



VENOM

Night Ranger 3D



Left: Direct servo linkages ensure precise CCPM control. Top right: The separate tail rotor motor offers easy setup and maintenance, and solid response. Bottom right: For maximum performance, Venom offers this brushless motor specifically matched to the Night Ranger 3D.

Fly this aerobatic micro heli today!

by Tyler Renkert

Micro helicopters have come along way in the last couple of years, and the Venom is a testament to the advances made. The Bell-Hiller style head with collective pitch enable this bird to not just hover really well, but for those who have the thumbs, do it inverted! I found the Night Ranger to be very stable for a bird of its size. Traditionally most small helicopters have been highly sensitive to slight inputs from the pilot. With just a little tuning, the Night Ranger 3D "sits" like a much larger heli. Let's take a closer look.

FIRST IMPRESSIONS

As soon as I opened the box I was quite taken by what I saw. This is a true CCPM helicopter with the three micro servos directly driving the swash plate. There are no intermediate bellcranks to introduce unnecessary flex or slop. This helps keep the Night Ranger 3D as tight and stable as possible. Mounted on the very front end of the alloy chassis is a black box with all the smarts. This 4-in-1 unit incorporates the receiver, gyro, mixer and ESCs for both the main and tail rotor motors. Other metal parts include the tail boom, skids and main head block.

The Venom Night Ranger 3D comes with a 6-channel FM radio preinstalled and programmed. Eight Venom Power AA batteries are included for the transmitter. The kit also includes a 9-cell 10.8v 650mAh NiMH flight battery and AC wall charger. The airborne system is Li-Poly compatible, and Venom offers suitable batteries and chargers if you want to upgrade the batteries for longer flights.

I was really impressed with the contents of the box, especially considering the price. This promised to be a nice little heli!

VENOM NIGHT RANGER 3D



SPECS

HELICOPTER: Night Ranger 3D

MANUFACTURER: Venom Air Corps

DISTRIBUTOR: Venom Air Corps

TYPE: 3D electric indoor/outdoor helicopter

FOR: intermediate to advanced pilots

FLYING WEIGHT: 13.75 oz.

LENGTH: 21 in.

ROTOR SPAN: 22.5 in.

ROTOR AREA: 397.6 sq. in.

DISK LOADING: 4.98 oz./sq. ft.

RADIO: 4 channels required; flown with a Venom 6 channel FM transmitter, Venom receiver with integrated gyro, 3 Venom micro servos (all included and installed)

POWER SYSTEM: Venom Fireball Micro motor, integrated speed control, Venom 9-cell 650mAh NiMH battery



HOVER POWER: 6 amps, 70 watts; 5.09 W/oz., 81.5 W/lb.

MAIN ROTOR RPM AT HOVER: 2,140

DURATION: 8-10 minutes mixed flying

MINIMAL FLYING AREA: average back yard

PRICE: \$179.99

COMPONENTS NEEDED TO

COMPLETE: none. Optional brushless motor and Li-Poly battery upgrades are also available

SUMMARY

The Venom Night Ranger 3D is a true out of the box, RTF electric heli. The kit comes with everything required to be airborne in 10 minutes of opening the box as the battery even comes with a partial charge. Once you check the blade tension and mount the battery you are flying in your living room or outside in the yard if the winds are calm.

TUNING

Regardless of how ready to fly any product is, I won't put it in the air without giving it a good preflight inspection. This was part of my full scale flight training, and it has served me well with all my models, especially helicopters. It is just too easy for something to get bumped or jostled in shipping, or while you are unpacking it.

The key to any helicopter is to make sure all surfaces are properly aligned. The flybar and paddles need to be perfectly parallel to the main rotor with the controls at neutral. Make sure that all the linkages are tight, and that the servo arms are centered. Next, you really want to get the CG dialed in. Not getting your CG right as can cause a perfectly aligned heli to be unnecessarily difficult to fly. This ship looked good, and I had it in the air soon after opening the box.

Like most small helis, the Night Ranger 3D was designed with lightness as a key factor. Naturally this can make the parts prone to damage when a landing goes wrong, but they are not as fragile as you might expect. The minimal mass of the heli contributes to the durability, as does flying over a soft surface. When parts do break, Venom has replacement parts readily available and affordably priced. This level of support can not be underestimated by the heli pilot.

Speaking of parts, Venom has several hop-up parts available including a brushless motor and speed control, Li-Poly batteries and carbon fiber main blades. The Night Ranger 3D does not require these for great forward flight and general cruising about your yard, but for maximum performance, you will want to look at some of the upgrades. The hop ups really come into play with 3D flight. The motor really works hard and generates a lot of heat while flying aggressively, and this can kill a conventional brushed motor if you are not careful. I would opt for brushless so I can be sure of a reliable, long life power plant.

CONCLUSION

With ever increasing demands on my time, I have appreciated the convenience and flying fun this helicopter offers. It truly was ready to fly coming out of the box, and its compact size and quiet nimble performance let me fly it anywhere the mood strikes. No it doesn't have the all out performance of a larger 3D nitro heli, but for the ease of operation, price and overall fun quotient, the Venom Night Ranger 3D is a

AIRBORNE

Before we go flying, let me state up front that the Night Ranger is not a helicopter suitable for beginners. I don't want to scare you off, but despite its attractive size and price, this is a heli best suited to experienced helicopter pilots. Also, if you haven't yet flown a micro helicopter with collective pitch, The Night Ranger 3D will seem much twitchier than other helis you have flown. Small coaxial helicopters are designed with the stability to hover hands off, and fixed-pitch micro helis have noticeable lag in their throttle response that is not seen with a CP machine. If you regularly fly larger helicopters, it will take a little while to get used to the lack of stability and damping that only mass can provide.

With the precautionary tales out of the way, If you have flown a micro heli before, you shouldn't have any trouble with Venom's Night Ranger 3D. You will be pretty impressed with the responsive control that a collective head offers if your experience has all been with fixed pitch micros. Nearly all response lag is gone, and the heli does what you want, when you want. The tendency to overcontrol it for the first few flights will be quite apparent. Don't worry though, as you get used to it, you will find that this is a pretty capable little machine. The gyro tames the gear driven tail rotor quite nicely, yet the tail is still quite responsive. This setup makes for a fun experience; no chasing the tail all the time, just fly!

The main rotor is driven by a brushed motor that provides plenty of power for general flying. It will easily lift off at mid stick. One point of caution, this is not an indoor helicopter for the novice. Flying indoors can be a real challenge due to the turbulence caused by close walls and low ceilings. Once your skills are honed outdoors or in a large area like a school gym, you can then venture to the living room for some coffee table touch and go's.

So, how about the 3D capabilities? This is not a heli that you will want to just park in a hover. Control response is solid for a machine in this class, and it has enough control authority to really toss it around. Loops, rolls and inverted flight are all within the bag of tricks of the Night Ranger 3D. If you plan much 3D flying though, I would recommend the carbon fiber blades and brushless motor. These two upgrades will provide additional power and efficiency for demanding maneuvers. They will also help performance in the wind. Don't expect miracles in that department though, from any heli that is this small and light. I have been having fun tossing the Night Ranger about in my back yard. While I am not up to mowing the lawn with this heli yet, I just might be by the time the grass is green again.

compelling package. Looking out the window, I see bright sun and calm winds. I think its time to go fly! ☺

Links

Venom Air Corps, www.venom-aircorps.com, (800) 705-0260

For more information, please see our source guide on pg. 169.