



Clean, efficient lines, plus the cabin gives our single channel bird a most realistic appearance while waiting its turn on the Sunday Flight line.

MISS AMERICA R/C

AND STILL ANOTHER VERSION OF THIS FAMOUS OLD BIRD DESIGNED BY FRANK ZAIC BACK IN THE GOLDEN ERA OF MODELING CIRCA 1930'S—FINE DESIGN WAS A NATURAL FOR RADIO CONTROL SINGLE CHANNEL SPORT WORK.

by WILLIAM WINTER

► The original Miss America by Scientific was one of the first free-flight models kitted. First produced in 1934, it was a six-foot cabin job for the Brown Junior engine. It was pretty then, and it is just as pretty today, perhaps prettier when you consider our trend to contest boxes.

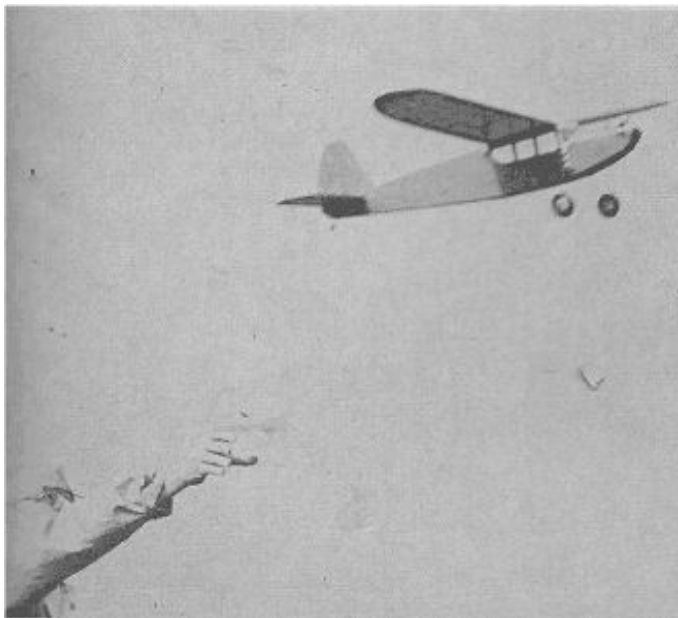
In recent times, Joe Wagner published an .02 free-flight version in MAN. This, of course, set many an R/C fan to speculating—why not a “classic” model of this history maker. Slim lines and curved wing tips, the cabin, that profile, all combined into an orthodox model which somehow seems entirely different.

Our .049-powered radio version more than lived up to

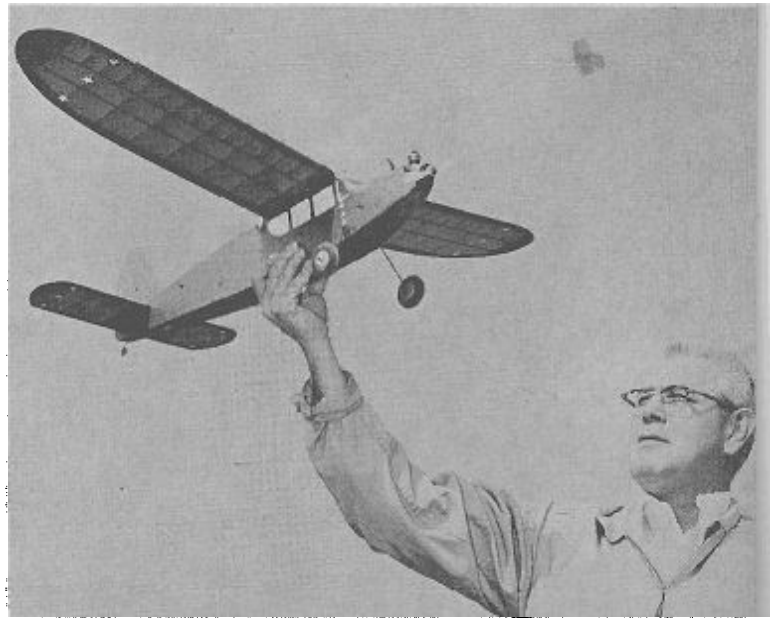
expectations, being a decidedly stable and graceful flier.

The design is intended for the growing crop of relayless 3-volt receivers. Having tried several makes, as well as several makes of escapements, we found several troublesome areas.

In one case, where receiver instructions warned against the possibility of residual magnetism in the escapement—a piece of Mylar or Scotch tape should be placed on the escapement coil core beneath the armature to prevent actual metal-to-metal contact (and this is an old trick, so don't be alarmed)—we found that voltage measured at the escapement with receiver idle was 1½ volts on a 95-degree day. This would hold the escapement locked in. Of course, the heat inside the cabin in the sun (Continued on page 38)



Study in stability—straight away flight without the use of the keying is the ideal flight trim so necessary for successful single channel flying.



Three-star bird is description given by our author who holds his “Miss America” up for critical inspection by the rest of the modeling world.

BRAND NEW MODEL FOR RADIO CONTROL MISS AMERICA

SCIENTIFIC

THIS SENSATIONAL NEW R/C MODEL IS AN EXCITING BLEND OF BEAUTIFUL LOOKS . . . AND SUPERB PERFORMANCE

Words can't describe the smooth responsiveness and superb handling that we experienced in the many, many flight tests on our new "Miss America". The ship flew perfectly from its first test hop! We found that it will operate reliably from the smallest of air fields. The kit is complete, too — and very easy to assemble from the deluxe preformed parts. Designed by Bill Winter, world famous model editor and designer.

\$6⁹⁵




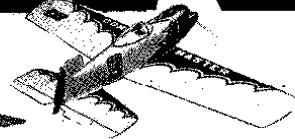
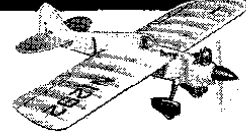

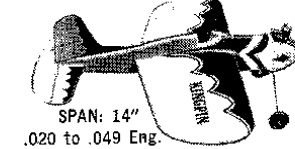
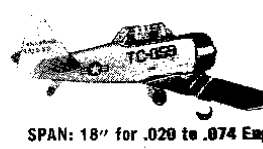
42" WINGSPAN
For .020 to .049 Engine

DO YOU HAVE OUR NEW 1963 CATALOG?

It's brand new and very colorful! Pictures and describes over 100 different gas powered models & accessories! Available at your dealer for a mere 10¢. Or if your dealer is "out", just send a dime to factory with your catalog request.

If no dealer is available, add 25c (postage and packing) to cost of model

SCIENTIFIC MODEL

 SPAN: 18" For .020 to .074 Eng.	 SPAN: 18" For .020 to .074 Eng.	 SPAN: 20" for .049 to .099 Eng.	 SPAN: 18" .020 to .099 Eng.	 SPAN: 28" for .049 to .099 Eng.
Stuka Dive Bomber \$2.50	COMBAT MASTER \$2.50	BONZO \$2.29	STUNTMAS-TER \$1.75	SUPER CUB \$2.00
 SPAN: 16" .020 to .074 Eng.	 SPAN: 14" .020 to .049 Eng.	 SPAN: 18" .020 to .074 Eng.	 SPAN: 18" for .020 to .074 Eng.	 SPAN: 18" .020 to .074 Eng.
LITTLE STINKER \$2.95	KINGPIN \$1.69	LITTLE SPITFIRE \$1.50	TEXAN "AT6" \$2.50	ZIG ZAG \$1.49

Miss America R/C

(Continued from page 17)

must have been much higher. So we suggest some kind of a heat test to make sure you have no such condition (but we doubt that you will).

In two cases the receivers would not work properly—with the particular escapements used in combination on as much as four pen-cells wired for 3-volts. When the manufacturer recommends, or suggests, alkaline batteries, by all means use them even if they are 50 cents apiece. Two of these batteries are adequate.

The use of the proper ohmage escapement—and this is left pretty much to the consumer to dope out for himself—is essential. With two proven receivers and two supposedly acceptable escapements, we had doubtful results, even on alkaline batteries.

And in a small ship with a high rpm motor—and does a Half-A scream!—there can be vibration problems. One escapement cycled like mad on the ground—and we've used this escapement for years on 29's and 35's! Another, two in fact, would skip on pull-outs after spirals, "Walking the airplane in a zoom." So use the largest prop recommended for the particular engine.

All these problems—and you may not encounter them—are easily licked. The fact that we show a CitizenShip receiver and escapement does not mean that we recommend it above others. There are many fine receivers and escapements, so use your own favorite.

We do think that the CitizenShip compound type—it has no motor control contact however—is fine for a small model, especially since it moves fast on light rubber which permits plenty of turns. We have Vari-comps and Babcocks in other

airplanes, so we make no comparisons in any other respect.

CONSTRUCTION

Fuselage: While construction is quite simple, a few points should be brought out in advance. In addition to the normal thin doubler which extends approximately to the trailing-edge station, there are two more thick nose doublers which serve two purposes: one, to add strength to the front end and, two, to eliminate tricky bending in of the sides forward by providing enough wood to permit quick sanding to contour. In addition there is a short side doubler aft to reinforce the general tail area.

While wing hold-down dowels should always face forward to permit the wing to slide off easily, the use of a celluloid windshield after the manner of the original Miss America, renders such a dowel arrangement rather difficult; however, the reader may elect to alter this detail, possibly by the substitution of a windshield block.

Note that the firewall is 1/8 in. ply—we need weight forward anyway for clean trimming—and that Bulkhead B is laminated from 1/8 in. balsa and 3/32 in. ply, the reason being that large cut out in this bulkhead is required for access to the battery box or batteries (if no box is use). The critical area in a cabin model is at this station so the weight is well spent.

Cut the two fuselage sides from medium-hard 1/16 in. balsa sheet—there should be some grain for strength, so avoid mushy appearing wood which breaks off easily. Rule off the bulkhead positions, then, using contact cement, attach the aft doubler and main cabin doubler—both being cut from 1/16 in. sheet; follow this by locating the four (2 to a side) nose doublers of soft 3/16 in. sheet balsa.

Prepare the bulkheads. In cutting the firewall, it would be a good idea to provide the engine mounting holes now, and to install reliable mounting nuts (or nut plate) to take the bolts. If a beam mount is needed for your engine prepare the proper sized holes for 1/4 in. square bearers.

Bulkhead C, like B, is laminated but from two thicknesses of 3/32 in. balsa (medium hard). Be sure to run the grains of the laminations at right angles to each other. Bulkheads D and E are only frames, made up of four pieces each of 3/32 in. sheet, the pieces overlapping at the corners as shown. F is two-ply 3/32 in. sheet.

Join the two sides by cementing in place formers B and C. Add 1/8 in. sheet former A, just behind the firewall, with grain across ship. Pull the sides together at the rear, gluing each to the shaped, soft tail block (1 1/8 x 1 x 3/8 in.). To provide the land on which the sides glue, a rectangular piece of 1/16 in. sheet is cemented to the front of the block, the same height as the block but shy 1/16 in. on each side. Install frames D and E.

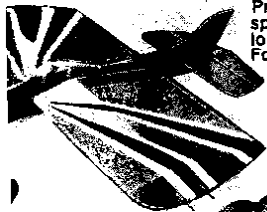
To simplify escapement installation, it is advisable now to install the torque rod (3/16 in. sq. balsa) and the escapement. At the rear, the tail block is drilled for a 1/8 in. dia. hole as shown to prevent binding, and a metal bushing is provided to serve as a bearing (don't glue it yet).

The appropriate music wire extensions of the torque rod (.049 to 1/16 in. wire recommended even if the escapement bushing requires drilling out) are made by binding the wire to the rod with thread and then cementing the joints. The inner ends of the wire should be bent at right angles and imbedded into the wood.

The torque rod can be slipped into place through the cabin top, provided the rear right-angled bend is not made until later.

5 NEW GAS-POWERED THRILLERS

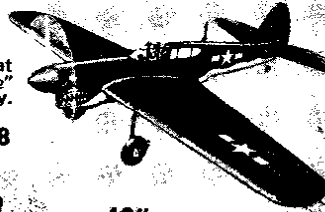
GIANT 152 SQ. IN. WING



FIRE BALL RACER

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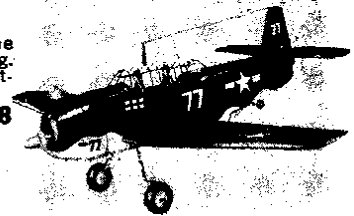
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KING COBRA

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GRUMMAN AVENGER

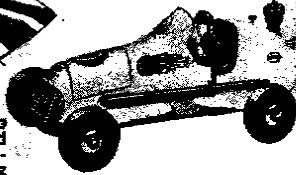
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CIRCLE MASTER

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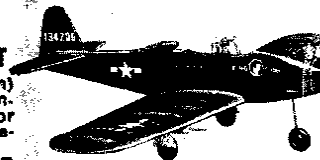


43" SPAN

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King size model (43" span) that really delivers championship performance. For .19 to .35 engines. All deluxe, preformed parts.

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BIG 27" SPAN

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For .020 to .049 Eng.	.020 to .074 Eng.			.049 to .099 Eng.
Stuntmaster \$1.69	PIPER CUB CRUISER \$1.98	CESSNA "180" \$1.98	AMERICAN BOY \$1.29	F-51 MUSTANG \$2.95
				
SPAN: 18"	SPAN: 18"	SPAN: 21" for .049 to .099 Eng.	LENGTH: 9" For "1/2A" Gas Eng.	SPAN: 18"
.020 to .074 Eng.				.020 to .074 Eng.
CESSNA HAWK \$2.50	P-40 FLYING TIGER \$2.50	CESSNA "172" \$2.95	Half-Pint Racer \$3.95	CESSNA "Bird Dog" \$1.98

The rear bearing should not be cemented until the lining up is done.

For the escapement mount, a pair of 1/8 x 1/4 in. soft balsa strips are cemented to each cabin side at the location shown. If the escapement is mounted on a 1/16 in. plywood slide it can be lowered into place when ready. Spot glue the mount so that it can be removed for servicing when necessary. Cover the escapement with cloth to keep out dust until the model is finished.

Add the top and bottom sheeting with grain across ship. You'll hear arguments about this but lengthwise grain will crack. Glue the firewall in position. Bend and install the rubber hook, leaving an access hole in the bottom.

The landing gear mounting block is cut to length from 3/8 in. hole square hardwood and is grooved along one side to take the .072 music wire landing gear, which is knockoff. The hardwood cements to the front of Buckhead B with its lower face flush with the fuselage bottom skin. Add the 3/16 sq. balsa corner fill pieces in the nose, then the nose bottom block which is 1/4 in. balsa sheet, grain lengthwise. It won't split on such a small plane.

Shape the top cowling piece from a soft balsa block 3 in. long, x 1 in. deep x 2 1/4 in. wide. The block is well hollowed, leaving about 3/16 in. wall thickness. The rear of the block, being open, is faced off with a 1/8 in. former. Before locating the block permanently, install a small, rectangular Perfect free-flight tank, blocking it in place with scrap balsa so that the top of the tank is no lower than the needle valve of the engine. Provide neoprene lines for filling, drain, and for the engine.

Two side nose block are cut from soft balsa (1 1/4 x 9/16 x 2 1/4 in.). Double glue these to the firewall and add the bottom block (3/4 x 1 1/4 x 7/8 in.). The top wind-

shield block is cut from 1/4 in. sheet but is shaped when the fuselage is sanded.

Sand the fuselage with a fairly fine paper then follow with a finer paper. A sanding board will insure even sanding of the flat areas. Drill the holes for the 1/8 in. dia. wing hold-down dowels and the landing gear dowel. If the front dowel is run across the ship as shown, glue it well and retain with a 3/8 in. square strip to a triangular cross section. The rear dowel should be left off until covering is complete, as should the landing gear retention dowel.

Tail wheel: The 1/2 in. dia. wheel mounts on a 1/32 in. wire axle, bent as shown, and sewn to a 1/16 in. ply base. The fuselage sides are recessed for the mount to glue into place.

Stabilizer: Although the 1/4 in. thick leading and trailing edges are shaped—and you might as well make both edges identical for strength—the stab can be built flat on the bench, since the 3/32 x 1/4 in. medium-soft cross pieces have no shape. It is desirable to notch both edges as an anti-wrap preventative.

Note, however, that, since the bottom center section of the stab is 1/16 in. sheet—grain spanwise—the two center cross pieces which will lock the fin in position are 3/16 in. deep, but 1/8 in. wide. Use soft wood here.

To assemble the stab, pin the edges to the bench, making sure the mid-point of the edge shape is 1/8 inch the bench, then add the center section sheet. The two fin-holder cross pieces go on top of this. Add all cross pieces and the tips, which are assembled (double glue the joints) from segments of medium-hard 3/16 sheet to gain grain direction.

Fin: This is assembled by pinning the three segments of 1/4 in. soft balsa sheet together with grain as shown. Note that

the fin extends down into the stabilizer so allow enough material. The finished fin is carefully sanded with light paper, switching sides occasionally in the process to avoid deforming the wood. Round the leading edge, and just barely round the trailing edge.

Rudder: Cut to outline from 1/8 in. soft balsa sheet, then sand carefully to a tapered cross section, round at front and about 1/16 in. square at the back, which is then rounded off.

Assembly of Fin and Rudder: For neatness it is desirable to cover both pieces before hinging. Give the wood two coats of clear dope that has been plasticized with about eight drops of castor oil per ounce of dope—this prevents warping. Cover both pieces on each side with light Japanese tissue of the desired color. Color doping is advised against, although sprayed dope is lighter than brushed dope.

Make the rudder linkage piece from 1/32 in. music wire, bending both ends in a semi-circle. Drill a hole through the rudder for the 2/56 machine screw which holds the wire. Place a light washer under the head and the nut on the screw, and pull up tight enough to hold the linkage piece firmly. The linkage can be tilted upward for more movement of the rudder and vice versa.

Use two sets of pinking tape (linen) hinges to hold the rudder to the fin. In cementing the tape onto the surfaces, do not glue the cloth beyond the edge-line of the wood; the hinges must permit very free control surface movement—there can be no restriction.

Cement the finished fin-rudder into the stabilizer slot after the stab has been covered.

Wing: Vee-dihedral is used, which allows building each wing panel flat on the bench, with one joining line at the center.

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If you will go to the trouble of making up a dihedralled building board—hinge the middle and you can use the board for other projects—you can incorporate the dihedral joiners as you build.

The leading edge is shaped from 7/16 in. sq. medium-hard balsa strip—shave down a 1/2 sq. if necessary. The trailing edge is 1/4 x 3/4 in. standard tapered stock and should be rock hard. Over-and-under 3/16 sq. hard balsa spars are employed, with an additional rear spar of the same material. After cutting 3/32 in. soft ribs pin them together and sand to match. False-ribs, between the main ribs, extend between leading edge and front spars. These lend support to the edge with striking objects and preserve a suitable wing cross section without resorting to sheeted leading edges which are such a mess to repair. It is suggested that you notch the edges for maximum strength and anti-warp qualities.

Note that the tip is designed to vary wing thickness in proportion to the varying chord which results from the graceful curved tip shape.

To construct, pin the edges and bottom spars to the board, using one rib as a guide for checking spacing throughout. Be sure that you allow sufficient spar material for center joining. Assemble the tip segments from appropriate pieces of soft-to-medium balsa. T-1 and T-2 are 1/8 in. sheet; T-3 is 1/4 in. sheet. Pieces T-4 and T-5 laminate on top of T-1 and T-2 so that the tip can be sanded to correct contour.

To obtain a smooth top spar transition into the tip, cut piece S-1 which glues on top of the tip and to the spar inboard of the tip rib. The top spar cements in place after all ribs (excepting the center ribs) have been installed. With the top spar located, glue in the false ribs.

To incorporate the dihedral, bevel the center-line ends of the edges and spars by blocking up each panel at right angles to the edge of the bench at the desired dihedral angle (1 3/8 in. under the tip). Use a sanding board, with the bench edge as a jig, to sand all the ends simultaneously.

Pin one panel flat to the bench, then join to it the other panel which is raised 2 3/4 in. at the tip. Double glue all joints. Now cut the joiners from 1/16 in. plywood and cement to the leading edge and front spars as shown. Add the two center section ribs, cementing them to each other side by side. The center section sheeting is 1/16 in. balsa with the grain spanwise.

Sand the wing carefully with medium then fine paper, being careful not to alter the rib shapes. The 1/16 in. ply protection pieces which reinforce the trailing edge where the wing rubbers grip, are cemented on after the covering is done.

Covering: The tail surfaces already are complete. The fuselage is covered with four pieces of material, one for each side and the top and the bottom. The top of the nose is a smaller piece. Run the paper grain lengthwise. Wing is covered with pieces, one for each panel top and bottom with grain spanwise.

FLYING

Check these points: Is the CG in the proper location? Are the flying surfaces in alignment and at designated angle relative to each other? Have all wraps—and don't overlook stabilizer tips or the top, front of the fin—been removed?

This model can be hand glided in complete safety. Aim the nose at a spot on the ground about 30 feet away and launch with a firm push; don't throw it, and don't nose it up, especially if there is any breeze. If it is windy, wait.

Run off a tank of fuel to establish the length of the motor run. For the first

motor test flight, allow the engine to exhaust all but about one-minute of fuel. Being sure that the escapement rubber is wound, that the escapement operates properly with engine running, and that you have adequate radio range, launch gently with nose pointed at the horizon. A weak launch is preferred at this point since the ship will do nothing worse than settle to the ground not too far away, after which you can make a better launch without fear of stalling out the ship.

Our model flew perfectly on its first test flight.

Once some altitude has been attained you can make final adjustments for the desired glide. If slightly tail heavy add weight to the nose. If slightly nose heavy, add no more than 1/16 in. thick packing (plywood shims) under the leading edge to increase incidence. If the glide circles bend the vertical rudder linkage arm to produce a nearly straight glide (a very slight turn may be useful if you have trouble in the air). After the glide has been perfected, adjust the thrust line to compensate for turns under power. If the glide is proper and the ship tends to mush or stall, add downthrust.

You will find your Miss America a truly delightful model when flown for sport.

In Their Honor

(Continued from page 18)

ation where most pilots would have sought to escape, Schilling attacked! As he blasted away at one of the enemy planes, the Nazi fighter began to come apart and pieces of wreckage whipped back striking Schilling's P-47. Disregarding the tears and gashes in his plane, Schilling attacked another German fighter and damaged it. In the confusion he became separated from his wingman, and when he turned again to attack the enemy's main formation he did it single-handed! At that moment the Thunderbolt blew a cylinder head from the strain! Oil spurted from under the cowl and spread over the windscreen. Smoke poured from the engine and obscured his vision during the most crucial moments. With his fuel and ammunition dangerously low and the engine threatening to quit at any time, the determined pilot attacked two more German fighters and shot down one of them! Only then did he point the nose of his laboring Thunderbolt toward home.

Schilling finished the war with an impressive record. He had made lieutenant colonel at the age of 24, and was the fifth leading ace in the Eighth Air Force. He had flown 360 hours on 132 combat missions and had destroyed 33 enemy aircraft.

After the war, Dave Schilling held down a desk job in The Pentagon until April 24, 1946 when he was assigned as commander of his wartime outfit, the 56th Fighter Group. Stationed at Selfridge Field, Michigan, the 56th was one of first units to be equipped with the Lockheed P-80 Shooting Star, America's first operational jet.

Meanwhile, tension was again mounting in Europe. The Russians had sealed off all surface routes into Berlin and Operation Vittles, the famous Berlin Airlift, was underway. The Soviets had built up their jet fighter strength in Germany, and the United States had no jet Squadron anywhere in Europe to counteract this threat. Meanwhile streams of unarmed transports were flying food and other necessities of life into the city. There was not enough time to transport the planes, men and equipment of an operational unit to Europe by ship. Colonel Schilling studied his charts and came up with the answer. Why not fly the short ranged jet fighters all the way to Europe by refueling at Air