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R/C Report

Flyzone AirCore Modular Aircraft

A popular concept from the 1980s resurrected in modern layout.

If memory serves me correctly, AirCore first happened on the modeling scene right around the early 1980s. The concept was a standard power module which could be transferred to different airframes depending on various factors such as developing pilot's skills, or more often than not, an unplanned vertical powered landing that destroyed an existing airframe.

The power module was a fairly simple affair, two wooden beams were used to mount a .40ci 2-stroke glow motor, the appropriately sized fuel tank, a receiver and three servos, one each for throttle, elevator and rudder. This power module was in-turn secured to the airframe of the modeler's choosing by using long screws.

The airframes of the time were constructed of a common corrugated plastic material that looks exactly like corrugated cardboard, but instead of using paper it's made from thin plastic sheet. Although simple in design, the airframes were heavy and for some people difficult to assemble into a finished product. Modelers who were used to using wood glue or nitrocellulose adhesives like Ambroid, found the idea of gluing an airframe together with the type of contact cement meant for laminating countertops a bit difficult to wrap their brains around. However, to add a bit of humor, whenever a popular modeling magazine would publish a plan for a corrugated plastic model, the local PDs would receive a flood of calls reporting missing political campaign signs.

Recently resurrected by Flyzone, the AirCore name is once again appearing in hobby stores. Exactly like the original AirCore products, the new Flyzone models use an



all inclusive power module. The airplanes are much smaller, and the models are now manufactured using extremely lightweight molded foam, but there are many similarities to the original product.

Gone are the wood rails, the material now used is a composite plastic. Also missing are the .40 glow motor, and fuel tank. These two components have been replaced by a 2181kV brushless outrunner motor and a 2S 250mAh lithium battery. The receiver and three servos are still part of the modular power system, but since a throttle servo is not needed with electric propulsion, the extra servo is used on those airframes that use aileron control. Because the models are now constructed of molded foam



The AirCore airframes are securely packaged in a molded container to prevent damage during shipping, and are complete, including pre-installed pushrods of the proper length, a propeller and spinner.

and composites, rare earth magnets instead of screws are now used to secure the power module to the airframe.

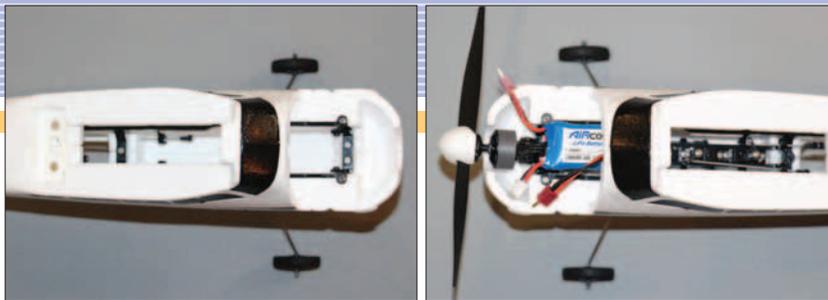
Each of the AirCore components is sold separately. The end user will need to purchase an airframe, of which there are many styles to choose from, and a universal Power Core Module. Also needed will be a customer supplied transmitter, flight

batteries, and a charger. In this instance, since I already have a battery charger capable of charging a 2S 250mAh lithium flight battery, it was not necessary to obtain a separate charger. Dealers may find this is often the case. As an example the modeler may already possess a power module and batteries, and he'll only need a replacement

airframe.

While the flight battery was charging, three airframes, the Principle Trainer, Japanese Zero and P-51 Mustang Cathy II were examined. It didn't take much to visualize how the power module mounts to the rails molded into each of the airframes, but since I am constantly screaming RTFM (Read The Full Manual) at everyone who will listen and especially those who won't, the manual for the Power Core Module and airframe were each read in their entirety.

Honestly, assembly couldn't be easier. Each of the airframes has a battery hatch that will need to be removed to access the cradle for the power module. Looking inside the fuselage a person can see exactly where the power module fits. It might take an additional try to get the power module attached the first time, but after that it becomes second nature. Basically the power module rails



Left: With the hatch removed it doesn't take much to visualize exactly how the power module fits on the mounting rails. Right: With the power module in place and a battery mounted, assembly is complete and the airplane is now ready to fly.

fit into the fuselage cradle from the rear, and the module is then slid slightly forward until the whole system locks in place.

Next the pushrods that line up to their respective servo are wiggled a little until the magnets holding the rod ends meet and snap together. The pushrods are of different lengths and aligned from the factory. They cannot be installed incorrectly unless forced. Even so, once the radio is turned on, should a pushrod be somehow incorrectly mated the magnets holding the pushrod together will simply break apart. The AirCore Power Core Module system is pretty much foolproof.

First to fly was the Principle Trainer. The Principle is rather attractive, having something of a classic Cessna 140 look. The airplane is three channel; throttle, elevator and rudder, so aerobatics are limited to loops and vertical spirals. The manual suggests the landing gear is optional,

Tactic TTX403 Micro 4-Channel Spread

Many Flyzone products are packaged as a ready to fly product which includes a transmitter. In the case of the AirCore Modular Aircraft System, unless the dealer puts an all-inclusive combo package together at the store level, the customer must always supply the transmitter.

Using Tactic protocol, there are a number of options available for the customer. Everything from the use of an AnyLink adaptor to any of the available four and six channel Tactic transmitters will work extremely well. A really good choice for smaller hands is the Tactic TTX403 micro transmitter. Although smaller than a full-size transmitter, it is shaped exactly the same as a normal transmitter, and it's scaled properly to include stick spacing.

The gimbals are smooth to the touch and the trim buttons are easy to reach, plus they emit an audible beep



when pressed. The TTX403 is a 4-channel transmitter, but the unit can be set up electronically for basic 3-channel operation (rudder or turning control on the right stick) which makes it a really good match for the AirCore Principle Trainer. Although there is no LED screen to guide a person through programming there are some basic functions like V-Tail and Elevon mixing available which can be accessed simply by moving and pressing the transmit-

ter's sticks in a specified order.

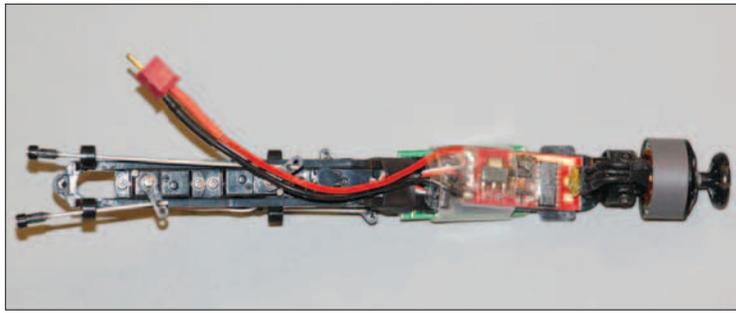
Even though the game controller shaped transmitter is popular with a number of manufacturers, the younger generation who have grown up using game controllers, but want to move into radio control aviation, need exposure to the shape and feel of the transmitters commonly used in the hobby, and the TTX430 4-Channel transmitter is an excellent choice for making the transition. **HM**

but all trainers need landing gear even when flown off grass. Landing gear simply gives a model like the Principle a finished appearance.

The model was hand-launched by spooling the throttle to full power, aiming the airplane at the horizon and giving the model a gentle push forward. The Principle climbs nicely to altitude, exhibiting no bad habits. Small airplanes like the Principle aren't always the best trainers as the first-time flier is always making turns to keep the airplane in close, but for a person with limited space the Principle will work fine as a trainer.

Next up was the Japanese Zero. With its large radial cowl the Zero has much of the same aerodynamic drag as the Principle, and with the landing gear attached it flies at roughly the same speed. The low wing and aileron control make the Zero much more maneuverable, so the airplane should not be considered a first time option. As maneuverable as the Zero is, chopping the throttle is like slamming on the brakes. The airplane slows quickly and lands at a walking pace. The Zero was initially flown with the landing gear attached. Removing the gear had an effect on the speed range, making the airplane slightly faster but without the drag of the landing gear it wasn't as quick to slow down.

The last airframe tested was the P-51 Mustang Cathy II. Unquestionably, the P-51 is the most popular aircraft ever modeled in radio control. Just about every modeler



The heart of the AirCore system is the power module that has the motor, receiver, and three servos mounted and ready for an airframe.

or at least seems faster. Unquestionably, this is due to a much sleeker aerodynamic design, and as mentioned, the landing gear was left off.

Of the three airframes tested, the Zero, with the landing gear attached, is my favorite. The bright green color scheme is easy

to see and the contrasting markings allow for quick orientation in the sky. The airplane is every bit as maneuverable and aerobatic as the Mustang, but the amount of drag produced by the cowl and landing gear provide for a wide range of speed during flight. For those who like the Zero, but find the green a bit too much, the same airframe is available in the light gray scheme often associated with Japanese carrier operations. With so many airframes available to choose from there's no question the end user will be able to select one that's a favorite.



The Zero's large radial cowl acts like a brake when the throttle is reduced and the bright scheme allows for quick orientation.

The Flyzone AirCore Power Core Module System can fill a variety of applications from the raw beginner who has limited space to fly yet wants to start working his way through the ranks, to the experienced modeler who's looking to get some air time in at a larger indoor arena, or perhaps in a park setting during calm weather. With the large variety of warbird airframes to choose from I can actually envision a few scenarios of full contact combat, much like the days of AirCore's distant relatives.

The dealer who simply places these products on the shelf and hopes for the best will most likely become frustrated. For the AirCore products to move, the dealer has to be willing to spend some time with the potential customer explaining how the system works. Without some instruction, the customer who's only been exposed to everything needed in one box, won't understand the attributes of the AirCore Modular Aircraft System and why he needs to purchase individual components.

The entire line of Flyzone products including the AirCore Modular Aircraft System are available through Great Planes. **HM**



Having something of a classic Cessna 140 appearance, the Principle Trainer is a good looking airplane that flies quite nicely. out there has at one time built and flown at least one P-51 Mustang. Since, like the Zero, the full-scale P-51 uses retractable landing gear, it's up to the modeler if he chooses to install the gear or leave it off. For the entire evaluation the landing gear was left off, thereby eliminating a bit of drag.

Even though Cathy II uses the same power module as the Principle and Zero, the Mustang is noticeably faster,