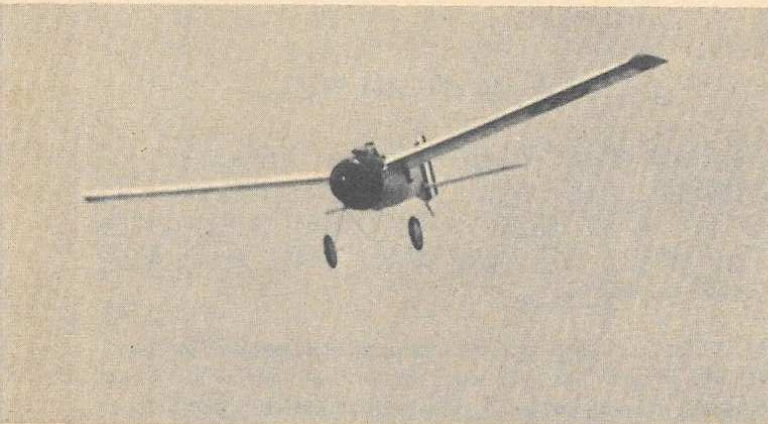


See what we mean when we say without "oil" of powered flight. Here, we have our author dressed in typical flying regalia for "quiet bird."

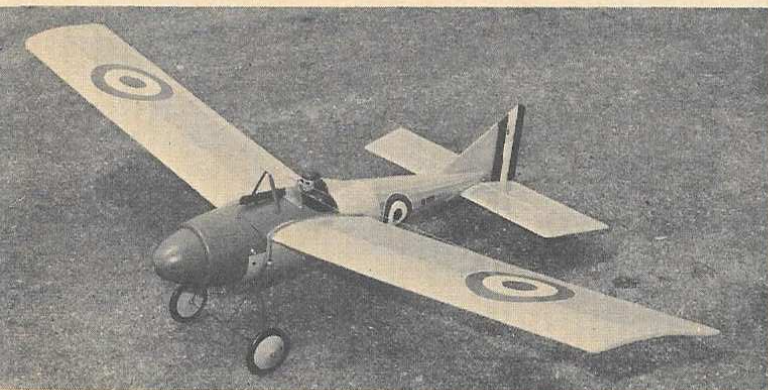
By GROVER MOORE

NOTHING LIKE THE "QUIET BIRD" FOR GOOD FLIGHT WITHOUT ALL THE FANFARE, OIL AND NOISE OF POWERED FLIGHT.



Landing approach during a club spot landing contest. Without propeller up front, you receive impression of powered flight rather than glide.

MORANE SAULNIER R/C COMBAT GLIDER



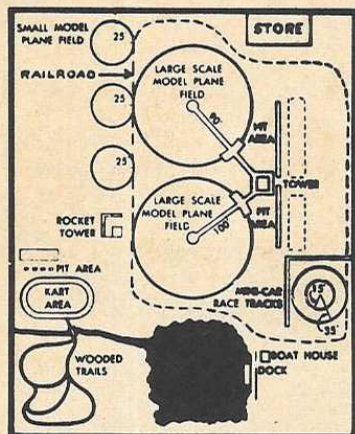
On tarmac our scale glider is quite exciting. For authentic scale colors, use our cover painting as a guide when finishing model.

► You might say that what we have here is the natural evolution of my R/C and F/F scale experiences of 13 years ago. About that time I became tired of getting up at 5:30 a.m. in order to get out on the field and get in some decent flying time. With the usual engine starting problems, trim problems, prop replacements and repairs I was lucky to get in 3 or 4 good flights before the perennial coastal winds blew me out of the air around 11:00 a.m. Those were the shortest hours of the whole week. It was then that I decided to quit racing against the wind and take up a pastime that would allow me to use the wind and get more sleep in the process. I took up ridge soaring, first with a Thermic 72 then with a modified Super Sinbad using a 6 foot wing.

In Orange County, California, the topography and prevailing ocean breeze combine to make conditions ideal for the sport. On the average we can fly most any day from 10 to 6 p.m. and in the summer until 8 p.m. My first few years of ridge soaring were a bit lonely and it seemed I worked harder at getting up a companion's glider than I did in keeping my own flyable. However, in time our numbers grew and we formed today's Harbor Slope Soaring Society. Eventually the thrill of just another ship in the air with mine wore off and to keep things lively I started pursuing any glider that would stay up with me. Since most of us were also War I buffs, in our chasing, we fancied ourselves to be in War I combat. I suggested we add to the illusion by building and gliding planes of that vintage. Amidst considerable skepticism, a Fokker E III was built and glided with great success. The Morane we have here was built to fly combat and the two ships have been flown together to create a realistic (Continued on page 58)

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Foreign Notes

(Continued from page 56)

able for the G.15. Mainly of interest to FAI free-flight fans, this replaces the standard backplate and has a built in pressure take-off. Also made for the G.15 is a machined spinner unit. When this is used, the regular prop driver is discarded and a heavy duty spinner backplate, which has its own knurled prop-drive surface, is fitted via the existing split taper collet.

The Muffler Controversy

We can't finish up this month's column without commenting on Noel Falconer's letter and article published on silencers in the May issue. We have known Noel for a number of years but we might as well say, right off, that we disagree with just about everything he said on this subject!

The argument that a solution to the noise nuisance (and the loss of flying fields that this has brought about) can be found in "local" modelers making "local" silencer rules to fit "local" conditions rather than in the general application of mufflers to all models, just doesn't stand up. For fifteen years, British clubs and individuals have been losing flying grounds because of complaints about noise. During this time there has been plenty of talk about the desirability of using mufflers. Unfortunately, nobody *did* anything. Modelers said they couldn't make mufflers for their engines and it was up to the engine manufacturers to provide them. The manufacturers said it wasn't worth making silencers because only those who were forced to use them would buy them. This was absolutely true, as was proved, not only in Britain, but in other countries where attempts were made to market mufflers.

The SMAE rule has, in contrast, given an incentive to both manufacturer and modeler. The manufacturer now has an assured market for his mufflers plus a further incentive to devote more time to the future development of really efficient engine/muffler combinations in competition with other manufacturers. There is plenty of scope here and it is highly encouraging to see how, in a few short months, some real progress has already been made. The manufacturer must, we are convinced, have this sort of support. Making model airplane motors, in most cases, involves investment and effort for a profit margin that would be laughed at by manufacturers in most other fields. It is in the interests of the hobby as a whole that the manufacturer should be given a job that will bring him a fair return.

The modeler, who previously lacked the incentive to use mufflers because they were (a) allegedly heavy, bulky and absorbed a lot of power (and were therefore impractical if his interests lay in the contest field) or were (b) unobtainable commercially, now knows that all the rumored hazards are so much hogwash and that, contestwise, everyone else being in the same boat, he can compete on equal terms whether in a local club event or at the nationals.

The majority of British modelers live in urban areas and the percentage who have access to wide open spaces where engine noise goes unheeded, is getting smaller every year. Therefore it must be in the interests of the majority that silencers should be available, and that they should be available for practically every type of engine. Some people are complaining that mufflers are not obtainable for certain older engines still in use. If we had relied on "local rules" to provide

the incentive, we would still be waiting for mufflers for current engines, let alone the obsolete ones.

As to whether the public's complaints about engine noise are justified or not, this is really quite beside the point, as are Joe Telehawk's guilt complexes—if such exist . . . The complaints are fact and we have to accept that many people find model engine noise irritating.

Although the solution put forward by Noel Falconer is "local" rules, he in fact devotes much of his article to the alleged futility of fitting silencers at all. Among other shortcomings mufflers are claimed to cause "severe" power loss and to make starting and handling more difficult.

In reply, we can only say that, in our experience, these claims are not borne out by test findings. Except in the case of one or two rather crude mufflers made for cheap diesels, maximum horsepower loss is rarely more than 15 percent and may be less than 10 percent in a well-designed unit. Starting and handling often seems a little strange when one first begins to operate a muffler equipped engine and may take a little time to become accustomed to, but mufflers do not, in our opinion (having tried many types) make starting and handling more difficult. In any case, one should remember that mufflers are, as yet, in their infancy. They will doubtless be developed during the next year or two to improve performance and silencing. If they should fall short in the latter respect, the time may then be ripe for the SMAE to impose regulations governing standards of muffling.

In our view, the SMAE decision to make the use of mufflers obligatory by members was a right one. After all, no one is *forced* to use a muffler. There is nothing to stop a British modeler opting out of the SMAE, taking out insurance with another agency and flying "unsilenced" where he can.

Morane Saulnier

(Continued from page 27)

and fascinating spectacle for fliers and audience alike. I chose the Morane because it was a contemporary Allied counterpart of my friend's Fokker E III, a monoplane and with its big spinner was one of the most streamlined and beautiful planes of its day.

A little historical research tells us that the Morane Saulnier model "N" or Bullet was designed by Roland Saulnier (who died March 4, 1964 at 83) as a direct development of his earlier fighters and still earlier racing monoplanes of the pre-1914 period. It used wing warping, was of typical wood and fabric construction and with its 110 hp Le Rhone engine could do 102.4 mph. In tests, it outperformed against a captured Fokker E III. On April 1, 1915 Raymond Garros flying an "N" equipped with an unsynchronized forward firing Hotchkiss gun and steel defectors on the prop blades, surprised and shot down an unsuspecting Aviatik. In 18 days he destroyed 5 German planes and made himself and this airplane famous by becoming the scourge of the German Air Force. On April 19th after a forced landing in German territory his airplane and its secret were captured intact. It was this capture which led to Fokker's design of a truly synchronized gun.

The basic scale of my plans is 1½" to the foot. However from this, to get better gliding and control characteristics, I had to deviate with an increased span, dihedral, tail area and nose moment. Hence the term "semi-scale." Since completion, further research has revealed the small 3-views I worked from were a cross of the "N" and

(Continued on page 60)

Morane Saulnier

(Continued from page 58)

the slightly later "AC." But to keep the scale buffs quiet, I would like to say I now have four different 3-view drawings of the "N" and they all differ materially. However, my ship is easier to build using all circular cross sections and it does capture the jaunty look and spirit of the real thing on the ground and in the air.

The model is "practicalized" with knock-off wing and tail sections, planked forward body and wing leading edges and is otherwise ruggedly built. It is, a strong and "forgiving" model that will allow you a few pilot errors without demolishing the plane. The ship has taken some terrible crashes and is still intact and it is quite light enough to glide and does so quite well. I highly recommend all the "slot and key" called for on the plans because if carefully done, it makes aligning and assembling a joy and gives a strong structure.

The forward fuselage is planked over formers around an inner box to give strength around the heavy components and wing knock-off and although construction from plans is academic, there is an assembly sequence which will make it easier. The aft fuselage is made on the plan side view in left and right "half-shells," each side consisting only of top and bottom keels, 1 main longeron and formers 6 through 9. The half shells are joined together at the center plane and the resulting aft fuselage is joined to the forward box and formers by the full length main longerons and the keyed lower keel. Then the balance of the stringers, two horizontal webs and two cant formers are added and the structure planked. Aft diagonal braces are added to prevent twisting and popping of the covering in bad cart-wheels.

Cut out and sand the airfoil section in the elevator before installing the sub-rubber keel piece, then, build the knock-off section around the keel. The one piece ribs through spar caps and 1/32 vertical webbing give a very light and strong structure and are worth the effort. Be sure the rudder swings free as a sticking rudder in flight can be deadly. Make the two entire basic wing frame halves, join them together with the specified splicers and dihedral, plank and sand to shape entire wing being sure to leave the 3/32" slot for the center keel member, install keel member, nest wing and keel piece to knock-off section web and to lower sections of K-1-2-3. Install upper sections of K-1-2-3 on top of wing, add fore and aft cant members, make cockpit cutout in keel, add pylon, attach tubings and forward machine gun, attach nut then plank entire knock-off section around the nested wing. For final shaping of fuselage planking, I lightly glued the wing (properly aligned) and tail sections, bolted on the hatch cover, sanded and shaped them all as a unit. The spinner was rough shaped, chucked in a hand motor and finish shaped with a sand block.

The entire model, including planked areas, is covered with silk and given 7 to 9 medium coats of clear dope for strength and fill. For most part, the real planes were painted yellow, silver or clear doped with the nose and cowlings usually red, see color scheme on cover painting. My ship is covered with yellow silk and is red in those cowling and spinner areas as designated on plans. I made the round insignia on decal paper and transferred it to the plane.

My Citizen-Ship JSH superhet works well with plug-in vertical antenna, Nicad batteries, Bonner S-N plastic arm escapement and a metal torque rod. No anti-static bonding wires are required with this

escapement-torque rod combination and I like the demountable feature of the metal torque-rod. The ship balances without nose ballast and with 6 ounces of receiver and Nicad batteries in place totals 31 ounces. This gives it about a 10 oz./sq. ft. loading and although this is not the heaviest loading, the ship is a little hot to handle and is recommended not as a trainer but after you've had a little time with a more conventional type glider.

When trimming for light winds, I have found it is best to shim up the wing leading edge rather than to shim down the stabilizer leading edge. However, since both surfaces are adjustable you can shim to your own theories but it is always safer to start out slightly down trimmed rather than take a chance on starting a stall sequence "right out of the box." Test gliding should be on the usual soft level grassy land but only so much can be learned here. The final test of trim comes when launching from your ridge and you may have to correct trim again. I guess you might say the ideal ridge soaring trim is one that allows the ship "hands-off" to climb evenly, weathervane and penetrate. In other words, no stalling or turning.

For those not familiar with the technique of ridge soaring, I'll say first the whole thing depends on finding the right flying site. It should be a steep slope or ridge about 75 to 100 feet high, facing the prevailing winds and if it is a bowl shape "cupping" the wind, all the better. Landing areas upwind and downwind are also highly desirable. The glider is maintained aloft in the air stream upwardly deflected by the ridge. We fly in the same rising air currents used by the buzzards and gulls and in fact, often fly with them. In learning to ridge soar, it is one thing to get up but quite another to stay up. This is done primarily by staying or figure-eighting in the area of rising air or pressure pattern which lies near the edge of the ridge. This calls for making your turns with as little altitude loss as possible and is done by pulsing or "blipping" around the turn since holding a command will cause you to drop in a spiral unless you are in an exceptionally strong rising current. Consequently timing, the light touch and staying in the pressure pattern are the first things to be learned in order to stay up.

If you're like me, when just staying up becomes routine, you will be right for the thrills of combat gliding, dropping in and leveling off on another fellow's tail, flying formation together, chasing in circles, making eye level passes down the ridge together and climbing to get on the other fellow's tail, to mention a few.

It is also a great test of depth perception and judgment but to you power fliers, I suggest its greatest charm is all the action you get without any vibration, mess and noise. Anyway I hope this will inspire some of you to build and fly this glider and better yet, I hope some of you will come and fly "quiet combat" with us.

Builder of the Model Rule

(Continued from page 11)

models of those who have built their own. To give them their due, if any, they don't seem to care if the other contestants have built their models or not, so long as they don't have to build theirs. This would not be so bad if all model-fliers felt the same way. Then no one would be flying his own model. Fortunately, most model-fliers feel differently. The ones who do are modelers. The others are only adults playing with toys, much as a child plays with an electric train, bought for him ready-to-run, of course.

I have been building models since 1930. I have always been intrigued by RC work, (Continued on page 62).

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