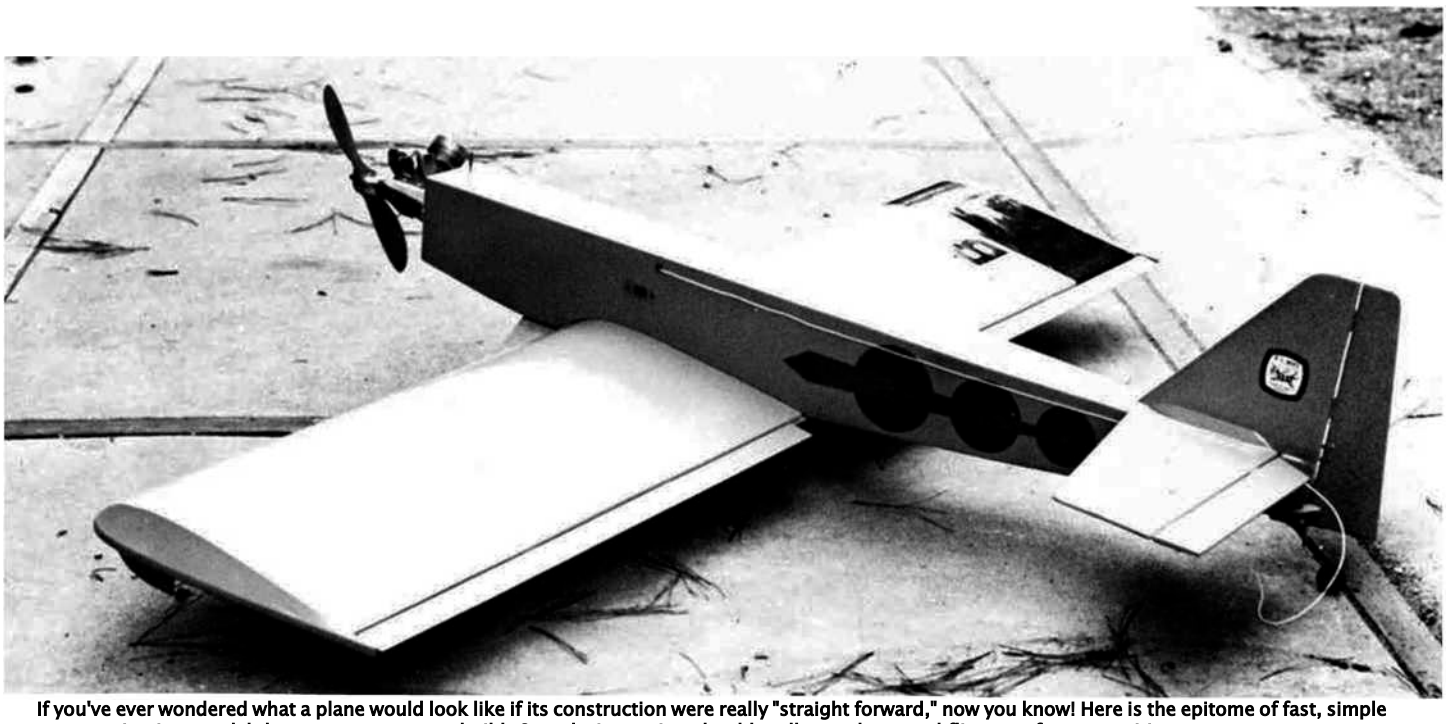

If you've ever wondered what a plane would look like if its construction were really "straight forward," now you know! Here is the epitome of fast, simple construction in a model that most anyone can build. One-design racing should really get the casual fliers out for competition.

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A ONE-DESIGN PYLON RACER COMPLETE WITH A SET OF RULES

This may be the answer for the sport flier who wants to compete on an equal equipment level with his fellow modeler. The idea of a one-design has been talked about many times. Maybe this is it. Text by the editor from material furnished by Gil Horstman.

The TOAD resulted from the combined designing efforts of Bob Frames and Bill Boone, who were developing a one-design pylon racing airplane for the average club sport flyer, primarily in this case, members of the R/C Bees of Santa Cruz County, California. Bob Francis is a well known manufacturer of fiberglass pylon racing models and the source of Francis Products Finishing Resin. Bill Boone is president of the R/C Bees. Although timing and general design similarities would indicate otherwise, development of the TOAD and Glen Spickler's "Quicky 500" pretty much took place independently.

Glen's design, featured in AMA's magazine, though as easily constructed and as much of a general purpose airplane as the TOAD, is considerably faster than what the Santa Cruz designers were after. The airfoil is only 11-1/2 percent as compared to about 17-1/4 percent on the TOAD. This airplane came about as the result of the desire to accomplish several goals. First, Gil Horst- man, as Sec-Treasurer of the NMPRA, had received many letters, staling concern over the organization's lack of a program to develop new Formula I pilots.

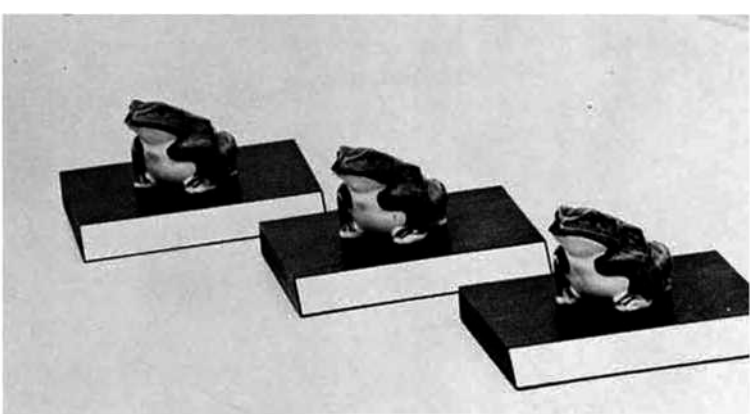
Secondly, Gil, Bob, and Bill were concerned about the speed and handling of a design that any modeler of average experience could build quickly and fly without too much difficulty.

Finally, they wanted a racing event that wasn't another 2-in-1 affair (One race is around the pylons, the other is the equipment race that always developed in the background, and where the all mighty buck is the dominating factor.)

Going back to the first problem, it is fast becoming obvious that quarter midgets, though growing rapidly in popularity, arc also beginning to settle into the same specialized rut as Formula I. The building time is nearly equal to Formula I, and it already has its set of "professional racers" who dominate the win columns.

It was felt that a one-design of a simple nature would be the way to avoid this problem. An Ugly Stik might do the job, but it's too big. Also, to somewhat resemble a racer, the plane should at least be a moderate to small low wing

"Alright, gentlemen, first of all .. THAT . . is a pylon!" Well known pylon flier and model manufacturer. Bob Francis, lays down the rules.



Trophies . . rivet . . for the first . . rivet, rivet .. TOAD race seem very rivet, rivet, rivet . . appropriate. Furnished by Bill Boone .. RIVET.

Winners of the first rivet.. TOAD race (l to r): Bill Mandarino, 3rd, K & B 40; John Rouse, 2nd, HP 40; and Jim Patrick, 1st, HP 40.

Gene Sanford cleaning his plane after a heat. Incidentally, that's not a field-box he's using. It's a TOAD stool.. No doubt there will be some wild paint jobs to try to cover up that one design.

design. Bob Francis made the rough design layout based on the above parameters and the bees developed a simple set of rules to team up with the airplane.

The design was completed by Bill Boone and it fell right into the second requirement; a plane that was quick to build, rugged, and also easy to fly.

The rules developed by the R/C Bees fulfilled the final requirement. The combination of front rotary engine, muffler, 10X5 prop, and 10 percent fuel put everyone on the same equipment level. All of a sudden, racing came down to one thing . . . Who was the best pilot?

The first race was a great success. There were 18 entires, with some flyers sharing airplanes. Well known Formula I flyers joe and Ed Foster, Bob Francis, and Gary Korpi were on hand to help the contestants. They released airplanes, called turns, and gave the pilots help in flying the best course. Quite an inspiration to the novice racers!

Race horse starts were employed, and with the planes being so equal in speed and acceleration, it was quite exciting to see them all lift off and head for Number One pylon at about the same time! Considering the closeness, it was interesting that only two mid-airs occurred. In one, a plane lost its tin but landed safely while the other plane went on to finish the race. The pilots were Gil Florstman and Gary Korpi. Ron Sheldon and Jerry Arana did a more complete job, totaling both ships.

One other ruling possibility came out of the first race, but its implications could make it difficult to establish, if the TOAD class were to become a national event: Regarding the front rotary engine rule, it would make the races all the more equal if a specific engine were used. Within a given area or club this might be possible. In Bakersfield, for instance, the BARKS all race with K&B 71 series engines.

Materials used in construction of the TOAD are completely up to the builder. The only requirement is that the finished product must

A three-plane ... er ... Toad heat about to get under way. Gary Korpi has just released John Rouses model. Similar speeds of various Toads add to the excitement; even though slower, they're flying close together a lot of the time. It should make a great general sport plane too.

TOAD ..... *Continued from page 24*
conform to the established one-design outline.

The fuselage may be fiberglass, plastic, wood, concrete, or what have you. However, an engine cowl is not permitted, and the corners may not be rounded more than to a 1/4 inch radius. The landing gear must be mounted on the fuselage and be of fiat dural aluminum. A Goldberg Shoestring gear is just right. Sec the accompanying rules for further specifications.

The plans show a simple plywood fuselage using an inexpensive 3-ply plywood. Sig has a light 3-ply plywood that should be just right. II balsa is used, add some cross pieces to resist buckling.

Construction of the airplane, if built according to the plans presented, is so simple that it needs no description. One suggestion: Don't leave the leading edge of the wing pointed. It makes the plane over-sensitive on elevator. A good, sturdy motor mount is very important in cutting down vibration. Also, a sturdy, well-balanced spinner is important. Makes electric starting easier, too!

One more building hint. Bob Francis suggests it, and it can be used on all types of airplanes, in addition to the TOAD. The idea is to put the framework all together with as good a mechanical fit as possible. Then, brush on a good coat of Francis Products Finishing Resin along all the joints. The result is a strongly glued structure accomplished in considerably less time than with conventional methods.

You might know Bob Francis would suggest something like that!

PROPOSED RULES FOR "TOAD" CLASS RADIO CONTROL PYLON RACING.

September 11, 1972 *(Italicized additions suggested by editor)*

1. **OBJECTIVE:** To form a class of pylon racing for the novice and/or the "Sunday" flier competitor that will be in the spirit of aircraft racing as well as challenging for the contestants.

2. **GENERAL:** All AMA and FCC regulations covering the R/C flier, his plane, and equipment, will be applicable to this event. The contestant will be allowed (wo entries. He can only use his alternate model if the first model becomes unflyable. Consideration for the safely of spectators, contest personnel, and other contestants is of prime importance. Any unsportsmanlike conduct or hazardous flying will be cause for immediate disqualification of the offending flight. (Second disqualification shall be cause for disqualification of flier for remainder of contest.)

3. **MODEL AIRCRAFT REQUIREMENTS AND SPECIFICATIONS:**

3.1. **FUSELAGE:**

3.1.1. Outline shall conform to one-design plans.

3.1.2. No engine cowling.

3.1.3. No wing fillets.

3.1.4. Fuselage corners may not be radiused more than 1/4 inch.

3.2. **TAIL SURFACES:**

3.2.1. Fillets allowed for strength.

3.2.2. Steerable tail wheel or steerable skid required.

3.3. **WING:**

3.3.1. Airfoil shall conform to one- design plans in shape and size *(from root to one inch from tip.)*

3.3.2. Minimum wing span shall be 50 inches, including tips.

(Weight limits should be specified)

3.4. **LANDING GEAR:**

3.4.1. Fuselage mounted only

3.4.2. Dural aluminum gear required (Goldberg Shoestring or equal)

3.4.3. No fairing, streamlining, or wheel pants permitted.

3.4.4. Wheels shall be balloon rubber type, 2 1/2 inch diameter minimum.

3.5. **ENGINE:**

3.5.1. Shall be .40 cubic inches maximum. More than 1000 produced. *(Nominal ,40?)*

3.5.2. Muffler or silencer required. *(Effective)*

3.5.3. Factory stock with factory stock carburetor. Have method to kill engine on command from transmitter *(Without having to roll in- verted)*

3.5.4. No rear rotor engines permitted.

3.5.5. No modified engines, ic., metal and/or parts removed to develop a "speed" engine.

3.5.6. No pressure systems permitted.

3.6. **PROPELLER:**

3.6.1. Shall be stock, standard wood 10X5 only.

3.6.2. No speed props permitted.

3.6.3. Modification limited to removal of wood from one blade only, for balancing purposes.

3.6.4. Two inch spinner allowed. No needle nose spinners permitted.

3.7. **FUEL:**

3.7.1. Ten percent nitro maximum permitted.

3.7.2. Supplying by sponsor is recommended.

3.8. **RACING SPECIFICATIONS:**

3.8.1. NMPRA race course should be used when possible. Variations at sponsors option due to field or safely considerations.

3.8.2. Ten laps following unassisted R.O.G.#