

HOBBICO

ElectriStar

EP SELECT RTF

by Thayer Syme



Fly this traditional first trainer, silently



Put your batteries on charge and go get yourself a cup of coffee.

Don't worry; you will have plenty of time to finish this model before the batteries are done. The manual says it only takes an hour to get this model ready to fly, but that must include reading the manual. Thoroughly. And more than once. Total assembly consists of installing 12 screws to secure the horizontal stabilizer, landing gear, wing hold down dowels and spinner. The two wing halves are joined with an aluminum

tube joiner and two nylon straps. Once I had the components out of the box and spread across my living room floor, I was fully able to prepare the ElectriStar EP Select for its first flight in well



Fresh from the box, the ElectriStar shows a remarkable level of prefabrication. Especially compelling are the preinstalled power and radio systems.

under 20 minutes. Except for charging the batteries.

Due to its size, weight and power, the ElectriStar promised to fly very smoothly and more easily handle a bit of weather that could ground smaller and lighter park flyer trainers. Despite its primary mission to train new pilots, I was also interested to see how the ElectriStar would shape up as a basic sport model.

This kit comes complete with the ElectriStar C-42 brushless outrunner motor, ElectriFly SS-45 ESC and Futaba's

4EXA 4-channel computer radio system fully installed. All you will need to do beyond the very basic airframe assembly is mount the propeller and charge the onboard receiver battery.

SPECS

PLANE: Hobbico ElectriStar EP Select RTF

MANUFACTURER: Great Planes Model Manufacturing

DISTRIBUTOR: Great Planes Model Distributors

TYPE: Ready-to-fly "40-class" electric trainer

FOR: Beginning pilots

WINGSPAN: 63 in.

WING AREA: 709 sq. in.

LENGTH: 53 in.

RADIO: 4 channels required; flown with a Futaba 4EXA transmitter, Futaba R136F receiver, Futaba S3003 servos (included and installed)

POWER SYSTEM: ElectriStar C-42 brushless outrunner motor, 11x7 prop, ElectriFly SS-45D

45-amp brushless speed control, (included and installed) two 7-cell 3000mAh NiMH batteries, 2S 3200mAh Li-Poly battery

NI-MH FLYING WEIGHT: 101.4 oz. (6 lbs., 5.4 oz.)

WING LOADING: 20.6 oz./sq. ft.

FULL THROTTLE POWER: 30.14 amps, 441.2 watts, 4.35 W/oz., 69.6 W/lb.

TOP RPM: 8,595

DURATION: 13 minutes, mixed flying

LI-POLY FLYING WEIGHT: 84.5 oz. (5 lbs., 4.5 oz.)

WING LOADING: 17.2 oz./sq. ft.

FULL THROTTLE POWER: 33.2 amps, 515.6 watts, 6.1 W/oz., 97.6 W/lb.

TOP RPM: 9,015

MINIMAL FLYING AREA: RC club field

PRICE: \$349.99

COMPONENTS NEEDED TO

COMPLETE: Flight batteries and appropriate charger. Two ElectriFly 7-cell 8.4V 3000mAh NiMH battery packs, or two ElectriFly Power Series 2S 7.4V 3200mAh 20C Li-Poly batteries with balance taps.

SUMMARY

The ElectriStar EP Select takes a classic trainer format and updates it for the 21st century. Long the domain of a .40-size glow engine, larger club-field type traditional trainers are known for smooth and stable flying rarely matched in smaller designs. Adding the convenience of complete prefabrication and the operational ease of a state-of-the-art electric power system make the ElectriStar EP Select an obvious candidate for a first trainer, or a basic sport flyer for weekend fun.

The 4EXA transmitter has four model memories and is compatible with Futaba's buddy box trainer system. This lets an instructor and student connect their transmitters together, so that the instructor can regain control at a moment's notice while training. This is the most common training method at most flying clubs.

TIPS FOR SUCCESS

Get some help. While assembling the ElectriStar is easy, learning to fly a radio control model is not. An experienced instructor can help you learn to fly without crashing your model. Ask your local hobby shop to direct you to clubs in your area. This model is best suited to flying at an

established RC club field and not suited to training yourself.

Follow the directions during assembly. There is so much prefabrication with this product that there really isn't much to get wrong, but you might as well take the time to be sure you are doing it right.

I found only one detail not covered in

AIRBORNE

At the field, the ElectriStar EP Select is a mild mannered trainer whose designers have learned much from what has come before. The tricycle landing gear provides stable, predictable ground handling during takeoff and landing. Once in the air, the ElectriStar remains just as stable.

FIRST IMPRESSIONS

With the recommended NiMH batteries fresh off the charger, I lined up and added full power for the first flight. I was flying off a local sports field, and with the season over, the grass was getting pretty tall. In fact, it was over the tops of the wheels. The initial acceleration was inevitably sedate, but I stuck with it. Remembering my full-scale training for soft field takeoff-technique, I held a little up elevator to take pressure off the nose wheel and help load the wings as soon as possible. After a few yards, the nose started to get light and lifted, so I eased off the elevator just a bit and kept it straight with a few slight rudder inputs while the wings started to do their job. The ElectriStar tracked well and soon lifted off. Free of the grass, it accelerated briskly into a solid climb. It immediately felt great, and I kept full power while arcing back across the field and climbing to a safe altitude before sorting out any trimming requirements. I needn't have bothered. Straight out of the box, with the transmitter trims centered, I needed nothing to maintain the climb, and with partial throttle, level flight. This model was completely straight and the rigging was spot on.

Knowing that beginners can get pretty ham-fisted while trying to sort out the proper control inputs, I took some time at altitude to give the ElectriStar a good wringing out on that first flight. I found only excellent manners and plenty of performance. Full control deflections in slow flight showed no tendency to drop a wing, even with both the elevator and throttle sticks fully back and in steep turns. I was unable to impart anything resembling a spin or other loss of control. Full elevator and rudder gives an open spiral dive that stops as soon as you release the sticks. Adding aileron will tighten the spiral as expected, but an opposite correction will level the wings almost instantly. Power off, the ElectriStar will self-level its wings in a hands-off recovery, but I did pull back a little to pick up the nose before eating up too much altitude.

The recommended CG and throws will not let the ElectriStar fully stall unless you aggressively force it into a very unusual attitude. Pulling the power off in cruise and gradually feeding in full up elevator simply slows the model and increases the angle of descent. Once stabilized, the ElectriStar gently bobs its nose while descending under complete control. I am convinced that you could fly it all the way to the ground in this condition without structural damage to the airframe. You might bend the landing gear, but the basic airframe should still be fine. I recommend letting it glide a bit flatter, and this is easily accomplished by simply letting the right stick center itself. As long as the wings are level and the fuse nearly so, you will be rewarded with a nice smooth glide with enough



speed to offer plenty of control and a gentle descent rate.

LANDING

The ElectriStar's exceptional slow-speed handling is sure to boost confidence and help a new pilot quickly fine tune his control inputs while practicing his landings. In my book, consistent patterns and smooth landings on the runway are the mark of an accomplished student pilot ready to fly on their own. Aerobatics can come later, for if you can't land, it

doesn't matter how brilliant your loops and rolls are.

A good landing results from a stable approach. The larger size and weight of the ElectriStar helps you achieve this. With the wings level and the power off, the ElectriStar glides smoothly without getting bounced around in light breezes. I try to use the elevator only to set the glide speed and to flare right before touching down. Just keep the wings level and use power to adjust the descent rate. The ElectriStar carries its speed well, and easing back into the flare a little high will not suddenly drop you out of the sky. As the nose comes up, the sink rate increases as the model slows from the extra drag. With some practice, you will be able to set it down lightly on the mains before lowering the nose wheel. Until you get to that point, the ElectriStar will take care of you and absorb the inevitable bumps that come from flaring too late or even just plain forgetting.

I find one of the most important tricks to mastering landings is to get used to seeing the model down low. Let's face it; the model doesn't care if it is flying at one foot or 100. It is important to recognize that and become comfortable flying with the ground nearby. The stability and faultless handling, along with repeated practice, will help build this needed confidence.

AEROBATICS

Speaking of loops and rolls, yeah, it will do them and much better than I expected. Let's face it; everyone will want to jazz it up a bit from time to time. With a little dive from cruise or with full power, that thick flat bottom wing and full up elevator will pull the ElectriStar up and over a smooth and graceful loop. I tried several different combinations of speed and power, and most worked. Those that didn't simply resulted in the ElectriStar running out of steam with the nose high. As soon as it was apparent that it wasn't going to make it over the top, I chopped the throttle, let the nose flop toward the ground, and easily recovered to level flight. Rolls are a little mushy, but then again, this is a trainer. Add a bit of down elevator while inverted to keep the wing from lifting toward the earth. The ElectriStar will also sustain inverted flight, though it needs a good push to do it.

I have continued to fly the ElectriStar EP Select in a variety of conditions and my initial impressions have not been diluted. This is a very stable trainer that will help you quickly earn your wings and give you the confidence to go out and fly after doing so.



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the manual. That was discussion of the CG when using the lighter Li-Poly batteries. The CG will shift aft if you place these batteries fore and aft in the mounting clips designed for the NiMH packs. This makes the model more maneuverable but less stable and less suitable for training. I recommend placing both Li-Poly batteries in the forward battery compartment. One will fit in the retention clip and the other can sit on the lower fuselage floor underneath the clip. Wrap



Above: The aileron servo comes pre-installed in the right wing panel, with the pushrod linkages all made up and installed. Join the wings, connect the second clevis to left aileron and you will be ready to fly. Left: The Hobbico ElectriStar C-42 Brushless outrunner offers similar power output to the standard .40 glow engine typically used to fly a trainer of this size and weight.

BATTERIES AND CHARGING

I really appreciate the power flexibility the ElectriStar EP Select offers. It flies great with both the NiMH and Li-Poly options, so which you choose really comes down to your performance preferences, experience level and budget. The recommended NiMH battery packs are about one-third of the cost of the similar Li-Poly batteries. This alone will be the determining factor for many new pilots, but you should also consider other factors before choosing the best motor battery for your flying. Charge times, weight, safety, etc., all come into play. Since there are two packs, you also have to think a little bit more about your charging setup.

NICKEL METAL HYDRIDE

The recommended pair of NiMH packs can be connected in series with a custom connector and charged together as a single 14-cell pack. Both the Electrify Triton 2 and Triton Jr. can charge a 14-cell NiMH pack in about an hour and are suitable chargers. These chargers can also be used to field charge the transmitter and receiver NiCds. Based on the very popular original Triton, the



Triton 2 and Triton Jr. can also charge Li-Poly batteries, though only individually. This would result in at least a two-hour charge time between flights. Both of these chargers feature backlit LCD displays, a feature I like for confirming charge settings and monitoring the charge process. Flying with the NiMH packs means a little more weight and a little less duration, but the batteries are more forgiving, and you could pick up an extra set of batteries and still spend less than with a Li-Poly setup.

LITHIUM POLYMER

Those who prefer Li-Poly batteries will see an impressive weight reduction of just over a pound, as well as a noticeable increase in power at the prop. This combination means faster takeoffs and more performance in the air, but at a price. The battery cost is obviously

higher, and you will need to be committed to the safe operation of Li-Poly batteries and maintain them with a cell balancer. The Li-Poly packs cannot be daisy chained for balanced charging, so they must be charged individually. A very convenient charging and balancing setup is the Electrify PolyCharge 4 Charger, used in conjunction with pair of Equinox Li-Poly cell balancers. The PolyCharge 4 is actually four chargers in one case, so you can charge the two Li-Poly batteries simultaneously and still have charging capacity left over. The Equinox balancer is an elegant solution to cell balancing with chargers that do not already have balancing capability. Using the Equinox unit is practically transparent, requiring just an extra button push before starting the charge. These inexpensive accessories are also compatible with most non-balancing Li-Poly chargers you might already have.



MAKING A CHOICE

There is a noticeable difference in the flight performance between the two batteries, but not quite as dramatic as you might expect. This is a trainer after all, and most of the time you will be flying around at partial throttle while learning to fly. The lighter more powerful Li-Poly setup gives quicker takeoffs and faster climbs, but once at a safe training altitude, you will throttle well back to maintain a cruise altitude. Less weight means you can hold altitude at a slower cruise speed and with a lower throttle setting. This lower power setting is where my extra flight duration has come from. I have seen a 50-percent increase in cruise time with the Li-Poly batteries, despite their capacity being only a few percent more than the NiMH cells. This extra duration is nice but not everything, especially when training. Productive learning falls off for most students after 8-10 minutes, a duration easily achieved with the less expensive NiMH cells. If you want to fly more often, adding a second NiMH battery pack would still be less expensive while increasing the potential flight time, if you have the additional charger capacity available. You will need to decide for yourself if you want to invest in the extra performance offered by the Li-Poly batteries.



The ElectriStar features bold red bands on the underside of the wing and stabilizer. This asymmetrical color pattern helps orientation during early training when your model would typically be at a higher altitude.

the retaining Velcro around both battery leads and they will stay in place. Installing the NiMH packs fore and aft as intended gave me a perfect CG.

One last area of the manual is a little confusing—the recommended control throws. The manual shows both high and low rate settings, but the Futaba 4EXA does not have dual rates. I did all my testing with the throws as set from the factory. These are approximately equal to the high rates. If this is your first ever RC experience, I recommend using the low rate settings. These can be established by moving the pushrod connectors closer in on the servo output arms.

As a last check before heading out to the field for the first time, go over all the fasteners to ensure they are secure. I found the nosewheel steering arm was a little loose on my model from the factory and tightened it up before flying. I also carefully checked the

set screws on the wheel retaining collars and found them all nicely tight.

I love that this model has a belly hatch for the motor batteries. This all but forces you to put the model on its back in the grass or on a work table while installing the batteries, effectively blocking the propeller from turning by accident. Be sure to slide the forward battery all the way up against the firewall, and secure it by encircling the power leads with the Velcro wrap. The padded battery saddle clip will hold the battery in place while the Velcro will keep it from sliding back and forth. The rear battery does not slide in as far and nestles in against the cooling air exit ramp. Make sure the Velcro is wrapped around this battery before you fly. If you are using the Li-Poly batteries, install both in the forward compartment to maintain the desired balance point.

I was surprised that there is no sort of



The fuselage features a sturdy plywood subfloor. The radio gear is neatly mounted on top of this floor, while the motor batteries are installed below through a generous hatch.

external power shunt or arming switch. After a bit of experimentation, I realized that there are redundant safety factors to prevent the motor from starting accidentally. There is no motivation for the ESC to send power to the motor without any signal from the receiver. Even after powering up the radio, you must still arm the ESC by cycling the throttle stick. After figuring this out, I felt better and developed a preflight methodology that works well for me.

First, I connect the aileron servo and mount the wing. Next, I turn on the transmitter, followed by the receiver, and check the radio for proper flight control function. Before installing the motor batteries, I turn off the receiver and then the transmitter, and put the model on its back to carefully install the large motor batteries. The speed control has two connectors, one for each battery. After replacing the hatch, I set the model upright on the ground and again turn on the transmitter and then the receiver after confirming the throttle stick is set to low power. I now arm the ESC by cycling the throttle stick to full power, and back to idle. There are audible beeps at each stick position to let you track the progress.

CONCLUSION

The ElectriStar EP Select offers an excellent way to start flying RC. It is a large, stable model that is easy to see in the air and that flies well. I look forward to flying it whenever I am in the mood for some relaxing sport flying fun. I also anticipate using it as designed—as a primary trainer to introduce family and friends to the joys of flying a radio control model. ☺

Links

Great Planes Model Manufacturing, distributed exclusively by Great Planes Model Distributors, www.greatplanes.com, (800) 682-8948

For more information, please see our source guide on pg. 177.



Hobbico Dual Peak Pro Charger

As we go to press Hobbico has announced a new dual charger with a cooling fan and advanced peak detection circuitry for a full charge without cell damage. The 5-amp rate charger defaults to a 350mAh trickle after peaking, or after a 54-minute timeout without peaking. Two Deans Ultra charge leads are included. Price—\$49.99