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AIR SCOOTER Corp

AirScoot

By Frank Fanelli

An intriguing R/C chopper for calm weather or indoor flying right in your living room. Very complete, all you add is transmitter and receiver, assemble and fly.

What came first the chicken or the egg? That could be the question asked of the Air Scooter Corporation which has recently introduced its *AirScoot* R/C electric powered helicopter to the modeling world. The question arises from Air Scooter's ambitious program to take the basic AirScoot coaxial concept and market it in a model, a UAV (unmanned aerial vehicle), and a personal ultralight helicopter for recreational flying. All versions, which are made in the USA, will be relatively easy to fly because of the contrarotating double main rotors that negate the need for a tail rotor.

AT A GLANCE

Type: coaxial contrarotating rotors heli

Construction: glass reinforced nylon polypropylene rotors, Lexan canopy

Rotor diameter: 28 inches

Rotor type: Beller, cyclic lower rotor

Rotor area 615.5 square inches

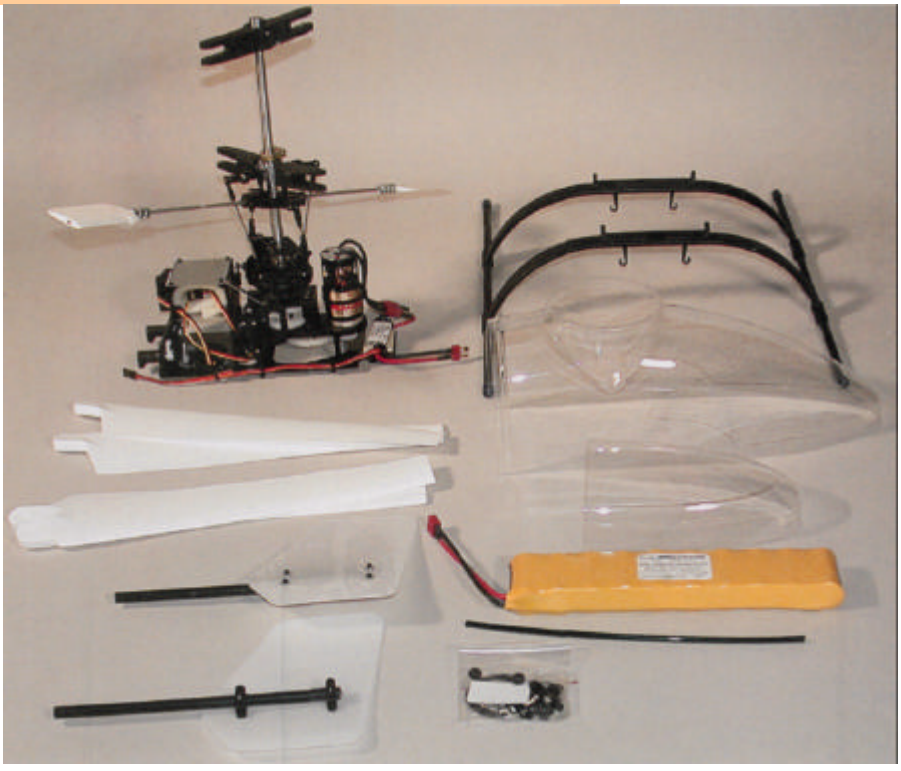
Weight: 4.19 pounds

Disc loading: 15.7 oz./sq.ft.

Motor: 7-turn cobalt, 41 amps full draw

Battery: 10-cell, 2400mAh Ni-Cd

Distributed by: Air Scooter Corp., 980 American Pacific Dr., Henderson, NV. 89014; 702-566-4602; www.airscoot.com



PHOTOGRAPHY FRANK FANELLI

This beam bar and ball link assembly **(above)** is the upgrade kit for the *AirScoot,* and is easy to retrofit. The mechanics come completely assembled **(at left)** with the three servos installed, so assembly of the other components is quick and easy. Painting the clear Lexan™ canopy, and applying decals takes time.

It's the R/C version of this e-power chopper that occupies this review because it demonstrates the length to which e-power continues to evolve. And it's touted to make R/C heli flying easier because of the contrarotating rotors. The *AirScoot* uses a combination of the latest R/C electric motor and the developing micro R/C gear to successfully fly a 4-pound model. It also makes use of modern plastic technology to make the airframe as resilient and light as possible. There is ample power supplied by the 10-cell 2400 mAh Ni-Cd battery to fly the model for about 4 ½5 minutes.

As with many R/C choppers these days, glow or electric power, the *AirScoot* comes mostly assembled, so much so that it comes in a large, sturdy double cardboard box with the mechanics and radio gear already installed. There's little to do except screw in the landing gear skids, the rotor blades, insert the servo connectors in the receiver, screw the tail fins on the booms, then align and fasten the twin booms to the main airframe. About the most tedious part of the assembly will be masking and painting the clear canopy, then applying the self-adhesive vinyl decals.

This heli doesn't need a sophisticated radio to fly. A simple 4-channel system will be more than adequate. That's one of the selling points of the chopper, and why it comes totally complete with radio gear installed—three servos, an MPI PG-2033 piezo gyro, and a Castle Creations Griffin 55 speed control . Just about ready to go out of the box. The optional accessory package provides a Hitec Laser 4 transmitter, a Hitec HS-555 receiver, and a Hitec CG-340 4-16-cell peak charger. I did try a Hitec 7-channel Eclipse transmitter with the capability of expo and dual rates, but eventually found that the *Air Scoot* didn't really benefit from any of the bells and whistles of a sophisticated transmitter.

Most of the *AirScoot* story *is* in the flying setup. The instructions detail the way to trim rotation about the vertical axis, but that seems to be about all. They say if the chopper rotates left, lengthen the linkage by popping the ball links off and screwing them counterclockwise to increase the pitch of the bottom rotor. The opposite is true is the model has a tendency to rotate to the right.

This latter condition was how the *AirScoot* was behaving at first. After a number of trim flights, I found that 3'/2 turns in on both torque adjustment rods pretty much stopped the rotation. Air Scooter Corp. also says that the model should not be flown in any wind above 5 mph and I found that to be true. Because it doesn't have the thrust muscle of a tail rotor, the *AirScoot's* vertical fins will be affected by decent wind currents. They are able to correct rotation in a hover and rely on the downwash of the blades to "push" the tail in the desired direction. I suspect that the twin tails offer the required area to effect the necessary response yet still provide quite a low profile so there aren't any main rotor blade strikes.

The main rotors, made from injection molded polypropylene are very light weight but rigid and have proven very durable despite the tipovers and other hangar rash incidents. So far, after a good 25 flights, they exhibit only a single nick and some scuff marks at the tips from some abuse. The landing gear skids are pretty strong also because they have absorbed a few good bounces without any deformation or breakage.

Just within the past week of writing this Air Scooter Corp. sent a modification kit to all *AirScoot* owners that incorporated a walking beam bar that has helped make flying the chopper even easier. The modification is simple and takes no more than a half hour if you're a slow worker.

First flights with the unmodified chopper proved pretty sensitive. With the update and placing the battery in a far forward position, the model became a tame pussycat. From that point on, steady hover was easy, and forward flight was easily controlled.

You can count on an honest 5-minute flight with the model. The 10-cell 2400 mAh Ni-Cd battery feeds about 20-22 amps to the Maxx Products cobalt motor in hover. And at full pop-up throttle a surge of 41 amps will go to the motor. That's why Air Scooter Corp. installed a Griffin 55 (55 amps continuous) speed control so there would be a good safe margin.

After a flight the battery will be decently warm, so you should let it cool before recharging. If you want a quick flight turnaround, it might be wise to purchase an additional battery.

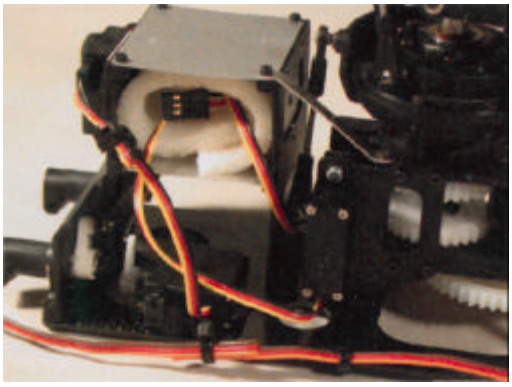
You might also note that the motor gets too hot to touch. That concerned me, so I asked if cutting cooling air vents in the canopy might help. Air Scooter Corp. said that despite the apparent overheating, the motor is operating comfortably within its specified heat range. However, they also indicated that they might experiment with putting a heat sink on the motor in the future.

There is plenty of power in the *AirScoot* and hover on a fresh battery occurs at half throttle. You won't have to worry about the model falling out of the air, because as the battery drops off in power, the model will just start to settle, and the controller doesn't shut the motor off abruptly. The rotors can keep spinning for a while after they can't provide lift before shutdown occurs.

The price for the basic kit with complete model, and radio gear installed is $846. That sounds pretty steep, but it's a complete package just about ready to go, and it will fly indoors quite well, even in a large living room, at hover. Add the accessory package and the price jumps to $995.

By no means is this a 3-D acrobat. It is designed to get you comfortable with hovering and level flight with a heli. It does that well, and I enjoy quiet morning and late evening flights in my driveway with it. If you fly it from grass, I caution that it be trimmed close and not be high. Otherwise the skids will catch and the model will tip over on lift-off.

This is a quality model that performs quite well in its intended use. It is more expensive than some other electric and gas-powered helis. That extra cost comes from its complete assembly and its more complex coaxial design. The future should make it better as Air Scooter Corp. begins to experiment with lithium-polymer setups for extended duration flights.



You can see the tail fin servo at the aft (above left) of the body frame. Above it. wrapped in foam is the receiver. The 7-turn MPI cobalt motor (above right) drives the rotors through a 2-stage spur gear transmission with Delrin™ gears in ball bearings. The MPI piezo gyro is already installed (below left), but must be adjusted before the first flight. Part of the optional package (below right) is the Hitec Laser 4 transmitter, with an HS-555 receiver, and the Hitec CG-330 peak charger.