

The .45 handled it beautifully. Bigger engines will add vitality to say the least. Live it up.

FULL SIZE PLAN AVAILABLE THROUGH "MODEL PLAN SERVICE"

THE "PIRATE" III

TWIN TAILED FULL HOUSE MULTI: Logictrol, .45 to .60 power,

51" length overall, 12" chord, 62" Wingspan

by Nick Zirolì

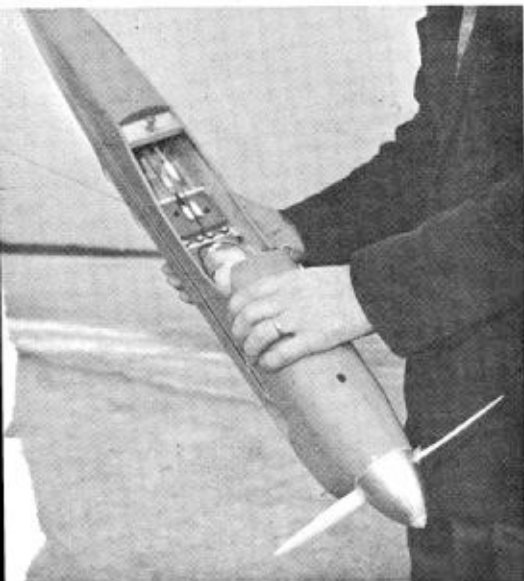
Greases its way through the maneuvers . . . lovely to see!

◆ If you have grown up with model airplanes as I have, the "Pirate" should not be unfamiliar to you. This design by Don McGovern is as up to date today as it was when it was originated over twenty-three years ago.

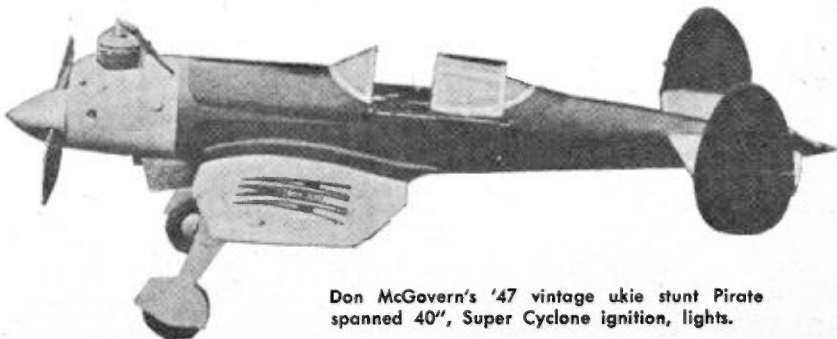
The first "Pirate" prototype took shape in a freezing barrack at Freeman Field, Indiana, in the winter of 1944, designed lean and skinny to hide in a Cadet's meager foot-locker home, for all else was subject to white-glove daily inspections. Some poor confused electrician is still trying to figure what happened to the panel of wallboard he

removed. It seems Don happened by, saw it as the solution to his problems, crammed the excess crumbs into the pot-bellied coal stove and built happily ever after. Sized and colored to make an olive-drab false bottom to hide the ship abuilding.

Two more Forster .29 "Pirates" were built at wars end, spanning 32", equipped with night flying lights. Twin 40" .60 Super Cyclone "Pirates" were built in 1947, likewise equipped with a full set of night flying lights, landing lights and of course, the ignition system of the day. The ships were flown with



Lean, long, lithe, factors which drill a ship through the blue arrow-true. A sensitive ship.



Don McGovern's '47 vintage ukie stunt Pirate spanned 40", Super Cyclone ignition, lights.

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Hobbyoxy balloon molded fiberglass cowling. The advantages include great strength with a thin wall for greater air cooling. Make balsa form.



Think how nice a retractable gear would be on this ship. While the "Pirate" was not designed with it in mind, you might explore the possibilities of the new BK Model Products or the Posi-Tract retracting landing gears in wings.

Ruggedly framed out, it can stand up to violent acrobatics. Twin rudders a little exposed on rougher type terrain. Lengthen tailwheel gear or raise rudders a fraction if field is poor.

an adjustable pitch prop, on lines as long as 125 feet. Modern control line stunt designs are somewhat slower. The "Pirates" flew at 90 mph or better, and once took second in a speed contest, clocking 104 mph.

The smaller "B" version appeared in the September 1946 issue of Model Craftsman magazine, while the .60 "Pirate" became a very popular Enterprise kit. If memory serves us, the span was clipped to 36" in the kit version. Construction of this larger "Pirate" was generally similar to this R/C version, planked fuselage, built-up and sheeted wing, ailerons (for manual trim) and a built-up sliding canopy. Window areas were framed with aluminum sheet.

I built several of these larger kit "Pirates". Their performance and appearance was always outstanding. The "Pirate" has a classic look about it that I have never been able to get out of my system.

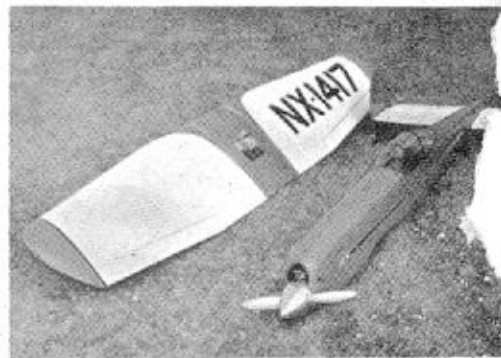
This is why I decided to re-design the "Pirate" for full house R.C., with Don's blessing, for he too was dying to see the old bird fly on the loose. Thus the name "Pirate III". The third major "Pirate" design, and for class III Multi. Very little re-designing was found to be necessary, as the original proportions proved to be almost identical with what I desired. It was simply a job of scaling up the drawings and applying more or less standard R.C. construction practices.

Performance with a Super Tiger .45 and Logitrol is a real pleasure. Ground handling is good, takeoffs and landings are trouble free. "The Pirate", due to its clean lines and fairly light weight will fly very fast, even on a .45, when wide open, yet throttled back it can be kept under complete control while flying at slow speeds. With the larger engines and in capable hands it would be possible to perform just about any maneuver desired. I would consider a .45 as minimum power.

It was intended that a Super Tiger .51 be used in the original model. Since this engine was tied up in another plane, I built it around the .45, thinking they were dimensionally the same. The night before the test flights I prepared to mount the .51 and found that the spinner backplate sticks out $\frac{1}{2}$ " beyond the nose. So, back to the .45.

The day of test flights dawned cold and windy, very windy for an untested and possibly underpowered plane. I was left no choice but to fly, as the worst

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sin one can possibly commit is to go to the field with a plane that is flyable and let a little wind or rain stop you. It takes quite a while to live such an action down.

Well no amount of under priming or closed needle valve could keep the engine from running, so this meant only one thing, I had to fly! After a brief check out of control action at various engine speeds to make sure that there were no resonant points, which might

be a cause to abort, I still had no excuse. Everything worked to perfection. It was now or never, so I pointed the nose into the wind and gave it full throttle. The "Pirate" accelerated down the field, straight as an arrow and lifted off so smooth that from where I stood I could not tell where it broke ground.

This R.C. version of the "Pirate" has one noticeable trait that the control line version had, and that is a tail high takeoff. After a run of a few feet the tail comes off the ground and the ship runs under perfect control on two wheels. The controliners used to do exactly the same thing, which made for a real pretty takeoff.

The first flight was exciting but uneventful. Maneuvers were smooth and predictable in spite of the high winds. I decided that one flight in that wind proved my courage, so I packed up for the day.

On the next flying session the weather was nice and calm but it was raining lightly. Six flights under these conditions gave me an opportunity to literally wring it out. It was a surprise to me to find that performance with a .45 was as good as it was, but as I stated before, this should be considered minimum power.

Construction is simple and quite fast. It should offer no problems to one who has built from scratch. The rudder linkages are the only departure from standard practice. These take a little more time than a single rudder, but I feel it is time well spent.



Hand-pick your wood as best you can. Design due the best. It flies with a purpose. You aim it.

The only change that was found to be necessary was to increase the rudder. With the rudders outside the major portion of the propwash, they became much less effective. I realized this while building the original and made the rudder travel what I felt was an adequate distance. The first few flights proved that the rudders were not as effective as they should be. Increasing the travel much further would be more of a detriment to performance than an advantage. It was felt that more rudder area

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Nick and his "Pirate." Design lends itself to colorful trim, has a distinctive look about it.

was what was really needed. This and the large rudder throw are shown on the plans. With this change, wingovers and spin entries as well as other rudder maneuvers will be easier to perform.

Build with an eye on keeping the weight down to a minimum. This does not mean to use soft balsa throughout, but instead to pick each piece for the job it must do. In this way you will obtain adequate strength with a minimum of weight.

Begin construction with the wing. The two outer panels are built first and then joined into the flat center-section when it is assembled. Cut out all the ribs from 3/32" sheet, except W-2 and W-4 which are of 1/8" plywood. Pin the 3/16" x 3/8" outer panel lower spars and the 1/4" x 1/2" rib block strip to the plans. Cement W-5 to W-10 ribs to the spars. Set W-5 at the proper angle with the gauge on the plans. Add the top spars, leading edge and the trailing edge cap. Sheet the top of the wing while it is still on the board.

Build the center-section in the same manner but join the outer panels to it before you sheet the top. The tips should be blocked up 1" under each panel.

While this is drying, bend the 5/32" dia. landing gear to shape. Remove the assembled wing from the board and install the landing gear mounts and aileron linkages.

Sheet the bottom surfaces of the wing. Roughly carve the wing tips to shape and partially hollow them out. Cement them in place and when dry, bring to final shape. Carve and sand the leading edge to the airfoil curvature.

Build the ailerons from 3/32" sheet. Use epoxy to secure the pushrod horns in place.

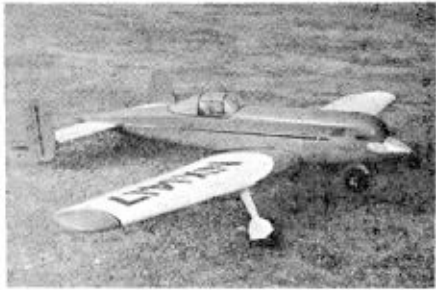
The stabilizer and rudders are built as a unit and installed before the fuselage is completed.

Cut the 1/16" sheet top and bottom covering to shape. Cut the 1/4" square ribs to length and drill 3/32" dia. pushrod holes in them. Pin the bottom covering over the plan and cement the 1/4" internal structure to it. Install the push-

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Wide stance, well positioned landing gear. The take-offs are tail-high, scale-like attitude.

rods as shown on the plan. Wrap the center joint with copper wire and solder. Each bend in the end of the stabilizer should be $\frac{1}{8}$ ". This can be adjusted later by resoldering the center pushrod joint. Sheet the top surface. Be sure you are working on a flat surface, for if a warp is built into this type of structure it is impossible to remove it. I use the top of my table saw for this and hold it flat with weights.

Build the elevators in the same manner and join with a Topflite Taurus type elevator horn.

Cut the rudders from medium grade $\frac{1}{4}$ " sheet balsa. Sand to an airfoil shape. Make the rudder horns from $\frac{1}{16}$ " thick phenolic and epoxy them into slots. Apply a heavy coat of epoxy on either side of the rudders around the horns.

Hinge the rudders with Tatone hinges. I used sheet mylar on the original and due to the short horns and flexible hinges, the rudders would move in and out, losing a lot of the intended motion. Changing over to the metal hinges eliminated this, and I so advise.

Slip the horns over the pushrods and epoxy the rudders in place. Keep the pushrod hole clear of epoxy. When cured, check the rudder action for binding. If necessary, re-solder the pushrod joint to obtain a neutral on both rudders. Drill a hole and install the modified aileron bellcrank. Hinge the elevator to the stabilizer. It will be necessary to cut the elevator horn down to 1" long to keep it inside the fuselage.

Cut the fuselage sides to outline shape from $\frac{3}{16}$ " x 3" x 48" medium hard sheet. Cement the $\frac{1}{2}$ " thick motor mounts, cabin and stabilizer doublers in place on the sides. Make one right and one left. Join the two sides with formers F-1, F-2 and F-5. Use rubber bands and pins to form the slight curve to the sides. Square up and let dry. Cement F-3 and F-4 in place.

Pull the tail together and join with F-9. Add the remaining formers. Cement a $\frac{1}{2}$ " x 2" x 2" block behind the firewall on each side. This will be cut out later to form the air outlets.

Cut out and cement the lower fuselage side pieces in place. These are angled in against the formers. Plank the top of the nose and bottom of the tail section with $\frac{1}{8}$ " x $\frac{3}{8}$ " strips. Before planking the top fuselage at the rear,

the stabilizer must be cemented securely in place and the pushrod hooked up. If you know exactly where the rudder servo will be, make up the pushrod to its final length. I used $\frac{3}{8}$ " sq. balsa with wire wrapped on one end and a link on the other. If you do not know the location of the servo, leave the link off the servo end. It can be wrapped on through the wing opening later. With the stabilizer and rudder pushrods in place plank the rest of the fuselage.

Hold the wing in place and check to see that it fits tightly all along the cut-out. Remove any high spots necessary to make a tight fit. Mark the position of the $\frac{1}{4}$ " dowels on the wing through the holes in F-2. Drill the leading edge and secure the dowels with epoxy. Epoxy the rear hold down block in place. Mark and drill the hold down bolt hole into the block. Use a $\frac{1}{4}$ " - 20 blind nut on the inside. These are available at hardware stores.

Cement the $\frac{1}{8}$ " sheet cockpit floor in place. Drill motor mount holes and bolt engine in place using blind nuts epoxied in place.

Tack cement the nose block to the fuselage bottom and carve to rough shape. Remove and hollow to the lines shown on the plans, then re-cement securely in place. Cut the front of nose back so there is about $\frac{3}{32}$ " space between it and a spinner backplate. Make the $\frac{1}{16}$ " plywood facing ring and epoxy in place so the edges line up with the backplate. Carve the block to final shape.

Cut the cooling vents in the side of the fuselage. Carve through the $\frac{3}{16}$ " sides into the $\frac{1}{2}$ " blocks on the inside.

Cement the tail block in place and sand all planking smooth.

It was realized after the original model was completed that a wing fillet as on the control line versions might add to the appearance. There have been a number of methods described in the magazines to accomplish this on removable wing models, so if one is desired, use a method that you think best. An outline is shown on the wing plan.

A fiberglass cowl was made for the original model. This was made using the easy-does-it Hobby-Poxy method that I am sure you are all familiar with. The thin wall of a fiberglass cowl leaves plenty of room inside for the largest engine. One can be carved from balsa blocks and hollowed if fiberglass does not appeal to you. I would suggest you at least give the fiberglass a try if you

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Twin tails do the job, slightly increased in area on plan to improve roll characteristics.



FLYING MODELS

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have never experimented it. It is hard to beat.

Sand all surfaces smooth and apply two coats of slightly thinned clear dope. Sand to remove the fuzz that is raised. Fill any cracks that appear in the planking with balsa putty. I covered the original all over with Silkspan, followed by clear dope and elbow grease until I had a good base for the colored dope.

There are many methods and materials available for obtaining a good finish. No matter what method you use, the final finish will only be as good as the surface it is being applied to.

When the finish and trim have been completed the cabin is put on. Bend the frame to shape from $\frac{1}{8}$ " o.d. aluminum tubing and epoxy into holes drilled into the fuselage. Use thin celluloid for the enclosure. Paint the cockpit black and install a pilot and any details you desire before cementing the celluloid in place. Outline the canopy with thin tape.

Install the landing gear legs and secure with Taurus type clamps. The fairings are cut from $\frac{1}{16}$ " plywood and secured to straps soldered to the legs. Wheel collars hold the low bounce type wheel in place. Install the radio equipment and pushrods. The servo rails will depend on the type of servos used so this is left to the builders. Battery space is rather limited especially with the larger packs. I wrapped it in foam and installed it over the fuel tank. The receiver was mounted in a foam box and placed against bulkhead F-2.

When satisfied with the control operation, the first flights are in order. Check the center of gravity location, it should be within $\frac{1}{2}$ " either side of where shown. With proportional equipment you can make an out of trim plane fly a lot easier than with reeds. I have seen models totally unmanageable on reeds turn in acceptable flights with proportional and the same center of gravity location as used on the reed installation. Still, try your best to balance it as indicated for safety in flight.

I think you will enjoy the "Pirate III" from the first flight on. It has performance and appearance that makes it an outstanding plane on any flying field. I would be interested in hearing from anyone who builds the "Pirate III". My address is 29 Edgar Drive, Smithtown, N.Y. 11787.

Let me hear your results and comments. Lots of luck. ●