

FLY RC HOW TO by Chris Luvara

Gentlemen, start your engines!

Hold a Club Pylon Race

Many people often think of one word when they talk about racing: expensive. It's a common misconception that one should overcome, because when you think of racing, it should be FUN!

Oftentimes, club members attempt to spark interest by starting a club-type race, using airframes such as Quickee 500s. Generally a few people get interested, they hold a race, and interest ends up burning out. What if there was a way to hold a club-type race that many club members would be interested in, with airplanes almost everyone would enjoy flying year round?

One such concept started back in 1999 at the SCCMAS in Morgan Hill, CA. There was an abundance of relatively cheap T-34 ARFs manufactured by The World Models flying around at the field. After a little deliberation by the core group of racers, rules were crafted and in May of '99, the first race was held. Eight years later, the races are still going strong. At least three other clubs have taken on the rules, and more than 65 pilots are participating.

So just how have these races become so successful? First off, practically any soloed pilot can participate. Secondly and most important, the races have remained fun. In this article, we'll give you a basic rundown of how your club can hold its own race event, have fun, and even generate a little extra revenue.



Before each heat, the aircraft are raised individually so the turn callers can identify them.



Two pilots vie for the same airspace and cut it close!



A pilot and caller wait anxiously for the start of their heat race.

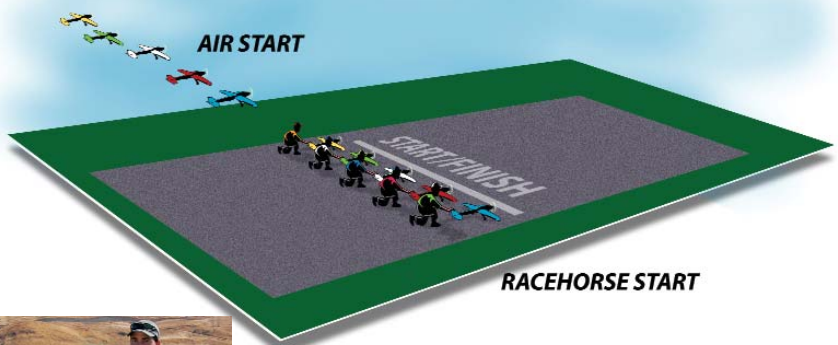


The rear view of the pylon.

This is an example of some 2D pylons our club built: very bright and easy to see. They are about 15' high, and fold for easy storage.



Handles were added so that the pylon could be carried when folded.





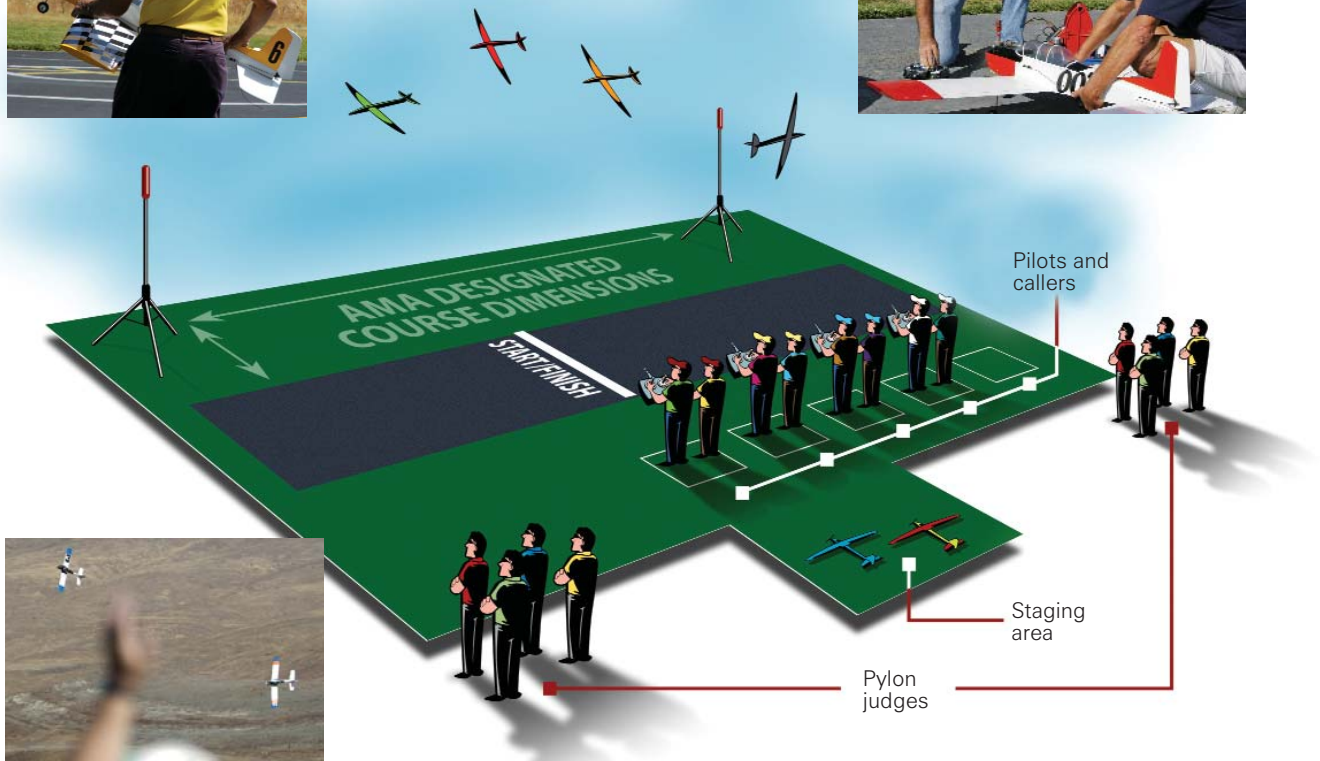
Three aircraft all stacked up, trying to turn tighter than their opponents.



Safety is essential, and all pilots and callers are required to wear helmets at AMA-sanctioned events.



A pilot and his helper get ready to start their engine.



HOW TO HOLD A CLUB PYLON RACE



The first step is picking an aircraft. Look around at your club, and see what types of airplanes are flying. As previously stated, the cheaper and more readily available the airframes—such as The World Models T-34 used in California—the better off you are. The symmetrical airfoil and tricycle landing gear make it an easy and well-behaved airplane for the beginner pilot as well as fun for the advanced one. Again, the key is to choose a model everyone can have fun with.

Once you have chosen an airframe, the next step is motor selection. Depending on how tight you want to be with the rules, pick one motor (again, choose one that is relatively inexpensive and available) or allow participants to choose from a variety of engines. As long as the displacement is the same, and there is no significant advantage, allowing a choice of motors will encourage more participants to get involved. However, when everyone has the same motor, it makes things just one step closer to being even.

Props can be restricted, but experience has shown it is better to



The smile on this pilot's face says it all—he's having fun!

leave propeller choice open to readily available, off-the-shelf items. On the other hand, fuel is a good option to standardize. A nitro content of 15% from an accepted brand is a good place to start. Finding a fuel sponsor, such as a local hobby shop that might offer a discount, is a great way to keep the cost down. Typically, a one-day race won't require more than a case of fuel. You can also add an extra dollar to your entry fee to cover a couple of gallons of fuel.

PROMOTE YOUR RACE

After you have defined your aircraft, prop, fuel, and all the needed rules, promote your event. After all, if people don't know about it, they won't come. Drop flyers and rules at the local hobby shop, put it in your club newsletter and, importantly,

Good communication between a caller and pilot is important in being a successful race pilot.

talk it up at your club meeting. Help your fellow members under-



HOW TO HOLD A CLUB PYLON RACE

stand how much fun a race event can be. Be sure to promote the race well in advance so that interested pilots can ready their airplanes.

Items that will also need some consideration before the event are entry fees, trophies and/or prizes. Since you want racing to be fun and inexpensive, try to keep the entry fee as low as possible. Most clubs find that \$10 or \$15 is a reasonable fee, and enough to cover some kind of trophy or plaque. Trophies and plaques are optional, but finding a sponsor (like your trusty local hobby shop) is a great way to cover costs. When all is said and done, gaining some extra money for the club is great, and can help to quiet naysayers who don't want the field to be shut down for a day.

The AMA has set forth certain restrictions for racing, and waivers and such can be obtained for certain field layouts. It is best to consult with your district AVP on these issues, to determine the right setup for your field. Playing by the rules and remaining safety-conscious will help all parties in the long run.

Having a good CD (contest director) with lots of resources can help motivate people, and that will make the event a successful one. Oftentimes, pilots and crew will end up helping with functions of the event. Take care of your workers; give them an incentive to help. Find a way



A T-34 streaks down the front stretch. Typical speeds for this class range from 85 to 90mph.

to get a kit or a motor and hold a workers' raffle. A happy worker might turn into a racer the next time around!

TWO-PYLON RACE COURSE

I'll explain a recommended race setup for any who have not held a race before. I will not go into detail about the three-pylon course that Quickee and Formula One racers use, but rather a two-pylon setup, where all pilots and workers are set back from the course. Imagine two poles set perpendicular to your runway, spread about 600 feet apart, with the start/finish line directly in the center. The pilots stand spread out from the start/finish line and each has a caller. The function of the caller is to tell the pilot when to turn, and in most cases he is guessing when the plane is past the pylon.

If the caller is wrong, and the pilot cuts inside the pylon, he is penalized by the pylon judges who are placed back from the pylons, but directly in line. Typically, each cut costs the pilot one lap (see illustration).

So exactly what will you need on race day? Well, pylons are going to play an important role. You will need to construct some pylons that are visible, yet easy to set up. Lap counters are also important. Our club purchased clickers, typically used for counting entrants at large events. You can utilize the callers as lap counters, but having dedicated people to count laps works the best.

A key safety item is hard hats. Require participants to bring one, but be sure to round up some extras just in case. Hard hats should be required for anyone working the racecourse, and anyone on the flight line. AMA sanctioning requires their use.

FLY RC MAGAZINE VIEWPOINT

Try club racing with this quick-build electric flyer

Electric Zap Machine by Thayer Syme

Are you thinking about giving club racing a try? It is a lot of fun, and you don't need an expensive model. The Electric Zap Machine is a simple, reliable flyer you can assemble as quickly as many ARFs. It flies well on a wide range of power systems, and thus will suit just about any budget.

AIRBORNE

The Zap Machine is intended to be hand launched, and the brushless/Li-Poly power system provides plenty of thrust. It accelerates well, and settles into its groove quite quickly. This model flies faster than a lightly loaded park flyer, but is easy to handle if you have previous aileron experience. Once in the air you will be pleased by its crisp performance and handling.

With the recommended balance point and control throws I could not find any bad habits. Full elevator at speed gives an abrupt pitch, but without sign of a snap roll. Full aileron rolls are fast, but not so much

that you can't precisely set a turn. Go easy on the elevator when racing, though: Pulling hard in tight corners will slow you down quite a bit. Reducing the throw can help you hide your nerves and fly a smoother and faster pattern.

The power-off glide is nice and flat, and fully controllable all the way through to landing. The wing loading lets you slow nicely, but the control response inevitably sags as you slow. I keep the nose low through the final stages of the approach to help maintain control. Kill any remaining power well before touchdown, and hold it just a few inches off the grass as the energy bleeds off.

TIPS FOR SUCCESS

Most of the assembly is done dry, with thin



CA wicked into the joints after you position the parts in place. I used medium CA to close up the wing sheeting and install the tail surfaces and firewall, to ensure there was enough glue getting into these important joints. I used Thin Zap and Okay CA+

RACING STARTS

Generally there are two types of racing starts: an air start and racehorse start. The racehorse start is generally used for F1, Quarter Midget and Quickie—all aircraft are lined up on the runway and launched in a staggered method. The air start consists of a start window, which allows all the aircraft to get airborne (typically 90 seconds) and then a countdown, usually 15 seconds. The object of the air start is to get as close to the start/finish line without going over, otherwise the pilot is penalized with a cut. The racehorse start can be easier, because it does not require a countdown system.

Matrices and scoring are also key ingredients of the race. Options range from specially written computer programs like those employed at giant scale races, to plain and simple handwriting. Many heat races are run with up to five airplanes, and points are given based on finish position, with first place getting five points, second place four, third place three, and so on. DNFs (did not finish) do not get any points. If you would like to try a computer program, the National Miniature Pylon Racing Association (NMPRA) offers a nicely written computer matrix and scoring program that can be adapted to almost any racing class. Check it out at www.nmpr.org.

As with any competition, you might run into a competitor who tries to bend the rules, and that can take away the fun. Such people are a fact of racing, and can be dealt with as you deem appropriate.

CONCLUSION

Although holding a pylon race might sound complex, it's not. It might be a little challenging, but it is fun and well worth the effort. After you hold a few events, you will become a pro. Competition can get fierce, but there is much camaraderie among the pilots. It is very rewarding to see

pilots eagerly helping fellow racers get airplanes into the air to make a heat race.

While the example race setup given here is for a .40-size race class, you can adapt these guidelines to any type of aircraft. Give it a try on a small scale with electrics, park flyers, or even 1/2A powered aircraft. I have seen everything from a Super Hots race class, to a Trainer class, and even a "Run What Ya Brung" type class. The point is, there are many options. Companies like Hobby Lobby even offer park flyer type models of Reno raceplanes, including Strega and Rare Bear. These electric craft are small, and can be flown by just about anyone. Best of all, they do not require a large area, or even a complex pylon setup. Dream it up, and make it happen—there is much fun to be had with club racing.

Are you ready to get out there and race? We hope so. Will you have fun? We think so. Just remember, as we mentioned in the very beginning of this article, it doesn't have to be expensive. Any questions? E-mail fun@luvaraairracing.com and we'll do our best to answer your questions and assist you. ☺

Links

Luvara Air Racing, www.luvaraairracing.com

National Miniature Pylon Racing Association, www.nmpr.org

Santa Clara County Model Aircraft Skypark, www.sccmas.org

T34 Racing, www.t34racing.com

Unlimited Scale Racing Association, www.usrainfo.org

For more information, please see our source guide on pg. 185.

SPECS

PLANE: Electric Zap Machine

MANUFACTURER: House of Balsa

DISTRIBUTOR: House of Balsa

TYPE: Quick-build sport flyer

FOR: Intermediate pilots

WINGSPAN: 29 3/4 in.

WING AREA: 227 sq. in.

FLYING WEIGHT: 14.2 oz.

WING LOADING: 9.01 oz./sq. ft.

LENGTH: 26 in.

RADIO: 3 channels required; flown with a JR XF421EX transmitter, Castle Berg 7 receiver, (3) JR NES-241 servos

POWER SYSTEM: HET-RC Typhoon Micro 6/20 brushless outrunner motor, APC 6x4 prop, Tsunami 18-amp speed control, Big Wave Power 3S 1320mAh Li-Poly battery

FULL THROTTLE POWER: 8.25 amps, 90.6 watts; 6.38 W/oz., 102.1 W/lb.

TOP RPM: 14,160

DURATION: 8-9 minutes racing, 15-20 minutes sport flying

MINIMAL FLYING AREA: Sports field

PRICE: \$69.95

COMPONENTS NEEDED TO COMPLETE:

3-channel radio required with 3 micro servos and Y-harness for ailerons, 100-watt electric motor, speed control, battery, propeller



throughout. While I didn't match the 6-hour assembly time claimed by House of Balsa, I wasn't off by a lot. I was ready for the decals after about eight hours of enjoyable building.

The kit includes a single belly wheel if you need to protect the underside of the fuselage from a hard surface runway. I fly from grass, so I left the wheel off to speed up the assembly and save drag and a few grams.

The kit comes with colorful self-adhesive decals. I gave the airframe a final sanding with 220-grit paper, then vacuumed it clean and applied the decals. A couple of quick coats of clear protect the wood from moisture and seal all the

edges. Whatever you do to personalize your own Zap Machine, keep it light.

CONCLUSION

If you have assembled a few ARFs and are looking to broaden your horizons, the Electric Zap Machine makes a perfect introduction to building. The precision laser cutting and lack of covering speed assembly and help ensure success. Get your friends together, and you will have the perfect recipe for some informal one-design racing. ☺

Links

APC Propellers, distributed by Landing Products, www.apcprop.com, (530) 661-0399

HET-RC, www.highendrc.com

Hitec RCD USA, Inc., www.hitecrad.com, (858) 748-6948

House of Balsa, www.houseofbalsa.com, (760) 246-6462

JR, distributed exclusively by Horizon Hobby Distributors, www.jrradios.com, (877) 504-0233

Thunder Power Batteries, www.thunderpower-batteries.com, (702) 228-8883

ZAP is manufactured by Pacer Technology, www.zapglue.com

For more information, please see our source guide on pg. 185.