

## Become a jet jockey!

by "Papa Jeff" Ring

### SPECS

**PLANE:** V-Diamond ARF

**MANUFACTURER:** Hobby Lobby

**DISTRIBUTOR:** Hobby Lobby

**TYPE:** Twin-tailed pusher prop jet

**FOR:** Intermediate to experienced pilot

**WINGSPAN:** 36 in.

**WING AREA:** 248 sq. in.

**WEIGHT:** 27 oz.

**WING LOADING:** 15.7 oz./sq. ft.

**LENGTH:** 33 in.

**RADIO:** 4 channels required; flown with a JR 9303 transmitter, Hitec O5S receiver, (3) Hitec HS-55 servos (nose wheel, ailerons, elevator)

**POWER SYSTEM:** AXI 2212/20 brushless outrunner motor, 8x8E APC prop, Jeti Advance Plus 18A brushless speed control, Poly-Quest 3S 11.1V 1800mAh Li-Poly battery

Test pilot Lynn Bowerman powers up the V-Diamond.



Steerable nose wheel linkage can be seen adjacent to the battery compartment.



Assembly of motor mount cage.

**FULL THROTTLE POWER:** 24.5 amps, 275 watts; 10.2 W/oz., 163 W/lb.

**TOP RPM:** 1,150

**DURATION:** 10 minutes with normal throttle management

**MINIMAL FLYING AREA:** Park or flying field

**PRICE:** \$79.90

### COMPONENTS NEEDED TO COMPLETE:

4-channel radio system with micro receiver and 3 micro servos, 18A brushless speed control, 12-inch servo extension, brushless outrunner motor, 11.1V 3S 1800mAh Li-Poly battery, prop

### SUMMARY

This twin-tailed pusher prop jet is a sleek looking, solid performing aircraft that responds quickly and predictably to control inputs whether flying low and slow or fast and furious! Takeoffs and landings are a breeze. This is a reasonably priced, quick building, great looking bird. It's a super way to become a "Jet Jockey" in no time at all.

This yellow gem can be assembled in about four hours so you can "buy and fly" in the same day. All the hardware for the steerable nose gear is pre-installed. The battery hatch is conveniently placed under the nose. Aileron and elevator hinges are pre-slotted, and the aileron torque rods are also pre-installed.

The "V" is set up for four channels: aileron, elevator, nose wheel steering and throttle. The recommended AXI 2212/20 outrunner bolts onto the included laser-cut motor mounting cage without the need for any radial mount. The instructions are a combination of photo-illustrations and clear drawings. Just a little bit of written advice would be helpful for someone without much modeling experience.

With a Hobby Lobby product, you can get just the plane and use any accessories that you may already have, or you can get the entire outfit and save some bucks. For this review, we used all the accessory items that "Hobby Lobby Bobby" (AKA Bobby Ballard) recommended.

### ASSEMBLY

Since it is an ARF, there are only a few parts: the fuselage, canopy, one-piece

wing, the twin tails, the elevator, landing gear with wheels and the laser-cut motor mount. As the hinges are supplied in the kit and the control surfaces are pre-slotted, just add glue (epoxy is recommended) and that's that.

The assembly of the twin tails and the elevator needs some special attention. Both the right and left tail just slip over the ends of the wing. Once the fins are properly positioned, scribe the wing on both sides of each fin, then remove the fins from the wing and cut away the yellow heat-shrink film exposing the raw balsa. Now you will get a strong glue joint.

I suggest installing the under-wing landing gear and wheels last so they will not get in the way as you install the electronics. When you install the steerable nose wheel, the control horn must be fitted, inside the nose well, to the top of the nose gear wire. Glue up the motor mount cage and attach to the back end of the fuselage. Do the canopy after you install the under-wing gear and wheels.

### INSTALLING THE ELECTRONICS

Prep your three servos (we used Hitec HS-55s) and refer to the drawings. Both ailerons are controlled by one servo in the main

wing and the second servo steers the nose wheel. The third controls the elevator and is installed, with two small hardwood posts, on the underside of the horizontal tail. The instructions make no reference to the need for a 12-inch servo extension for the elevator servo. No big deal: Hobby Lobby is aware of this and the correction has been made. Remember to center all of your servos before you adjust the control rods and linkages. When it comes to trimming out on your maiden flight, you'll be glad that you did! Oh, yeah!

Place your receiver in a convenient position according to its size. A Hitec O5S was used along with that neat little "antenna bobbin." Just wrap some of the antenna wire around the bobbin, which controls the total length, and you never have to worry about stepping on the usual three feet of antenna trailing behind your plane.

### POWER SYSTEM

That AXI 2212/20 brushless outrunner is sweet. Now, mount the motor inside the motor mount "cage" and not outside as shown in the instructions! Yes, Hobby Lobby is aware and it's being taken care of. Notice how this open "cage" of the pusher style propjet allows for excellent motor



**HOBBY LOBBY**  
V-Diamond ARF

## HOBBY LOBBY V-DIAMOND ARF

### AIRBORNE

So now it's time to fly, and off I went to Eygabroad's Aerodrome. Dan lives out in the country on top of a hill with his own grass flying field. I'm talking football size flying field, here! Is that nice or what? Lynn Bowerman handled the maiden flight duties. Lynn is a seasoned, well-known test pilot with years of modeling and flying experience.

In addition, I had just received my new JR XP9303 9-channel, 30-model-memory transmitter with a synthesizing receiver. This little transmitter module has two tiny dials on its face, and all you do is dial in whatever channel you want. JR also has synthesized receivers that automatically detect the correct transmitter frequency and tune itself in to the proper channel.

Since the grass was a little too long, we hand launched the V and off she went, flying like a hornet on its way back to the hive. Yes, Lynn had to make some minor trim adjustments, but once accomplished, the jet-like V performed, well, like a JET! "I've been flying nearly all my life and enjoy test-flying new products. Being a reviewer myself, I understand the importance of a good first test flight. The Hobby Lobby V-Diamond is a great flying plane that likes to be flown fast, but it will slow to a crawl on landing and stay very stable," said Lynn.

As I was taking the flying photos, I noticed just how smooth the V was. Rolls and loops looked good, pylon turns were awesome, vertical was excellent with more than enough power, and inverted flight was super looking with not much up elevator at all. Although the deflection of the flying surfaces looked minimal, they controlled with authority. Fast was just fast enough to look and sound cool, and we were all surprised by how the V slowed down to a crawl. After about eight minutes, Lynn decided to bring it in to check everything out. Lynn kept a little speed up as the approach was not as slow and floaty as a foamy and yet the landing was perfect, even with the little foam wheels on the slightly longer grass.

All was in order except for a slightly bent landing gear wire. We put the Poly-Quest battery on the Cellpro 4S charger, using the charge adapter, which revealed that we had used about 65 percent of the capacity for our first flight as the 4S displayed 35 percent remaining fuel...nice feature! The display tells us that the charger is balancing all the cells and then the screen displays charging. Just walk away; your Li-Poly is charging safely and when it double beeps, the charge is complete.



cooling. Hobby Lobby recommends an 8x8E prop and it works just fine! Remember, those little numbers for the size of the prop face the front of the plane.

Please use a good set of single pin, electric power connectors between the motor and the ESC, and Deans ultra plug connectors between the ESC and the Li-Poly battery. A Jeti "Advance Plus" 18-amp ESC, with their little program card, was used with a Poly-Quest "Twenty" 3S 11.1V 1800mAh Li-Poly battery. That little program card is just fantastic! Basically, you set the parameters and plug it in between the battery and electronic speed control. You hear one beep and you are done. If you use the FMA Cellpro 4S Li-Poly balancing charger, Li-Poly charging "fear" is a thing of the past. A Cellpro to Thunder Power or Poly-Quest charging adapter is now available. More adapters are coming and soon most Li-Poly's will be able to be charged on the 4S.

#### PRE-FLIGHT CHECKLIST

Go ahead and admire your accomplishment, but now is the time to triple-check everything you have done. Be sure to properly adjust the travel of each control surface to the suggested values in the instructions. Make these adjustments manually and leave the fine-tuning for the test flight. It is always better to need only a few small trim adjustments on your transmitter as your bird gains altitude and circles the flying field. Always check the center of gravity (CG). Make sure that it is within the required position as specified in the instructions. If it is off, start by re-

positioning the battery and/or the receiver. Additional weight should not be necessary, so just keep at it (moving stuff around) till you get it right.

#### TIPS FOR SUCCESS

When using 5-minute epoxy to install the control surface hinges, be sure to use a minimal amount of epoxy—just enough to do the job. Also, take a crayon (any color you like) and



Cellpro charge, from FMA Direct is shown with battery adapter that allows you to charge and balance different brands of batteries.

color the hinge line on both sides of the hinge. Make this crayola line, left to right, exactly where the hinge will bend when the control surface is working. Excess epoxy will not adhere to the crayon "wax" and your hinge will always work properly.

As you position each of the twin tails on the main wing (do one at a time), and before the epoxy begins to set up, make sure that the measurement from the aft wingtip to the rear corner of the tail fin is the same for both the left and right vertical tails.

When you install the elevator servo under the horizontal tail section, dry fit the servo and

the two little square hardwood posts first and mark the posts where the servo screws will go. Now, drill the holes in the posts and then actually screw the servo screws into the posts about halfway and back them out. Epoxy in the posts and when you are ready, the servo is placed properly and the screws go in just like butter.

Removing some of the covering material over the "lightening" holes on the battery hatch will aid in cooling the battery and ESC enclosed in the fuselage. Although it looked as if enough air could vent out through the open rear motor mount "cage," I added a little exhaust air scoop behind the canopy. Also, those little neodymium magnets make a real slick-looking hatch and eliminate the need for a hinge and latch.

#### CONCLUSION

This "OLD DOG" Grandpa had an absolute ball with Hobby Lobby's delta-jet-looking, sunflower yellow V-Diamond. The balsa construction was excellent, assembly was actually fun since most of the work was already done at the factory, and it flew like you would expect a jet to fly. So, fire up your afterburners, get yourself a V-Diamond and let the fun begin! 🚀

#### Links

FMA Direct, [www.fmadirect.com](http://www.fmadirect.com), (800) 343-2934

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For more information, please see our source guide on pg. 193.

