

# GEE BEE MODEL D SPORTSTER

Here's one of the prettiest airplanes of the Golden Era of racing in scale R/C form. It flies as good as it looks  
**Henry Haffke**

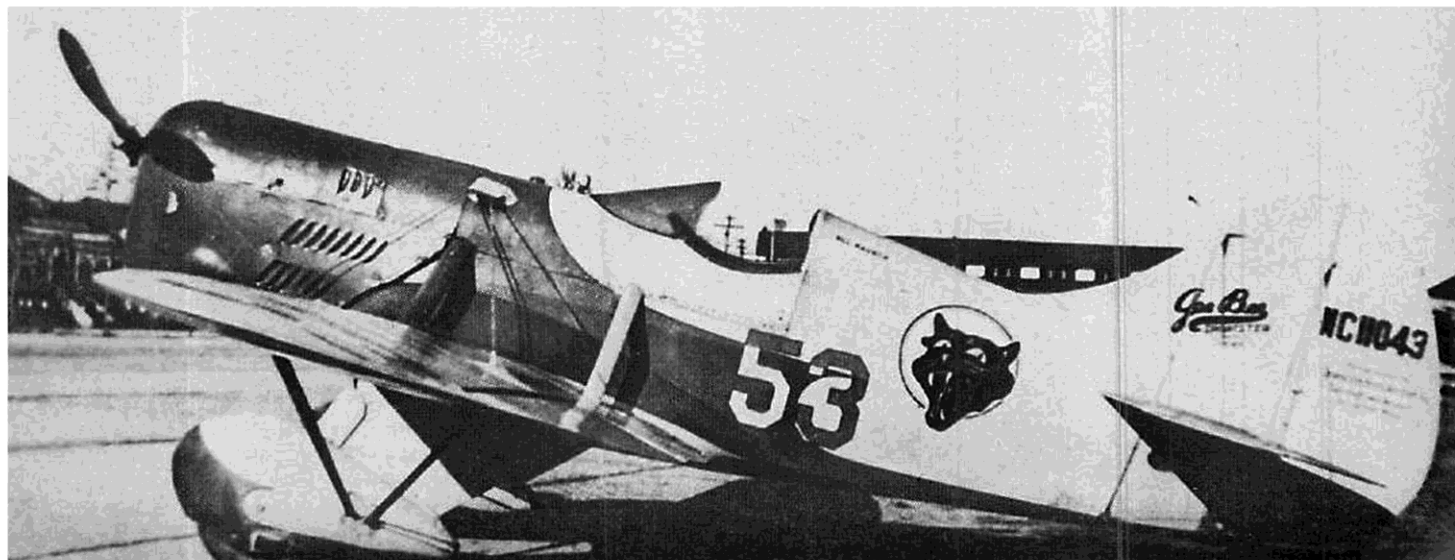
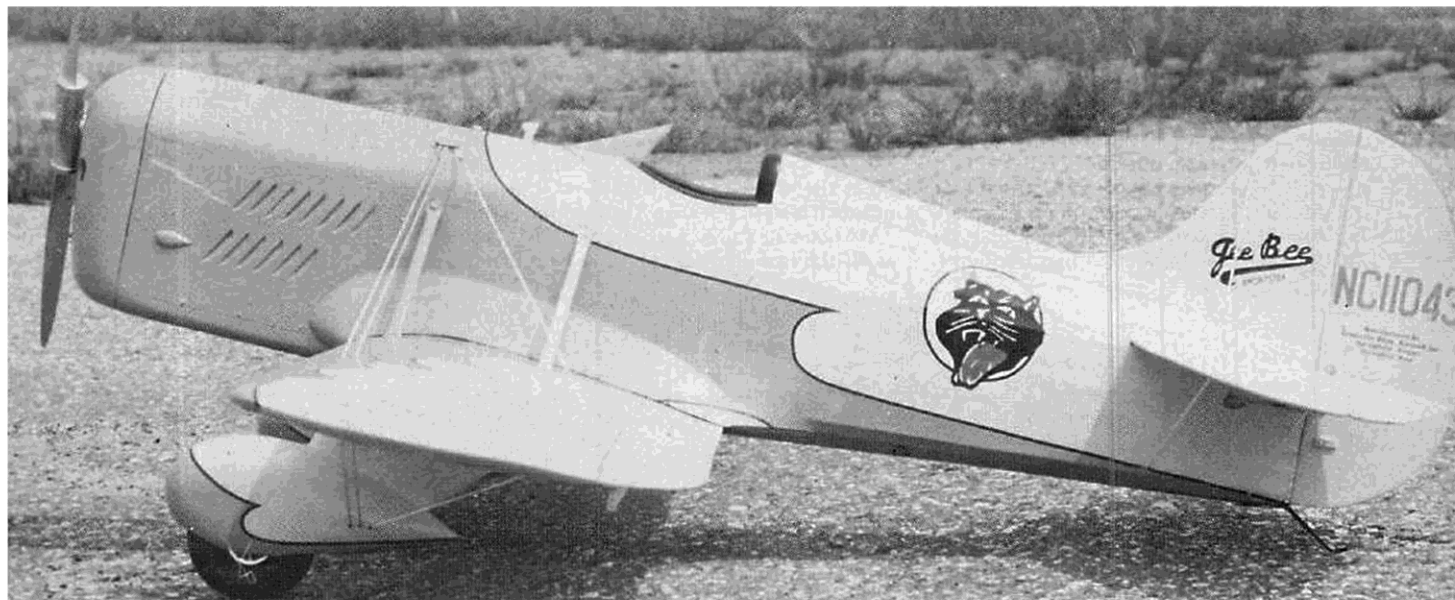
**W**e all have certain types of models that inspire us to spend many hours in our workshops. My thing is models of aircraft from the Golden Era. I am particularly interested in racing aircraft because of their very colorful and striking color schemes and the ships built by the Granville Brothers (Gee Bee) Aircraft Company in the early thirties have always had a special appeal to me.

These aircraft were built in what had previously been a dance hall on one edge of

the Springfield Airport in Springfield, Massachusetts. I was born in Springfield and lived in nearby Chicopee Falls, less than a mile from the site of the Gee Bee Factory. A common evening's entertainment for my family, in those hard times, consisted of my dad loading by mother and me, along with my three younger brothers, into the old Ford and taking a trip (just a few blocks) to the Springfield Airport to watch the activity. Even though I was young, I can remember quite vividly those evening trips to

watch the airplanes fly. I undoubtedly watched many of the Gee Bees during those evenings. At the time, I did not realize how involved I would become with these airplanes which were to become among the most famous in the history of aviation. I have wanted to do several of the Gee Bee subjects for several years and have been restricted because of lack of suitable information on the particular models that I wanted to build. The later Super Speedster racing craft built by the Granville Brothers

PHOTOGRAPHY: JAY DUNCAN



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could be well documented as many pictures and drawings can be found. However, it was the earlier Sportsters that I wanted to model and that presented much more of a problem.

I built a Model Y Sportster and, after flying it, tried to find information and photos of it usable for documentation for judging in scale competitions. I also drew up plans for the earlier Model D Sportster but put off building it until more photos could be found. I spent the better part of two years searching for material and for the most part, got nowhere. The Smithsonian did have one picture of each of the two Model Y's which were built and the Connecticut Aeronautical Historical Society sent me two good pictures of the first Model Y.

I am a member of the E.A.A. and when my January issue of the E.A.A.'s Sport Aviation arrived, it contained a great article on the Gee Bee racers, written by Robert H. Granville, one of the five Granville Brothers who had designed and built these craft in the early thirties. I immediately wrote to him telling him of my problems in trying to find suitable pictures to document my model. I enclosed a few pictures of the model and also asked numerous questions about the real Model Y. A week later, I received an answer and this was the start of a continuous series of letters between Mr. Granville and myself in which I learned many new things about the Gee Bees. With the new material I had, I went to work on the Model D which I had drawn the plans for some time ago. I decided to finish the Model D as the aircraft that was frequently

flown by Zantford Granville.

Bob informed me that it was blue and cream, though I had seen it referred to as blue and white, and also green and cream in two different publications. I sent Bob color charts to get him to give me the exact colors and he informed me that Randolph Bahama Blue and Tuscon Cream were the correct colors for NC 11043. The model started to take shape as I learned of the Mid Hudson R/C Club's plans to conduct a big contest at the Rhinebeck Aerodrome for models of the Golden Era.

Now the project took on new meaning and in mentioning this affair to Bob Granville in one of my letters, he replied that he had always wanted to visit Rhinebeck and would like to see my Gee Bee models fly.

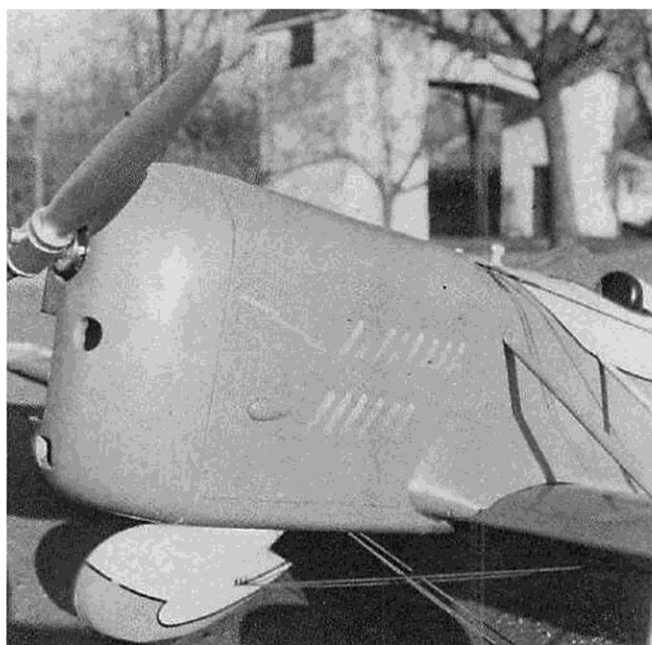
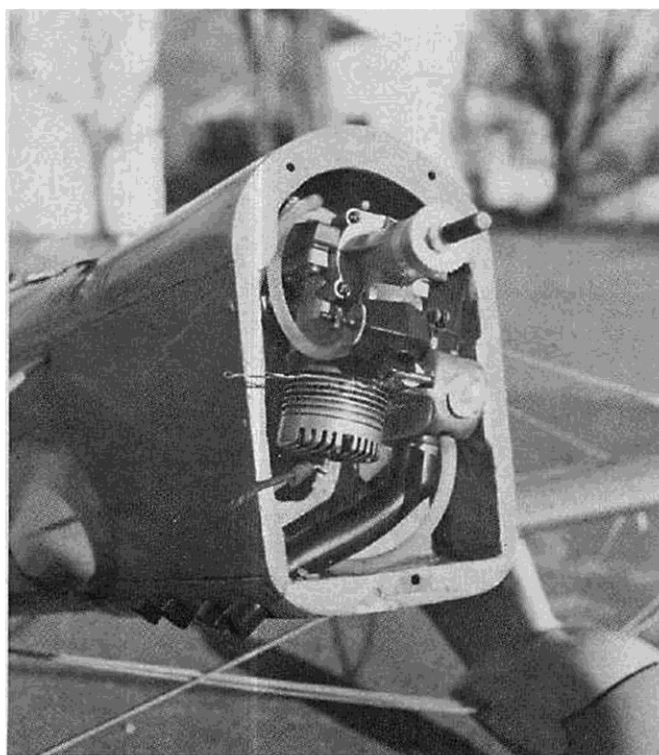
My club, the South Jersey R/C Society decided it would be a great thing for model aviation to have one of the greats of that period be in attendance at the contest for models of that time, and voted to authorize me to have Mr. Granville there as our club's guest if he was able to make it. Two weeks before the meet, Bob informed me that he was planning to make the trip to Rhinebeck with one of his sons and both their wives. I had the model finished about this time but was having problems getting to test fly it. First, it was bad weather and then my radio acted up. I sent the radio out for repairs and got it back eight days before the meet. I had wanted to fly it at the Valley Forge Scale Meet the week before Rhinebeck but did not get it tested. I flew my Howard Ike in the AMA event at Valley Forge on Saturday and, as the flying ended early, I drove back to our

club field about an hour and a half away and gave the Model D a try. Everything was working this time and the weather was ideal. The first flight showed I had insufficient up elevator movement to do much, so after feeling out turning the model, I throttled back and made a beautiful landing. I made the necessary adjustment on the elevator clevis and topped off the tank and took off again. The second flight was fantastic. I did everything I could think of and the model responded in a way that is hard to believe. Loops, rolls in both directions and spins in both directions, everything worked to perfection.

The next morning, I returned for the second day of the Valley Forge Meet and entered the Model D in the Sport Scale event. The weather was very windy and my first flight earned a score of 75 which put me close to the leader.

On my second flight, I goofed a couple of maneuvers slightly and my score dropped to a 73, but my final flight with this new aircraft went very smoothly and earned a score of 80.5 which put me in first place in the model's first contest. I was too busy the week before Rhinebeck to do any practice flying except on Thursday evening, when I did get out long enough to try two flights for the Barnstorming event.

I arrived at Rhinebeck early Saturday morning and got in one flight before Bob Granville arrived with his family. He was very impressed with the Model D Sportster and remarked how real it looked. I also had five other Sportsters on display and he thought they were all great. In addition to



The engine compartment (left) shows the engine installed on a Kraft mount with a Tatone manifold. Note muffer pressure line and exhaust extension exits through the scale exhaust stack. Nose closed (above).

my Model D, I had my Model Y that Maude Tait flew; Phil Barbaro of Clayton, New Jersey had his Model X flown by Lowell Bayles, and built from my plans; Dink Shahan of Deepwater, New Jersey had a model of George Rand's Model C Sportster, also built from my drawings; and another friend, Burton Williams of Westfield, Massachusetts had his model of Florence Klingensmith's Model Y Sportster and also a Gee Bee Model A Biplane which he had designed and built several years ago; in my Gee Bee display, I had a big panel with framed pictures of all of the Gee Bee Sportsters and three views of each model headed by a picture of the five Granville Brothers and the Gee Bee Factory taken in 1930. It made a very impressive display and many cameramen took pictures of Bob Granville with the Gee Bee models.

Bob had never seen an R/C model fly before and was very impressed with them. He called all of the rest of my scale flights during the two day meet and enjoyed it very much. Everyone was impressed with the way the Model D flew and after two days of competition in three different events, the Model D proved to be the most consistent performer, as it fared no poorer than 5th in any of the three events.

When the prizes were awarded at the end of the contest, the Model D had won at least its share of the awards. Bob beamed with each presentation and I guess he relived for a few moments the times when the real aircraft was a winner in its flying activities.

The Gee Bee Company started out building a biplane trainer which was an excel-

lent flying machine. Then they built a special aircraft designed around the American Cirrus engine to compete in the All American Derby of 1930. This was a 5,541 mile race sponsored by the Cirrus Company to demonstrate the durability of their engine. Eighteen aircraft competed in this race that started in Detroit, the motor capital of the world, penetrated the deep South, went as far west as Los Angeles, and then returned to Detroit. The Gee Bee Model X, as this first low wing sport plane was called, flown by Lowell Bayles, finished second in the race and thus began a situation which was to make this company, formed by the five Granville Brothers (Gee Bee was the spelled out abbreviation for Granville Brothers) one of the most well known concerns in aviation history.

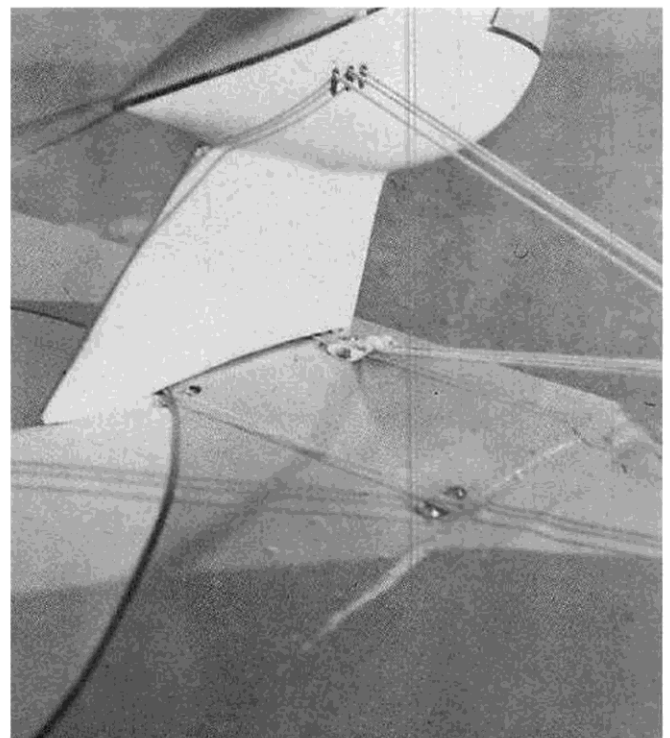
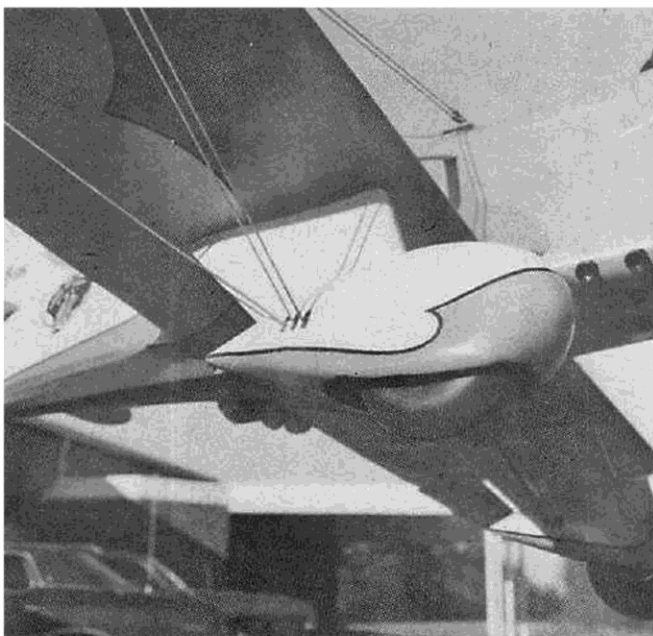
Following the success of the Model X Sportster in the Cirrus Derby, the company received several requests from sportsman pilots for one of the little single seat sportsters. As the sportsters were built, there were slight differences in them as some were built with the Cirrus engine and some with the Menasco power plant. These in-line engine versions were designated Model X, C, and D Sportsters. Some were also built with the Warner radial engine and were known as the Model E Sportsters. The other noticeable difference in the Sportsters was in the landing gear. The original Model X had a non-shock-absorbing landing gear and depended on the balloon tires to absorb landing jolts. A few of the later sportsters had a different gear modification and the later models had

the fully faired gear as used on the later Ryan ST aircraft. Any one of these subjects can be built from my plans and included in this article is a chart of all of the sportsters which encompass many color combinations, so there is a wide variety of choices. Also, I show the three types of gear configurations so that any of the Model X, C, D, or E Sportsters can be built from the plans. The front end modification for the radial engine Model E is also detailed. All of the Sportsters were excellent aerobatic craft and were used extensively for air show work. Russell Boardman won the National Aerobatic Championship in one of the Model Y Sportsters. Few realize that the Gee Bee aircraft flew this well.

Pick out your subject and let's get started with the construction.

### Fuselage

The basic sides are cut out of 1/8 balsa and the firewall (F-1) and F-2 and F-3 are cemented in place. Next, the 1/4 inch doubler is glued to the sides, back to F-4. When this has dried, the sides may be joined at the rear and F-4 and F-5 can be added. The top of the fuselage back to F-4 may now be planked with 3/32 balsa. Next, the tail surfaces should be prepared of 3/16 balsa. The fin and stab are added to the basic fuselage structure and then the 1/8 x 1/4 stringers are added. Finally, the 1/2 balsa cowl bottom is added. The nose front parts N-1, N-2, and two N-3's are glued together and are tack-glued to the fuselage front. When dry, the front may be carved and sanded to shape. Add the 1/8 ply mount plates for the com-



These two photos (above and right) show the landing gear details and the wheel pants. Note the inner side of the landing gear fairings and the method of attaching the flying wires with an aluminum bracket.

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pression struts, the wing mount block, the ply tail skid mount and the fuselage is ready for final sanding and finishing.

## Wing

The wing needs little explanation as the structure is very standard. All ribs are cut out of proper size material and are slid onto the two spars. The rear spar will have to be tapered evenly, top and bottom, from the last outboard rib C to the tip so that it is  $\frac{3}{16}$ ths at the tip. When the ribs have been positioned on the spars, the leading and trailing edges are added.  $\frac{3}{16}$ " x  $\frac{3}{4}$ " spacers are added between each rib at the leading edge and  $\frac{1}{8}$ " x  $\frac{1}{4}$ " spacers are used at the trailing edge. These makes a very sturdy structure. The tip parts are cut from  $\frac{1}{8}$ " stock and glued in place. The maple landing gear mount blocks are epoxied in place and finally the  $\frac{1}{8}$ " ply plates for the strut base and brace wires are added. The strut base plates are needed on the top only but the brace wire plates are needed both top and bottom. Ailerons are carved from  $\frac{3}{4}$ " x  $2\frac{1}{4}$ " balsa, or may be built up if desired. Cut out two dihedral braces of  $\frac{1}{8}$ " ply and join the wing halves with  $4\frac{1}{2}$  inches of dihedral at one tip. The  $\frac{1}{8}$  ply mount for the aileron bellcrank is added and the bellcrank is mounted and the linkage for the aileron can be completed. Cut away part of the center rib A-2 for aileron servo installation and sheet the wing center section.

## Landing gear

Wire parts are formed from  $\frac{1}{8}$ " wire and the front and rear wires are bound and soldered. The fairings are built from the various parts shown on the plans. Each fairing is built in two halves and the parts should be

weighted until thoroughly dry. Drill through the two halves of each fairing at the front and rear and install a  $\frac{3}{32}$ " dowel for alignment. Glue dowel to one half only. Now tack-glue the two halves together and carve and sand to shape. When finished, the halves are split apart and are sandwiched around the landing gear wires and are held in place with sheet metal screws. If they become loose, a piece of fuel tubing may be split and slipped over the wires for a more snug fit. For anyone wishing to avoid building the landing gear fairings, they may obtain a set of molded fairings from Aero Classics. The cost of these fairings is \$5.95 plus 75¢ postage.

If you would like to build the model as the Model E with the radial engine, the cowl is built as follows: Wrap a  $2\frac{1}{2}$ -inch wide strip of  $\frac{1}{16}$ " ply around a 3 lb. coffee can. Wrap a second layer over the first, staggering the joints. Then build up the proper thickness by adding layers of balsa to the plywood. When it is completely dry, it may be removed from the can and is carved and sanded to shape. The front of the fuselage is extended forward of firewall with  $\frac{1}{2}$ -inch balsa layers around the motor mount and the front end is carved to an oval shape, as round as possible at the very front. I did Maude Tait's Gee Bee Model Y with this process and it can be seen in the background in some of the photos. Radio installation should be no trouble as there is plenty of room for even the largest of servos. Engine is installed with about 3° of right thrust. Tilt the engine as much as possible to one side and you will have enough room for a Tatone exhaust manifold inside the cowl. A section of the exhaust extension tubing will exit the exhaust out through the first scale exhaust

stack. Finishing the Gee Bee is where the real character of the model is brought out. The Gee Bees were noted for their high gloss finish and the addition of the struts and brace wires really finishes the job.

Sand the entire structure with fine sandpaper. Fill all dings with Hobby Pox's new Polyester Filler Compound and sand smooth. I gave the sheeted areas two coats of Randolph clear sanding between coats and then covered the sheeted areas with medium silkspan. This was then given two more coats of clear and then three coats of filler (dope and talc). The fabric covered areas were given a coat of Coverite's Balsarite. Then Super Coverite was applied to fabric-covered areas. Two coats of clear were brushed on the Coverite and then the entire aircraft received three sprayed coats of Randolph Tuscon Cream. The trim areas were masked off and two coats of Randolph Bahama Blue were sprayed. These colors were picked out by Robert Granville as being the correct shades for NC 11043. A  $\frac{3}{32}$ " black pinstripe is added between the colors. The panther on the sides of the aircraft was hand painted. A pattern was made and traced on each side and then painted.

## Details

The compression struts are made of flattened aluminum tubing or streamline tubing can be used. Flatten each end enough to bend to fit flat on the wing and fuselage and drill a hole in the flattened end to take a small sheet metal screw which fastens the struts. They are easily removed to take the wing off. Flying wires are added by threading elastic thread through holes drilled in the ply plates built into the wing. The ends are fastened by small hooks to an aluminum



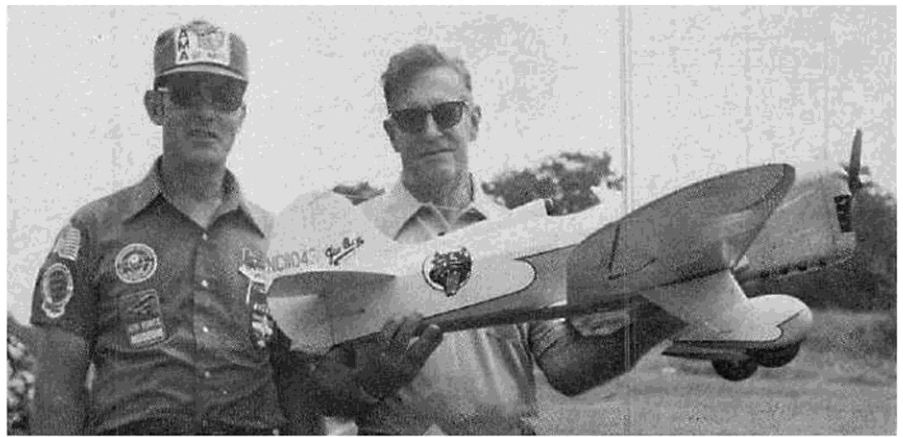
bracket protruding from the fuselage above the front compression strut. This can be a continuous length of aluminum about 1/2-inch wide, long enough to extend about 3/8" outside the fuselage. Three holes are drilled to take the hooks. Similar brackets can be screwed to the landing gear blocks at the base of the landing gear fairings to receive the other ends of the flying wires. Brace wires at the tail surfaces are simply threaded through the surfaces and joined to themselves just beneath the stabilizer. Other small details such as gas caps (one ahead of gas gauge on top of fuselage and one between compression struts on each wing stub) gas gauge and cockpit coaming complete the model. A cockpit may also be included if you so desire. Don't forget the pitot tube extending from the wing leading edge.

Through much research and study of old pictures and correspondence with Bob Granville, the included chart was prepared. Nine of the single seat sportsters were built and the chart gives the order in which they were built; model, powerplant, colors, owners and pilots, and a few notes of interest pertaining to particular models.

Anyone wishing to use his Gee Bee for scale contests can contact me for documentation material. I have negatives and can supply prints from original pictures loaned to me by Bob Granville.

**Reference material**

- The Gee Bee Racers* - Profile Publication #51 - Pete Bowers
- Model Aircraft* (August, 1957)
- American Modeler* (July, 1958)
- They Call Me Mr. Airshow* - Bill Sweet
- Robert H. Granville



Henry Haffke, the author, is shown (above) at left with Bob Granville, the last surviving brother of the team that built these beautiful racers. Bob is holding the Model D Sportster at the 1977 Golden Age contest at Rhinebeck, N.Y. The cockpit detail is visible in this shot (below) showing the burlled aluminum panel and the fuel wobble pump. The Triumph gas gauge is in front of the windshield and the gas cap is forward of the gauge. Panel lines, cockpit coaming and some rivet detail is also visible in the shot.

