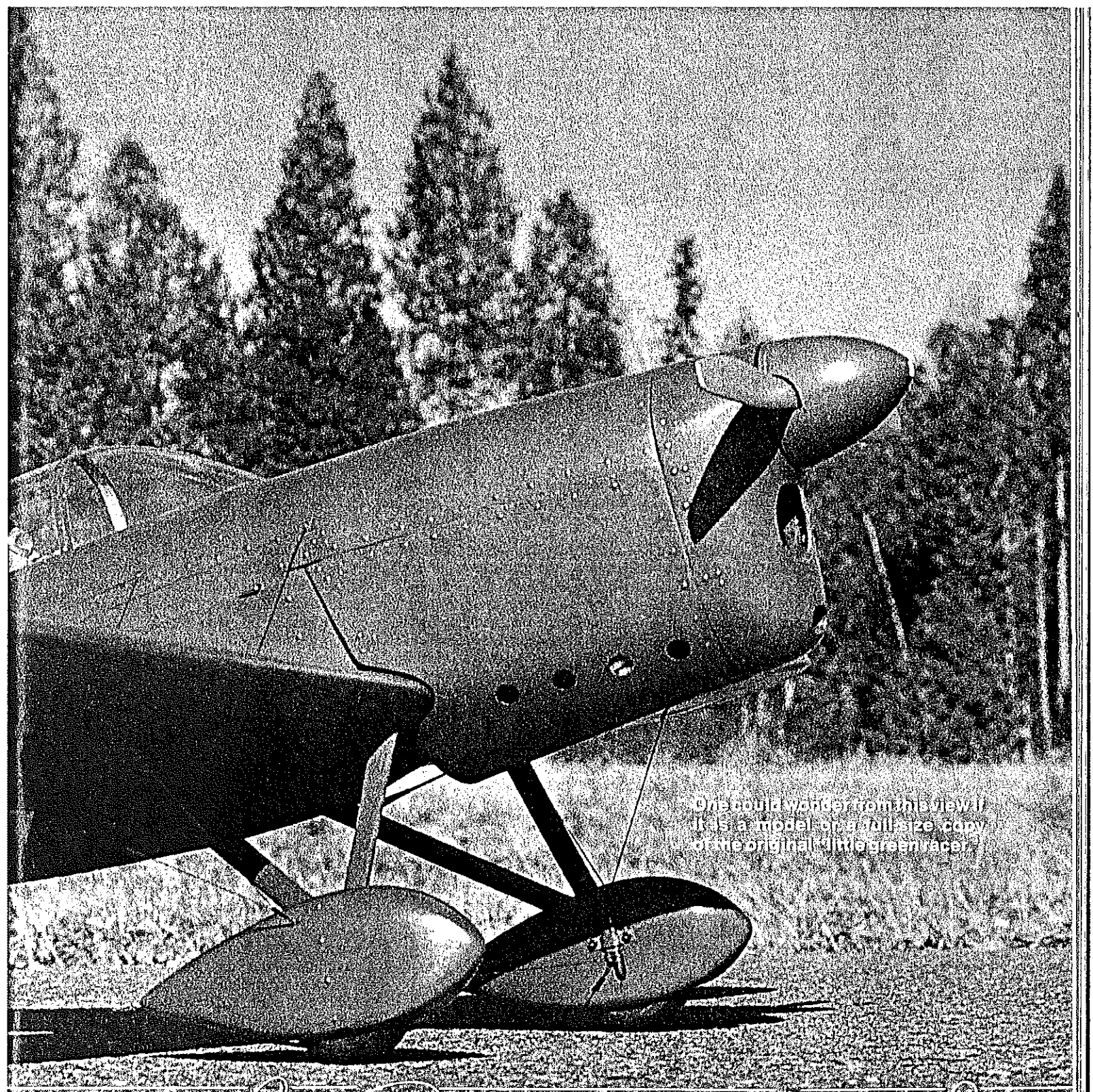
Miles Mohawk

Featured in 1/5-size "Sunday Scale" is a classic airplane from the Golden Age of Air Racing. Our author stretched the wingspan to make the model fly better, so it's intended for

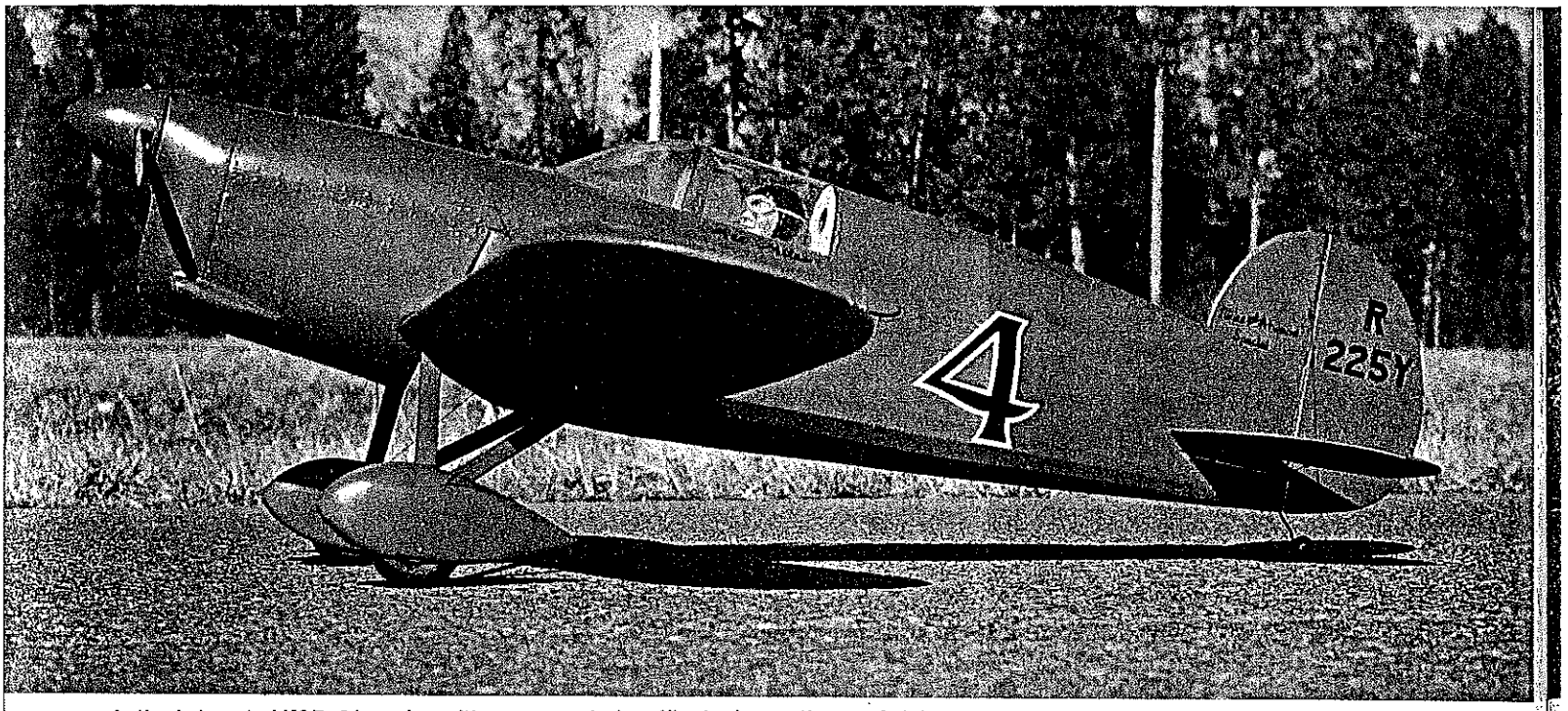
#1180



One could wonder from this view if it is a model or a full-size copy of the original Little Gramercy.

Bob Special

fun flying rather than competitions. Designed for .20 to .25 cu. in. engines and a four-channel radio ■ **Fred Reese**



Author's inverted K&B .21 engine with rear-mounted muffler tucks neatly out of sight underneath the cowling. If you use an engine with a side-mounted muffler, you'll have to cut away portions of F-2 to get the needed clearance. See the text for muffler mods on the K&B .21.

THIS IS A CLASSIC RACER from the Golden Age of Air Racing. Clean lines and streamlining made it competitive with other racers of its day that had twice the power. At one-fifth scale this still is a small model, and it is designed for .20-.25 cu. in. engines.

To many of us, the building and flying of model airplanes is a way of studying and preserving aviation history. There were many aircraft and people involved in pioneer aviation that are not well known, but they still contributed to modern aviation. The bravery of the pilots who strapped themselves into machines that were just chalk lines on the floor three months earlier needs to be remembered. Air racing quickly changed the military airplanes from biplanes to all-metal monoplanes that were double the speed. This technology became very important, as we were thrown into World War II shortly thereafter.

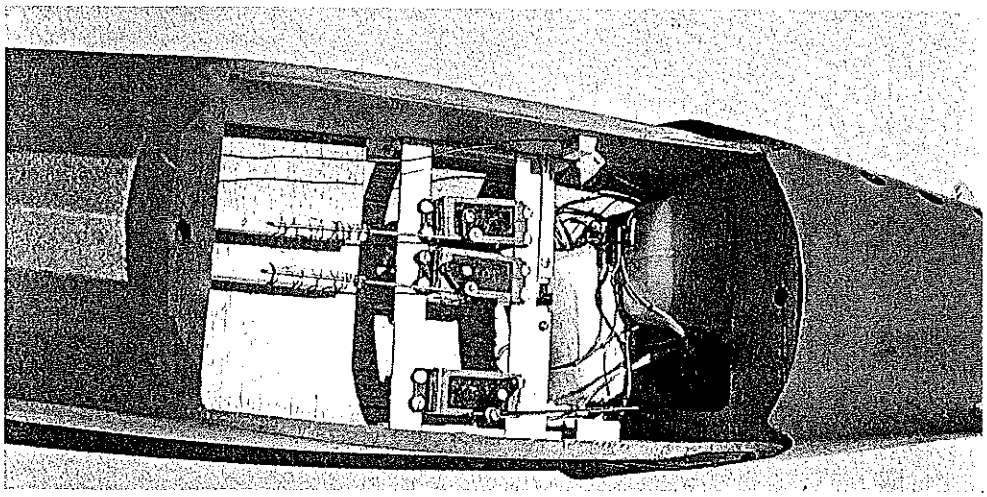
We have all heard of the Gee Bee racers, the Mr. Mulligan, and some of the other planes that won the Thompson and Bendix at the National Air Races. These unlimited air races were equal in stature to today's Indianapolis 500 in auto racing. Also at the national event were at least a dozen other races for smaller displacement classes. These races included straight line, city-to-city dashes, and pylon races. Some of these early racer-builders were Ben Howard, Art Chester, Steve Wittman, Clayton Folkerts, Keith Rider, Eldon Cessna, Gordon Israel, and Lawrence Brown.

Lawrence Brown, famous for his B-2, Miss Los Angeles, built his first racer for another pilot, Lee Miles. The Miles-Atwood Special, named for its pilot and its sponsor, was built and first raced in 1933. The petite plane had a wingspan of only 16½ feet! The fuselage was built of conventional welded steel tubing covered with wood stringers and fabric. The wing was made with spruce spars and plywood ribs. It was covered with fabric and braced with wire for support. Power was a Menasco C45 four-cylinder engine of 363 cu. in. displacement, producing 185 hp.

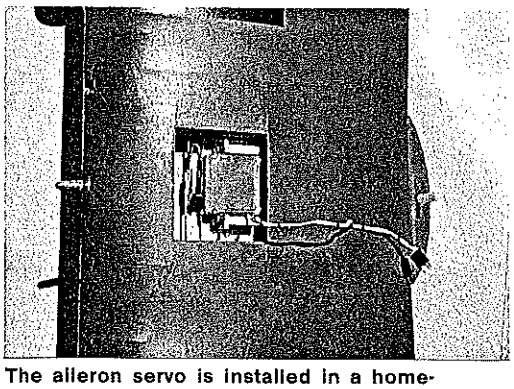
In 1933 the Miles-Atwood Special raced as #6 without wheel pants or spinner, but it took two firsts, two thirds, one fourth, and two fifths at the National Air Races. Planes qualifying for the 375 cu. in. class races could also fly in the under 550 and 1,000 cu. in. races and the Thompson. Top speed of the Miles-Atwood Special in 1933 was 170.14 mph around the pylons and 210.64 mph in the dashes. Jimmy Wedell won the Thompson that year with his 985 cu. in. Wedell-Williams racer at 237.95 mph.

In 1934 the Miles-Atwood Special was given wheel pants, a spinner, and a close-fitting cowl, and it was painted all-green with a new race number, four. At the Pan Am Races in New Orleans that year, the little green racer won three firsts in the 375 cu. in. class. At the 1934 National Air Races in Cleveland, the Miles-Atwood Special won six firsts, one third, and a fourth. Top speed was up to 206 mph around the pylons and 233.44 mph in the Shell-sponsored dashes.

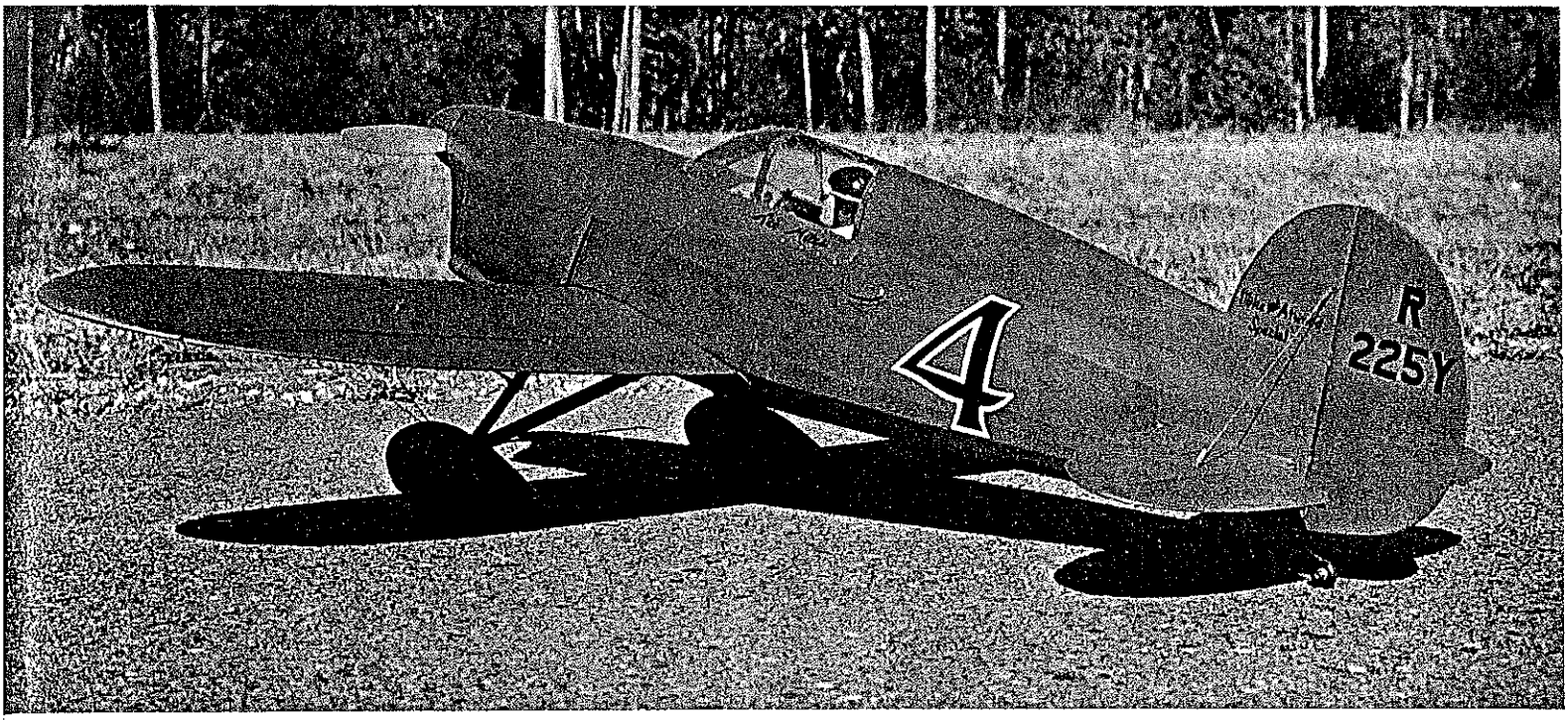
Lee Miles entered the Miles-Atwood Special in the Thompson Trophy Race



There is plenty of room in this fuselage for the radio. The switch and servos are mounted on ⅛-in. ply crosspieces. The switch pull is .045 wire slipped into a 1/16-in. hole in the switch. Servo grommets keep the wire in the switch, and the pushrods are ¼ sq. balsa.



The aileron servo is installed in a home-made mount and screwed down to ⅛ ply strips glued into the wing. The two 1/16 wire pushrods and the clevis rod are soldered into a short length of 3/16 brass tubing.



A set of decals is available from the author (text has address, price) to help finish your model. It isn't necessary or desirable to detail this plane to the hilt, though. As the author says, "It's Sunday Scale and not really intended for use in competition, but for fun flying."

along with Roy Minor in Miss Los Angeles, Art Chester in the Jeep, Rodger Don Rae in a Keith Rider, Harold Neuman in Ben Howard's Ike, and Roscoe Turner, Doug Davis, and J. Worthen, the latter three all flying Wedell-Williams racers with very large engines. The Miles-Atwood Special had engine problems from the start, and it failed to finish. The other Brown racer, Miss Los Angeles, finished second behind Roscoe Turner. The Miles-Atwood Special also won the Greve race in 1934 for engines with less than 550 cu. in.

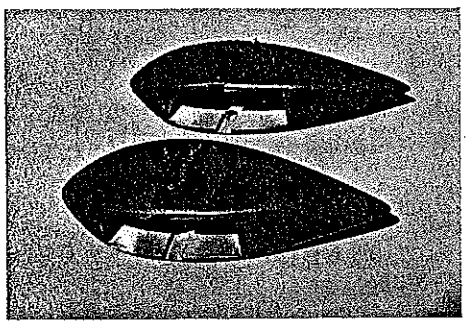
The Miles-Atwood Special was small, light, and highly streamlined, but it reached its peak in 1934. By 1935, aircraft were appearing with cantilever wings and retractable landing gears, spelling the end of the wire-braced, fixed-gear era.

The model is very small for 1/5-scale, but it still has a very large fuselage. The scale wingspan is only 39 inches. I originally planned to build the scale-size wing, but after completing the basic fuselage structure, I could predict that the finished weight would be around four pounds. Consequently, I kept the fuselage to scale dimensions but stretched the wing to 45 inches to keep the wing loading within reasonable limits. The wing still looks small, so the overall appearance has not suffered, in my opinion. Instead of being a beast, as it might have been with the scale-size wing, the model is a pleasure to fly.

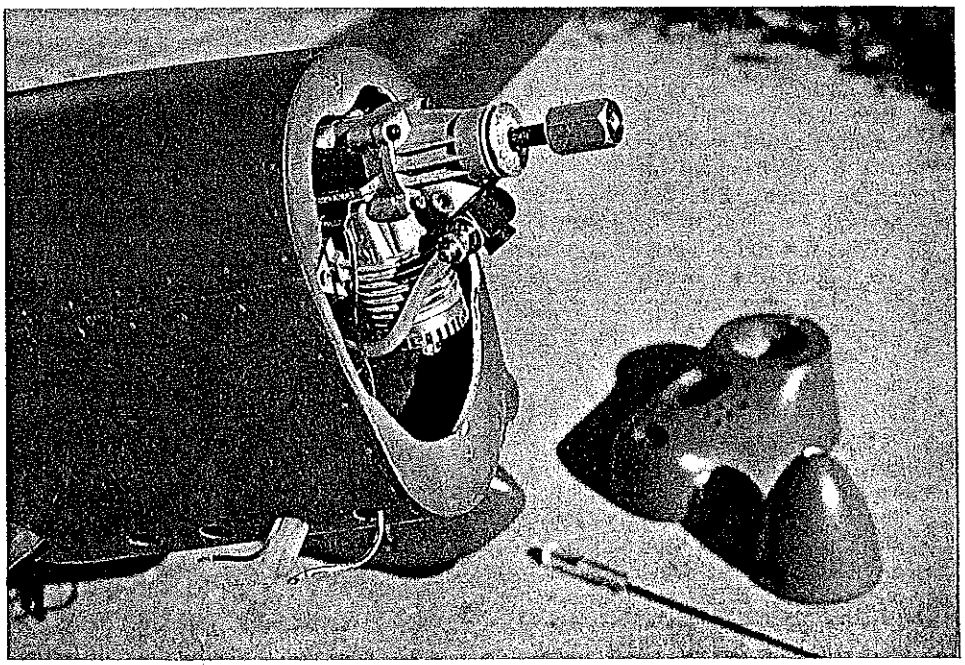
The K&B .21 engine works perfectly in this design. The rear-exhaust muffler dumps into the cavernous cowl and does not need further extensions. I did reverse the outlets so that they would point downward. Just redrill with a 1/16 bit, and tap for the 2-56 setscrews. This engine is fantastic. It hauls the four-pound model around with authority. The K&B .21 starts easily, and it will idle forever, even inverted. The model flies fast and is fully aerobatic, but it is very smooth and gentle.

I call this type of model *Sunday Scale.* It is detailed but not really enough for competition; instead, it should be flown regularly, as you would a Kadet, Kaos, Falcon, etc.

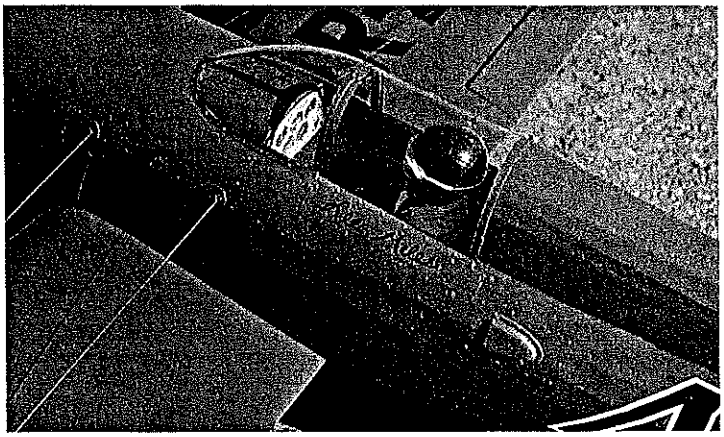
If you decide to build this model, order the 1934-37 Miles-Atwood Special three-view drawing by Hirsch from Repla-Tech International. The two photographs included in the package will help you visualize some of the details on the plan. There is another excellent photograph of the Miles-Atwood Special as #4 in Reed

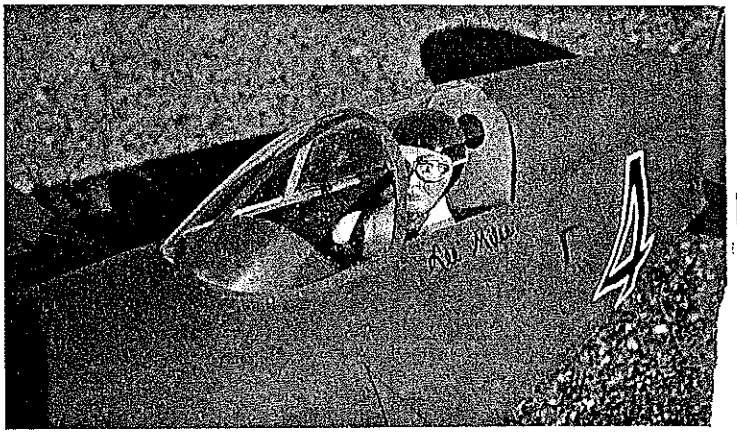


Wheel pants are made from balsa and plywood, covered with Solartex. Auto body spot putty was used to smooth out the seams. Collars on each side of the wheels are accessible from slots at the bottom. Two 4-40 x ¼-in. bolts, screwed into blind nuts and a brass strap, hold the wheel pants.

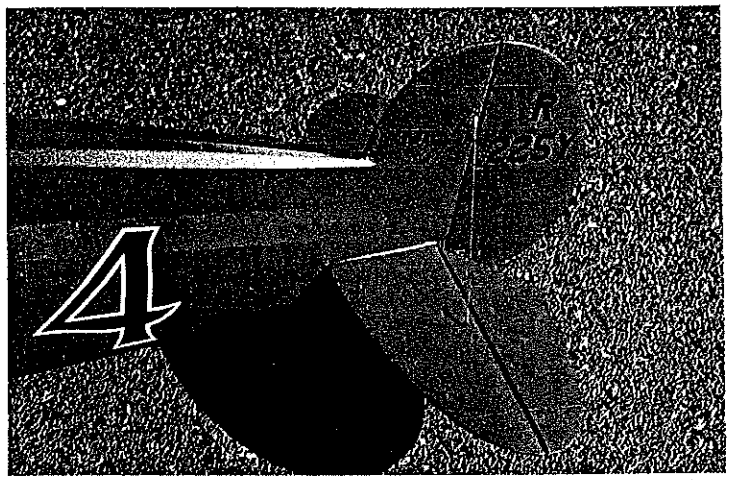


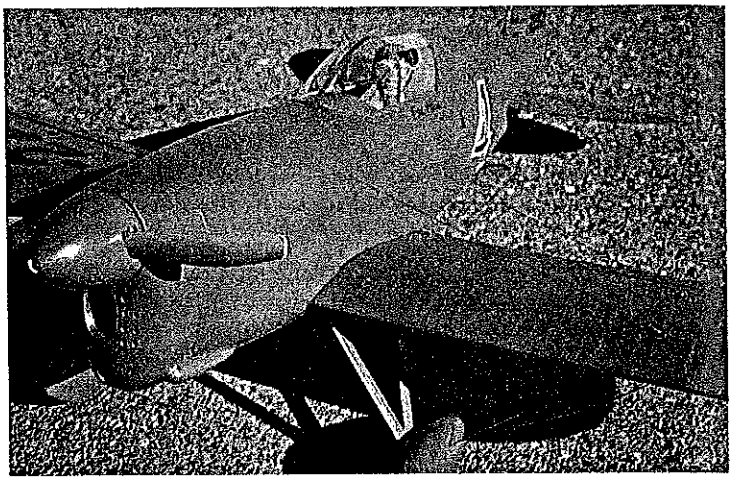
Remove the nose block to access the engine. The glow plug is lit by one wire soldered to a ⅛-in. wheel collar on the glow plug and another wire hooked to an engine bolt. Both wires and the fuel lines can stick out the scale exhaust ports. Though not shown here, the needle valve is adjusted through a hole in the nose block by a Du-Bro ball-tip Allen wrench into the head of an Allen-head screw soldered to a wheel collar on the needle valve. Author pics.





Left: Simple surface detailing and the Williams Bros. pilot figure add realism. Rivets are little dots of 5-min. epoxy applied with a toothpick before painting. Little rigging reinforcements are 1/64 ply, while the panel under the cockpit and the flange of the scoop were cut from 3 x 5 file cards. Right: The pilot figure is turned slightly so the "pilot" appears to be looking at the camera. Hole in the headrest is for checking the control cables. Wing wires are left off the model when flying, but the tail brace wires remain in place for extra support.





Left: Tail surfaces are solid 3/16 sheet balsa with ironed-on strips of covering material to simulate ribs. The rigging is 10-lb.-test monofilament with ends of crimped aluminum tubing. Loops of 1/32 wire are Zapped into holes through the vertical fin and stabilizer. Right: Front view shows the finished nose block in place and the little side bump. To be scale, the prop should be 14 in., but it flies with an 8-6. Cloth-wrapped balsa fairings around the landing gear wire are to scale. That is how they did it on airplanes back in the days of the Thirties.

Kinert's *Racing Planes and Air Races*, Vol. III, available from Aero Publishers, Inc., Fallbrook, CA.

Construction. I built the fuselage first. Make the two 3/32 balsa fuselage sides, and add the 1/32 plywood doublers. Mount the engine onto the firewall, and set the blind nuts. Drill all of the holes for the throttle and fuel lines. If you use an engine with a side-mounted muffler, angle the engine so the muffler outlet will miss the firewall.

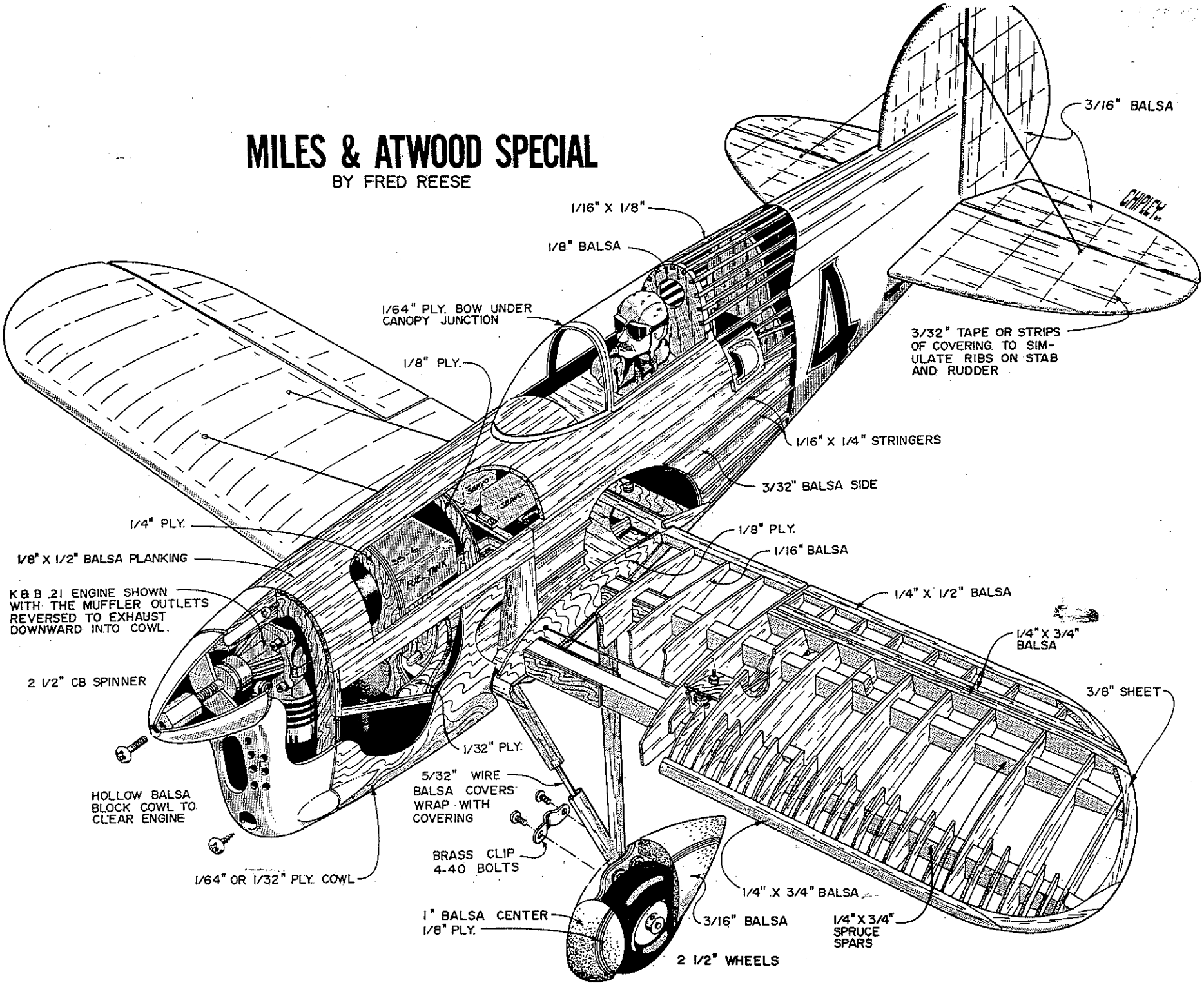
Glue F-4 and F-6 between the fuselage sides. Epoxy the firewall in place, and pull the tail together. Glue in F-2, the cockpit floor, and F-5 through F-10.

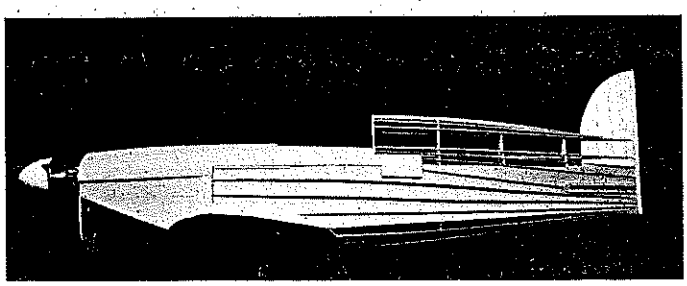
Plank the top of the forward fuselage with ⅛ x ½-in. balsa strips. This step goes quickly when using Zap cyanoacrylate (CyA). I used Zap CA+ for all construction (except for epoxy around the firewall, landing gear blocks, and joining the wing panels). The bottom strip of the forward planking is a 3/16 x ¾-in. strip glued over the fuselage sides. Behind this strip, the planking ends awkwardly at the top of the

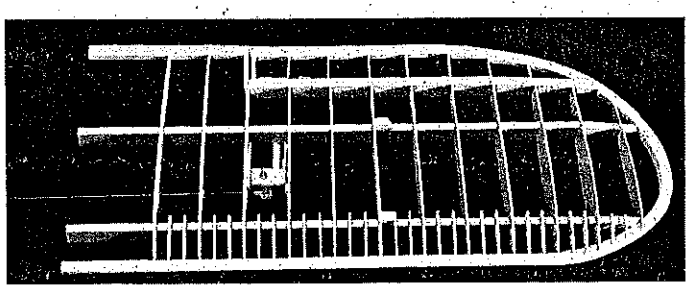
Posing with his Lawrence Brown racer is our author, Fred Reese. Although the model is fairly small, it is 1/5-scale (except for the stretched wingspan to bring the wing loading to a more useful figure). Fred says it flies great, despite some early problems he had.

MILES & ATWOOD SPECIAL

BY FRED REESE







Left: The fuselage is built with 3/32 balsa sides and 1/32 ply doublers. The forward top is planked with ⅛ x ½-in. strips. Stringers of different depths give the fuselage sides a rounded shape. At this stage, the author notes, the fuselage seems huge. Right: Wing panels are built, shaped, and sanded as a one-piece unit, then the ailerons are cut away. Leave off the two inner ribs until after joining the panels. Little blocks on top of the spars are for rigging hooks. Make sure the servo-bellcrank pushrods are ¼ in. longer than the wing center section.

fuselage sides (with no gluing surface), so I bridged this with a strip of 3/32 sq.

The rudder needs a platform on the top of the fuselage sides. Glue 3/32 sheet, cross-grained, from F-10 to the tail. Glue on the rudder and the tail post. Glue some ⅛ x ¼ balsa around the stabilizer slot to provide a surface for the covering. Do the same for the pushrod exits.

On the full-size Miles-Atwood Special, cooling air exited at the rear of the cowl on the sides and bottom. To simulate the exit on the sides, there is a piece of ⅛-in. balsa glued to the sides, ahead of the side stringers, ending just inside the cowl edge. The side stringers taper into this ⅛-in. sheet, and the ⅛-in. sheet tapers into the sides, creating a slot in the finished model.

Epoxy in the ¼-in. ply wing hold-down block behind F-6, and add F-15. Glue on all of the top, bottom, and side stringers. Glue on the 1/32 ply tank floor between F-2 and F-3.

The block of wood that forms the back of the scoop, on the left side of the fuselage behind the cockpit, must be shaped to fair with the side of the cockpit and the stringers. Think of it as a piece of thin aluminum screwed down over the stringers. Glue on the scoop after covering. Glue in the 3/32 sheet stabilizer, and prepare the fuselage for covering.

Build each wing panel, complete with the ailerons, as a one-piece unit until after shaping, then cut away the ailerons. Taper the spars evenly, top and bottom, from full depth at W-7 to ⅜ in. at the tip. Shim up the spars ⅛ in. over the plan, and glue on all of the ribs except W-2 and W-3. Glue on the leading edge, aileron framing, trailing edge, and wing tips. Add the aileron ribs, and carve and shape the leading edge, tips, etc. For this I use a razor plane and a large, coarse sanding block.

Glue in the ⅛ ply bellcrank mounts, and install the bellcranks and pushrods. Cut the servo-bellcrank pushrods ¼ in. longer than the wing center so that the two wires will overlap each other by ½ in. Glue in some scrap ¼-in. blocks on the top of the spars for the 1/32 wire "U" rigging hooks.

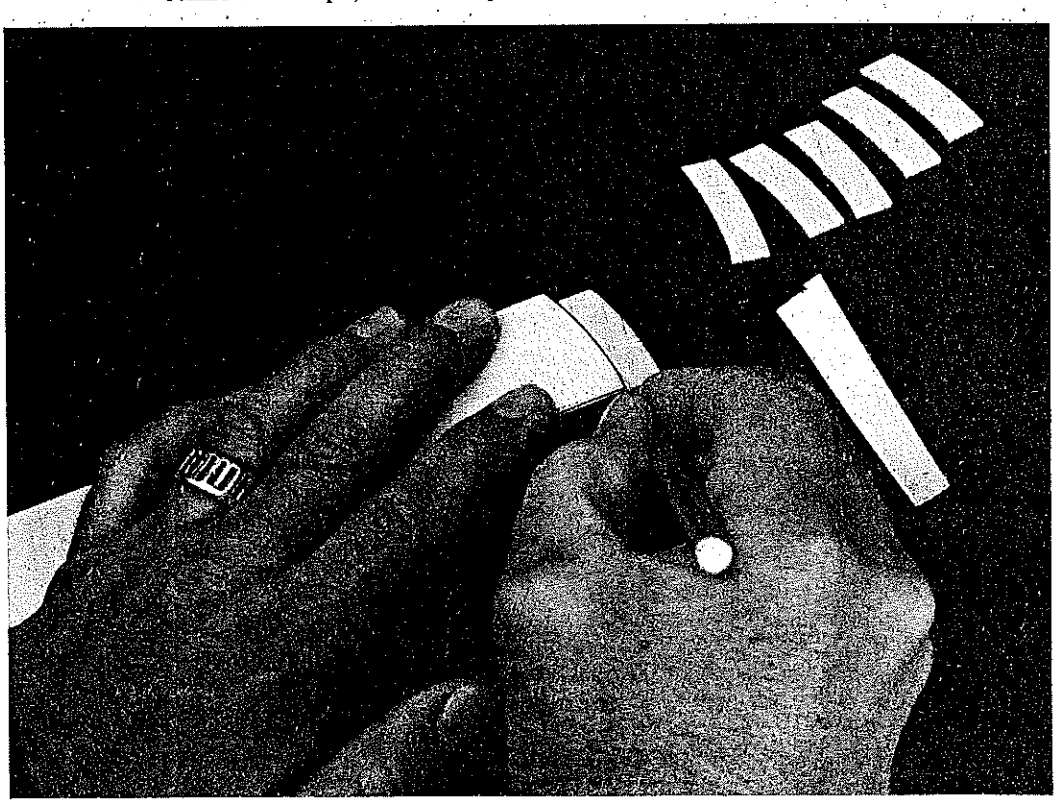
The first step in building the wing center section is to glue the spar sections between two W-10s. Glue the four W-1 ribs over the spars (the two outer W-1s are ⅛ ply), then fill in the bottom 1/16 sheeting. Epoxy-glue in place the Sig hardwood landing gear blocks and W-9. Glue on the leading edge, trailing edge, and the top sheeting (leaving a cutout for the servo). Join the wing panels with epoxy, blocking up each wing tip 1¼ in. Glue in the W-2 and W-3 ribs.

Make 1/16 ply templates as shown on the plan for making the false ribs. One is a cutting guide, and the other is a width gauge. Glue up a strip of 1¼ x 16-in. balsa with the grain crosswise. With a sharp X-Acto knife, slice off 56 of the little ribs, and Zap them into the wing. Surprisingly, this really doesn't take much time, and it isn't hard to do.

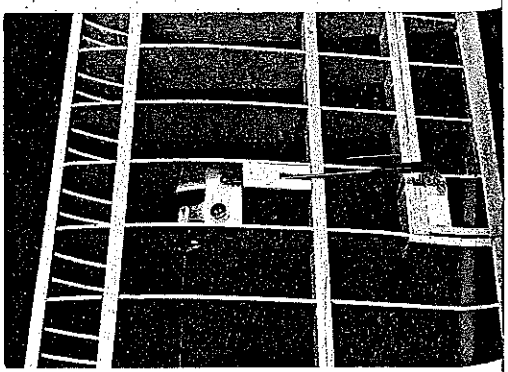
Fit the fuselage to the wing, and install the leading edge dowel to fit the hole in F-4.

I used Solartex for covering, as I wanted the fabric texture to show. However, I filled the weave with a primer coat at the top and front of the fuselage, where it is planked, as this was aluminum on the full-size aircraft. Solartex and other similar iron-on fabric coverings are incredibly easy to use and readily accept sprayed-on finishes (don't try brushing). Cover the wing and the fuselage up to the cowl.

Align the wing in the fuselage, and hold it in place with pins while you glue F-14 to the wing. Glue in the balsa block for the wing bolt, and shape it to line up with F-15. Drill through the block, F-14, F-15, and the ¼ ply hold-down in the fuselage with a 3/16-in. drill bit. Follow the drill with a ¼-20 tap. Remove the wing, and drill out the wing block with a ¼-in. drill; countersink for the

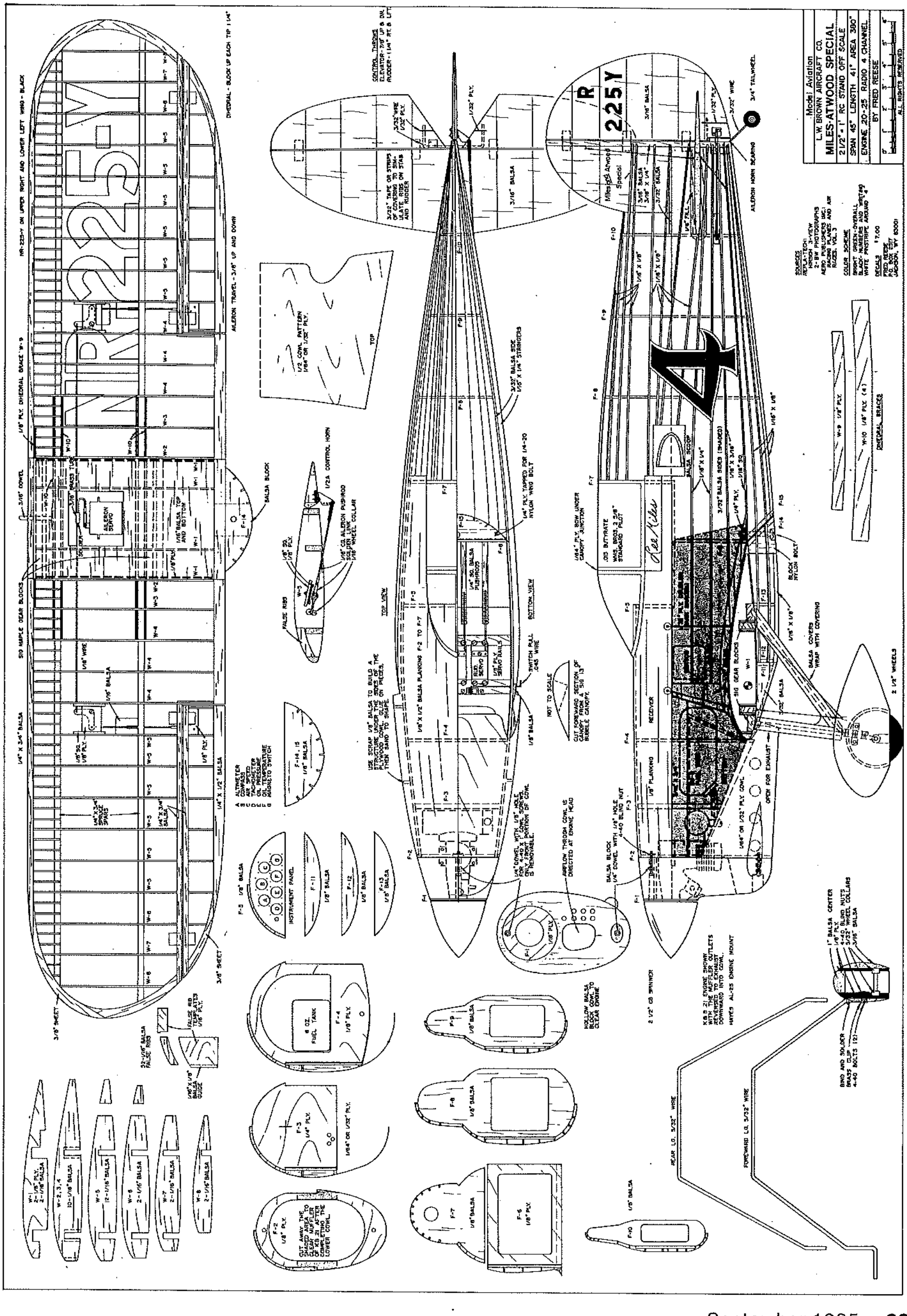


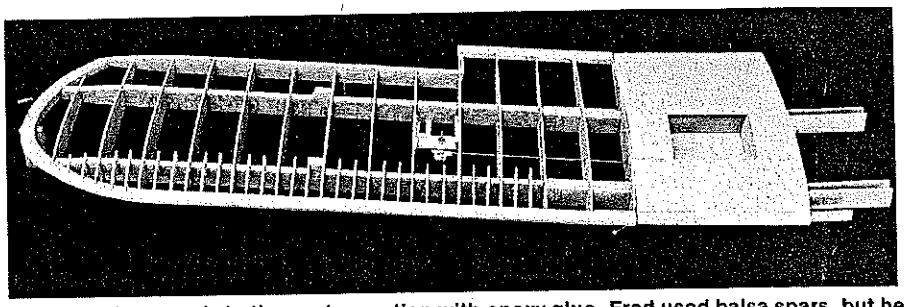
False ribs are sliced from a long strip of cross-grained balsa using the plywood template and depth gauge from the plan. They are then Zapped into place against the leading edge and spar. They give an impressive appearance, and doing the work isn't difficult at all.



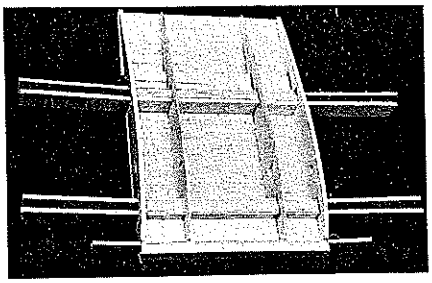
Bottom view of the aileron bellcrank and the linkage. The ½A control horns are attached to ⅛ ply plates in the ailerons with two No. 2 sheet metal screws. It's simple and neat.

Full-Size Plans Available . . . See Page 156

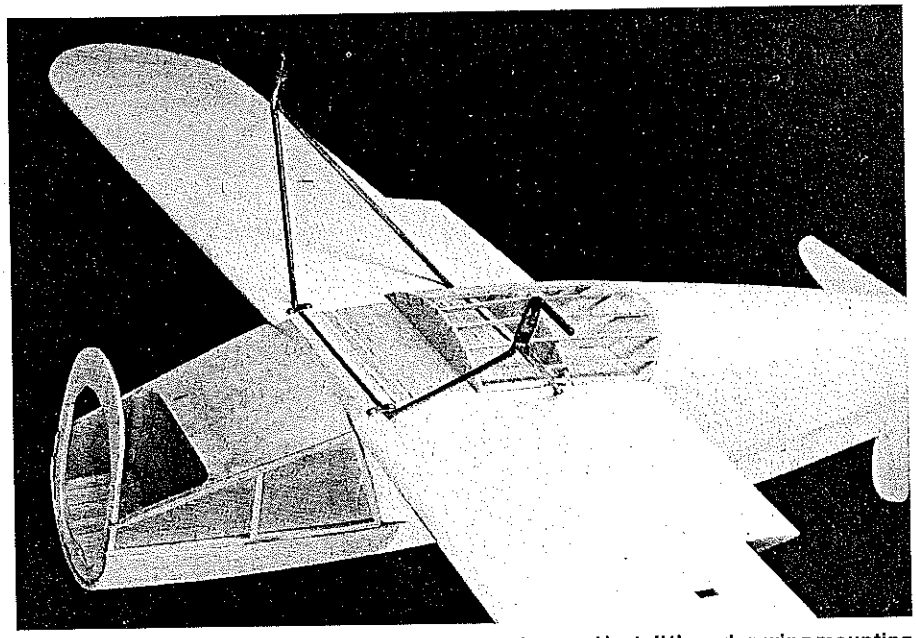




Join the wing panels to the center section with epoxy glue. Fred used balsa spars, but he recommends that you use spruce for extra strength and not much of a weight penalty.



Wing center section showing W-9 and W-10 ply dihedral joiners. Outer ribs are 1/8 ply to take landing gear loads. The forward gear block is sandwiched between W-9, W-10.



Cover the wing and fuselage after fitting them together, and install the nylon wing mounting bolt. Bend the wire landing gear, and install in the slotted blocks with metal straps and screws. Solder the wires together, and then add F-11, -12, -13, and the stringers. Balsa 3/32 sheet fills the gap between F-11 and the wing L.E. Note sub-structure for cowl sides.

bolt head. Screw the wing down tightly with a ¼-20 nylon bolt.

Bend the 5/32-in. landing gear wires, and secure them in the slotted gear blocks with metal landing gear straps and screws. Bind the landing gear wires together with copper wire and solder. As you solder, slip in a little 1/32 wire "U" on each side for rigging.

Glue on F-11, F-12, and F-13 and the bottom stringers to line up with the aft stringers. Add the 3/32 sheeting between F-11 and the leading edge. Cover the bottom of the wing center section.

The sides of the forward cowl need a little structure underneath the plywood. I glued a piece of ⅛ sq. along the edge of the 3/16 x ¾-in. planking and along the bottom of the fuselage side to provide a gluing edge for the plywood. I then glued on three vertical ⅛-in. formers between the ⅛ sq. and sanded them to give a curved contour to the sides. The bottom ⅛ sq. is mostly sanded off.

The plywood cowl must be glued along the bottom edge of the fuselage side. I used 1/64 ply for the cowl but ended up covering it with glass cloth. If you used 1/32 ply, you wouldn't have to glass it.

The outside grain of the plywood must be in the same direction as the fuselage in order for it to bend easily around F-2. Make a cardboard cowl pattern, using the plan pattern as a guide, and check its fit to your fuselage. Compare it to the side view of the plan. Cut out the cowl plywood, and glue it to the fuselage. Sand the 3/16 x ¾-in. planking to fair into the cowl. Cover the top of the fuselage from F-2 back and down to the cowl edge. Zap the edges of the covering around the cowl so they will not lift later.

Cut the nose block to rough shape, and drill two ¼-in. holes for the hollow ¼-in. dowels and mounting bolts. Drill the ¼-in. dowel with a ⅛-in. bit, then glue the two dowels into the nose block flush with the back of the block. Hold the block in position on the fuselage, and drill through the dowel and F-2 with a ⅛-in. bit top and bottom. Enlarge the holes in F-2 with a 5/32 drill, and install the two 4-40 blind nuts with epoxy. Bolt the block in place with two 4-40 x 1-in. bolts, and finish shaping it.

The nose block is the only removable portion of the cowl, but it is 2 in. deep and exposes most of the engine. Rather than unbolt the engine from the mount for removal, I unbolt the mount from the firewall. Cut away portions of F-2 as needed to clear the muffler on your engine. The plan shows the cut-away material for the rear-mounted muffler of the K&B .21.

Fit F-1 to the nose block so there is a 1/16-in. gap between the spinner and F-1. Drill a ¼-in. hole to clear the mounting screw, and glue F-1 to the nose block. Cut the cooling duct in the front of the cowl to aim the airflow at the engine head and cylinder. The 3/16-in. holes are similarly directed. Coat the inside of the nose block and cowl with epoxy or resin to thoroughly seal the wood.

The wheel pants are balsa-and-plywood sandwiches. The inner ⅛ ply is slotted to the bottom of the pant for the 5/32-in. wheel collars. The outer layer of ⅛ ply is slotted to the top for the 5/32 wire landing gear. The wheel collars and strut slots position the wheel pants, but they need the straps and screws to hold them firmly. Glue balsa fairings to the wire gear legs, and wrap with the covering material.

Primer-coat any bare wood, and paint the model after sanding. I used Aerogloss dope in Cessna Green, which is available in spray cans. Sig's Supercoat Brite Green or Pactra Formula U Jungle Green could also be used. These paints should be sprayed to obtain an even finish.

I masked and painted all of the numbers and lettering on my model, but I subsequently have had decals made of these, which I now offer for sale. The price of the decals is $7.00. Send check or money order to Fred Reese, P.O. Box 2517, Jackson, WY 83001. The rivets were made of epoxy applied with a toothpick.

I photographed the model with the wire rigging shown on the plans, but except for the tail wires, I don't fly with it. I used monofilament line with 3/16-in. lengths of 3/32-in. aluminum tubing crimped over loops at each end. The top wing flying wires are secured through the fuselage with rubberbands and little wire S-hooks.

Flying. Let me say, first, that the Miles-Atwood Special model flies nicely, and it has no bad habits. However, that's not to say my first day of flying it went just the way I wished. It was just one of those days when everything seemed to go wrong. Consequently, I let my friend, Dennis Carlson, make the first test hop. Dennis flies a lot with many different airplanes, and he is good.

Dennis took off easily, and the little green airplane zipped around the sky. "Here," he said, "It flies nicely," and handed me the transmitter. He was right:

Continued on page 115

Letters to the Editor

Continued from page 113

of modeling interests.

The first article I would like to comment on is the guest editorial. I do believe Mr. Waterman expressed the views of the *active* instructors very well. For those of us who spend most of our flying time teaching others to fly, we know what happens when a student pilot brings out the wrong airplane! It takes twice as long for him or her to learn to fly. I don't believe, however, that a student cannot learn with a ship that has ailerons. Take the Goldberg Eaglet, for example. I sincerely believe that this is probably the best trainer on the market. I have taught lots of folks to fly, and the ailerons are definitely not a hinderance to the learning process. I don't feel we need to go back to the days of the Smog Hog, but I applaud Mr. Waterman's views on keeping things simple for the beginner.

Anthony Stevens
Knoxville, TN

I am writing in overwhelming appreciation of the guest editorial in the April 1985 issue by Jim Waterman. I really enoyed it. Frankly, I stand behind him 100%!

Let me explain. My first trainer was a Little Stik with a 6-ft. wing with flat-bottomed airfoil and polydihedral. It had 576 sq. in. of area, and it truly was a basic trainer. It would recover from a full stall in about 10 ft.! When this plane crashed (servo arm for the rudder came off in a turn and left full rudder was locked-in), a friend gave me a Box Fly 20. We put the big wing on it, and it flew even better. Loops, spins, and snaps could be flown; yet it was as stable as an Old-Timer.

When the wing broke while I was using it on a glider fuselage, I switched to a no-dihedral, fully-symmetrical-airfoil wing with ailerons. Then I needed a larger power plant. I got it, but I wasn't ready for a 'second' airplane (as the guest editorial called it). I bumped it about quite a bit. During the winter I fixed it up, and afterwards I could fly much better. However, I was still herkey-jerkey on the ailerons. I *was* doing better than before, but I crashed five times when I first switched to ailerons. It took a year, lots of patience, and a really bruised ego to learn how to fly it.

Don't you think that if I had stayed with that basic trainer (which never crashed due to pilot error) I would have had a faster learning session? It's a good thing that I really *love* RCing, because most greenhorns would have given up a long time ago.

Chris Allen
Pittsburg, CA

Although I enjoy *Model Aviation,* I was disappointed, aggravated, and to be totally honest, a little mad after reading the guest editorial in the April 1985 edition. I got the impression that the guest editor is a little envious of the skill level required to fly a Pattern or Racing ship. I was particularly disturbed at the remark that those of us who fly Pattern or Racing models cannot understand the needs of the beginners. All of us had to start somewhere. And *most* of us were not so successful that our first flying session was totally without mishaps, save breaking a couple of props.

If your hangup is Antic Bipes and Sopwith Pups, fine. Go for it. This sport that we all enjoy covers a variety of aircraft types with varying skill requirements. Once a beginner (and at present I have six trainees) has reached the skill level to competently fly his trainer, then I respect his choice of models, and I continue to assist as long as I think he needs it.

Instructors are not determined by the type of aircraft that they fly. Instructors are born.

David C. Lassiter
Aulander, NC

Safety/Preston

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is the radio expert among the contributing editors of *Model Aviation.*

One last comment concerns radio interference, and I'm also going to buck this one to George Myers. I've had several letters asking my opinion on which RC channels should be avoided because of interference from other channels. I really don't know the answer to this one. However, in his "Radio Technique" column that appeared in the April 1985 issue (page 40), George did mention the subject of radio interference. He also referenced a number of his previous columns in which he had discussed this subject. If you have questions about interference, first check your back issues of the magazine. You may find the answers you seek. Also, don't forget your District Frequency Coordinator. These people were appointed to pinpoint local problems. Their names and addresses can be found at the head of your District VP's column in the *AMA News* section of the magazine.

Have another safe month.

John Preston, 12235 Tildenwood Dr., Rockville, MD 20852.

Miles-Atwood/Reese

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the airplane flew nicely for another 30 seconds. I was a little nervous as I looped and rolled it about the sky. The little green airplane needed just another foot of altitude to complete that split-S. I told you, it just wasn't my day. On inspection, it didn't appear to be badly damaged. The landing gear was bent and the lower cowl had popped loose, but nothing else appeared to be broken.

I repaired the cowl with 5-min. epoxy, and we tried again. This time I was not going to touch it. As soon as it was airborne,

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Miles-Atwood/Reese

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Dennis said, "Something is really wrong." He was holding full right rudder and almost full right aileron just to maintain level flight. Somehow, Dennis got the airplane back down unhurt—which was a considerable feat, as the throttle stuck and he had to fly out a full tank of fuel.

On the ground we discovered that the spars on the right wing had cracked in the crash and had fully broken in the air. We could hear the flutter, but the covering miraculously held the wing together.

After repairing the wing, the airplane still turned left. I knew the wing was twisted by the repair, but it was hard to "eyeball" any real difference. I taped on sticks, but that, too, was inconclusive.

Frustrated, I bought a Robart Incidence Meter and measured the twist. That little gadget is magic, accurate to less than ½°. The left wing was washed-out 1°, and the right wing was washed-in 1°. That is a difference of 3/16 in. per side, based on a 9-in. chord.

I used a hair dryer and twisted the right wing until the covering set so that it, too, had 1° of washout to match the left side. This is the setup I needed, as I once again have a nice-flying "Sunday Scale" airplane.

Radio Technique/Myers

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arrived at 9:44 and left at 9:55. The probable cause of the interference is Third-Order Intermodulation, aggravated by the fact that the late arrival on Station No. 1 is an AM set. This data tells you what test setup will prove/disprove it.

George M. Myers, 70 Froehlich Farm Rd., Hicksville, NY 11801.

Can't Buy Skill

I traded my old transmitter—
Thought a new one would give me some breaks;
But it isn't any kindlier.
It makes the same mistakes.

Lou Roberts

RC Soaring/Pruss

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by Bird/Australia, with Bame and Reagan right behind with 98 points each. These landing score averages, which do indicate great consistency, can be taken for what they are worth, remembering that F3B landing tapes are divided into five-point-per-meter increments.

Again, at a glance...Decker and Blanchard were the only two in the top 10 with perfect 6:00/100 scores...Bird had five out of seven 100-point landings, while Bame had four out of seven.

If you like to play around with numbers, no doubt you will come up with more than a few "what ifs." On that note, you may want to look back at the final results that were listed last month and see what the final placings would be if there were *no* "throwaway round" provision in the rules. The results are not only surprising but reflect the biggest change in the results of both the individual placings and the team standings of all five F3B World Championships.

If anyone has any complaints about his performance in the early portions of the World Championships, the complaints can probably be attributed to the "Wall." The week before, with its calm air, no doubt lulled more than a few folks into expecting near-ideal conditions for the event. Couple that with the same type of practice conditions back home for a few, and that 25-mile-an-hour wall on the first day of the meet was more than a mental barrier for some. The British claimed the weather was their secret weapon—and they brought it with them. Their only complaint was they thought it would be a six-round championship and therefore *their* weather left for home a day too early.

Plustask. The three-view drawing this month is of Dave Worrall's Plustask, the plane he flew to within one percentage point of first place at the F3B World Championships this year. Interesting features include a one-piece wing and full-