



Note the angled flybar control arm that allows increased cyclic throws.



The belt-driven tail is very smooth and robust.

SPEC CHECK

MODEL Panthera 50
MANUFACTURER Audacity Models
DISTRIBUTOR Genesis Hobby Distributors
MAIN-ROTOR DIAMETER 53 in.
WEIGHT 7 lb. 4 oz.
ENGINE REQ'D .50 to .61 heli engine
PRICE \$370

HIGHLIGHTS

- Outstanding flight performance
- Accepts O.S. .61SX WC engine and 620mm blades
- Easy to build and set up

AUDACITY MODELS PANTERA 50

The new, sleek and powerful Audacity Models Panthera 50 has entered the popular and competitive .50-size helicopter market. The face behind Audacity Models is John Beech, who is very passionate about his new model. John's other helicopter, the Tiger 50, is a low-cost alternative to .30-size machines and is stable and easy to fly. The Panthera, on the other hand, is extremely responsive and was created for no-holds-barred performance. Very few parts are shared by the two models.

The Panthera kit is of very high quality and comes packed in individual plastic bags numbered for the assembly steps. It is designed to accept most .50-size engines, but it can also use the O.S. .61SX WC. High-altitude dwellers will benefit from the larger engine. At high elevations such as Denver, the O.S. .61-equipped Panthera will perform like the O.S. 50 at sea level because of the thinner air. You will need to supply a set of your favorite blades. The heli is designed to use blades of up to 640mm, although most pilots will probably want to use 600mm when using a .50 engine. The control system is electronic cyclic/collective pitch mixing (CCPM), so you will want to use good quality

servos, preferably digital. The assembly manual is perhaps the most detailed and useful one I have seen. It is virtually a book on helicopter theory, building, setup and flying. The diagrams are clear and easy to follow. A beginner or someone moving up from a mini-electric will easily be able to assemble the Panthera.

UNIQUE FEATURES

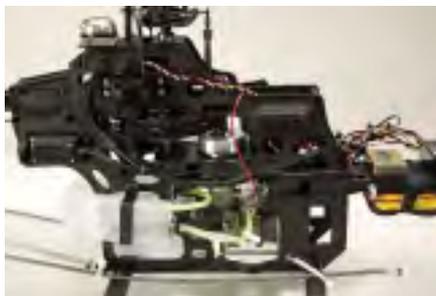
The Panthera 50 is loaded with features. According to John Beech: "I set out to design a heli that includes all the best features of the helis out there now and to incorporate the wish lists of heli fliers." The result is a heli that will compete with the best

of them—and at a reasonable price. The kit is very well engineered, not only from an assembly standpoint but also for ease of maintenance and repair.

The side frames are fiber-reinforced plastic and incorporate locations for additional servos. Scale builders will appreciate the convenience of mounting a retract servo (or a mixture servo) in the main frame and another optional servo in the tail for a functional elevator, or another application. The servos for the 120-degree CCPM are mounted directly in the side frames, so they will not interfere with a scale body. The servo-output arms are stabilized by ball-bearing-equipped bridge supports. Like a push-pull system, this eliminates all the servo slop with fewer parts, less complexity and easier setup. The 10mm main shaft is supported by three main bearings in easily removable bearing blocks. This means that you won't have to completely disassemble the heli to replace or service a bearing.

I used an O.S. .50 Hyper engine and found it to be a good match; it provides plenty of power at my field's 400-foot elevation. The O.S. .61 is recommended for high-altitude operation. The clutch is closer to a .90-size heli's, and it absorbs the torque

of either engine without slipping. Another very clever idea is the carburetor air-intake snorkel and filter that draw the air in from the canopy area. Common sense tells us that the engine will live longer if clean air, free from dust and clutch dust, is used. John also says that the snorkel provides a laminar (smooth) airflow for the intake air, and the air is cooler (more dense) than in a traditional engine installation. This should translate to additional power. The large, 500cc main fuel tank and included 2-ounce header tank give plenty of flight time. The ridges in the fuel tank stiffen it to enable it to withstand the very high pressure of the upcoming YS .50 engine.



The mechanics contain many unique features such as extra servo cutouts for control and scale applications.

The rotor head has a 4mm flybar not usually found on this size of heli. In addition to being stiffer, it can use any of the many 60/90 paddles available. To increase cyclic throw before interfering with the blade grips, the flybar control frame is angled downward. The stock flybar paddles have two sets of holes: the rear for stationary 3D type maneuvers and the forward for more stable forward flight while still maintaining good agility. Also adjustable are the seesaw arms to set the Bell-Hiller ratio at 1:1 for smoother flight or 0.7:1 for aggressive 3D. Last, for increased 3D agility, bushings can be added to the swashplate and seesaw arms. The blade grips are factory-assembled but not greased. I disassembled the grips, added grease and verified that the thrust bearings were properly oriented.

The tail-rotor blade grips are supported by three bearings—two radial and one thrust. Fully aerobatic autorotations are possible thanks to the fully driven tail-rotor system.

CONCLUSION

The Pantera 50 is extremely well engineered and represents everything on a heli pilots' wish list whether it's 3D or scale. The strong, light structure is easy to build and maintain. The very competitive price, outstanding flight performance, ease of repair and excellent customer support from Genesis Hobby encourage you to push your envelope. ::

See the Source Guide for manufacturers' contact information.

4 RADIO CONTROL HELICOPTER



Airtime

Hover I set the head speed to about 1,500rpm for hovering and trimming. The blades needed only one turn on the ball links to bring them in track, and a couple of clicks of down-elevator had the Pantera hovering nearly hands-off. The cyclic controls were very responsive but not twitchy, and the heli had a nice, locked-in feel. With reduced control throws and collective-pitch range, it would make a good beginner model.

Forward flight Pushing the model into forward flight yielded no surprises. It accelerates quickly into high-speed flight without any tendency to wander. The canopy shape provides good visual orientation, so you know in which direction it's going. It's just as easy to transition back into a hover.

Aerobatics The O.S. 50 Hyper engine, ProModeler muffler and Byron fuel make a combination that does not disappoint. At the higher head speed in idle-up, the Pantera came alive. It felt very light and had quick cyclic response. There's plenty of power to pull large loops, and rolls are easy because of the fast roll rate. For really hard 3D, set the model up for maximum control throws using the ball-link extensions. The quick and precise cyclic response makes it capable of any freestyle aerobatics. The stock model flew fabulously, reflecting Audacity's outstanding engineering and attention to detail. The more I flew the model, the more fun I had and the more impressed I was.

Pitch curves (deg.)	Low	Mid-stick	High
Normal	-5	0	+10
Idle-up 1	-5	0	+10
Idle-up 2	-9	0	-9
Throttle hold	-5	0	+12

GEAR USED

TRANSMITTER Futaba T9CHP

RECEIVER Futaba FP-R-148DF

GYRO Futaba GY611 w/Futaba S-9256

SERVO 3 Hitec HS-635HB, 1 Hitec HS-425BB

BLADES Thunder Tiger 600mm carbon fiber

ENGINE O.S. 50SX-H Ring Hyper

FUEL Byron's Original 30% nitro Competition Helicopter