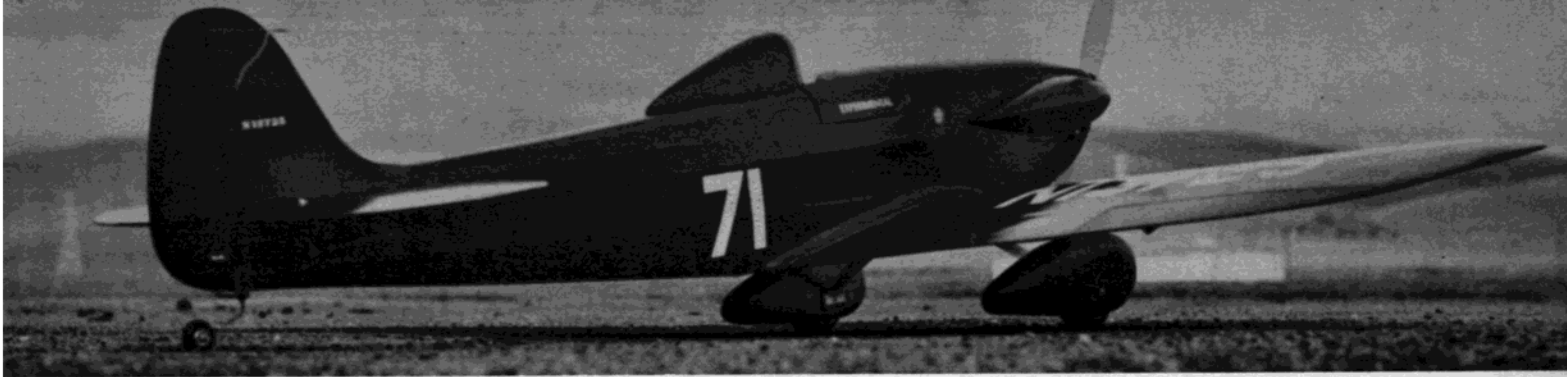
the fuselage on the plans using hard $\frac{1}{4}$ " square stringers. Now build the left side on the reverse side of the plans. Don't forget they are different. Next, add the $\frac{1}{8}$ " sheet sides to the forward areas of both sides. Add the $\frac{3}{16}$ " square stringers. For maximum appearance, it is imperative to keep the stringers sharp and free from dents.

The next step is to bend the fuselage sides to their approximate shape as shown in the top view. Add the $\frac{1}{16}$ " doublers. Sand the proper angle on the aft section of the fuselage sides and they are then ready to join together. This is accomplished by pinning the fuselage sides to the top view on the plans and joining them together with F2 and $\frac{3}{16}$ " square cross pieces as shown. Extra cross bracing will have to be used to hold the fuselage to its correct shape until the blocks are glued in place. These can later be removed.

The landing gear block can be added at this time — this is simply a 1" block with plywood glued on both sides. The wing is notched to receive this block, so that when the

Photo by Dick Tichenor





landing gear is in place, it holds the forward part of the wing in position.

I think by now you will have realized how easy this type of construction is, and it shouldn't have taken more than four hours to get this far with only a couple of dollars worth of wood. The rest of the fuselage is fairly simple to build and the drawings should be self-explanatory. The engine may be mounted either inverted or upright with any good radial mount. I, personally, prefer the inverted method simply for appearance and ease of construction. The portion of the fuselage forward of F1 can be built to suit the engine and mounting method used.

The stabilizer is constructed from $\frac{1}{4}$ " sheet, silked, elevators attached, and then glued in place on the fuselage. The vertical stabilizer may also be made from sheet stock, but I doubt if it will look as good as one that is built up.

The fuselage should now be covered — this can be accomplished with one piece of silk wrapped completely around the fuselage with the seam being joined together on the $\frac{3}{16}$ " square stringer on the bottom of the fuselage. Don't forget to use Scotch tape as shown to keep the silk from adhering to surfaces other than those intended.

Finally, the head rest and cheek blocks may be carved to shape, sanded, and glued in place.

Wing. The wing for the Denight Special utilizes a flat bottom section except for a $\frac{1}{8}$ " curve from the main spar to the point where the leading edge connects. Therefore, the easiest way to build this wing is to glue together three 4" wide sheets, cutting it to the overall wing outline. Lay out the rib and spar locations

on this outline, then build the wing on a completely flat surface. Put a $\frac{1}{8}$ " shim under the leading edge of the sheeting in order to allow for the airfoil shape.

After the ribs and spars are glued in place, install the bellcrank as shown. Ailerons can be carved out of a block and attached with sheet mylar strip hinges.

The leading edge is glued in place after the wing is completely sheeted. The wing is then joined together and notched out for the landing gear block. Take a little extra care at this point and make a good fit without any slop. Cover and finish the wing before fitting it to the fuselage so you can be assured of a good fit when the model is completed. When fitting the wing to the fuselage, a good tip to remember is to use a strip of sandpaper about $1\frac{1}{2}$ " wide, dragging it between the wing and the fuselage to remove any high spots.

To add the wing fillets to the fuselage, take a couple of scrap pieces of soft 20 gauge aluminum about 13" x

2" in size, wrapping the excess over the leading edge where the fuselage will fit on. Use masking tape to hold it in place while the fuselage is put on and outlined, allowing for a leather fillet. Cut on these scribe lines and fillet, then scribe the outline on the epoxy to the fuselage while holding it in place with the wing. Now add the leather fillet. This works out quite well and is really worth the effort. You get a perfect fit, and the assembly does not warp from applications of dope. It is also completely fuel proof.

That's about all there is to building the Denight Special. I don't feel that it is necessary to go into RC installation for there is ample room for almost any type of gear without special installation tricks.

The Denight Special has shown no undesirable flight characteristics, and has been flown on reeds as well as proportional. We think you'll like this model, and even more, the new Good-year event for RC.

See you at the races.

Right: The author with his Denight Special, shown with Jerry Nelson and the Bonzo.

Photo by Dick Tichenor

