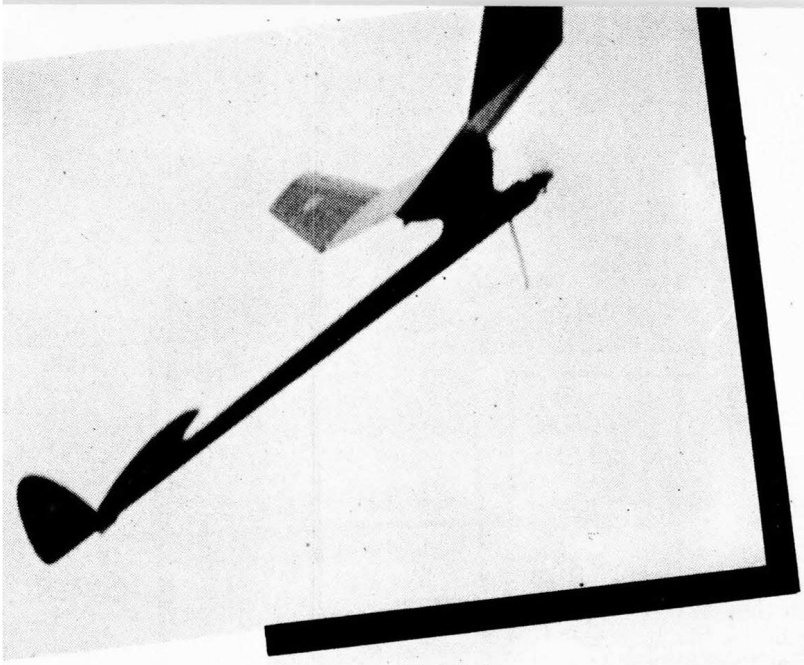


Left: Away goes the model at about 50° but the angle increases up to about 70° when the model gets up to full flying speed. A sharp roll-out at the top keeps the model from losing altitude, then it glides right.

...near miss

In answer to requests from readers, we take pleasure publishing another overseas model

by A. R. Collinson

● The Near Miss is an adaptation of a design by Vic Gays of London which was designed for the old F.A.I. (International) rules.

When we were staying with Vic a few years back, we asked if we could have the plans for his model—which we had seen flying and looked very promising. His model had been powered by an Olive Tiger and we wanted to put a K&B .15 into ours—give us a good glow engine anytime, it seems to have the ability to accelerate during the climb, which a diesel does not seem to do. Our model was built and weighed in at 18½ ozs.

Taking it out to the local flying field, we found the model to be one of the most tricky we have ever handled. It seemed okay for the first 2 or 3 seconds of power, then it would flatten on the turn and come down in a shallow dive at terrific speed.

We suppose that we made about 30 test flights and never got the engine run up over 5 seconds. At this point, we asked our flying friend Silvio Lanfranchi to join in and solve this problem. Down thrust, side thrust, more incidence, less incidence, moving the C.G. back and forth, all seemed to have little effect in obtaining the desired power pattern.

Finally, Silvio suggested that we increase the incidence drastically to plus ¼" and also to move the center of gravity back about 1". A frightening thought, but what else was there to try?

Immediately, the power pattern worked out and we were able to get the necessary full 15 seconds engine run, every time. About this time, the F.A.I. trials were coming along so we decided to up the model's weight to 27½ ozs., change the prop to an 8"/3", and take a crack at the trials. We felt we had a very good model.

Near Miss flew well and was the only model to score 5 maxs. At the 2nd trials, the model did 16 seconds less than the possible 5 maxs (which was due to an error in setting the dethermalizer on our part. We won the "Aeromodeller Gold Trophy" for the top total time in the two trials (29:44) and found ourselves on the British team to fly in the World Championships at Cranfield.

Before the Championships, we went out flying on every decent night and during two or three really still air evenings. The model was flown with long dethermalizer settings to find out what the average still air time was. We found this to be 4 minutes and 45 seconds on 15-second engine runs.

The World Championships came and we found ourselves very disappointed at their end due to a silly mistake on our part.



A side-winder mounted engine is prefered by the author. He claims it helps keep the exhaust off of the engine. Complete tips on flying models in competition are in the detailed article. Much to learn from this.

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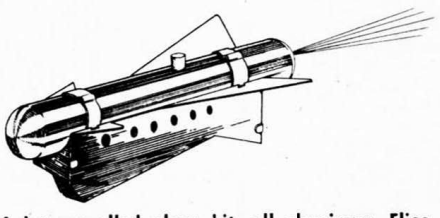
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NEAR MISS

The first and second flights were beautiful maximums, the 3rd hit a corker of a down draft scoring a 2:51 but we felt we were doing well as Mike Gaster commented that our third attempt was still a good flight.

Disaster hit on the fourth flight. There seemed to be a good spell of weather coming so we, and the team manager, hurried the model through processing. The tank was filled on the way to the take-off point. On arrival, we were just about to start up when we noticed one of the other flyers warming up his engine. So, we decided to wait until he had finished. when his engine stopped running, we fired up and launched. The model went up in the usual pattern but stopped climbing after 8 seconds, bringing the model in with a flight of 1 minute 31 seconds.

We retrieved the model and tried to blow out the tank only to find that it was completely dry. There should have been a half tank left over under the circumstances. Where the fuel went, we will never know but we think it must have run out one of the vents while we were waiting for the other flyer to warm up his engine.

On the 5th and final flight we made sure that the tank was full and topped off (a good idea for all tight competition gas flying: Ed) and we made another maximum. Our total for the 5 flights was 13 minutes and 22 seconds which placed us 20th. The annoying point is that we feel we would have beaten Erno Frigyes by one second if we would have had the full 15-second engine run on our fourth flight. The moral of this story is to have a preflight routine and never alter the fueling and starting procedure for any purpose. This applies to when you fly to adjust trim as well as contest flying.

The procedure we now use follows the following check list:

1—Check to see that the wing, tailplane and other critical parts are in correct alignment.

2—Light the dethermal fuze (or set the mechanical timer) making sure that you have an ample amount of fuze—longer than needed for flight.

3—Fuel the tank making sure that the timer is in the off position so as to prevent flooding the engine.

4—Set the timer.

5—Start the engine and adjust the needle valve with the nose of the model pointing upwards.

6—Adjust the fuze to the correct length for proper determalization.

7—Set the timer going and check that it is running.

8—Launch the model with a good throw making sure that you set it loose at the proper angle in relation to ground and wind.

That's the story of our experience with the Near Miss, so we'll go onto contruction details:

CONSTRUCTION: First build the wing and cover it so that it can be throughly drying out while you go onto other things. The wing is a straight forward with few points to watch. Note the 3/16" to 1/4" wash-in at the right wing tip. This is put in during construction so don't try to build the wing flat and put it in later. Steaming may put the wash-in in but we have found that it won't be permanent.

Keeping the weight centrally located in the model is of great importance. For this reason, use lighter wood at the wing tips keeping the greatest weight and strength in the center panels. Don't forget the bandage covering at the center joint as this section is subject to great strain especially when the model dethermalizes.

The fuselage should be built next. Lay the longerons down and fill in between them up to F7 using 1/8" sheet. The 1/8" spacers can then be added to complete the sides. One side is built and then the other side is built over the first. This provides greater accuracy then trying to build both sides at the same time. When these assemblies are dry they can be removed from the plan. Since they will stick together we suggest that you leave them that way until you have covered each of the sides with 1/16" sheet. Pin this down to the board again and give it a chance to dry at least over night.

Remove the dry sides and separate them with a razor blade or modelling knife. Having done this you can trim off the excess 1/16" sheet and sand the outlines to a smooth contour. You now have two identical sides.

Add all of the formers back to F7 along with the tank and plywood formers which will mount the engine and the underside skid. Locate the timer position at this time, too. Having done this, fill in between the sides and then draw the two fuselage sides together at the rear. Check for twisting while you add all of the 1/8" square cross-braces.

The fin is built from 1/16" sheet and 1/16" cross-pieces which act as ribs. When this has dried, remove the part from the plan and add the 1/8" x 1/16" pieces on both sides of the ribs. Sand this assembly to a symmetrical shape taking care that you taper the ribs toward the tip. The whole assembly is then covered with 1/32" sheet with its grain running vertically. Trim and sand to a smooth shape.

Stand the fin in the correct position on the fuselage and mark around it with a pencil. Cut out this section of fuselage and cement the fin in position checking the vertical and horizontal alignment. Note that the fin goes right down to the bottom of the fuselage.

Build the pylon from hard 1/8" balsa sheet (for the center layers) and medium weight sheet for the outer laminations. We cannot stress to much the need for a slow drying cement for this assembly and at least 24 hours of dry-

ing time. Movement of the pylon before it is fully dry will weaken it considerably as the cement takes longer to dry in a lamination and loses strength if moved when partially set.

Cut the dry pylon to finished outline and sand it smooth. It can then be cemented to the fuselage. Fill in between the pylon and the sides of the longerons, also underneath the fuselage with ⅛" sheet. The top and bottom 1/16" covering on the fuselage can now be added. This done, you can finish shaping the pylon and add the wing platform and wing hold-down dowels. Use a liberal amount of cement between the platform and the pylon.

The tailplane is built along standard lines and requires little description. Install the tail platform and attach all the wire fitting which will be required to hold the tail on and for the dethermalizer.

At this point, you can sand the entire fuselage to remove any bumps or blobs that will mar the finish. Cover the fuselage using your favorite covering and color scheme.

Assemble the model and check the alignment of all parts. When you have everything aligned to your satisfaction, add the keys to the wing and tailplane. This is a must if you want consistent flight performance. The keys should fit snugly. Having installed all of the necessary parts, you will now have to add ballast to bring the model to the required weight for competition. Place this weight directly under the C.G.

We mount our Torp .15 on a dural plate and locate this so that the engine is in side-winder position on the model. We feel that this makes it easier to prime the model and keeps the sloppy exhaust mess away from the timer. You might prefer to use one of the available commercial engine mounts for the .15 engines, we leave this to your choice.

An 8"/3" or an 8"/3½" prop is our choice for F.A.I. flying. Flights are no more difficult than any proven contest design. See that the C.G. is in the position shown on the plan (slightly further back will be okay). Check glide trim by hand-launching the model making sure that the glide is flat with a slight turn to the right. Turn is achieved by tilting the tailpane so that the right side is higher than the left. More tilt gives more turn. Do not use any other adjustment to obtain turn. If the model stalls, pack up the leading edge of the tailplane with 1/32" sheet wood at the leading edge. Add more, 1/32" at a time, if the model continues to stall.

Power flight can be tested under low power using about 4 seconds of engine run. Proper results will provide a slight right turn, a level pullout, and a smooth glide. If this is okay, try a highpower flight using the same short engine run. If the right turn proves to be too much, bend the small rudder tab to the left, pin it in place, and take another flight. We cannot emphasize too much that you should exert extreme care when making high power turn adjustments.

Never use more than a 5-second engine run until you are completely satisfied that the model is functioning properly at all levels. The nose should be up during the climb.

Work your way up to a 15-second engine run by increasing the time in 2 or 3 second increments—say 7, 10, 13, then 15. Fully trimmed, the model should go up in a cork-screw climb with its nose up about 70°. It should roll out at the top, into a right glide, with no loss of altitude.

Just one or two final points in closing this article. Always use an accurate timer and always wind it past the required cut-off mark. When you start the timer running, watch the pointer move to the proper mark and then launch. In this way, you know that the timer is properly set and running. On launch, a good hard throw will get the model up to flying speed. This should be done at about a 50° angle.

Cement the rudder tab position when you have reached final trim so that it will not move. Movable tabs have cost many models during meets when they have be accidentally knocked out of alignment. Always use the determalizer no matter when you fly. Thermals have no way of knowing that you are testing.

A final word, consistent performance depends on attention to details. Careful checking at all times is also necessary. Never fly unless you know every part of the model is properly set and is in working order. Needless to say, loose or broken parts should be fixed before flying. Anxiety to fly should not override care and caution.

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