

# FRITZ

## A DIFFERENT KIND OF HAND LAUNCH GLIDER

By JIM PARKER

• The pylon is the most outstanding feature on Fritz. It is not a gadget to attract attention from other standard outdoor hand launch gliders, but rather, a functional new idea. The pylon idea came about after I destroyed a standard glider by throwing it into the ground.

A flying buddy (Jim Farmer) and I later kicked around several ideas for consistent launching. They ranged from giving up the event to pendulum operated auto surfaces. For some reason during this talk, I thought about what my dad had told me about his favorite old ship, the Zipper. He said Carl Goldberg used a pylon to control the power of the newer, hotter engines of the time. Why not use a pylon to control the high speed launches of a Hand Launch Glider? I mentioned the pylon idea and Jim laughed a bit, but after further discussion we decided it might be worth a try.

After making up our minds to build a model to evaluate the pylon idea, we selected a name. This bull session lasted longer than the design conference. The "Brooklyn Frog" did not seem appropriate; we were looking for something different... to set it apart from the crowd. The "Maverick" was suggested, but how would a brandless cow fly? Through pure, divine inspiration, the name "Fritz" was heard. Having a certain ring to it, the name caught on. Anyone familiar with the infamous cartoon cat (*Hmmm, thought that was "Felix." wcn*) knows the similarities between "Fritz" and Free Flighters. Besides, a cat has nine lives... a little luck is always welcomed.

I set about to build the prototype and elected to use an eighteen inch wing span, four inch cord, and long rounded tips with ample polyhedral. A standard tail moment arm with large tail surfaces was also chosen. With a pylon, the finger rest position is not limited to the trailing edge of the wing. I moved mine forward... after all it was an experimental aircraft. Being optimistic, I put on a good finish and went so far as to add a swing weight dethermalizer.

The first hand throw showed the launch stability of the Fritz. It was a super-lousy launch, but instead of biting the dust, Fritz rolled out and recovered at a decent altitude. With some stab tilt and trim tab adjustments, Fritz was trimmed in one flying session. The next weekend, this optimist did not light the dethermalizer fuse and "Fritz the First" was lost. New Fritz's were built, lowering the dihedral and changing the tail surface outline for easier trim tab adjustment. They all perform equally well.

It is believed the excellent launch consistency is due mainly to the pylon; also the forward finger rest position may contribute to this, but more experimentation needs to be done in this area. If this has interested you at all, start building a Fritz.

### CONSTRUCTION

Select wood so the finished model will weigh according to your athletic abilities. A finished weight of one and a quarter ounces seems to be a good average. This requires a medium light piece of wing wood. All glue is an aliphatic type, unless otherwise specified. Left handers should reverse finger rest, stab tilt, and flying instruction.

Cut out the wing, stab and rudder. Pin the wing and stab, with wax paper or plastic wrap underneath, to the building table. Soak the hardwood leading edge reinforcements in hot water. Bend to shape and with plenty of pins, glue in place. When dry, remove and sand to shape. Note the sharp leading edges and the unsanded area on the stab.

Cut the wing apart and sand in proper angles for the dihedral joint. This is easily done by laying the dihedral edge along a square table edge. Block the other end up one-half the shown dihedral measurement. Note: for the tip joint on the center panels, the block-up point is the same distance from the table edge as used for the tip panels. Then simply sand with a sanding block, keeping it flat against the table edge. After pregluing the joints, glue the tips to the center panels. When dry, glue the center panels together.

The grain on the spruce fuselage should be closely spaced and run straight for the full length. Cut the fuselage out and sand to shape. Laminate and glue the pylon pieces and fuselage pieces in one step. When dry, slot the pylon side and epoxy the finger rest pieces in position. Jig the fuselage so the pylon makes a ninety degree angle to the table. Epoxy the wing in place... the wing tips should be equal distances from the table, and the center leading edge should be square to the fuselage.

No trouble has been encountered throwing the wings off. For those who throw like Joe Namath, a small piece of fiberglass cloth from the front wing top to the pylon would be advisable. At this time glue the rudder on. When dry, glue the stab on, tilting the wing so the left center panel is parallel to the table. This provides the proper amount of stab tilt.

Apply a coat of thinned sanding sealer to the model and sand smooth when dry. Follow with a coat of thinned dope. Sand smooth and add tissue trim. Give the wing five additional coats and the stab three, sand to smooth finish with 400 grit sand-paper, followed with '00' steel wool. Wait one week after the last coat before applying polishing compounds and paste wax.

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If the dethermalizer is used (highly recommended), epoxy the plywood nose piece and snuffer tube in place. The lead used is obtainable from most printing shops. It is harder than common lead, but can be cut with a Zona saw and filed easily. Cut the lead swing weight to shape and slot the bottom rear corner with a saw. Insert a piece of .008 braided U-control cable and crimp the sides together. Form a loop in the opposite end and secure by crimping a 1/16 aluminum tube sleeve over it. Epoxy a length of thin elastic to the tail. Stretching the elastic just enough to keep the swing weight from hanging up on the wing, tie the elastic to the cable.

Use a small doubled rubber band to hold the swing weight in the plywood nose piece. Lift one rubber band strand and slip a piece of fuse under and into the snuffer tube. The fuse can be easily inserted if first, scotch tape is tightly wrapped around the middle of a fuse twice as long as needed. Cutting through the tape and fuse will yield two fuses with fray-proof ends. When the fuse is lit, it will burn through the rubber band, releasing the swing weight, causing the model to flutter back to earth. Be sure the swing weight falls out freely, and also keep the burnt fuse residue wiped off the weight, it could cause the weight to hang up.

At this point, the model will be tail heavy. Cut a piece of lead to the profile shape of the nose; temporarily attach the piece to the nose... which will make it nose heavy. Cut the back of the weight off until the model balances just slightly nose heavy. Inlay and epoxy the weight in place to the nose. Then file the weight to a streamline shape and until the proper C.G. is obtained. Use contact cement to attach the sandpaper grips on both sides of the fuselage.

### FLYING

Test glide, adjusting the stab T.E. so a nice flat glide is obtained. It should turn slightly to the left. Fritz uses a little different launch than most other gliders, as it does not like to be thrown straight up. Rather, release at about 45° to the horizon with right bank. Fritz should climb to the right, making a 180° turn, slowing on top and smoothly going into the left glide. Use small rudder tab adjustments to obtain this.

If Fritz stalls between launch and glide, add a hair of right rudder, or throw with more right bank. If it goes up sharply into a wing over, either release lower or bend in a small amount of down elevator. A small amount of left down elevator tab improves the transitions between the climb and glide.

Fritz does not get as high as a standard glider, but makes up for it in launching consistency; also it has a better than usual glide and thermaling characteristics. Little or no wash-in is needed on the in-board tip for thermaling. Light the fuse, throw hard and GOOD LUCK.