



FlyZone Beechcraft Staggerwing RTF

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A new entry (July 2008) to Hobbico's Flyzone series of [RTF](#) (ready-to-fly) sport aircraft is their Beechcraft Staggerwing biplane (stock no. HCAA27). An attractive model of one of the most unique private airplanes ever built, Flyzone's all-red Staggerwing is a true RTF that assembles in just about an hour or two and flies as well as did the original.

Of course, Flyzone's Staggerwing can't match the original's near 200 mph top speed. But then it shouldn't considering that most of these airplanes will be flying from small airfields and parks.

The Staggerwing meets all the aircraft requirements of the Academy of Model Aeronautics' (AMA) Park Pilot Program. The aircraft weighs less than 2 pounds (the Program's upper weight limit) and has a level top speed under 60 mph (the Program's upper speed limit). For complete Park Pilot aircraft details, [follow this link](#).

The AMA Park Pilot Program offers non-AMA members the opportunity to become AMA members at a much reduced cost. Park Pilot membership includes a great magazine "Park Pilot", \$500,000 personal liability insurance, \$2.5 million liability insurance for the flying field owner ([see insurance details](#)) and membership in the world's largest sport aviation association – the AMA. For complete information and details about Park Pilot membership, just [click here](#).



Photo 2



Photo 3

This is a parking lot size model of approximately 17 ounces total weight and is powered by a geared Speed 300 (or Mabuchi RS-370, although the literature claims a Speed-280!) brushed motor and a 6-cell, 900-mAh [Ni-MH](#) battery pack. The airplane is made from molded foam and plastic parts and includes the complete motor, RC systems battery and charger.



Photo 4



Photo 5

The only additional item you need to purchase is a set of eight (8) AA size alkaline batteries to power the RC transmitter.

The three-channel RC system supplied with this Beechcraft goes under the name "Tactic". The receiver, two servos, Electronic Speed Control ([ESC](#)) with a Battery Eliminator Circuit ([BEC](#)), switch and a geared brushed electric motor come already factory installed in the aircraft. The transmitter pictured here is an FM system that operates on the 72 MHz RC channels.



Photo 6

A closer look at the transmitter indicates that it has a single, two-axis control stick on the right side that controls the rudder and elevator on the Beechcraft. You hold the transmitter case with your left hand and place the fingers of your right hand on the control stick.



Photo 7

To install the eight battery cells in the transmitter you must remove a single screw at the bottom of the transmitter case. Flyzone supplies the Phillips head screwdriver for this purpose. With the battery compartment cover removed, pull out the battery cell holder and insert each cell while observing the proper polarity.



Photo 8

In this photo, the battery holder is now filled with the cells and inserted back into the transmitter case, awaiting the cover replacement.



Photo 9

In the lower front portion of the transmitter is a small control panel that contains the main power switch (on/off) and a servo reversing switch for each of the three channel functions. When you turn the power on, a GREEN LED lights up. As the batteries wear down, the LED changes color to a pale YELLOW. When the LED flashes RED, it is unsafe to fly and the batteries must be replaced.

This is a good system as the only other means for a pilot to know when the dry cell batteries have died is when the airplane is no longer controllable. When using dry cells to power a transmitter, it is always a good idea to have an extra set in your "field box" as dry cells often quit with little warning.



Photo 10



Photo 11

The throttle control stick is located up on the top left corner of the transmitter case. Moving this lever all the way to the left will turn off the motor. Moving it all the way to the right will give you full or maximum motor power. Note that both control sticks have trim levers that can help level the aircraft attitude in flight.



Photo 12

On the airborne side, you receive a 6-cell, 900 mAh capacity Ni-MH battery pack along with a peak detect charger to charge that battery from your 12 volt DC system in your automobile. The charger plug is intended to be plugged into your 12 volt accessory outlet, which is available in most autos.



Photo 13



Photo 14

Flyzone is very concerned with the safety aspect of battery charging and use. This large warning note is applied to the charger cable. Basically, it tells you to never operate the charger when the auto engine is running. If you did, the higher voltage present from the auto generator might over-charge the battery. You should also remove the battery from the aircraft for charging purposes and keep the battery outside the passenger compartment of the auto. They also make it clear to never leave the battery unattended while it is being charged.



Photo 15

If you choose not to use the auto accessory plug inside your car you can, as an alternative, purchase this adapter from a Radio Shack Store that will allow you to connect the charger directly to the auto battery terminals.

The Beechcraft final assembly is quite easy and takes no more than a few hours at best. The instruction manual is easy to read and quite thorough. Flyzone has been thoughtful to post this manual to the following website for your information prior to purchasing the aircraft:

<http://manuals.hobbico.com/hca/hcaa27-manual.pdf>.

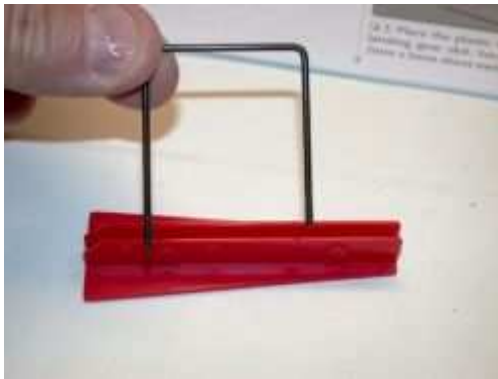


Photo 16



Photo 17

Assembly starts at the tail where the horizontal stabilizer is installed first. The control horns and hinges are all factory installed. The stabilizer is held in place using a metal "U" clamp that passes through the vertical fin's fillet (photo 16) and then out the bottom of the fuselage. Two finger bolts hold this clamp in place on the fuselage bottom.



Photo 18



Photo 19

With the stabilizer in place, the vertical fin (with rudder) is installed into the fillet. The fin is held in place using two screws as shown in photo 19.



Photo 20

Once both control surfaces are installed, connect the control rods to the factory installed control horns. The precut rudder and elevator control rods, coming from the servos, are inserted into the outer hole on each of the two horns. A retainer keeps these wires in place. Using the outer holes provides adequate control but keeps the Staggerwing from being over sensitive to the pilot's inputs.



Photo 21

The last thing done at the rear of the airplane is to install the tail wheel. The wire goes into a slot and a plastic keeper is attached with two screws. This tail wheel is not steerable.



Photo 22

The main landing gear strut plugs into a slot located directly behind the battery compartment. A plastic retainer and two more screws hold this gear in place. Note that the battery pack can easily be removed from its compartment for charging or substitution purposes, without having to remove either wing. The landing gear is a neat installation and being able to remove the battery without disassembling the airplane makes for more enjoyable flying sessions.

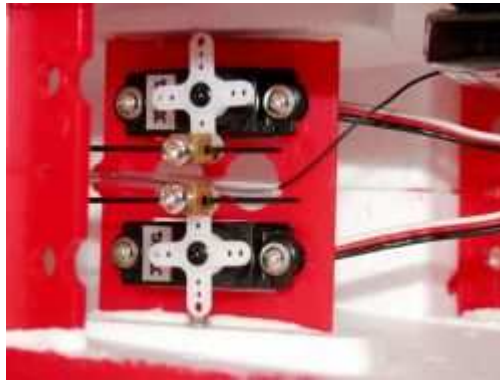


Photo 23

Looking into the RC compartment with the top wing removed, you can see the rudder and elevator servos which come factory installed along with the control rods. Adjustable connectors will allow you to neutralize control surfaces should that ever become necessary. Make sure that the two "set" screws are tight.



Photo 24

The RC receiver is mounted with Velcro tape along the inside of the RC compartment. The servos and ESC connectors are already plugged into the proper places on this receiver.



Photo 25



Photo 26

Both the upper and lower wings attach very easily with two dowels by the leading edge and a single metal screw at the trailing edge. Molded plastic, scale-like inter-wing struts (two) go between both wing panels and are held in place with special fasteners.



Photo 27

The molded plastic cowl is held in place with three screws. It is an easy job to access the motor and ESC after removing the cowl. You might even consider upgrading the power system at a later time with a brushless motor, brushless ESC and a Li-poly battery pack. But for now, the supplied system works just fine.



Photo 28

A power on/off switch is mounted on the left side of the fuselage. Off is in the forward position. Despite this switch, you *must* disconnect the battery when not flying because there is always some residual power being consumed within the system. *(Ed Note: I can't count how many batteries I have destroyed by forgetting to disconnect the battery from the ESC after turning off*

the receiver switch. Sometimes, I despair of ever getting this electric thing down perfectly. I am still trying to figure out where the glow plug goes in an electric motor and Bob won't tell me!



Photo 29

The 1 5/8 inch diameter main landing wheels arrive factory installed. The wheel retainers are already glued in place.



Photo 30



Photo 31

Here are some overall photos after final assembly was completed. The entire airplane is factory painted and the decals are already installed. Alignment of all surfaces was just perfect.



Photo 32



Photo 33

For a small, RTF airplane, the Flyzone Beechcraft Staggerwing is a very good looking aircraft. The full-size Staggerwing is still, after nearly 80 years, considered one of the best looking private airplanes ever designed. Its 200+ mph performance outperformed the "airliners" of its time (the 1930's) and remains better than almost all other propeller-driven private airplanes of today (minus turbo props of course).



Photo 34

This view of the Staggerwing's underside shows the convenient battery hatch and clean lines of the airplane's bottom. Notice the under-cambered airfoil designed to provide extra lift and maneuverability. These wings provide great "park" performance and lower landing speeds. Because of the non-steerable tail wheel, the best takeoffs in a wind will probably be by hand launching.

FINAL CENTER OF GRAVITY:

The final CG position was exactly as recommended in the instruction manual. It is at the very front leading edge of the top wing or 2 ¼ inches back from the leading edge of the lower wing. Photos in the manual show the technique for determining the CG position

CONTROL SURFACE MOVEMENTS:

This is with both control rods placed in the outer most hole in each control horn:

Rudder travel was 5/8 inch either side of the neutral position.

Elevator travel was 3/8 inch either side of neutral.

FLYING THE STAGGERWING:



Photo 35



Photo 36

The Flyzone Beechcraft certainly did its job and flew well as a sport type Park Pilot airplane. From a flat, smooth surface on calm days, it takes off from the ground quickly and lands at a very slow speed, without any tendency to stall. In crosswinds up to about 8-10 mph, hand launching is a good idea.



Photo 37

In flight, I found the control response (more so in right turns) a little on the slow side, with a slight tendency to yaw. It almost felt like the airplane needed aileron control, with some coordinated rudder. But adding ailerons would take a lot of work and quite honestly the average sport flyer will quickly get the feel of the Beechcraft when making turns.

Once you get the feel of the airplane, you might want to consider re-connecting the control rods to the next hole inwards on the control horn. This improves the airplane's control response without making it "tricky" to handle. If you are a new RC pilot, leave the control rods on the outer hole until you get a little more proficient.



Photo 38



Photo 39

When I made my static tests of the motor system I was somewhat surprised to see a motor current of 9 amps on this little "280" motor. After my first flight of about 10 minutes, I quickly removed the cowl to check on how hot the motor got during the flight. It was hot, but not excessive. I always throttle back a lot in flight, so most likely the motor was not seeing a constant 9 amps.



Photo 39A

Photo courtesy of Flyzone

What did surprise me is that the motor turned out to be a Mabuchi RS-370, which is really a SPEED-300 (not a 280). This motor is generally rated at about 6 amps max. Probably with throttling I was around that figure. If, for any reason the motor eventually fails I might suggest you go up one size to a geared SPEED-400 motor. Substitution would not be difficult and the cost would be minimal.

The Beechcraft isn't a real speed demon in the air. So if you did want some more pep the SPEED-400 motor might eventually be the way to go. At any rate the Beechcraft performed well in my flight testing with the supplied motor.

My flight photos were taken for me by Ray Juschkus, AMA District-II AVP from out on Long Island. I thank Ray for these wonderful photos. He also managed to catch me flying the Beechcraft as seen in this photo.



Photo 40

SUMMARY:

All in all, the Flyzone Beechcraft Staggering is a good, all around RTF sport flyer. It can easily be flown out of parking lots, baseball fields and the like. The assembly time can be measured in an hour or two. Everything is included except for a set of batteries for the RC transmitter. An extra battery pack to extend your flying time would be very inexpensive.

As mentioned earlier, the manual can be downloaded from the referenced website. This way you can see all the assembly steps and even check out a video of actual flying before you purchase this airplane. I think it safe to say the Beechcraft Staggerwing is a job well done.

For more information on this great looking and easy to fly RTF Park Pilot airplane, go to: http://www.masportaviator.com/redirect.asp?website=ArticleLinks_FlyZone_BeechcraftStaggerwing

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Specifications

Manufacturer: Flyzone	Length: 26 in.
Cost: \$160.00	Wingspan: 31 in.
Radio: Tactic 3-channel	Wing Area: 285 sq. in.
Servos: 2 x Tactic micro	Wing Loading: 8.5 oz./sq. ft.
Motor: Mabuchi RS-370 (not 280)	Weight: 16.9 oz. Airfoil: Under Cambered

Special Airframe Features: Attractive airframe; True RTF airplane; Rugged foam construction

Notable Positives

Easy to assemble RTF
Nice Scale-like airframe
Very good looks
Light flying weight
Good basic trainer performance
Engine larger and more powerful than advertised
Very easy to fly

Notable Negatives

Could use some trim on the wing bottom for better visibility

Electric Power Specifications

Prop: 9 x 8 in.

Battery: 6-cell, 900 mAh

Max Watts: 55 W

Power Loading: 52 W / lb.

Max Voltage: 7.01 V

Motor Current: 9.23 Amps

Motor Run Time: 8-10 min.