

BY MATT MAZIARZ
PHOTOS BY EDWIN RODRIGUEZ

RA CORES Mini Yak 55

“Coreman” Jim Reith of RA Cores has produced Yak 55 models for a number of years now. Made from different foam composition (Depron or EPP) and in varying thicknesses, these models are light wing-loaded fun incarnate. With a 32-inch wing, the original Yak 55’s were the perfect machine for small fields or large indoor domes. Enter the Mini Yak 55, an exact copy of the wildly popular original, but touting a mere 22-inch wing, making it perfect for smaller yards and/or gymnasiums.

Unlike the larger models, the Mini Yak is only available in a 6mm thick EPP model. The smaller size doesn’t warrant the 9mm option size found on the 32-inch model, which is more than necessary with this floaty little bird.

*Indoors or Out,
Fun is What it’s
All About*



Key Features

- > The profile models from RA Cores all feature the same basic design, giving them excellent flight qualities in a model that is durable and easy to build.
- > The Completer Package from RA Cores provides everything you need to build your Mini Yak 55 save for the radio system, flight pack and prop.
- > The 3D performance of this little hot rod is exceptional. The control surfaces are HUGE compared to other minis and the light weight makes for supreme post stall stability.
- > Though the instructions could use a bit of help with the clarity of the photos, the build is actually quite easy.
- > Flight times in excess of 10 or 15 minutes depending on what size battery is used means there’s more time in the air than on the bench with this Yak.

Pros

- > Lightly loaded for excellent flight performance
- > Awesome tumbling ability
- > Modestly priced for a PnP model
- > Highly durable EPP foam construction

Cons

- > Instructions could use a little work in the illustrations department



NEED TO KNOW

MANUFACTURER: RA Cores
DISTRIBUTOR: RA Cores
TYPE: Mini Profile Aerobat
FOR: Intermediate to advanced pilots
MINIMUM FLYING AREA: Gym or back yard
PRICE: \$94.90 (as tested)

NEEDED TO COMPLETE:

RA Cores sells the Mini Yak 55 in a couple of different ways. You can get the bare kit, unpainted for \$24.95 or a kit painted (in one of six different color combos) for \$54.95. RA Cores also sells electronics completer kits for the model consisting of servos, motor and ESC. Going with the painted kit and completer package, you’ll only need to provide your own 4-channel radio system, 2S 180-300mAh LiPo, some 2mm bullet connectors for the ESC/Motor and a 6X3 prop.

Author’s Opinion

I’ve been a huge fan of the RA Cores lineup of profile foamies for a number of years now. Their Depron and EPP offerings in both the Yak 55 and various warbirds excel at lightly loaded flight, capable of all the 3D maneuvers you can toss at them with lengthy flight times to boot. The latest creation from Jim Reith at RA Cores out of Southbridge, MA is a scaled-down version of the popular Yak 55. This little Mini Yak spans a mere 22 inches across the wing, making it the perfect machine for indoor adventures, but it can still strut its stuff in the great outdoors. Better still, batteries are cheap for this little bird so you can keep it in the air all day long.





RIGHT: The Turnigy 2100Kv motor gives the little Yak plenty of power for a full host of aerobatic capability.

IN THE AIR

As there are no landing gear to speak of. Hand launches are the order of business with the Mini Yak 55. However, the model is so light that you don't even have to toss it. Simply hold it on an outstretched hand, power it up to between 50-75 percent and let it go. A word to the wise: if you set up your model like ours, with full throws on all surfaces, a good bit of expo might be in order for the initial flights. This Yak is responsive, to say the least. Once up at altitude, a few clicks of up elevator and right aileron had our model flying hands-free.

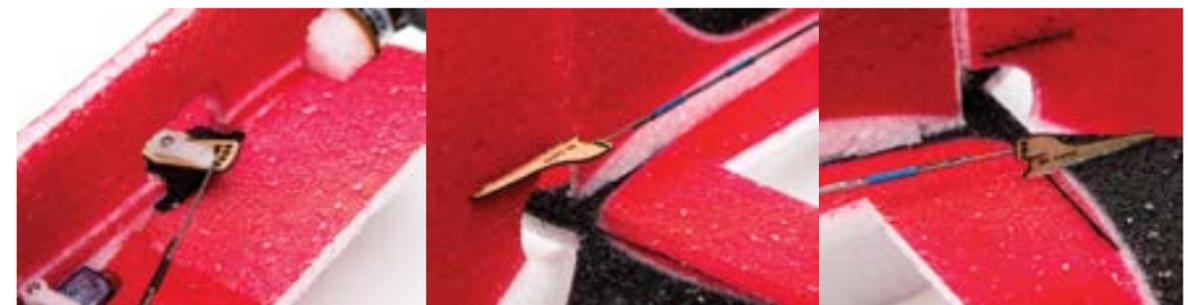
With a slightly forward CG (the flight pack placed just in front of the main spar on the fuse), the handling was predictable, yet snappy. Snaps and spins were effortless, but the little Yak could still putter around in a harrier with little rocking. We couldn't wait to move the CG back to see what it could do when a little tail heavy, but before that, we had to test the stall. In outdoor conditions, without any wind to speak of, the model simply gets a little sluggish, shows a slight wag and then usually falls right through the nose. Recovery was easy at all altitudes as this machine has excellent power to weight ratio and the control surface authority can turn it on a dime. So, as long as you keep your wits about you, it'll be pretty hard to stuff the Mini Yak, even at low altitude.

The flat line speed was surprisingly fast for such a small 2S system, especially considering the long flight times. This just might be the perfect machine to master the art of harriers and hovering with. It's small enough to not be intimidating, it is extremely durable and it has plenty of bail-out power on tap. Also, once it settles in to a hover, torque and anti-torque rolls are possible with high rates and careful throttle management. A couple times we did plop the model down on its nose, only to have the prop fly off with no other damage. It's also worth noting that the manual specifies a few places where leftover pieces of carbon fiber can be used to stiffen both the tail and nose portions of the Yak. We highly recommend doing so as the servos have enough strength to twist the airframe about when not limited properly or when full throws used.

The Mini Yak 55 excels in post stall flight, no matter what your orientation. We were able to burn through entire battery packs in both inverted and knife edge orientation because it's just that easy. With a neutral CG, the Yak 55 will float on its back without so much as an input on the elevator. The generous side surface area of the fuse creates quite a bit of lift once the model is rolled on its side, leading the way to the perfect knife edge passes down on the deck in figure-8 style. The fact that the model is nearly the same in length as it is in wingspan gives it great precision for such a small machine. When the battery starts to fade (after a long, long time), landing is about as easy as takeoff with this model. Simply find a soft spot of grass, float it in, keep the nose up and chop the throttle when only a foot or so from the ground. You'll stick the spot landing every time!



RIGHT: Here's a top view of the single aileron servo sitting in front of the separate elevator and rudder servos.



FAR LEFT: A side shot of the aileron servo bellcrank horn. CENTER: The Rudder control horn. LEFT: The Elevator control horn.

Keeping with the RA Cores trend, the Mini Yak 55 follows the profile pattern of the earlier models, making it easy to build, fun to fly and imminently more durable than other types of foam. The creative blend of laser cut EPP and lite-ply hard points makes for an awesome final result. Powered by a

modestly rated (and priced!) ESC and motor as included with RA Cores' completer pack, this little Yak is capable of some insanely long and aerobatic flights.

Of course, such a wide open airframe and frugal price for the basic kit means you can easily source your own

components ... which is cool. You could also sheet the wings, triple reinforce the carbon spars, add ball links for the control surfaces



process requires little more than a straight-edge ruler, a hobby knife, adhesives and a small Phillips head driver for the servo horns. If you are a seasoned pro, you could probably have the Mini Yak 55 from the box to airworthy within a few hours using CA glues exclusively. If, however, you use the Foam-Tac for the build as advised, the complete assembly will take a couple of days.

Assembly starts off with the beveling of all control surfaces as well as their corresponding section on

and strap a motor that's way too large into it ... NOT cool. While there are a vast array of prudently sized electronics that this Yak 55 can accommodate and excel with, messing with the covering, adding strengthening material here, there and everywhere or going completely off the reservation in regards to the size/power of your system will straight up kill the excellent handling characteristics that the RA Cores line of models are so well known for.

That being said, Jim from RA Cores hooked us up with everything we needed for the build, right on down to the Foam-Tac adhesive, 6x3 prop and even a Glacier RC 2S 210mAh flight pack. So basically, follow exactly what the manual says for the build and exactly what the designers of this model recommend; you'll be thankful for it.

ASSEMBLY TIPS

Though this is a "foamie" model, it is not necessarily easy to assemble if this is your first crack at an RC kit. The entire build

the wings/stab. Using the straight edge as a guide, you hold the parts on the edge of your work surface and run a hobby knife with a BRAND NEW blade down each surface at a 45 degree angle. Once all the pieces are cut for the elevator and ailerons, you rub the Foam-Tac on each piece, put them together, pull them apart and then let them sit for a minute. Then, you place the pieces back together, firmly, but not too hard. Set these assemblies aside until the next day to ensure a good bond.

Once the aileron and elevator glue hinges are cured, give them a good "back and forth" to loosen them up and then proceed with the rest of the build. From here it goes fast: glue the horizontal stab spar in, connect all the flat fuse pieces, join the wings, glue the main spar and let dry. We let our model hang out on the bench for only an hour or so before gluing the bottom fuse section in. After that, the tail stiffeners are glued in with right angle brackets on the fuse. The manual recommends placing pins or picks into the control surface when aligning the stiffeners, but with the right angle brackets in place, we "eye-balled" it and got them spot on.

Now you can install the servos, control horns and motor mount. It is always best practice to center all the servos to your radio system before gluing them in. Also, the three aileron and rudder horns are the same, while the elevator horn is different, take note! Next, glue the top fuse in, bevel the rear of it and the rudder and glue it in place. Once cured for another hour, mount your

SPECS

- WINGSPAN:** 22 in. (559mm)
- WING AREA:** 105 sq. in. (677 sq. cm.)
- WEIGHT:** 3.3 oz. (94 g)
- WING LOADING:** 4.53 oz./sq. ft.
- CUBE LOADING:** 5.3
- LENGTH:** 20.5 in (520mm)

COMPLETER PACKAGE SPECS

- SERVOS:** (2) New Power 3.7g, (1) New Power 5g
- MOTOR:** Turnigy C1822-2100Kv Brushless
- ESC:** Turnigy Plush 6 amp
- MISC:** Also includes one JST and one UMX 2S leads

We Used

RADIO: Spektrum DX6, SPMR6750

BATTERY: Glacier 210mAh 2S 20C LiPo, GLC-20C-210-2S

RECEIVER: Spektrum AR6210 (uncased), SPMAR6210



motor, ESC and receiver. Once that's done, assemble the control rods, taking your time, and center all your controls. Now go charge up a pack and rip it up.

THE LAST WORD

There you have it. Just when you thought the RA Cores models couldn't get any cooler, they release a Mini Yak 55 that is every bit as capable as the larger 32-inch models, custom tailored for smaller indoor venues or backyards. The EPP construction offers a forgiving airframe that will stand up to some hefty doses of abuse while trying to perfect that ultimate 3D routine. Whether you get the basic model and outfit it yourself or gather all the parts necessary from Jim at RA Cores, you will not be disappointed with this little gem, I guarantee it.

CONTACTS

- RA CORES** racores.com
- SPEKTRUM** spektrumrc.com, (217) 352-1913
- GLACIER** buddycrc.com, (614) 824-7250

For more information, please see our source guide on page 73.



TOP: The Glacier 210mAh 2S flight pack sits just below the main spar on the CG. **BOTTOM:** The ESC and uncased Rx tucked into the rear fuse support.