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R/C Report

Flyzone Hadron

Extreme speed and maneuverability, all in one package.

Just about every possible aircraft is now offered as a molded foam product. It doesn't matter if it's scale, sport, large and small, civilian or military. Everything from gliders to ducted fans are available. Odds are, if a radio control modeler is looking for a particular subject he'll most likely be able to find it somewhere.

The challenge to designers is to come up with an aircraft that will appeal to a large enough audience to make production worthwhile. To answer this call the team at Flyzone has introduced a completely unique product, one that will have a broad appeal to experienced pilots by combining a quazi-military looking craft with speed and extreme maneuverability.

Speed and maneuverability is a combination that is rare. In most cases, they simply don't go hand-in-hand. And the way this has been achieved took more than a little bit of thought and associated engineering, but the results are pretty spectacular.

The Flyzone Hadron is a modified delta wing platform. Delta wings are basically nothing more than a triangle, but they offer some aerodynamic advantages when a designer is looking for all out speed. Not only are deltas inherently fast, but they are also stable, not requiring the amount of dihedral that is often needed to make a high-speed platform stable. Nothing is free, and the trade off is in maneuverability, except for a high roll rate, deltas aren't known to be very agile. Since aerobatics and delta wings don't mix, the design team at Flyzone came up with a solution, and that is vectored thrust. By changing the angle of the motor during flight, maneuverability has now been added to the delta wing platform and, as stated, the results are pretty spectacular.



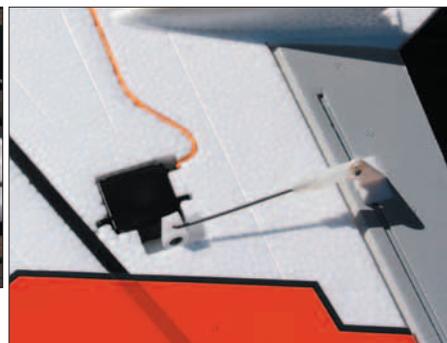
Above: Removing the canopy hatch reveals a large compartment that will accept a variety of 3S and 4S battery packs. Right: The elevon servos are glued in pockets that are molded into the wing and use short pushrods for slop-free control movement.



The Hadron comes packaged in a large, roughly 3ft x 3ft box. The airframe is completely assembled except for the vertical stabilizer, so the box is only about five inches deep, but it will nonetheless take up quite a bit of wall space. The box is colorful and does a good job of relating the contents and the airplane's features to the prospective buyer.

The review topic is the Tx-R (Transmitter Ready) package and is complete except for the transmitter. Included as part of the package is a 3S 2200mAh #GPMP 0861 and a rudimentary, but safe, battery charger. Also in the box is a spare 5x5 propeller intended for use with a 4S pack. Always susceptible to damage from rough landings, the nose of a foam airplane is generally the first item damaged, but Flyzone has remedied this by using magnets to hold the nose piece in place. The part is easily replaced and an extra nose is included.

The only assembly required is to attach the vertical stabilizer and connect the rudder linkage. This does take a few minutes as the vertical stab's mount is also the cover for the



internal electronics. To accomplish this, the cover must first be removed from the fuse, a simple task requiring the removal of six machine screws.

Since this is the Tx-R version, the Hadron will require the purchaser supply his own transmitter. Available were both the recommended Tactic TTX650 #TACJ2650, and what has become a favorite, the Futaba 8J #FUTK8100 with an AnyLink adaptor. The instructions state any transmitter from a four channel, as long as it has elevon mixing, on up can be used. Physically,

this is correct but I wouldn't even suggest this airplane to a customer who does not have at minimum a six channel transmitter that features dual rates and exponential throw. To get the most out of the Hadron, these features are a necessity.

The hobby of radio control aviation is all about choices, so the Futaba 8J was selected. This required calibration of the throttle, but using the instruction manual as a guide, it is easily accomplished. Also, while the cover is off, the radio compartment programming was initiated.

Programming the transmitter is what takes time when putting a Hadron in service. And even though the manual lists some great tips, it is directed at the Tactic TT650, so the end user will need some understanding of programming to make his model work with other transmitter brands.

As an example, the chart indicates offset is not required, but in the case of the Futaba 8J, 50% offset is needed to make channel five work as the vector channel. In most cases, channel five is assigned as the retract channel—landing gear up or down—but vectored thrust needs a center so offset is programmed into the channel (100% minus 50% offset 100% plus).

Not a recommendation, only an example, but in the case of the review model and the 8J, all of the rates were assigned to switch B—high rates up, low rates down. Thrust was assigned to switch C—rudder only up, rudder and vectored thrust middle, and vectored thrust only down. With an airplane that offers the performance potential of the Hadron, having a transmitter that allows switch assignments is a real bonus. Nothing is worse than getting out of sorts while fumbling to find the correct transmitter switch.

Once at our club field, a freshly charged 3S battery was installed and the airplane was readied for flight. While I manned the camera, a pilot who is experienced with high-speed airplanes was asked to do the honors of the first flight. Launch is easy, there are finger grips molded into the bottom of the fuse, so once the motor was spooled to power, the airplane was aimed into the wind and away it went. Climb out is brisk to say the



The mount for the vertical stabilizer also doubles as a cover for the speed control along with the rudder and thrust servos.

least and the speed is nothing less than impressive. After trimming and familiarization, thrust was toggled in. All that can be said about the vectored thrust is

wow. I've never been at the sticks of an airplane of any design that could maneuver like the Hadron when its vectored thrust is activated. Maneuvers that do not have names were performed with ease. The instruction manual states the Hadron is easy to fly and this is true to a degree, but it would take less than an instant for an inexperienced pilot to get into trouble flying the Hadron at speed while using maximum vectored thrust.

With a 4S pack installed, the Hadron is noticeably faster, but not without penalty. Aerobatic performance is not affected, but the airplane is heavier which means more stress on the airframe and flight times are reduced. Locally, those who have flown the Hadron prefer a 3S pack, but battery selection is entirely up to the end user.

Generally, with new designs I like to give pilots with a variety of skills the opportunity to fly the airplane. This is important, not only from an evaluators perspective, but dealers need to know the potential target consumer. I have to admit though with the Hadron, due to its highly swept wing and vectored thrust, I've only allowed flyers experienced in high-speed flight the enjoyment of piloting it.

When flown slowly without the use of vectored thrust, there is no question the Hadron is relatively easy to fly, but everyone wants to push the airplane to its limit. That said, of the pilots who have flown this airplane, none have walked away without laughing and talking about what crazy maneuvers can be accomplished with different combinations of control input and thrust.

I can heartily recommend the Hadron to dealers who have customers looking for something out of the ordinary. The airplane requires a bit of skill, both to program and fly, and this might limit the customer base but without question, those who are capable of getting maximum performance out of the airplane will also get maximum enjoyment.

Like all Flyzone products, the Hadron is available exclusively through Great Planes Distributors. **HM**



The Hadron covers a lot of territory in a short amount of time, but the bright color scheme helps keep the pilot orientated.