

RCU Review: Advantage Hobby's Tigershark EDF ARF

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ADVANTAGE HOBBY

Tigershark EDF



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SCORECARD

Design	👍👍👍👍
Appearance	👍👍👍👍👍
Ease of build	👍👍👍
Manual	👍👍
Performance	👍👍👍👍👍
Price	👍👍👍👍

INTRODUCTION

I have always admired EDF Jets and read about them heavily in the forums. They have been on my list of must try's for a while and when the opportunity to review one came through my inbox, I was falling over myself to review it.

The Tigershark EDF ARF is just the ticket to turn and burn. The fuse is molded foam and comes pre-painted. Although the packaging shows three separate paint schemes, the one that was sent (red-white) seems to be the only one offered.

While the kit comes with fixed landing gear, Advantage Hobby offers a retract system that adds an additional level of realism and an additional platform to fly the Tigershark from. Since I fly from a grass field, I wont be able to utilize either option and will instead be hand launching and belly landing the plane.

I am excited to get my first taste of EDF with a plane that already has a good reputation among other pilots.



SPECIFICATIONS

WING SPAN: 700MM (27.55")

WING AREA: 13.6DM

LENGTH: 700MM (27.55")

MEDIA



LENGTH: 760MM (29.92")
WEIGHT RTF: 500-550G (1.10-1.20LBS)
FUNCTIONS: 3 or 4 channels (5 with optional retracts)
POWER: 400 Brushed Motor W/6 Blade Powerfan (included)
POWER USED: 6 Blade Powerfan with 400 Brushless motor
ESC : Electrify 25a Silver Series
BATTERY : Thunderpower 3S 2100 mah
SERVOS: Cirrus 9g micro (3)



ASSEMBLY LINE

Inspection:

The parts were lay ed out and each was inspected for defects. The only issue that stood out was that the red paint was coated heavier on one side than the other. So it appeared to have two different shades of red on each side of the fuse. Minor issue and certainly doesn't affect flight performance.

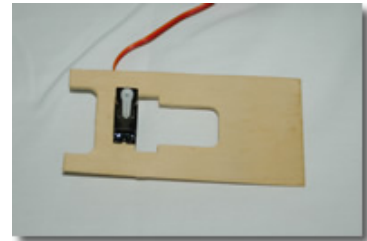
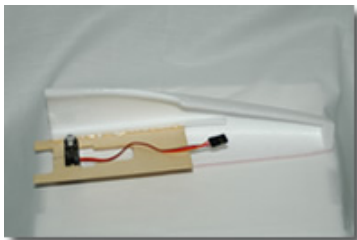
The canopy, wingtips and nosecone (in addition to a few more accessories) are molded from white plastic. All but the canopy comes on one sheet and must be cut out prior to installation. The mold lines on my parts were well enough defined that this was an easy procedure.

The flying surfaces are different than what I have seen. While the cores of the wing are EPP/EPS foam, they are also sheeted in a hard coated foam which is surprisingly stiff. The ailerons and elevator are also molded in, so there isn't any need to cut and hinge. Nice.

Getting Started:

The elevator servo is mounted in the only piece of ply in the kit. This ply plate not only serves the purpose of holding the elevator servo, but it is the battery tray and reinforces the front fuse.

The manual calls for the entire build to be completed with two part epoxy. I used 5 minute epoxy throughout and made sure to trail fit my parts first. The ply plate and front fuse halves are joined in one step. The two tabs that stick out towards the back of the fuse are there to allow another point of contact when the two fuse halves are joined.



While in most cases the power system is the last piece that goes in to any plane that I am working on. Not so in the case of an EDF as it has to be fitted into the fuse during the building process. A 400 class brushed motor is provided with the plane, however I intend to use the 3700 kv brushless inrunner that AdvantageHobby recommends. The swap is effortless as the mounting holes line up perfectly. The only trick is when mounting the prop adapter. It has a set screw that has to be tightened down and it takes some time using an allen wrench. Ensure you file a flat spot onto the shaft where the set screw will make contact. This will keep the hub from slipping on the shaft. A little loctite to keep everything in place is also a good idea.

As it comes, the fan unit is too large to fit into the fuse due to the intake lip. This must be be cut down to 73mm. If you are like me, that will make you just a bit nervous. Have no fear, as it is a painless process. I first took some lexan scissors and trimmed along the mold line on the lip. After that, I took my dremel and sander bit and slowly went around the lip taking off a little bit at a time. I did this while checking the fit to the fuse often. In roughly five minutes, the entire process was over and the fan unit was ready for installation.



With most EDF's the fan and esc wires are always a tight fit. This kit is no exception as it must be to get a good and efficient seal. The ESC leads have to be passed to the front of the fuse as this is where the RX and battery will be housed. A groove must be cut into the foam on both sides of the rear fuse to allow the leads to pass through. This is highlighted in the photo above. The ESC wires route through holes pre formed in the fuse and is velcro ed to the side. I have a concern that the ESC will not get enough airflow, but only time will tell.

The elevator control tubes also must be installed prior to joining the two fuse halves. They exit the fuse at the beginning of the fan air inlets and route to the rear of the fuse. The instructions call for 50mm to extend into the front canopy area. There is no mention of gluing the control tubes in place, however I did so with medium foam safe CA.



The fuse is joined together with two part epoxy. The instructions call for the fuse halves to be joined and then to join the front and rear portion together. I decided to do this in one fall swoop. I used rubber bands to hold the rear fuse halves together while I manually held the front and rear in place until the epoxy cured.

The flying surfaces are the most daunting portion of the build. The wings, elevator and rudder must be sanded flat to ensure a 90 degree flat gluing surface. I started with the rudder and decided to add two carbon fiber pins to add strength. After I did this, I realized I was over engineering this process. For the remainder of the surfaces I elected to simply use a screwdriver and make shallow dimples on both of the joining surfaces for a better adhesion. Taking one surface at a time, I held it in place keeping it lined up until the epoxy set. This allowed me to eyeball it and make adjustment to keep all of the surfaces true.



A split elevator design is used for the two halves. I like the fact that they are fully adjustable using collars as this makes it easy to trim the two halves to move in unison. The control horns work exactly as intended and snap in for ease of assembly. Once the horns are installed and centered, the control rod tubes are taped to the side of the fuse. Not the prettiest of arrangements, but it is functional.

A FG spar is provided to strengthen the wing and fuse joints. Have a sharp knife here as it was difficult getting through the epoxy holding the wings in place. While there was absolutely zero flex in the wings prior to installing the spar, I see no problem with any extra reinforcement.

Here is where I have to change things up. The original design places the aileron servo at the bottom of the fuse. Utilizing the included static gear or the optional retracts would make this a non issue. However, since I am planning on belly landing this plane, that servo placement would prove disastrous. The solution was to mount one servo per aileron. I cut a servo hole on each fuse side and glued the servo in place. The original control rods worked perfectly and no extra parts were needed.





The Canopy is held on using four magnets glued to the fuse and four washers glued to the inside of the canopy. It seems to hold ok, but I would feel better if it were magnets in place of the washers. I will most likely secure with tape as an extra precaution.

To finish the plane up, the nose cone and wing tips are cut from the plastic mold. The nosecone is glued to the fuse and an air hole opened on the underside as well as in the tip of the fuse. This will ensure the batteries get a fresh supply of cool air.

Tape is used to hold the wingtips on. It is a good idea to use an iron or heat gun to slightly heat up the tape after they are attached to further melt the glue for a secure hold.



ON THE TARMAC

I installed the 3S 2100 and found that to obtain the correct CG, the battery needed to almost touch the elevator servo. For the first flight, I had a club mate toss the plane for me. I figured on a hand launch maiden, it would be better to have both hands on the transmitter.

I had low rates set at 30% and high rates at full with about 70% expo across the board. Eric tossed the Tigershark and it went into a shallow dive. Full up elevator did nothing and it continued to sink. I immediately switched to full rates and pulled vertical. I started off on low rates concerned that the full rates would make it too twitchy. That however was not the case as it was extremely stable on full rates. The trim flight lasted about 4 minutes and proved to be uneventful.

The second flight I decided to hand launch myself since it didn't seem to take much to get it on step. I throttled up and tossed it.

The plane fly's great at any speed. Either slow or with the hammer down, the plane is inherently stable. I was having a blast flying it right off the deck and pulling into a vertical climb. Even inverted flight showed no sign of problems and required only a small amount of down elevator.

After 6 minutes I setup for a landing and only had to blip the throttle to set it down nice and soft. Everything was nice and cool upon landing and I only put back 1700 mah into the packs. Not bad since I was on the throttle a lot.





FINAL APPROACH

My first experience with EDF has been completely thrilling. Advantage Hobby has a winner with the Tigershark and it fly's awesome. The brushless setup combined with this airframe provides an exciting ride and a perfect top speed that is quick and agile, while allowing the pilot to stay ahead of the plane and not the other way around.

The cons are few but worth noting. The manual takes quite a bit of studying and some interpretation of the text and drawings to determine what the designer intended for the particular step. The flying surfaces are quite a challenge as well and take some time to ensure they are straight. There is some opportunity for improvement in this area.

Overall the hiccups that were experienced during the build are washed out and almost forgotten once the plane takes to the air. It is insanely fun and quenched my EDF thirst. It has definitely opened up a new branch of opportunity for me in R/C and I look forward to my next EDF project.



MANUFACTURER INFORMATION

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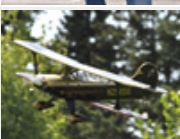





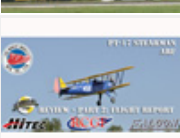
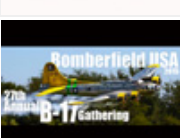

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