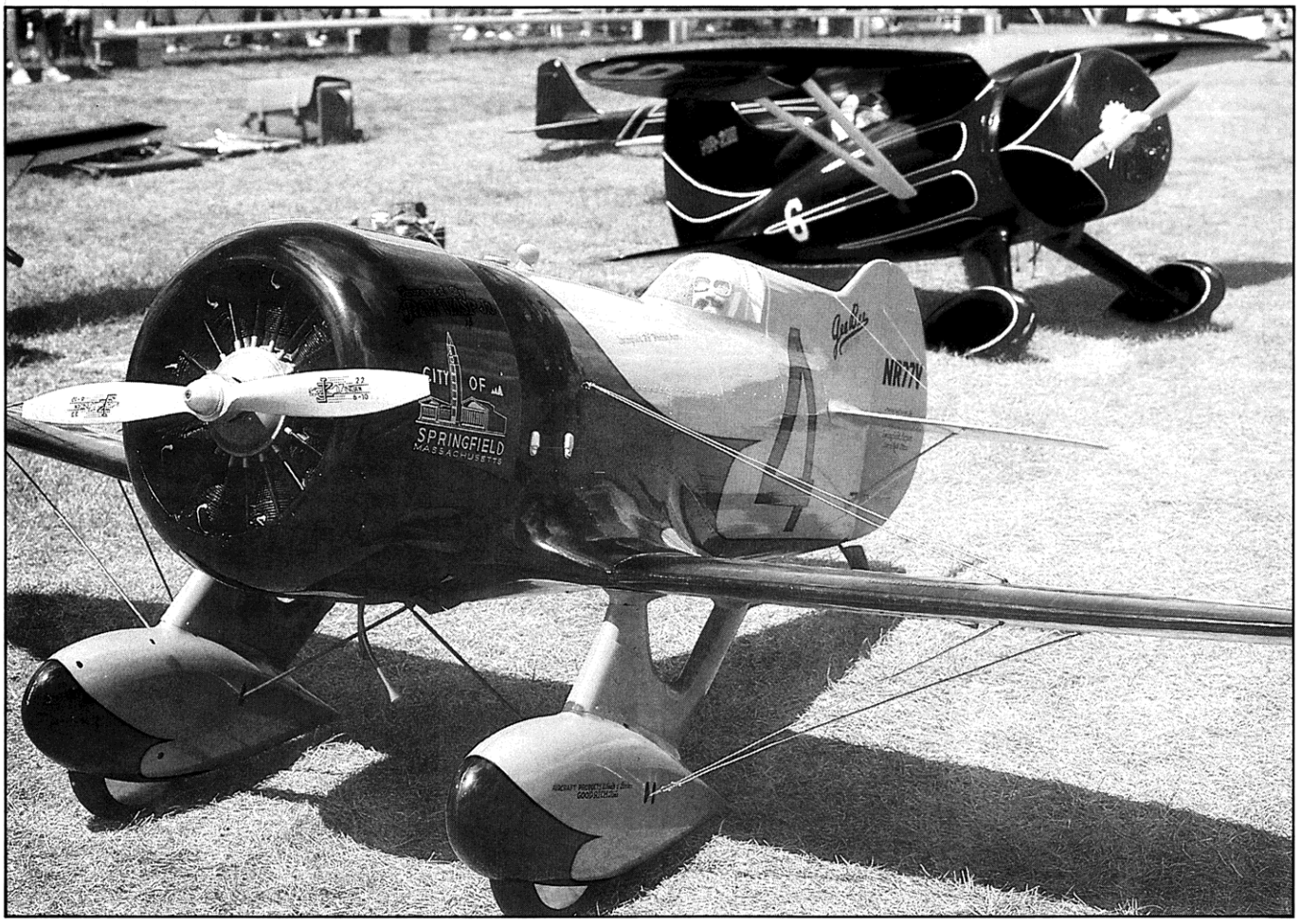
GEE BEE MODEL Z

NOT AS FAMOUS AS THE GRANVILLES' OTHER MODELS, THE Z DID WIN THE 1931 THOMPSON TROPHY RACE AT A SPEED OF 236 MPH

BY NORM GOYER
MODEL AND PLANS BY DON NEILL

The most widely known Gee Bee Z model is that built by veteran modeler Don Neill of Lincoln, Nebraska.



I first met Don Neill at Byron's Aviation EXPO about three or four years ago. He was standing behind a maroon "Hall Racer" and a Gee Bee "Z." Wow, I thought, here's a modeler who isn't afraid to tackle not only one racing plane with a terrible reputation, but he even built *two* of them! The Hall Racer and the Gee Bee Z were both 1/3 scale aircraft, and as I examined them more closely, I could see that they were both superbly built and finished.

When they called Don's name for the pin and he returned with his transmitter, I realized that he was going to employ the "best man for the job" technique in flying his aircraft. Don handed the sticks over to Terry Majewski who has the reputation of being one of the best all-around R/C pilots living, and he's won a whole roomful of awards to prove it. Terry is smooth, reserved, unflappable, quiet, reserved, and best of all, extremely competent. Premier pilots Jimmy Doolittle and Lowell Bayles accomplished the same purpose for the builders of the aircraft they flew — the Granvilles.

Whenever the Hall or the Gee Bee were taxied out to the flight line (they are almost too heavy and too large to carry) the crowd suddenly hushed and watched these two aeronautical creations from the past, expecting the unusual. Both aircraft tracked perfectly down the runway, one drifted onto the grass the slightest bit, but kept right on going (after all, these aircraft weren't designed to take off from a hard surface). Once in the air, they flew flawlessly, and the audience was spellbound, showing some of the reasons why those early races, like the Thompson Trophy Race and long-legged Bendix Race, were so popular with the spectators and the press nearly sixty years ago. Terry Majewski made many low-level high-speed runs down the runway, while every available camera owner snapped away excitedly. When Don called out to the flight line crew his intention to land, another hush fell over the huge crowd and they watched, holding their breath. With amazing expertise, Terry greased in those beautiful vintage replica aircraft on the grass, in the behind-the-wheels landings recommended by experts for the full-scale aircraft. And Terry continued to repeat this expert performance all weekend long.

Between the rounds of flying, I was able to talk with Don for a while, and he agreed to let *Scale R/C Modeler* run plans of his beautiful aircraft soon. Therefore, in the December issue of 1988, we detailed his beautiful Hall Racer and after he had worked out a few details, he shipped us the plans for his Gee Bee Model Z which you can find in this issue.

You can also look forward to seeing more of Don's great 1/3 scale plans of aircraft of the 1920s and 1930s.

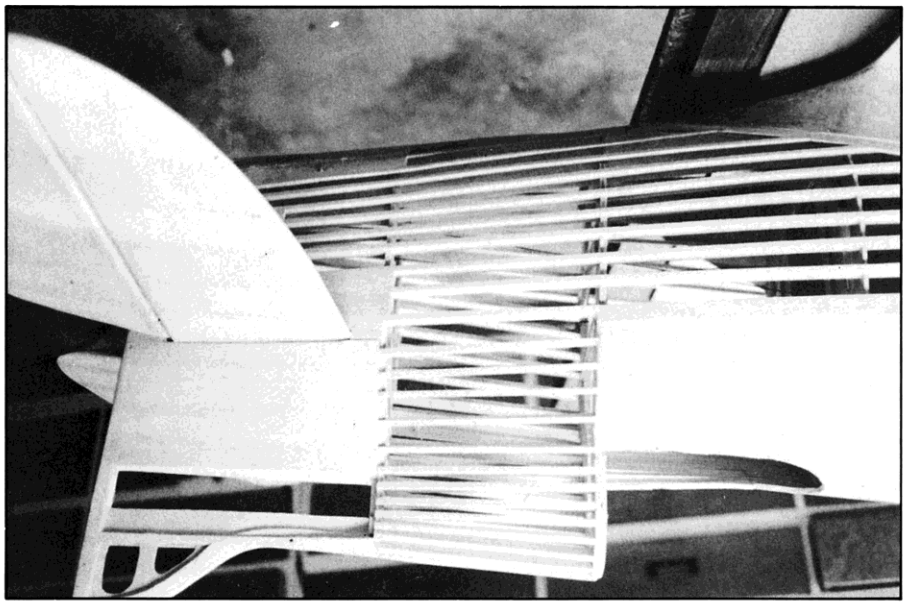
Photographs of the Model Z in progress were taken during the construction phase of the aircraft pictured here. All other photos were taken at Byron's Aviation EXPO, located within driving distance from Don's home in Nebraska.

Plans available from Don Neill at this time are: the Gee Bee, the Hall Racer, the Wedell-Williams and his new Folkerts. I've seen all of these aircraft fly many times, and I can wholeheartedly recommend any and all of them to any competent pilot/modeler who enjoys buiding and flying complex aircraft.

To order, contact: Don Neill, 1120 South 40th Street, Lincoln, Nebraska 68510, (702) 488-7509.

Most modelers are well acquainted with the story of the Granville Brothers and their racing aircraft. I knew them personally, and actually saw them fly their aircraft. I was only a boy at the time, but this experience has stayed with me ever since.

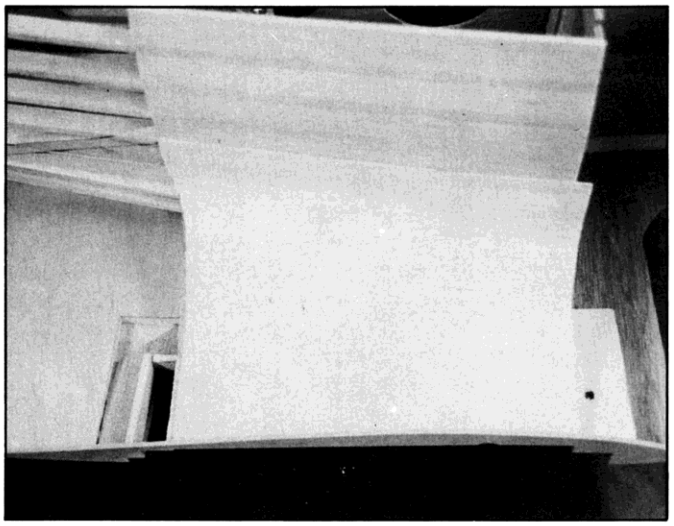
If anyone mentions Gee Bees, everybody immediately thinks of the red and

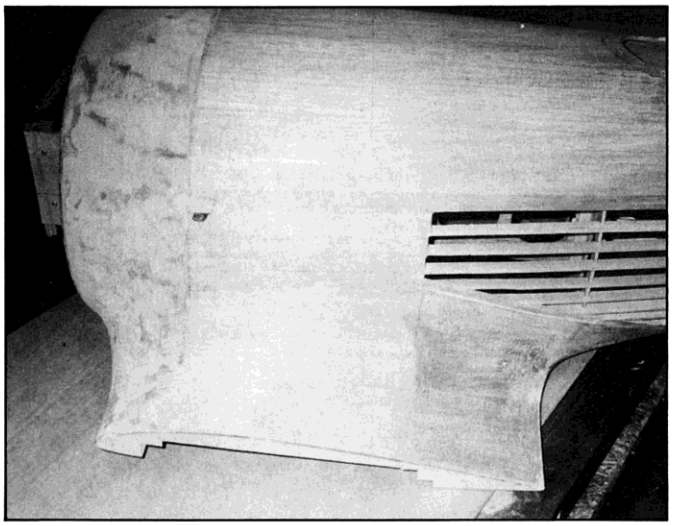


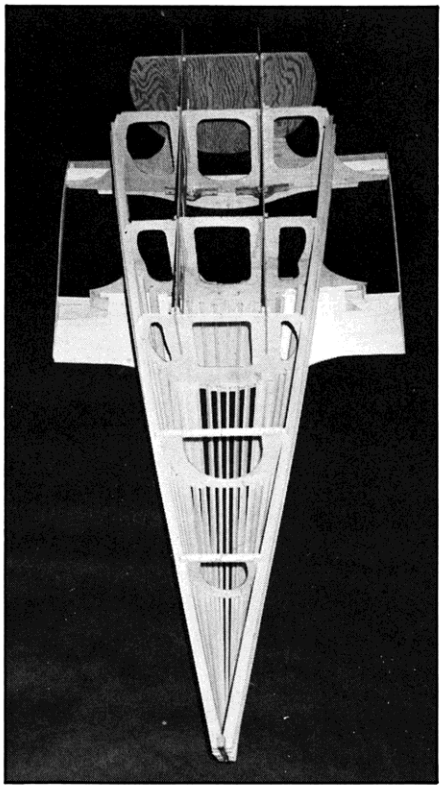
white Number 7 and Number 11 planes. You know, the one with which Jimmy Doolittle won the Thompson Trophy Race in 1932. But that's not the one we're talking about here.

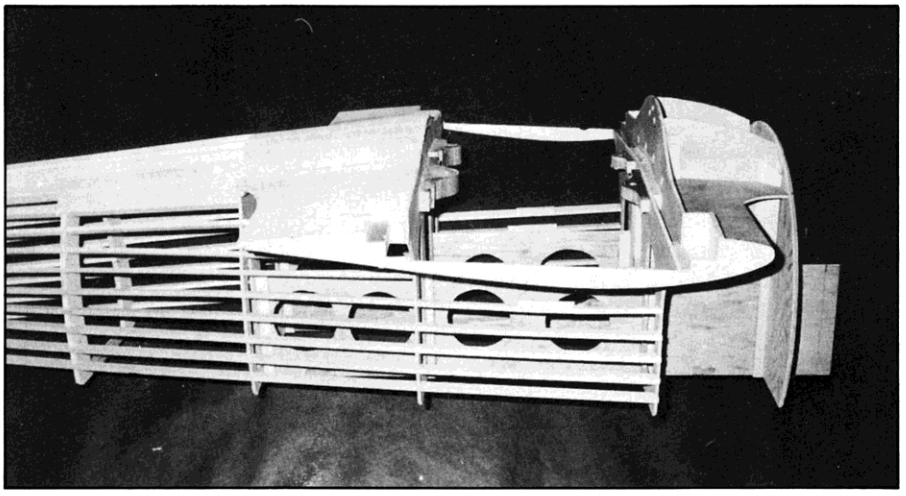
The "Z" was named after Zantford Granville, a self-taught, naturally inventive mechanic who, at nineteen, already owned an automobile repair shop in Arlington, Massachusetts. Around the mid-twenties, "Granny" (he was never called anything else), became interested in aviation, and he traded work for flying lessons, becoming a licensed pilot at the East Boston Airport in 1925.

One day, Granny realized that he really loved aircraft, and wanted to be around them as much as he could, so he coaxed one of his other brothers to run his car business while he fixed up his flatbed









The fuselage is constructed via the standard former, stringer, and plywood spline method. The plywood spline is a box structure which runs from the engine mount through the fuselage and terminates just in back of the wing. This is the member which absorbs all the flight and ground loads of the aircraft and engine. There are four large (lightening) holes cut to eliminate any unwanted weight. These plywood splines are also the main anchor point for the formers which make up the engine area and the wing-attach area. The center section of the wing is built onto this box to absorb the loads from the gear. After all the stringers are applied, those areas of the model (which were covered with metal on the full-size aircraft) are planked with balsa. By building the center section onto the fuselage, great strength is attained. The vertical stabilizer is also built into the fuselage. Blocks of wood are attached to the front of the aircraft, then shaped to match the final contours. Top planking goes back to the rear of the cockpit area.

truck with all the tools he needed for aircraft repair, and went into business at the East Boston Airport.

The first Gee Bee was a low-powered lightweight biplane, and Granny test-flew the aircraft in 1929. Because this was the first aircraft built in Boston, the press gave the Granville brothers a great deal of publicity.

Deciding to go on with the fabrication of airplanes, the Granvilles searched for suitable hangars, but because of building restrictions at the East Boston Airport, their search was fruitless. As a result of the publicity received in Boston, however, the Tait Brothers, four businessmen from Springfield, a city about 90 miles west of Boston, came up with the financing to move the Granvilles to a site at a large airport in *their* town. The new venture was called Granville Brothers, Inc., Zantford was named president, and they moved into a huge vacant dance pavillion which was large enough to function as an aircraft factory.

With his new capitol, Granny purchased wood and metal working equipment and promptly turned out eight of the Gee Bee biplanes. They upgraded the engine to a Kinner K-5 of 118 hp. The Granvilles offered their biplane Model A with wheels, skis and floats.

Soon, however, "The Great Depression" was in full swing and airplanes were one of the first items people stopped buying. Most aircraft companies were hanging on by a thread, and the only money available was in the pockets of wealthy sportsmen who dabbled in wine, women, song, racing cars, horses, yachts and, Granny hoped, in the new aircraft he had

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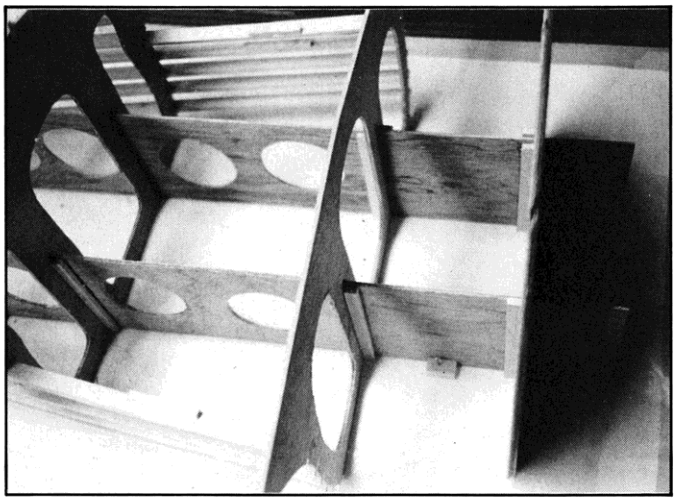

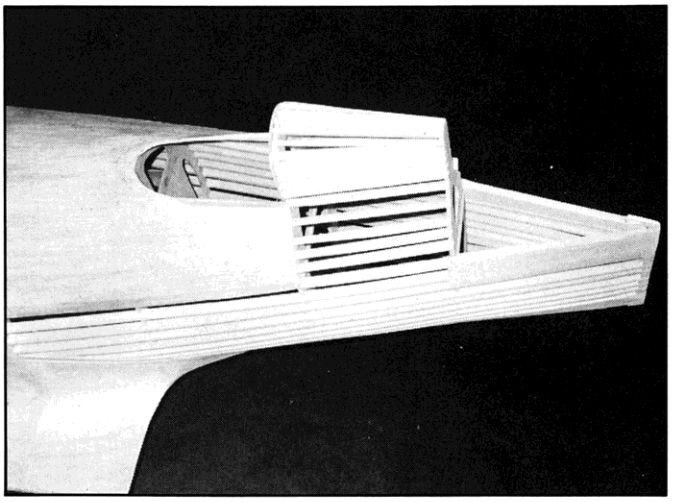

GEE BEE MODEL Z

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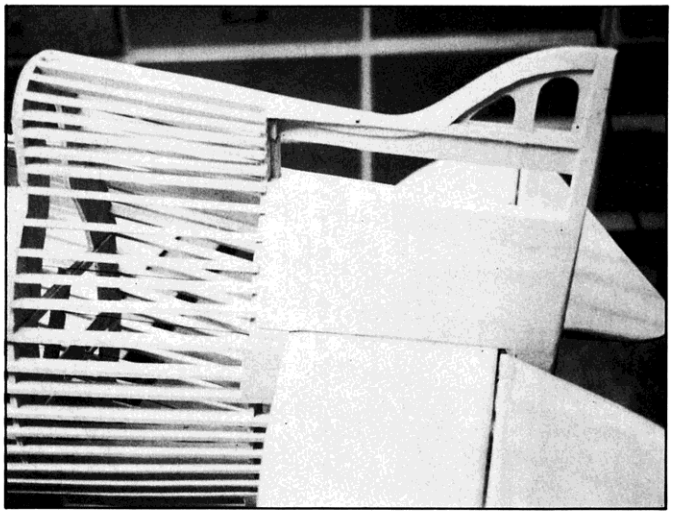
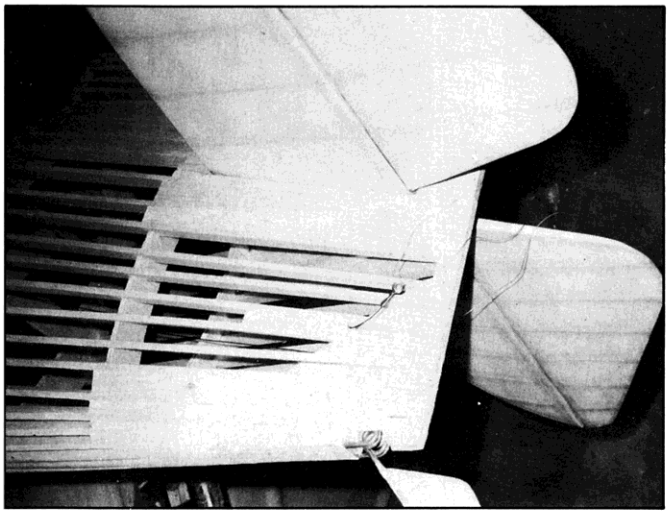
designed just for them. He called it the Model X, but everyone else called it the Sportster, which it was.

In the heyday of the biplane, the Granville's new aircraft was a low-wing monoplane. All the other airplanes flying in those days were biplanes — military pursuits, bombers, airliners and trainers — they were all biplanes; didn't those crazy Granvilles know that nobody would trust a monoplane? The new aircraft was co-designed by Bob Hall who, with Granny, laid down the lines for the Sportster.

The little aircraft flew so well and so fast that they entered it in the All American Flying Derby to be held the following July. First, though, they needed the prize money and they needed the publicity to kick off their new line of low-wing aircraft for the wealthy sportsman pilot. Well, it almost worked. The Sportster only came in second, but the publicity it gained by coming close helped the brothers sell nine more Sportsters.

One night, over a pitcher of Hampden Ale, the local brew that all pilots tossed down after they were through flying, the brothers started to kick around the design of a new aircraft. Granny said, "Why not stretch the fuselage so that a second cockpit could be added?" Another brother chimed in with, "And how about replacing that inverted Menasco C-4 of 125 hp with a 215 hp Lycoming radial?" Soon, an aircraft with those modifications

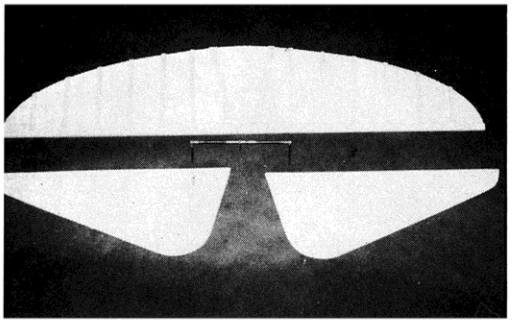




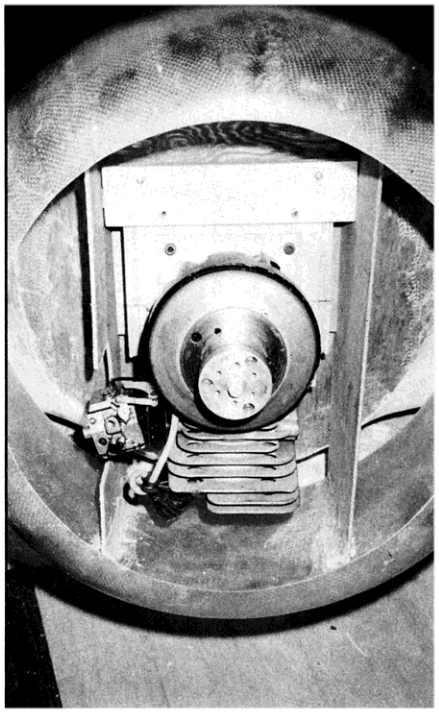
was in the works.

A bright red and white scalloped paint scheme with a bump cowling over the engine made the Senior Sportster, or Model Y, one of the prettiest Gee Bees ever built. Two of the Model Ys were built, one being sold to Florence Klingensmith who was eventually killed in it when the fabric came off a wing.

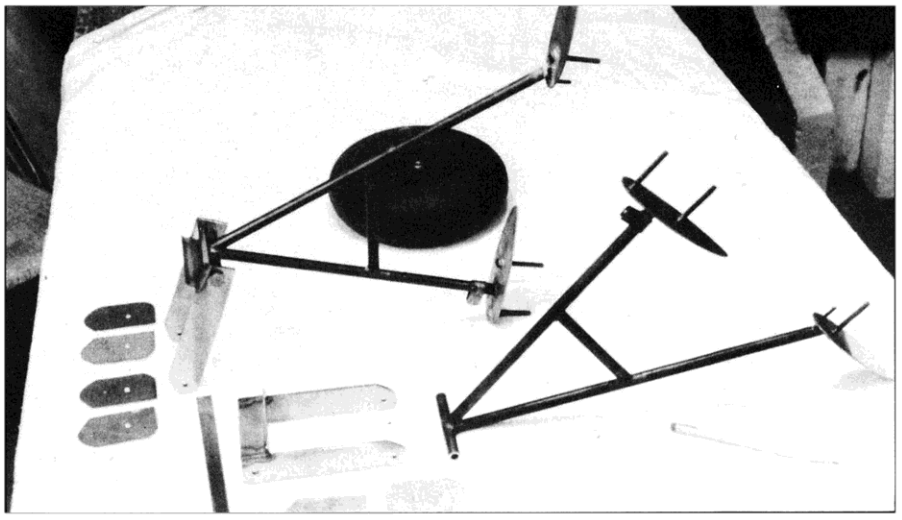
The Model Y whetted the appetite of the Granvilles for a true, no-holds-barred racing aircraft. They obtained a 535 hp Pratt&Whitney Wasp engine and proceed-



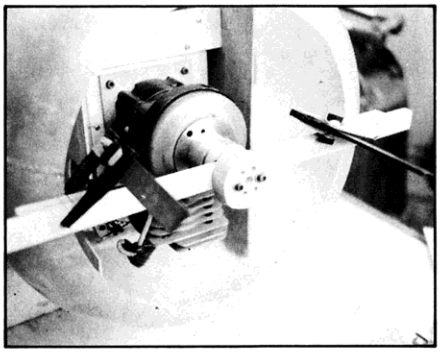
The tail is constructed of sheet balsa with shaping ribs attached to the top and bottom. This will allow the tail to have the *looks* of a fabric-covered unit without actually having to build one of this type. The short vertical stabilizer is built into the fuselage main structure, then covered with fabric.

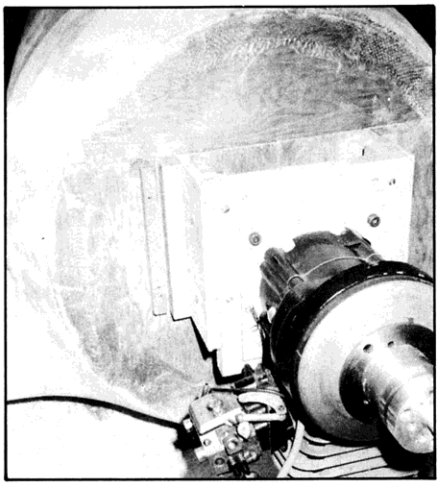


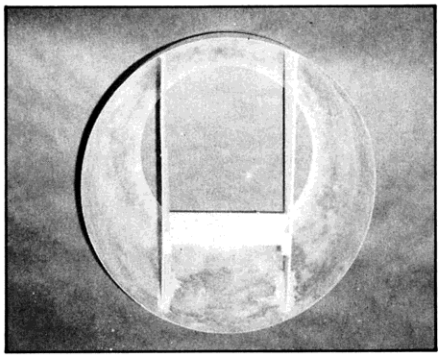
ed to design the complete aircraft around this engine. Money was once again in short supply, so the Granvilles searched for investors with cash enough to build their new plane. If they won the 1931 Thompson Trophy Race, they'd get the prize money — $15,000 — big bucks back in 1931.



Although the landing gear design looks complex, if its construction is taken step by step, it builds accurately and easily. The aircraft used a landing gear system similar to that of the Ryan ST and PTs of the mid-30s and early 40s. The wheels were placed ahead of the main struts and a shock strut was attached from the main frame to the axle. Because of the large wheel pants on this aircraft, attach points on both the frame and the wing must be very sturdy.







A plug for the cowl is shaped and the cowl is made from this. A plywood box is attached to the front of the main former to build the engine out to the correct distance. A jig is used to ensure that the cowl and engine will fall into correct placement when everything sets up. Two vertical plywood strips are epoxied to the cowling, allowing the cowl to be attached from the front through a cowl brace, then into the engine mount to secure the large cowling in place. It also provides an attach point for the dummy engine. This cowl is large enough to accommodate engines of many different sizes, including the large Sachs.

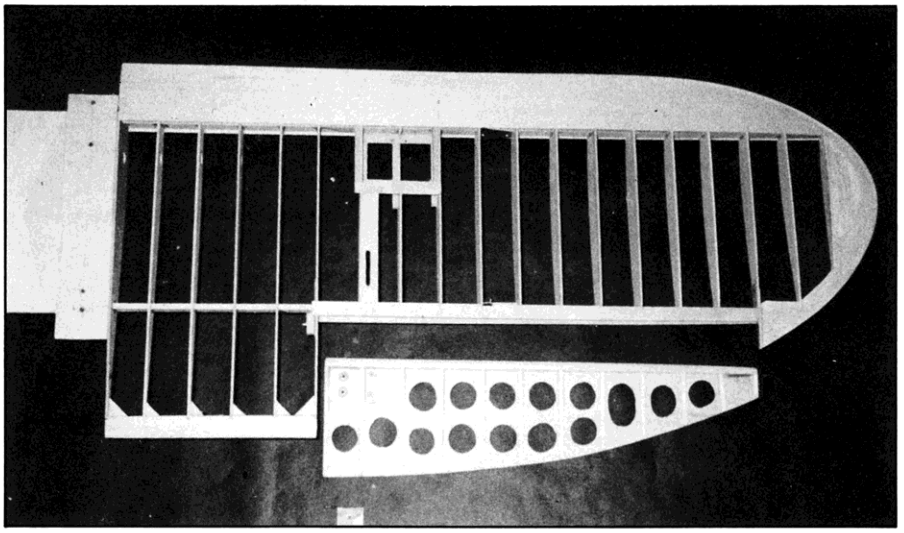
Well, the race began; not the Thompson Trophy, but the race to get money for the weekly payroll and the necessary parts for the new Model Z (so named in honor of Zantford Granville). Just when it was beginning to look hopeless, a group of local businessmen came to their aid and founded the Springfield Air Racing Association, or SARA. (I bet you thought, as I did, that the word SARA on the Gee

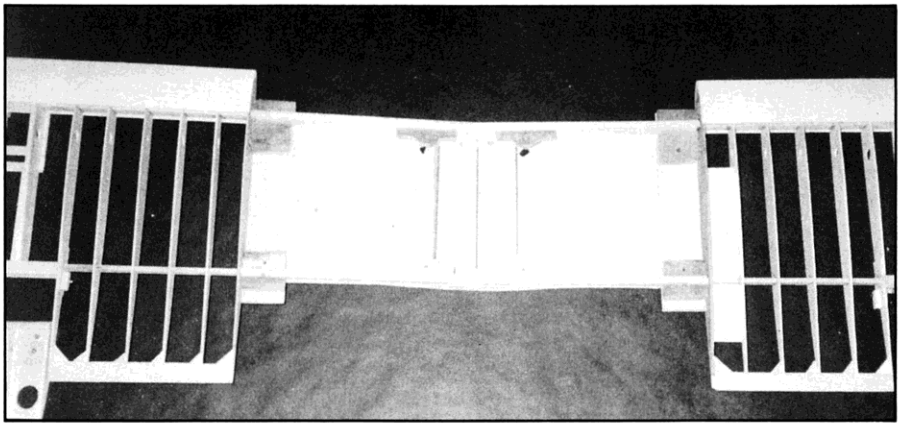
Bee's cowling was the name of a wife or girlfriend.) So, the Model Z was named "The City Of Springfield" and this was proudly lettered in gold on the black cowling along with a drawing of the city's skyline.

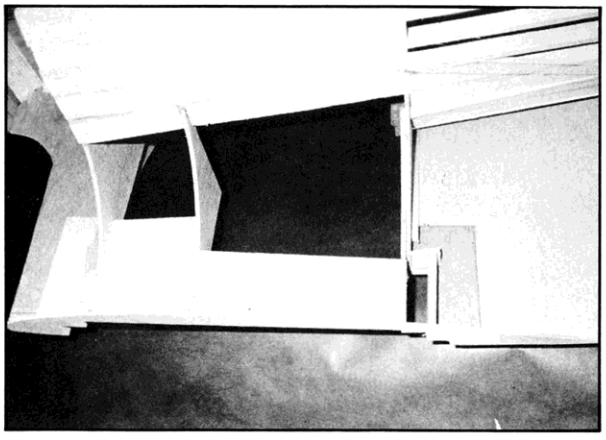
There was no doubt about it, the Z was a racing machine first. It had smooth lines, from its NACA cowling which housed the Wasp, to its massive wheel pants and yellow and black paint job. Some said it looked like an angry bumble bee, ready to attack.

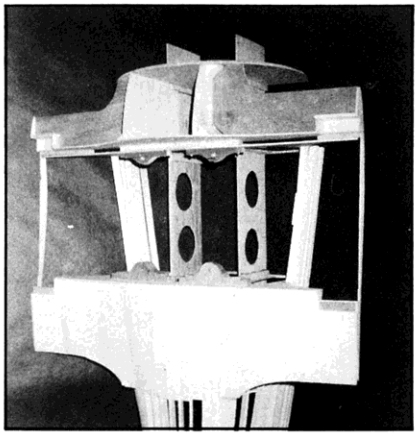
With Lowell Bayles aboard, it easily won the 1931 Thompson Trophy Race at 236 mph. Bayles would also set several speed records of the day in the Z, including one pass at an unheard of 314 mph — over 100 mph faster than any pursuit ship in the Army Air Corp or the Navy. During one of these speed dashes, a gas cap came off the Z and shattered the windscreen causing a knee jerk reaction from Bayles which was too much stress for the structure of the aircraft. A wing failed and the plane rolled into the ground, killing Lowell Bayles.

This tragic crash spelled the end of the "Z" model Gee Bee. The Grandvilles then started on their new Model 7 and Model 11 that are the most familiar of all the Gee Bee Racers. ●









The wing is constructed in one piece with multiple attach points to the fuselage. The top part of the wing is built onto the fuselage, and the bottom part is built into the one-piece wing. Ailerons are mounted in the outboard portion of the wing. The ailerons are sheet balsa with shaping ribs on the top. "Lightening" holes are then cut between the ribs, after which the leading edge of the wing is covered with sheet balsa. The wing was built on a straight board with clamps and dihedral wedges.