

It's "Bad Medicine"

1/2A or A, two events with the simple switch of an engine.
A scorching climb and a soaring glide. Contests are ahead!

Once the last fall contest is over and a whole season's castor-oil is mopped up off of wings, stabilizers, and the living room carpet, every Free Flighter looks forward to the halcyon days of winter—days spent in recuperation, re-building, and explaining the castor-oil in the carpet to the lady of the house.

Time spent with a tall, cool one in hand, leaning back watching the NFL and contemplating next year's building project is not really time wasted. It's a solace to the soul—a necessary spiritual aspirin for knotted nerves—a mental medicinal to prepare you for the winter's onslaught of clouds of balsa dust and curing dope fumes that is sure to come.

Such medicinal musings provided Mike Ransome an opportunity for diagnosis, and just as surely a cure for contest anxieties in the form of "Bad Medicine," a 1/2A screamer that's certain to give observers

by Mike Ransom

Text and Photos by Larry Kruse

a crick in the neck from following its power pattern.

Compounding the Prescription

Carrying just 280 squares, "Bad Medicine" tippy-toes a fine line between optimum climb and acceptable glide, offering the best of both worlds. The plane was developed by Mike early in the '74 contest season, originally intended to be a back-up ship for this year's Nats. However, its performance capabilities quickly made it Mike's number one tourniquet for shutting off the competition.

Beginning with the airfoil from Jim Clem's "Medicine Man," (Feb. '74 FM)

Mike felt a personal commitment to his past experience with pylon/rear fin configuration, due to seemingly superior glide characteristics. A very light tapered-box fuselage with an interesting pylon installation was filled with one of Dale Kirn's jewel-like .049's by Cox. A careful compounding of other components such as a pen-bladder pressure system and an all-up weight of 6.5 oz. allowed "Bad Medicine" to offer potential headaches to 1/2A opponents during the past season.

Active Ingredients

"Bad Medicine's" tapered-box fuselage, used successfully on planes such as the "Ramrod" and its many relatives, offers a decided weight and structural advantage. It's not really any more difficult to build than the slab-sided "Starduster" variety. It just employs some different techniques.

The fuselage is built inverted on the

building board. Start by cutting out the fuselage top, (including the slot for the pylon) the sheet sides, and the bottom piece. Pin the top to the building board and glue up the $\frac{1}{16}$ " sheet formers and the sides. Slot the formers for the pylon and add the $\frac{1}{16}$ " doubler to the bottom piece, then glue the bottom to the formed-up fuselage.

After the fuselage is dry, remove it from the board and insert the triangular stock in the nose area. Epoxy on the round firewall after blindnuts have been installed and then contour the nose area to blend with the firewall shape. The fuselage will go from essentially a square at the leading edge of the pylon slot to a circular cross-section at the firewall to accommodate the Tatone engine mount.

Cut out the rudder, sub-rudder, $\frac{1}{16}$ " top doubler and stab platform. Cement these parts to the main fuselage, being certain that all right angle joints are accurate. When all joints are dry, sand the fuselage and cover the whole thing with tissue and set it aside. Glue up the pylon blank from $\frac{3}{16}$ "x3" sheet and cut it to its final height as per the plan. Do not cut it to its final width or angle at this time, though. It will be epoxied in place at a later stage in construction, after the C.G. has been established.

The wing and stabilizer are built flat and warp-free on the building board and can both be constructed at the same time. Pin down all leading and trailing edges and bottom spars. Stack-saw all ribs, sand, and then glue them in place. Omit the ribs at the wing dihedral joints for now. Also, don't install the wing top spar and turbulator spar until after the dihedral joints have been epoxied in at the prescribed angles. Glue dihedral braces to the wing, gussets to both wing and stab, and all remaining wing spars in place after the dihedral joints have set. Sand the wing and stabilizer in preparation for covering as soon as the $\frac{1}{8}$ " sheet tips are dry.

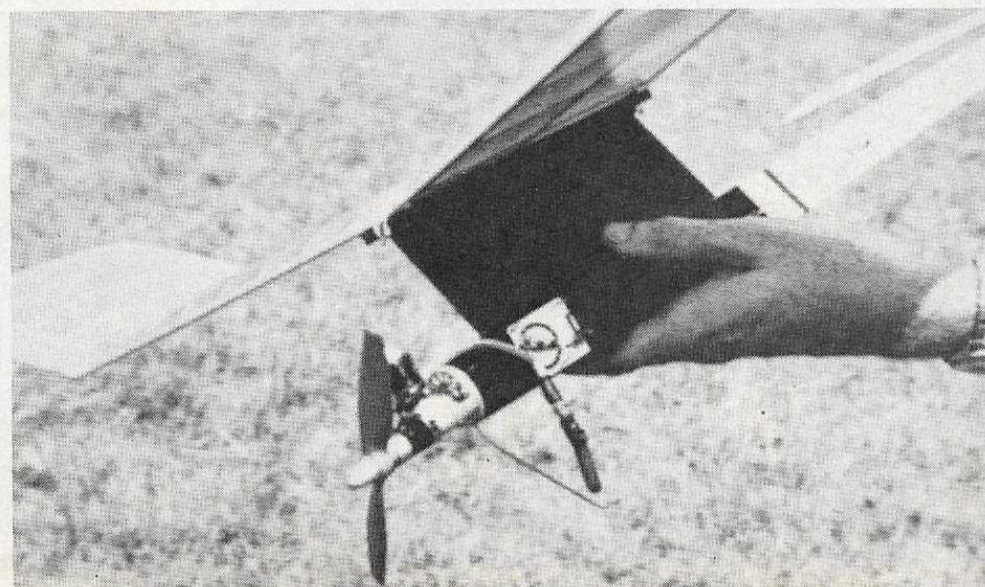
Now comes the kicker that helps keep the weight down. Make up the engine/mount/pen-bladder/timer assembly and fasten the whole mess to the fuselage with silly putty. Put the stab in place and mount the wing to the top of the fuselage box with rubber bands. Now slide it back and forth until the C.G. is at the position indicated on the plan-view of the wing chord. Mark the location of the wing and remove it. Slip the pylon into its slot in the fuselage top. Cut the pylon to position the wing correctly by varying the forward sweep of its leading edge and trailing edge. When the pylon is properly seated and epoxied in place, no extra weight should have to be added, except for perhaps a dab for fine trim later. The wing platform, rails, and braces complete the framework.

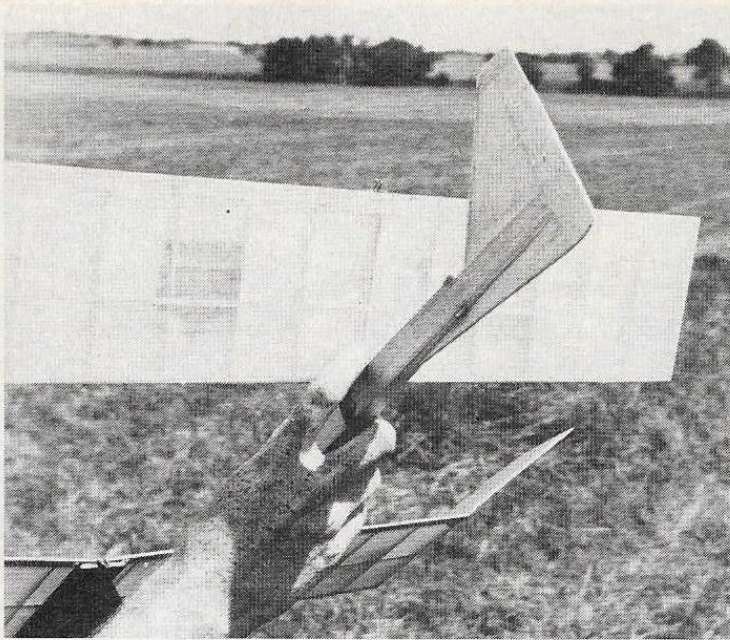
Apply at least two coats of Aero Gloss clear to all bare wood and cover the wing and stabilizer with tissue. MonoKote or similar type covering is not recommended for this airframe due to the lack of torsional rigidity evident with such material. Tissue is the way to go. While the open framework is being water-shrunk, flow on one or two coats of Hobbypoxy from the back of the pylon to the nose area of the fuselage to resist high nitro fuels.

A finish of 6-8 thin coats of Aero Gloss over other tissue areas will make sure fuel does not soak into the covering and at-



The grass is itchy, it departs earth at great rate. A well tested concept. Design VTO's nicely. **Beneath:** Coyote food. Kind of typical, but the right amounts of everything to go. Drink up little engine; pressure bladder to force feed its veins. Tatone timer on fuel line, skid saves prop.





A tale of "Bad Medicine." Fin stays in trim when the stab D-T's upward.
Left: Stab pops to angle shown, limited by the line, standard practice.
Below: Who dropped what through the wing? Season coming, build it fast!

tack the framework during an active season of flying. The D-T system can be set up after the dope dries.

Recommended Doseages

"Bad Medicine" uses $\frac{1}{8}$ " wash-in in the right main panel and approximately $\frac{1}{8}$ " wash-out in each tip panel. The left main panel should remain flat. These warps can be steamed in by holding the wing over a tea kettle or pan of boiling water.

After an acceptable hand glide has been reached through shimming the stabilizer so the glide is flat and to the right, use only a *very* short (3 sec.) motor run for the first powered flights because this ship is Ex-

Lax quick. Some right rudder tab will have to be used, also. Rudder tab adjustment will vary with the individual airplane. Start with no more than $\frac{1}{64}$ " for openers.

As the minimal square inches and light weight suggest, the plane is designed to be hot. Use only a superior engine and hot fuel for best results. Mike uses a Kirn rework and a propelane oxide mix by Casey Hornbeck of Dallas called "Wind-X 15P" pushed through the pen-bladder system. The prop to use for highest r.p.m.'s is a balanced Cox 6/3 grey cut to $5\frac{3}{4}$ " diameter.

The most important thing, of course, in flying any airplane is paying attention to the air before launching. Don't just start

the engine and toss it into the air. As Mike suggests, "The best airplane in the world won't max if you launch it into the middle of a monstrous downdraft."

Thus far, "Bad Medicine" has avoided such pitfalls fairly well. Its most impressive avoidance has been at the Tulsa Glue Dobber's 25th Annual where it was the only plane to max out over the notorious Tulsa "sink-hole" which has sucked many a Free-Flight down in far less than max time. Compounded carefully of proven active ingredients, the plane will offer welcome and reliable relief to you and prove to be nothing except "Bad Medicine" to a season of competitors. ☞

