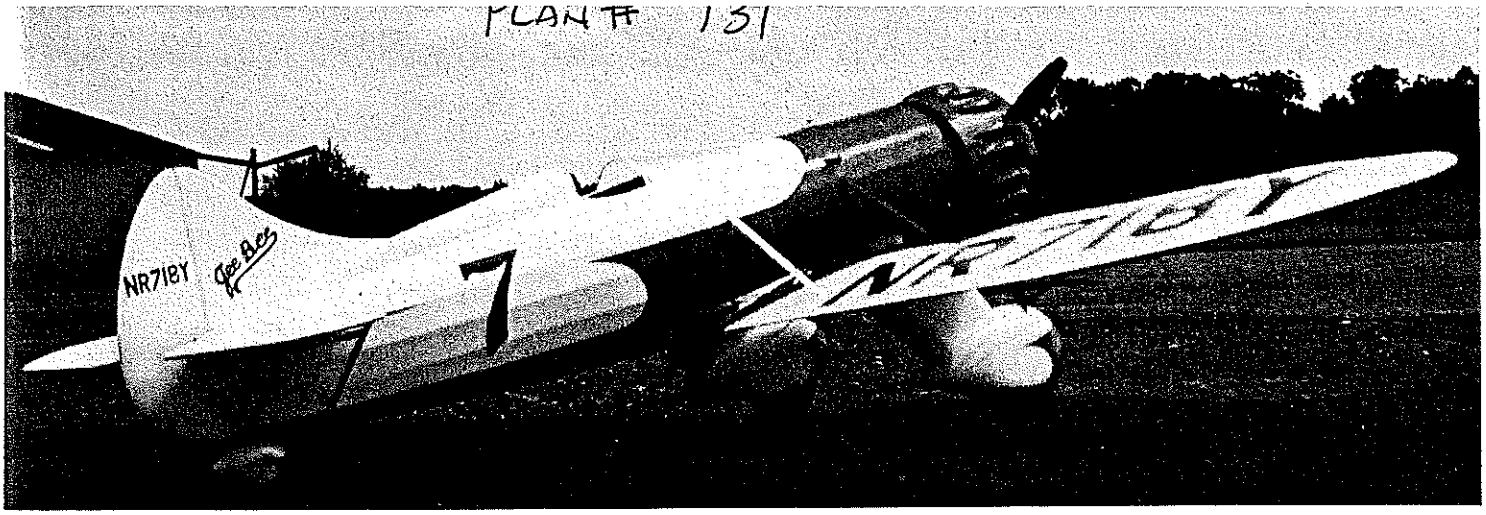
PLAN # 131

131




**Most of us think of the "flying milk bottle" and "flying Silo" Gee Bees famous for the Bendix and Thompson races but the firm built many other sporting aircraft. The manufacturer considered the "Y" the best airplane they ever built. It excelled in aerobatics as well as racing.**

Henry Haffke

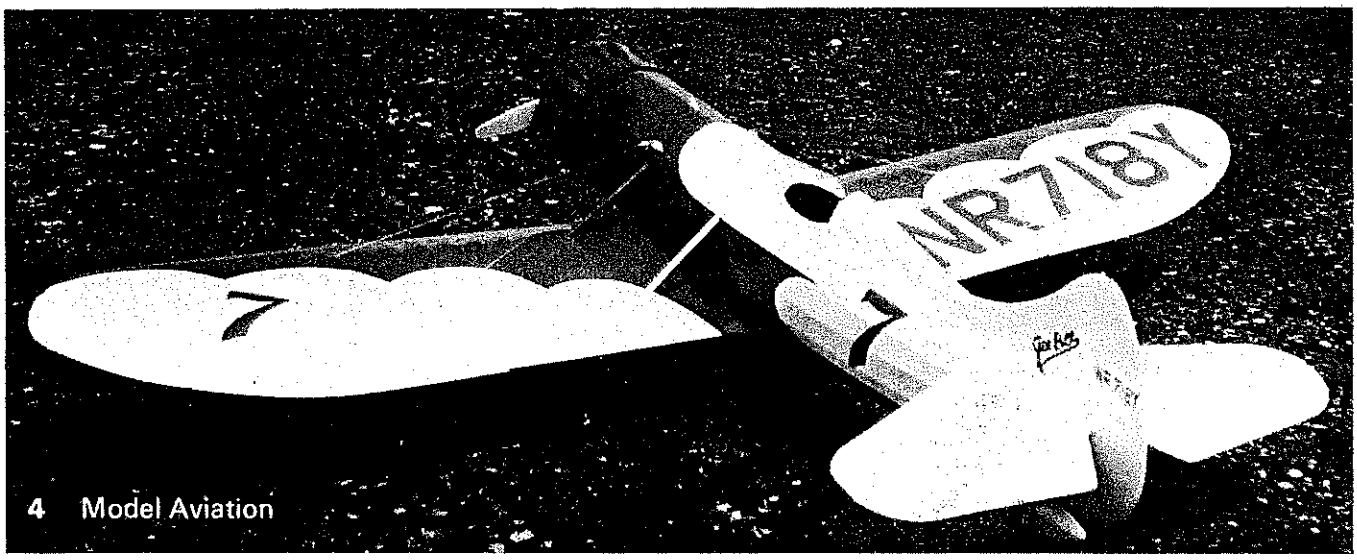
# Gee Bee Model Y

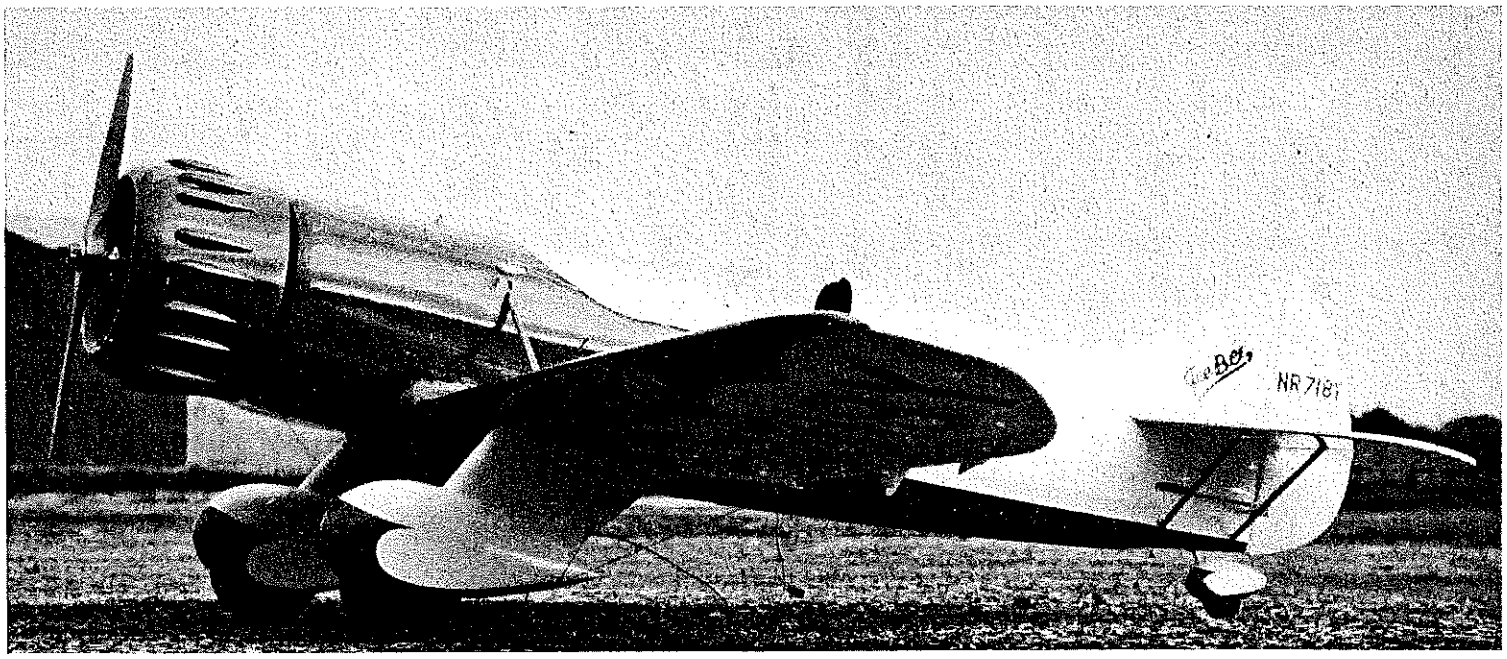
IN THE LATE 1920's and early 30's, the Granville Brothers of Springfield, Mass. built a series of aircraft that were destined to become the most famous racing aircraft of all times. The well known R-1 and R-2 Super Sportsters racing craft have probably received more coverage in aviation publications than any other single aircraft.

The Super Sportsters came about as a result of success attained with earlier aircraft built by the company which were raced in various racing events. The first Gee Bee aircraft to enter in a race was the model "X" Sportster powered with a Cirrus engine. Its success prompted a series of single-place sport planes powered with various engines including the Cirrus, Menasco and Warner powerplants. Eight of these Model "D" Sportsters, as they were called, were built. A larger two-place version of these was built and was designated the Model "Y" Senior Sportster. Two of the Model "Y" Sportsters were built and both were very successful as racers even though they were not designed as such: They were excellent flying craft and Tom Granville states that the Model "Y" Sportsters were the best ever built by the company. They won more money than any other planes and had plenty of power, landed nicely, and flew beautifully. One of the Model "Y" Sportsters was flown to victory in the National Aerobatic event as Russell Boardman won the Speed Holman Trophy.

All of the Sportsters were excellent aerobatic craft. One of the Model "Y"s (NR-718Y) was built for the E. L. Cord Automobile firm's Lycoming Aircraft Engine Division and was completed in the latter part of 1930. It was used by the Cord Corp. as a test plane for their Lycoming R-6 80 of 215 hp. Wing span was 30 ft. and length was 21 ft. The other Model "Y" was frequently flown in air races by Maude Tait whose family owned the Springfield Airport. She set a women's closed-course record at 187.6 mph in winning the 1931 Aerol Trophy Race in NR-11049. NR-718Y was sold to Art Knapp in 1933 and was modified for the 1933 International Air Races at Chicago. The 215-hp engine was changed for a 450-hp Wright Whirlwind. Twenty-six-year-old Florence Klingensmith flew the aircraft to second place in the Women's International Free For All at an average speed of 189.4 mph. She then entered the Frank Phillips Trophy Race, a free-for-all race for men or women. The race was held on Labor Day, Sept. 4th and she was leading the race on the 7th

**Red-and-white color schemes with distinctive scalloped trim made Gee Bees great eye catchers. The "Y" flown by Florence Klingensmith.**






**Slimmer lines that later Gee Bees had, make the Model Y an ideal scale or Sunday flying sport job. Good flying traits and longer nose and tail moments of the real ship are reflected in the way the miniature flies—which is very well indeed. Stringers are laid over a balsa box.**

lap at over 200 mph when fabric peeled from the right wing causing a fatal crash. Soon after this, a pilot flying Maude Tait's Model "Y" took off from the North Beach Airport (LaGuardia Field) on Long Island and spun it into the ocean. A few months later, Zantford (Granny) Granville was killed on Feb. 12, 1934 in a Gee Bee Model A Trainer avoiding two airport workers on a runway and the Gee Bee Company ceased operations.

As a young boy, I lived about a mile from the Springfield Airport and my father frequently took us over to the airport on a summer evening to watch the planes fly. I was too young at the time to appreciate what was going on, other than I enjoyed watching the take-offs and landings on the busy field. I undoubtedly saw several of the Sportsters during these visits and, while at home, never missed the chance to stare skyward whenever an engine was heard above. In my many years of modeling, I have become very interested in racing aircraft and the aircraft of the Golden Era are my favorite subjects. The Gee Bee Model "Y" flown by Florence Klingensmith has always had a special appeal to me as the ultimate of classic aircraft with its cowl bumps and faired landing gear.

**The model was covered with Silkspan and finished with Super MonoKote, and weighs just over 5 lbs. ready to fly. Flying wires are nostalgic.**

From the golden age of air racing, sporty looking, smooth flying RC for .40 engines.

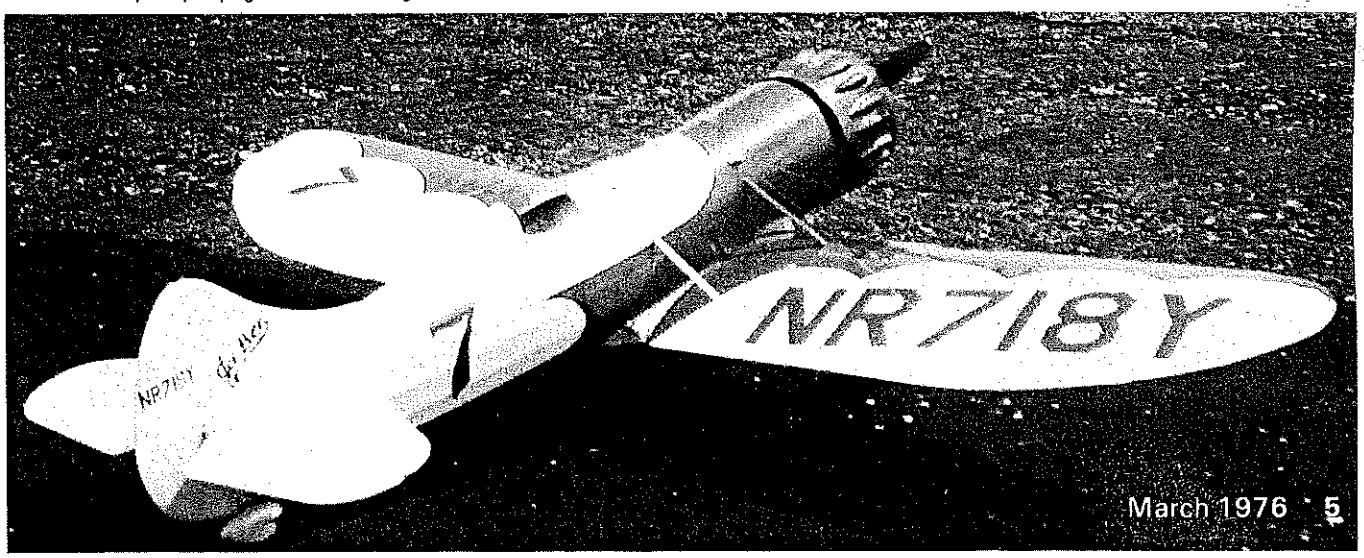
I work for a company that produces craft items and when my boss suggested that I design a model for him to produce, I decided on a .40 powered sport scale model of this beautiful plane of the past. A kit of this model is planned for this year.

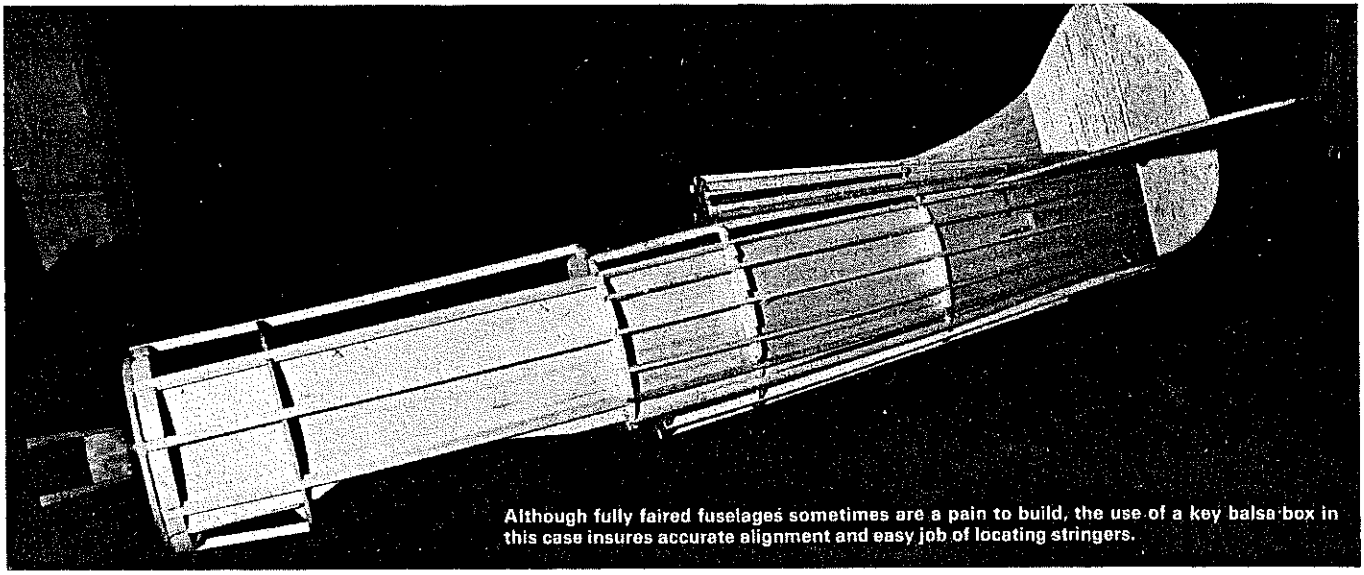
The racing record of the Model "Y" Senior Sportsers include: 1931—4th, Thompson Trophy, Pilot: Bob Hall; 1931—1st, Aerol Trophy Race, Pilot: Maude Tait; 1932—1st, Omaha Air Races, Pilot: Russell Boardman; 1932—1st, Niagara Falls International Air Races, Pilot: Russell Boardman; 1932—1st, Omaha Air Races, Pilot: Maude Tait; 1932—1st, Niagara Falls International Air Races, Pilot: Maude Tait; 1933—2nd, Aerol Trophy Race, Pilot: Marty Bowman; 1933—5th, Thompson Trophy Race, Pilot: Zantford Granville; 1933—2nd, Women's International Free For All, Pilot: Florence Klingensmith.

### Construction

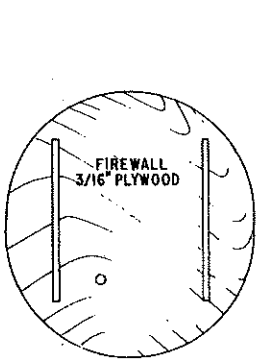
Drawings basically are for the final modifications to NR-718Y as flown by Florence Klingensmith in the 1933 Chicago International Air Races. I have included details of the nose section of Maude Tait's aircraft which was identical except for the engine installation and smaller windshield, and also a plain tail skid. Either of these aircraft may be built from the drawings. Also, the two-seat version could be made. A list of reference material may be found at the end of this article.

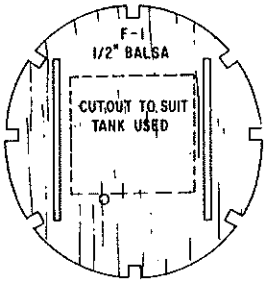
**Fuselage:** This is constructed on a basic slab sided structure. The ⅛" sides are cut out as are the front-end bulkheads F1 and

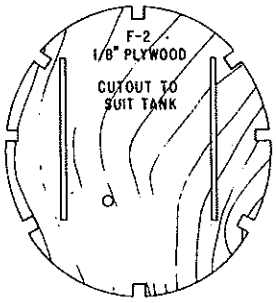


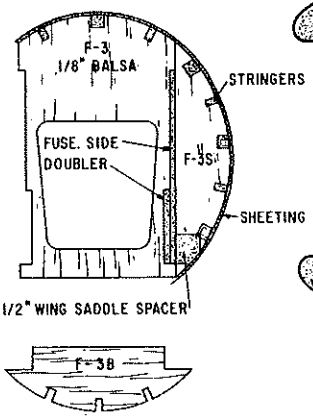


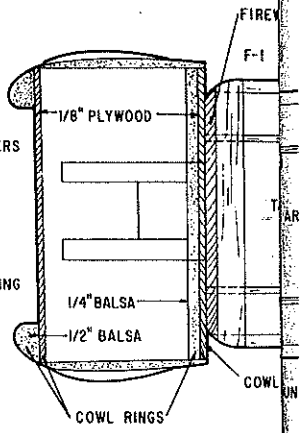
Although fully faired fuselages sometimes are a pain to build, the use of a key balsa box in this case insures accurate alignment and easy job of locating stringers.



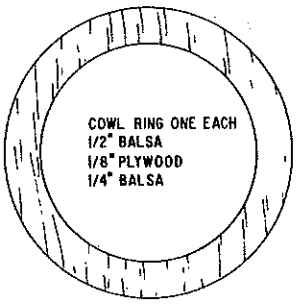



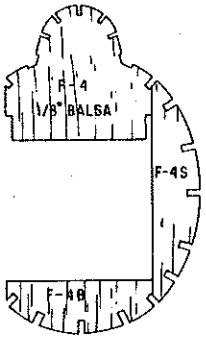



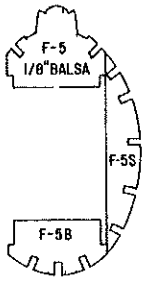


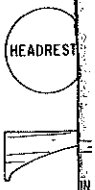


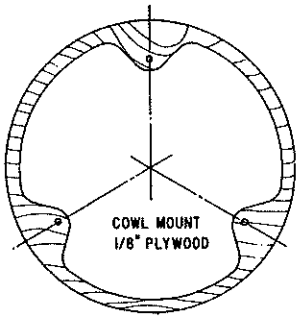
DRAWING SHOWES TWO DIFFERENT COWLS FOR TWO DIFFERENT AIRCRAFT. THE MAIN IS FOR FLORENCE KLINGENSMITHS 1933 NR-718Y

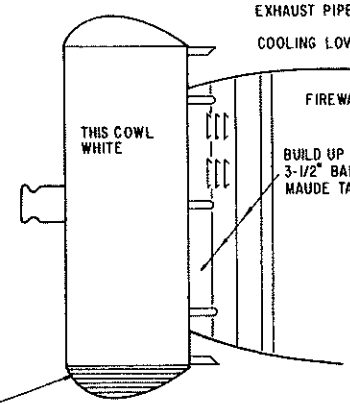


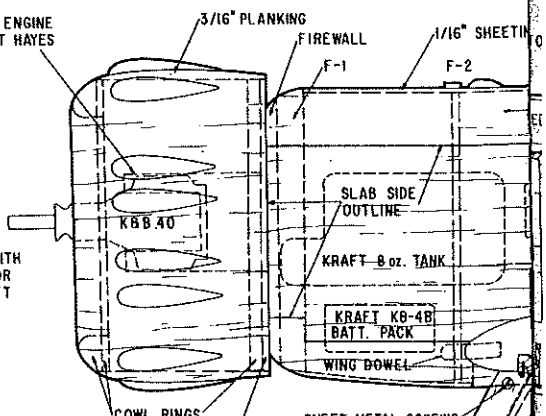



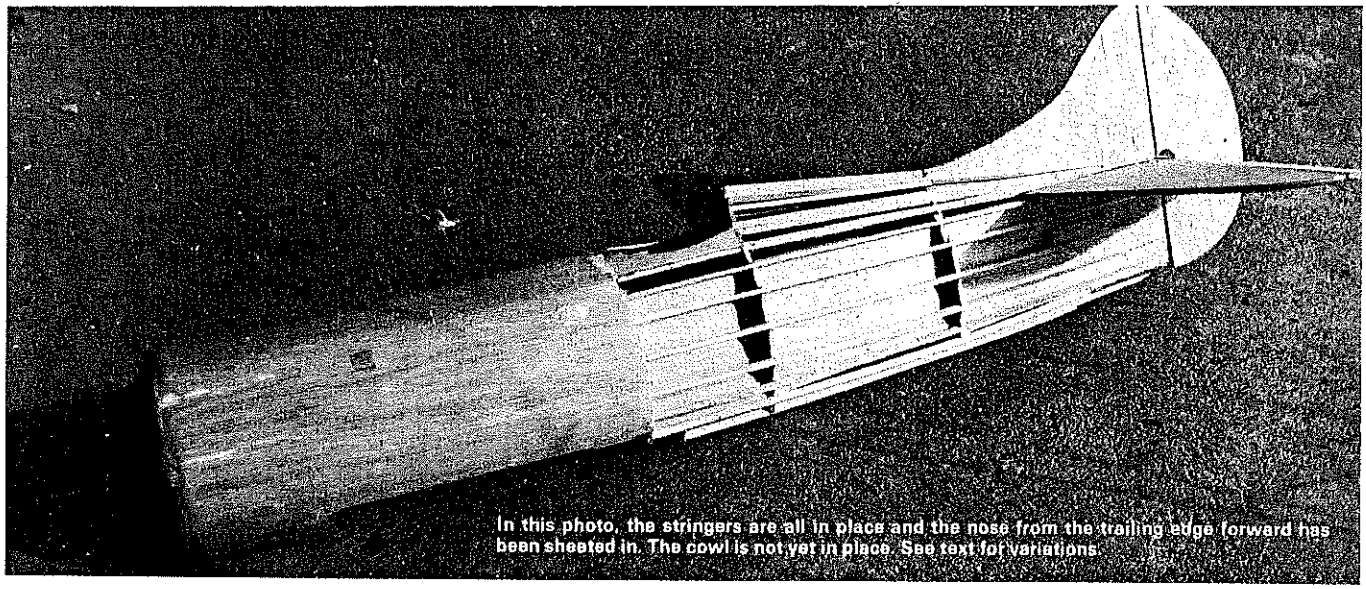




THIS SHOWS COWL FOR THE FIRST MODEL Y SPORTSTER NR-11049 USUALLY FLOWN BY MAUDE TAIT. COWL IS FORMED BY WRAPPING 2 1/2" WIDE LAYERS OF 1/16" PLYWOOD AND BALSA AROUND A 3lb. COFFEE CAN TO MAKE A RING COWL WHICH IS CARVED AND SANDED TO SHAPE AFTER DRYING.

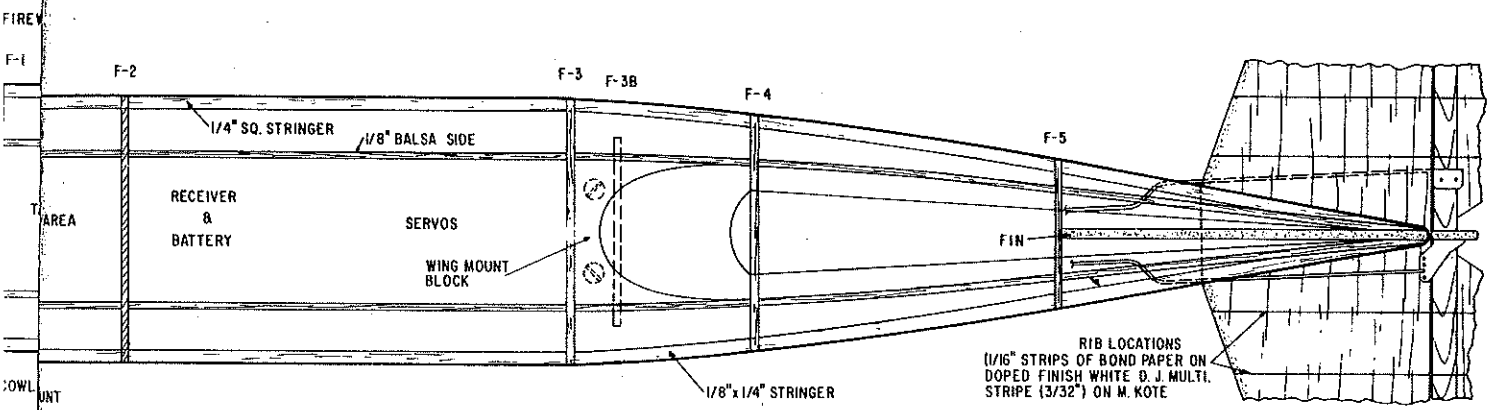
SOME BUILDERS MAY PREFERE TO BUILD THIS VERSION RATHER THAN THE MAIN SUBJECT OF THESE PLANS— THE TWO AIRCRAFT WERE IDENTICAL EXCEPT FOR ENGINE INSTALLATION- WINDSHIELD- AND TAIL SKID ON MAUDE TAITS AIRCRAFT.

NOSE SECTION NR-11049
(FIRST OF THE 2 MODEL Y SPORTSTERS)
MAUDE TAITS AIRCRAFT WITH 300 HP.
PRATT & WHITNEY WASP JR.

COWL BUMP (18)

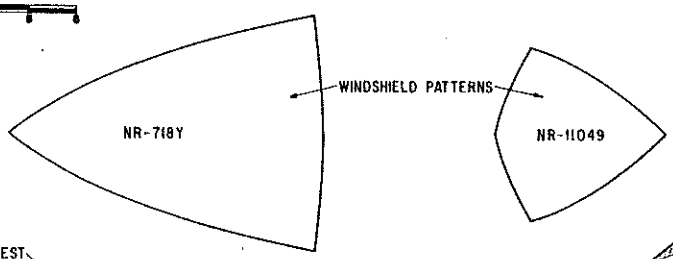


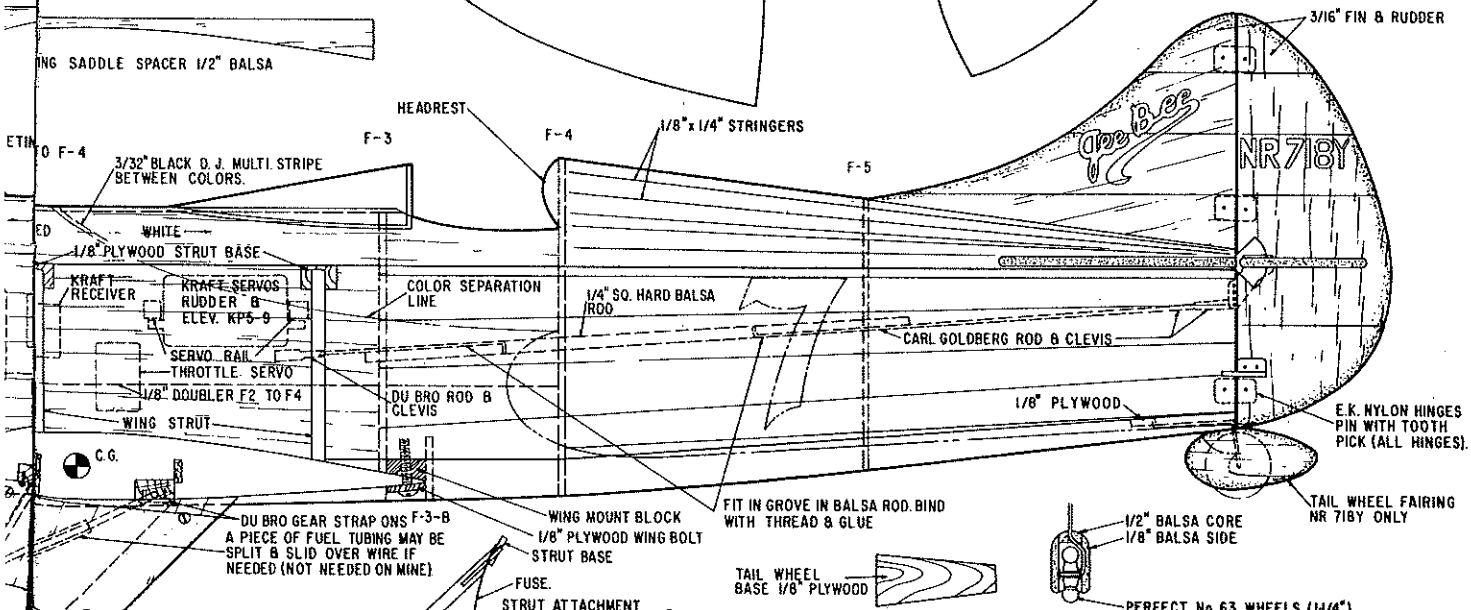
In this photo, the stringers are all in place and the nose from the trailing edge forward has been sheeted in. The cowl is not yet in place. See text for variations.





USE BOTTOM HOLE ON ELEVATOR HORN
USE 2nd HOLE IN RUDDER HORN
USE BOTTOM HOLE ON AILERONS
USE CARL GOLDBERG PUSHRODS WITH NYLON CLEVIS
(I USED GOLDBERG HARDWARE PACKAGE FOR HORNS, BELLCRANKS & RODS AND E-K HINGES.)




NR 718Y FLOWN BY: FLORENCE KLINGENSMITH
NR 11049 FLOWN BY: MAUDE TAIT

# GEE BEE MODEL Y SPORTSTER

DESIGNED & DRAWN BY: HENRY A. HAFFKE

SPAN: 56" LENGTH: 38" POWER: .40 CU. IN. WEIGHT: 5 1/4 lbs.

*INK FOR MODEL AVIATION BY: ROGER GREENE*

PLATE 1 of 2

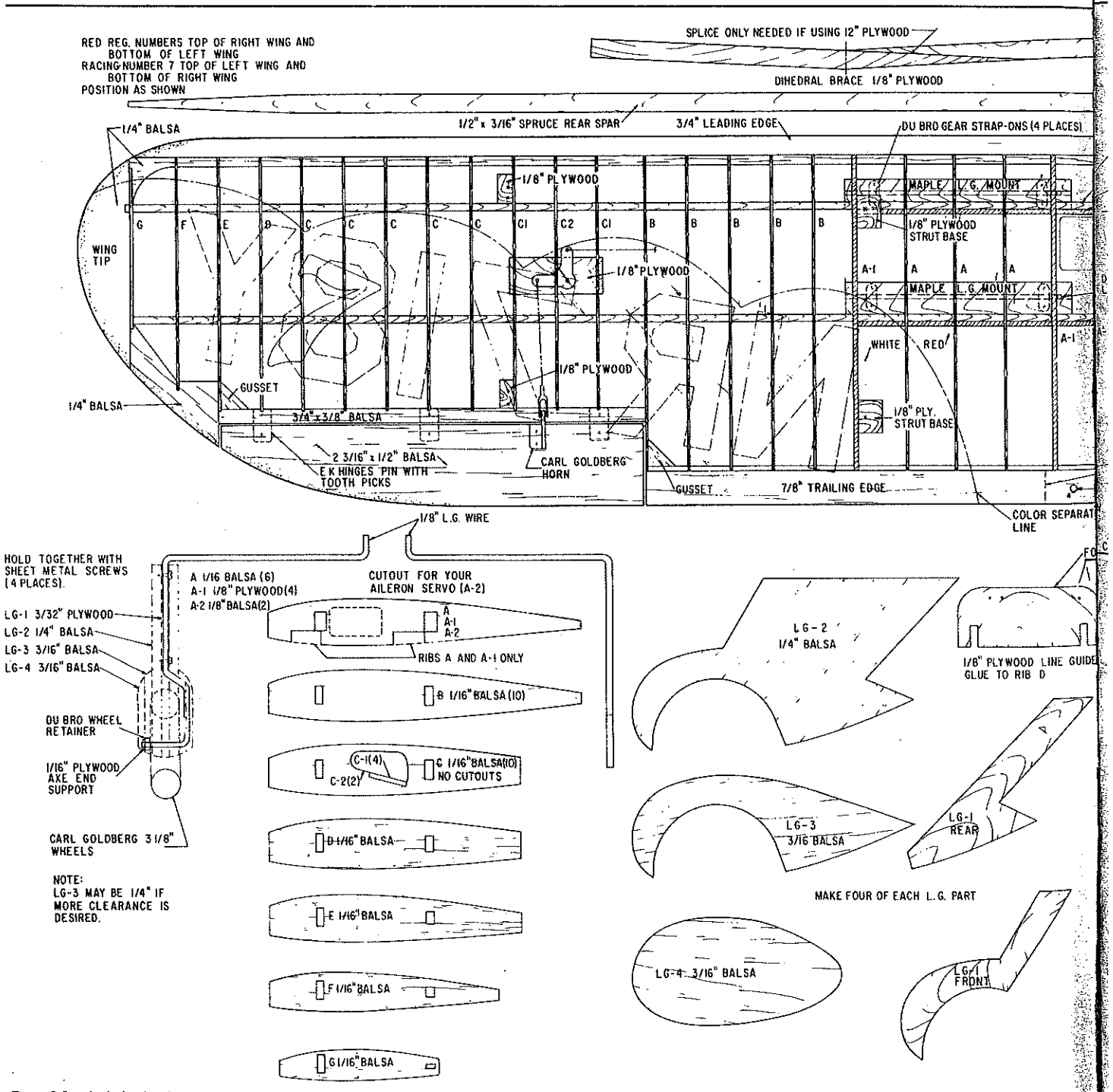
## Gee Bee Model Y

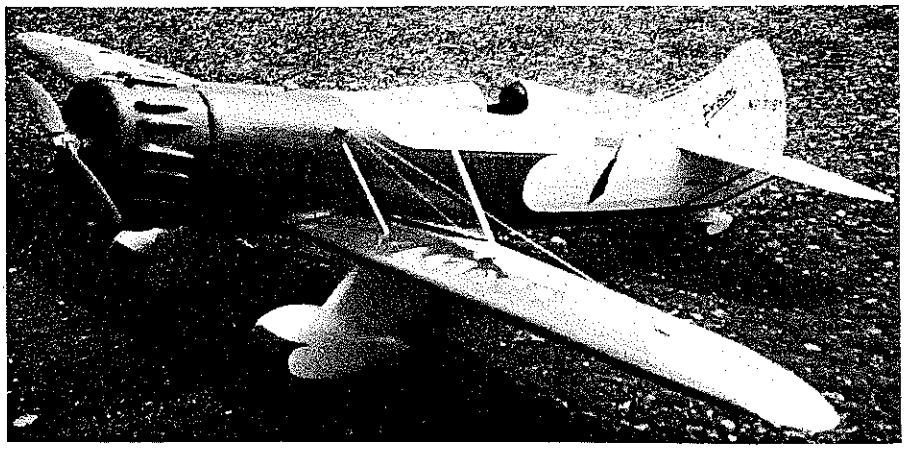
F2, along with the firewall. F2 is slid into position on the sides and then the firewall and F1 are added after cementing them together. The ⅛" wing saddle doubler is added next and then the sides may be glued together at the tail and the remaining bulkheads added. When this is dry, the ¼" sq. forward stringers may be installed. The tail surfaces should be cut out and the fin and stabilizer installed before adding the ⅛ × ¼" rear stringers. The forward section of the fuselage is covered with 1/16" sheet and the final details such as ply plates for strut attachment, tail-wheel mount, and wing mount block are added. The ½" wing saddle spacer can now be trimmed to fit between the basic slab sides and the sheeting at the wing saddle. It will be necessary to trim away a little of the ¼" sq. stringer to slide this into position between F2 and F3. Radio installation is left to the individual and there is plenty of room for even large servos.

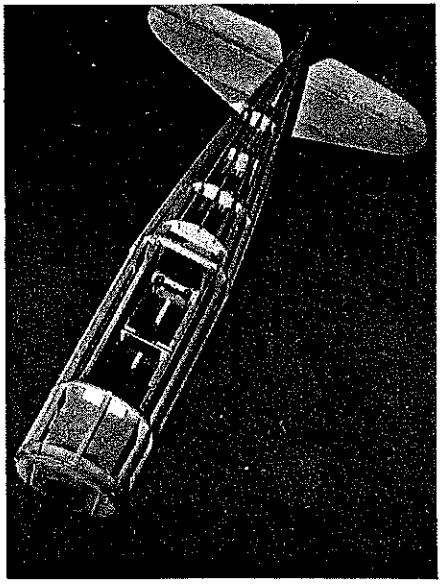
**Wing:** Construction is standard with the ribs being slid onto the two spruce spars. The rear spar must be tapered at the tip as shown. Leading and trailing edge stock is used and short pieces of ¾ × ¾" are cut to fit between ribs at the leading edge. ⅛ × ¼" pieces are used between the ribs at the trailing edge. Add the tip parts and gussets where shown. The ⅛" ply plates for the compression struts are added to the top of the wing and the plates for the flying wires must be added to both the top and the bottom of the wing. The ply mount for the aileron bellcrank is also added and finally the maple landing gear mount blocks. The ailerons may be carved from balsa or may be built up if desired. The ply dihedral braces may be cut out and assembled and the wing halves may be joined blocking up one tip 4½ inches for dihedral. Center section is sheeted with 1/16 balsa between LG legs.

**Landing Gear:** This is formed from ⅛" wire. Both the left and right forward parts are identical but the rear wire must be formed for a right and a left side. Bind and solder the wires as shown on the drawings and then they may be mounted to the maple blocks. The fairings are built up by cutting the various parts of ply and balsa and are cemented together in two halves for each

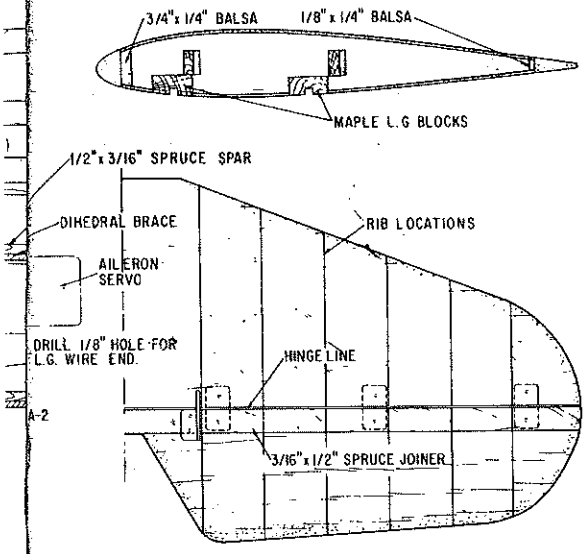
*continued on page 78*

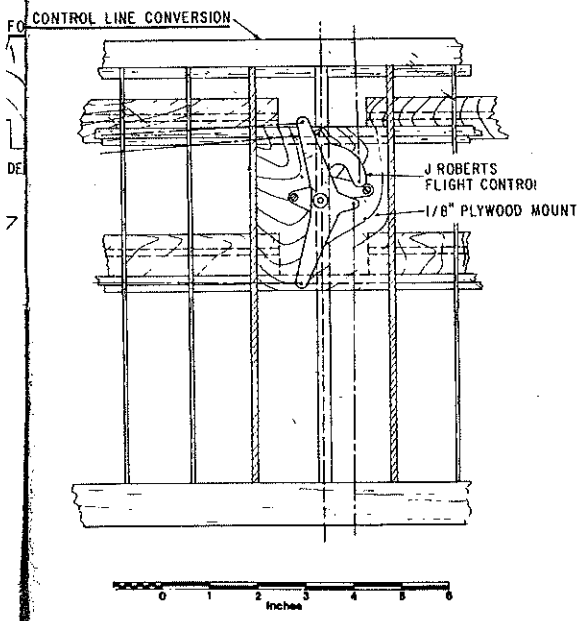




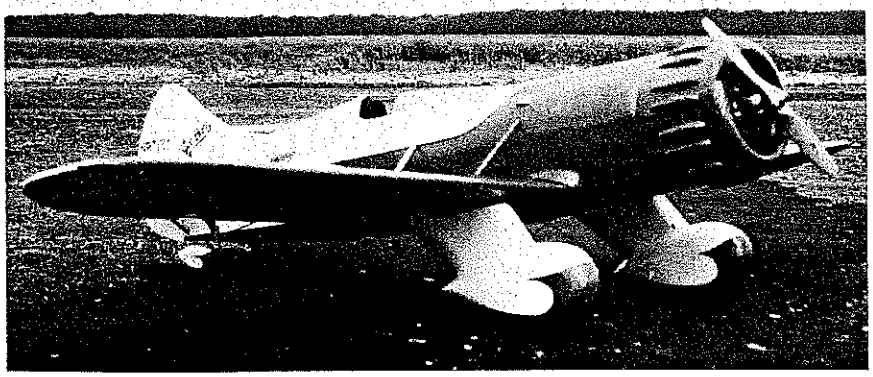


The cowl with its distinctive "bumps" and the wheel pants give this Gee Bee a personality all its own. The fixed wing struts transmitted landing gear loads to the fuselage. Right: Radio installation accessible through the wing mounting cut-out—with all kinds of room.




GEE BEE MODEL Y SPORTSTER
PLATE 2 of 2



Above: Scale modelers will find plenty of detail in the plethora of photographs. The cowling attaches to firewall with three short sheet metal screws. Below: Henry Haffke poses with his finished model. He also flew model U-control by moving the CG forward.

## Gee Bee/Haffke

*continued from page 9*

fairing. The stacked parts should be weighted while the glue dries. When thoroughly dry, the halves may be dowled for alignment and may be tack glued for carving to shape. When finished, the two halves are sandwiched over the wire and secured together with short sheet-metal screws.

**Engine Cowl:** Cowl rings and cowl mount are cut from the various sizes shown on the plans. The ½" balsa and ⅛" ply rings are glued together as are the ¼" balsa ring and ⅛" ply mount. Space these 3 in. apart and plank with 3/16" strips; or sheet may be used, wetting it to help curvature, if you prefer. Cowl is carved and sanded to shape when thoroughly dry. The 18 cowl bumps are carved from scrap balsa and are cemented in place. After cowl is finished, it may be fitted to firewall and retained with three short sheet-metal screws. Mine needed only a small hole for the glow plug and I used an exhaust extension out the bottom of the cowl. We can make available a molded plastic cowl and wheel fairings for anyone wishing to avoid building these parts. You may inquire about these parts by writing to: Aero Classics, P.O. Box 2156, S. Vineland, N.J. 08360.

If you desire to build the model as Maude Tait's NR-11049, the cowling may be formed by using a large coffee can or other appropriate size cylinder and wrap around the can a 2½"strip of 1/16" ply. A second layer of 1/16" ply is wrapped over the first with the joints staggered, and then layers of balsa may be added to build up the proper thickness. When dry, it is carved and sanded to shape. Maude Tait's aircraft had the standard windshield of the two-seat version and used a simple tail skid in place of the faired tail wheel.

Finishing the model is up to the individual and much has been written on this. I covered my structure with Silkspan and then finished it with Super Monokote. The model is very strong and light. Mine weighed just over 5 lbs. ready to fly. You may add whatever small details you wish such as wing and tail struts and flying wires. These give real character to the model.

My first model flew beautifully on its very first flight. Right rudder was needed on takeoff but once in the air, it flew hands off with just a little trim adjustment. It proved very stable and gentle and was very positive to the controls. The model is not difficult to build and the structure is very strong and light. When finished with the external bracing and wires, it is a very attractive ship.

Data Sources: *Racing Planes Guide*, Joe Christy; *62 Rare Racing Planes*, Maj. Truman Weaver; *They Call Me Mr. Airshow*, Bill Sweet; *The National Air Racers in 3 Views*, Charles Mendenhall; *The Gee Bee Racers Profile Publication #51*, Pete Bowers; *Model Aircraft*, Aug. 1957; *American Modeler*, July, 1958.

## Callisto/Rimmer

*continued from page 56*

(say 90°) doesn't improve effectiveness very much.

For the first flight the rudder should have about 20° movement each side of center and stabilator should be at least 15° up and 15° down. The stabilator should be about 3/16" up at the rear when trim is neutral as you sight along the bottom of the wing. A gentle hand glide should give a slow, stable descent with no tendency to nose up to a stall. Have the radio on—you wouldn't want the Callisto to be lost now! The first launch (either winch or high-start) should be made initially inclined up about 30°. Later the near vertical heave can be tried using about 15 pounds of tension. Watch the tip sections of the wing for flex as an indication of proper tension as the center section does not bend. If the CG tow-hook positions are correct, and there are no warps, the ship should climb out with only slight up elevator and full up trim. Change the trim back to neutral just before release. If the heading begins to weave uncertainly, trim the nose down slightly.

Try the flaps at altitude first. Here you can safely get familiar with the rapid loss of forward speed and resulting trim change. The change in trim does not occur immediately, but one or two seconds after the flaps are full down. Since we aren't used to the speed decreasing when the nose is down the flaps can be deceiving at first during an approach to landing. After you have some confidence in flying the ship, lower the flaps, push the nose over into a vertical dive, and get ready for one of your biggest thrills. Don't forget that she is moving about 25 mph (2,200 ft./min. or 37 ft./sec.) straight down. It's easy to miscalculate and perform the ultimate structural test.

Due to the low drag, you can dip the nose, pick up speed, level out, and achieve sustained penetration that is unbelieveable for a ship with such a low wing loading. Most standard ships would have to weigh twice as much as the Callisto to have the same penetrating ability, and with much greater sink rate. The only problem is that at the faster speed the controls are much more sensitive, so don't slow her down by excessive control movement. Smoothness is the only way to achieve maximum possible efficiency. I adjust the Callisto for approximately neutral pitch stability. Positive stability can be achieved with nose ballast, but stabilator drag and higher wing loading are the result. The Callisto once made a seven minute "hands off" flight during a required fun fly event. The flight would have been much longer if controlled flight had been allowed.

I could go on, seemingly indefinitely, about the Callisto but after a few flights so will you! Good luck!.