BY HENRY HAFFKE | PHOTOS BY GERRY YARRISH

SPECIFICATIONS
Model: Howard Ike Miss Chevrolet
Type: 1/3 scale
Wingspan: 80 in.
Wing area: 1,061 sq. in.
Weight: 14 lb.
Wing loading: 30.5 oz./sq. ft.
Length: 66.5 in.
Radio req'd: 4-channel (rudder, throttle, ailerons, elevator)
Engine req'd: 25cc to 38cc (BH Hansen G260 used)

The basic model is a sheet balsa box structure filled out with formers and stringers to give it shape. Traditional building methods are used throughout.

Giant-Scale Howard Ike *Miss Chevrolet*

A 1/3-scale version of the .40-size racer

EDITOR'S NOTE: *Henry Haffke has been a contributor and consultant to* Model Airplane News *for close to 40 years and one of his most popular projects was his 40-size, 56-inch-span, Howard "Ike" DGA-5 racer* Miss Chevrolet *published in the April 1979 issue of* Model Airplane News. *Henry teamed up with expert pilot Sid Clement and competed at many scale regional and national scale meets with the Ike. It's amazing that Henry's original is still air worth today and can be seen regularly at the Old Rhinebeck RC Jamboree.*

Henry always thought the "Ike" would make an excellent giant-scale project and he teamed up with Senior Tech Editor Gerry Yarrish to develop a 1/3-scale, 88-inch-span version. Using a mix of traditional construction and up-to-date engine and radio equipment, the giant "Ike" was born.

Construction notes

A basic sheet-sided box structure, the fuselage is filled out with balsa and light ply formers and balsa stringers to develop its classic shape. Start by cutting out two 3/16-inch sheet sides and mark the inner surfaces for the former locations. The firewall should be positioned to suit the engine you use. The prototype was powered by a BH Hanson (bhhanson.com) 26cc Zenoah gas engine modified with electronic ignition. A standard G-26 or a G-38 (horizonhobby.com) would also provide ample power. After the firewall and the formers are installed, add the wing saddle doubles and filler blocks, then the aft formers and cross-pieces to bring the tail ends together. There is a square tunnel built behind the firewall to provide adequate engine cooling and it should be wide enough to suit your muffler. A Slimline (slimlineproducts.com) Pitts-style muffler worked nicely on this model. To improve the outward appearance, you can add a thin aluminum cover to the tunnel opening. Cut several louver slits into it to provide adequate airflow. The original was flown successfully with the cover in place, but you can make your first flight with the cover removed.

Next, add the top and side formers and then sheet the front of the fuselage with 1/8-inch balsa. Strip planking helps in the more curved sections. Add the top aft formers and the side stringer supports and slowly

add the long stringers to the sides of the plane. Use medium-hard balsa grade for the stringers and adjust any former slots to keep the strings straight. This takes time and you need to work a few stringers at a time, working on one side and then the other. Also, make sure the stringers are high enough to prevent any covering sag. When you get to the tail end, use scrap balsa to fill in between the stringers under the stabilizer.

The engine cowling area is built as part of the fuselage and it goes all the way to the separation line for the front cowling piece. The front piece is carved from solid balsa and a plywood spinner disc is added to form the prop shaft opening. The front piece uses 3/16-inch alignment dowels and wood screws used to secure it in place.

Oval-shaped rings of 1/2-inch sheet balsa form the engine compartment between the firewall and the cowl front piece. Once sanded and shaped, use thinned epoxy resin to fuel proof the interior engine area. Install the fuel tanks, engine ignition battery, and module before finishing the upper fuselage sheeting. To make maintenance easier, I made a light ply tray that slides into place on hardwood side rails to support the 16-ounce DuBro (dubro.com) fuel tanks and the two 2400mAh Ni-Cd battery packs. Two small screws hold the tray in place so it can be slid back and removed through the wing saddle.

The throttle, rudder, and elevator servos are located above the wing just under the removable pilot's seat and are accessible through the hinged cockpit hatch. The hatch is best built in place on the fuselage and then cut away and hinged back into place. There are several Shop Tips showing the Howard Ike's constriction posted on ModelAirplaneNews.com in the "How to" section under Current Trends.

Details like the flying and landing wires make the plane look real.

Tail surfaces

The stabilizer, fin, and rudder are all built with 1/8-inch sheet balsa cores with half ribs glued to each side, while the elevators are built up from 3/8-inch stock and sheet parts. You can add a joiner wire and use one internal elevator horn or add two elevator horns and drive each half with a separate servo as we did. Once the stabilizer is complete, it can be tack glued into place so you can finish the aft upper portion of the fuselage and install the vertical fin. Take care to blend the sides of the sheeted aft turtle deck into the vertical fin. The area where the headrest sheeting meets the upper fuselage turtle deck formers should be straight and filled in with sheet balsa so there is ample area for the covering to adhere. The headrest fairing from the cockpit to the fin is sheeted with 3/32-inch balsa.

Landing gear

The gear is nothing fancy, just bent music wire soldered together then covered with balsa. Don't omit the 1/8-inch cross wire as it provides necessary stiffness. Once covered, and sanded smooth (the wheel pants are also solid balsa), the gear is finished with 1/2-ounce fiberglass cloth and Pacer Finishing resin (zapglue.com). Take your time and fill all the cracks and seams

Here the aileron is being built as part of the wing structure. It will be separated and hinged back into place after the wing has been covered.

The tail feathers are lightweight and very easy to build.

A 1/3-scale Great Planes pilot bust fills in the cockpit opening.

A scratch-built scale propeller adds a lot to the model's scale looks. The prop logo comes from Cal-Grafx.

with filler. The landing gear is supported by grooved hardwood blocks built into the fuselage and the underside of the wing. Removable blocks cover the attachment screws.

Wing assembly

The ribs are 1/8-inch balsa and 1/8-inch plywood as noted on the plans. The wing uses single, solid front and aft spars made from hard balsa stock or from clear pine. During construction, the ribs slide over the spars and I use building blocks to support the spars over the plans. The leading edge is solid and sheeting is applied top and bottom around the leading edge. The trailing edge is made with a 2-inch-wide lower sheet and a narrower upper trailing edge sheet for a nice scale appearance. The wingtips outboard of the ailerons are sheeted top and bottom with 3/32-inch balsa.

The ailerons are made using the same technique as the rudder and vertical fin with a central core sheet and then half ribs. You can install your aileron servo in front of the aileron and use a traditional beveled balsa leading edge with external linkage and control horn. Or, you can install an aluminum torque tube to drive the ailerons internally. (Details are shown on the plans.)

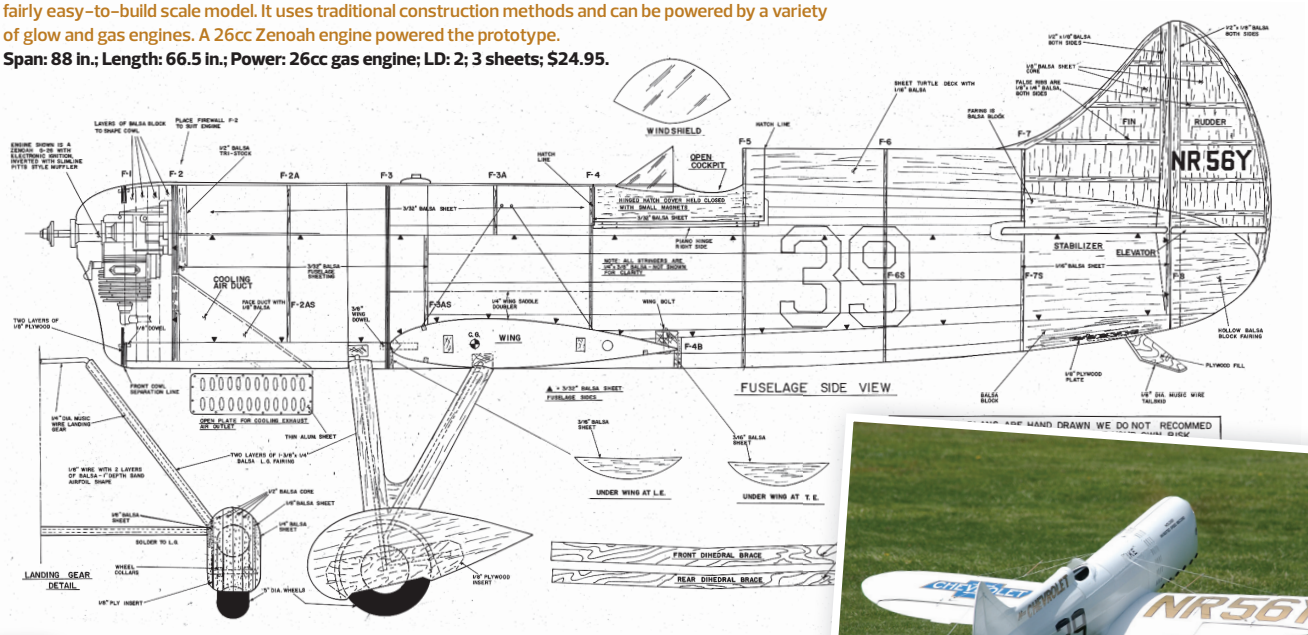
Covering and finishing

I used painted 21st Century fabric from

Giant Scale Howard Ike *Miss Chevrolet*

Designed by Henry "Mr. Gee Bee" Haffke, this 1/3-scale version of the *Miss Chevrolet* is a great-flying, fairly easy-to-build scale model. It uses traditional construction methods and can be powered by a variety of glow and gas engines. A 26cc Zenoah engine powered the prototype.

Span: 88 in.; Length: 66.5 in.; Power: 26cc gas engine; LD: 2; 3 sheets; $24.95.



To order the full-size plan, visit AirAgeStore.com

Coverite and started the covering with the bottom. The sides are next followed by the top surfaces. This keeps seams to a minimum and if you keep them straight and clean, the seams are almost invisible. To duplicate the metal panels on the fuselage, thin G-10 fiberglass sheeting (from FTE) was cut and screwed into place over the cloth covering. The panels go up to the ring of louvered panels aft of the engine cowl. I then cut slits into it and glued aluminum louver strips in place at an angle. For a sport model, the G-10 panels can be replaced with thin 1/64-inch plywood. All the sheeted fuselage surfaces, the landing gear struts and wheel pants, are all finished with fiberglass cloth and resin, then painted with Stits Lite Poly Tone Insignia White to match the fabric. A final Poly Tone clear coat gives everything a semi-glossy sheen.

Details like the dummy scale propeller and engine exhausts, tail bracing and flying wires along with a fully detailed cockpit (minus the floor boards), add a lot to the model's final appearance. All the *Miss Chevrolet* decals and markings are available from Callie Graphics (callie-graphics.com) and the 1/3-scale propeller logos come from Cal-Grafx (Cal-Grafx.com).

About the Author
Henry Haffke

Born in Springfield, Massachusetts in 1927, Henry Haffke has written historical articles for *Model Airplane News* and other model aviation magazines in the U.S., as well as for publications in England, Germany, and Australia. An accomplished RC designer, builder, and scale model pilot, he has devoted most of his RC career to reproducing the great race planes for the Golden Age of Aviation (Henry's AMA card reads "Mr. Gee Bee").

In the early days, Henry flew a lot of Free Flight models until he bought a used Lorenz "2-tube" receiver and transmitter that he installed in a Trixter Beam, which was a more or less a successful model. He then moved to a Citizenship single-channel radio and flew a Junior Falcon with it for hundreds of flights. When his wife Lee bought him a used EK Logictrol 4-channel outfit for Christmas, he started to build scale models he had only dreamed about—including his favorite, the Ryan ST from *Model Airplane News* plans. Henry then turned his attention to the classic Gee Bee racers and with this he became personally acquainted with the designers of the full-size planes, the Granville Brothers. He became good friends with the Granville family and was lovingly called the "Fifth Granville Brother." Henry went on to author the book *Gee Bee: The Real Story of the Granville Brothers and their Marvelous Airplanes.*

Henry Haffke shows off one of the Ike's wing panels at the WRAM show. Simple scale construction is used throughout the model.

Flying the *Miss Chevrolet*

The CG location is shown on the plans so make sure it's right. Test run your engine, and check all the controls for correct direction. We used a Moki 18x6 propeller and the engine topped out close to 10,000rpm with a reliable idle and good throttle transition. For better ground handling, the landing gear shown on the plans places the wheels about one inch farther forward than scale. The rudder is very responsive and even with a fixed tail skid, taxiing and takeoff tracking is easy. Once airborne, climb to a safe altitude, throttle back slightly and trim for straight and level flight. You'll notice the plane is slightly more responsive in pitch and less so in roll, so use low rates on elevator and high rates for the ailerons.

The Ike is well behaved even at reduced airspeeds; be sure to keep a little power held in during the final approach and landing. Aerobatics are easy as is inverted flight. The model also benefits from some coordinated rudder and aileron mixing to minimized adverse yaw. Just like its smaller 1979 brother, the new giant-scale Howard Ike looks and flies great. Once airborne, you'll be ready for the checkered flag. It's a winner!

The removable pilot seat is held in place with magnets. The shoulder straps, seat belts and buckles all come from a fabric shop.

The Howard Ike is a great-flying design—aileron differential helps to eliminate adverse yaw.