BY DON NELSON ■ PHOTOS BY JOHN REID

RC Guys CESSNA 150 ARF

This beautiful, **scale 96-inch-span** Cessna 150 from RC Guys is guaranteed to turn heads at the field

DURING THE 1970S AND '80S, Cessna built a version of its popular Cessna 150 that was designated the "Aerobat." It became a popular aerobatic trainer because of its gentle flight characteristics. In fact, many pilots who have flown Cessna Aerobats often describe the airplane as capable of "gentlemanly aerobatics" such as loops, rolls and even flat spins. Now you can enjoy flying this beautiful, giant-scale Cessna 150 aerobat from RC Guys.

This model lives up to its name as an aerobatic trainer, and when equipped with a recommended engine, it can perform most simple looping and rolling maneuvers. It isn't difficult to fly, and a pilot who has graduated from the basic trainer should be able to fly it easily. This model will wow them at the field!

Assembly requires intermediate skills,

The Saito 1.80 has plenty of room under the cowl for good airflow and easy firewall mounting. The engine provides outstanding performance and pulls the Cessna around with good authority.

and it's helpful to have a good set of modeling tools. The model is a well-constructed ply, lite-ply and balsa frame. It's beautifully covered in a striking red, white and blue color scheme that is highly visible on the ground and in the air. All decals and markings have been applied by the manufacturer. The model also has fully functional Fowler flaps that enhance its scale appearance. The cabin door is fully operational right down to the handle and door lock. The kit also includes a painted fiberglass cowl and wheel pants. The painted wraparound windshields fit very well and give the model a sleek, scale appearance. Overall, this plane is first-rate.

SPECIFICATIONS

MODEL Cessna 150 Aerobat ARF
DISTRIBUTOR RC Guys
TYPE Scale aerobat
LENGTH 67 in.
WINGSPAN 96 in.
WING AREA 1,290 sq. in.
WEIGHT 14 lb. 12 oz.
WING LOADING 26.7 oz./sq. ft.
ENGINE REQ'D .90 to 1.20 2-stroke; 1.2 to 1.8 4-stroke, 22 to 32cc gas
RADIO REQ'D 5-channel
PRICE $500

HIGHLIGHTS

- Very scale outline
- Striking color scheme with decals
- Well constructed
- Fun to fly

UNIQUE FEATURES

The kit includes a complete set of hardware and accessories that includes wheels with balloon tires and a fuel tank. The steerable nose gear on this model is a work of art; it is a carefully machined Oleo strut that looks and acts like the shock-absorbing nose gear used on the full-size airplane. The high-

quality control horns for all movable surfaces were machined out of aluminum stock.

When the model rolled on the main gear, the wheels wanted to spread, and I was concerned that the gear would collapse if subjected to a hard landing, so I attached a cable between the axles to prevent it from spreading. When I tried to bend the aileron and flap pushrod wires in my Z-bender, they snapped, so I replaced them with 2-56 pushrods and installed L-bend connectors.

RC Guys includes a great set of detailed instructions with many photos to guide you through the construction process, and I have a few notes to add. First, I recommend that you complete the radio installation before you install the windows and windshields. The radio and servos go in the cabin area of the fuselage; once you've installed the windshields, the only access is through the door, and that can make working in this area difficult, so I appreciated having the additional access.

The Cessna 150 ARF kit includes a nicely done scale front wheel. It's mounted inside the fuselage, so be sure to lock down everything tightly.

The model does not have "hard points" for installing control horns. The manual instructs you to drill directly into the balsa structure of the control surface. I think that would result in a weak control system that, over time, would suffer from wear. Before I installed the horns, I hardened the holes' edges with thin CA and then filled each hole with foaming polyester glue. The polyester glue foams up to fill the hole and dries hard.

The kit comes with a beautifully crafted elevator pushrod. The manual includes a detailed picture of how to bend the wire sections at the end of the pushrod to affix it to the elevator control horns; however, the plans neglect to tell you how to get the entire pushrod inside the fuselage. If you carefully tape the wire portions of the pushrod together, you can thread the entire assembly through the fuel-line hole in the firewall to the rear of the fuselage and out through the exit holes. Be careful; it's easy to puncture the side of the fuselage and put a hole in the beautiful covering.

THE CESSNA IS AN EASY MODEL TO FLY, BUT IT ISN'T A TRAINER

CONTROL THROWS

AILERONS ±¾ in.; 30% expo
ELEVATOR ±1¼ in.; 30% expo
RUDDER 2½ in.
FLAPS 4 in. down

GEAR USED

RADIO Futaba 7-channel PCM; Futaba S3305 servos (6)
ENGINE Saito 1.80 4 stroke
PROP Top Flite 16x8
FUEL Wildcat 15%

In the Air

The Cessna's first flight was off a paved runway. It tracked very straight and lifted into the air without any elevator input. Once it was off the ground, I added a little up-elevator to begin a gentle climbout. Landing the model is also quite easy. Line it up with the runway, cut the throttle to an idle and let the airplane settle. You will have to add some elevator as you approach the ground to get a little flare before touching down. I fly off a paved runway, but the Cessna 150 should also be able to take off from closely mowed grass fields without any trouble.

GENERAL FLIGHT PERFORMANCE

Stability The Cessna is an easy model to fly, but it isn't a trainer. If you neutralize control inputs, it will continue to track along its current path. You have to fly it back to level flight. I was surprised to find that the rudder is quite effective. As you first input rudder, the model will enter a relatively flat turn in the direction of the input; however, at some point, it will tuck its nose, and you will need up-elevator to maintain altitude. For a large, high-wing airplane, its response to all control inputs is very solid.

Tracking The Cessna tracks very well, but it has to be piloted as if it were a large airplane. You will have to use the rudder to maintain straight tracking when it does vertical maneuvers or loops. You will also have to use the elevator to maintain level flight when it does rolling maneuvers. The designers got the firewall angle right; the model didn't show any tendency to climb or dive as throttle and airspeed were varied.

Aerobatics This model is advertised as an aerobatic trainer, and it looks great flying basic rolling and looping maneuvers. Throttle advances increase the model's pulling performance, but they don't have a huge impact on airspeed, so maneuvers will be relatively slow and, with practice, quite graceful. I tried a few stall turns (not quite a scale maneuver for this airplane), and they looked great. I also did a few spins. You have to wait for the stall, but once the spin starts, it is slow and gentle. I used opposite rudder and ailerons to stop the spin.

Glide & stall performance This model stalls gently and doesn't show any tendency to drop wingtips. Recovery is quick if you let it gain airspeed by adding throttle. This airplane has a large wing and is relatively light for its size, so when you cut the throttle, you have a great glider.

PILOT DEBRIEFING

This model comes equipped with Fowler flaps. They are large, and they are effective. If you've never flown a model with flaps, be sure to gain altitude and apply flaps slowly. At first, you'll notice little effect, but at some point, the model will pitch its nose down, and you will have to apply quite a bit of up-elevator to maintain level flight. Once you get used to using flaps, you will be able to make short, relatively steep approaches on your landings.

This model fulfills many roles; you can take it to the field for relaxing, gentle flying, or you can use it as a basic aerobatic trainer. If this is your first large model, you will find flying it quite different from flying smaller sport flyers. The model will teach you to use all of your control inputs, especially the rudder. Although it's capable of aerobatics, it isn't able to do more advanced "snapping" maneuvers. Within its design envelope, it's fun to fly and absolutely beautiful to watch. If you want to get into large models, the Cessna is a great way to do it.

Because the instructions didn't designate where the center of gravity (CG) was located, I put it about ⅓ back from the leading edge. Flight tests proved this to be very close.

CONCLUSION

This model's assembly does take some time (I spent about 30 hours), but if you approach each task carefully and think about what you are doing, the result is well worth it. When I finally was able to step back and look at the fully assembled model for the first time, I could only say, "Wow!" ✚

See the Source Guide for manufacturers' contact information.

RC GUYS' CESSNA AEROBAT

by Jim Onorato

Giant scale replica of a popular general aviation flyer

The Cessna 150 is a two-seat tricycle gear general purpose civil aircraft that was designed for flight training and touring as well as personal use. With more than 23,800 produced, it is the fourth most produced civilian plane ever. Developed in the mid 1950s as a successor to the popular Cessna 140 which was a taildragger, the 150 was offered in five models including the Aerobat. A total of 1,079 Aerobats were produced in the United States, France and Argentina from 1957 to 1977 when the 150s were succeeded by the Cessna 152s. All Cessna 150s have very effective flaps that extend 40 degrees. My affinity for Cessnas goes way back, as my first 40-size RC airplane was a Cessna Skylane 62 which I still fly from time to time. Now, RC Guys offers a 1.50-sized replica of this popular airplane as an outstanding "Almost Ready-to-Fly" kit that was developed from factory drawings.

THE KIT

The RC Guys Aerobat is constructed of laser-cut balsa and light ply. It is fully sheeted and exquisitely covered with red, white and blue Oracover. The finish is very well done and looks like it's painted. The Aerobat has a two-piece plug-in wing with working Fowler flaps and airfoil-shaped painted aluminum struts with fiberglass fairings. Molded plastic material is included to add simulated corrugated surfaces to the ailerons, flaps and elevators. Fiberglass parts include cowl, wheel pants, wing tips, landing gear fairings and wing strut fairings. The kit also includes engine mounts and fuel tank for glow engines, scale landing gear including an oleo strut nose wheel with installed wheel pant, vacuum

PHOTOS BY WALTER SCOTT & JIM ONORATO

AIRBORNE

Whenever I go to the flying field with a plane like the Cessna Aerobat, I know that such a tried and true design is bound to fly well. Still, when it's a brand new giant scale plane, I can't seem to relax until I get that first flight over. I got a bit of help this time, as David Baron, Fly RC's Chief Test Pilot, was around to do the honors. It turns out that I need not have worried with this one! The Cessna is a pussycat in the air and a joy to fly.

The instructions recommend only one rate setting for the controls and suggest that you may wish to add a second rate setting after you become more familiar with the model. I followed the recommendation and after a few flights I haven't seen the need to change the original settings.

The Zenoah G-26 is a good match for the Aerobat and its inherent reliability adds to the pleasure of flying this fine looking airplane. It's not strong enough to keep the Aerobat going vertical nor should it be. It provides more than enough power for the type of flying you would expect a responsible Cessna pilot to do. Remember, the full scale Aerobat was designed to train students, not to help an expert win championships. It gets the plane off the ground quickly and easily pulls it through large round loops. As a matter of fact, those are just about the only times I find it necessary to apply full power - most of the time I fly the Aerobat at about half throttle.

The Aerobat is very stable throughout its speed envelope, and really moves out at full throttle. It will go much faster than scale speed but tracks exceptionally well without any bad tendencies. It is a smooth and stable flyer at slow speed and is responsive to control inputs right up to the point at which it stalls. Stalls are typical Cessna. They are quite gentle, with the left wing leading the right ever so slightly. A touch of right rudder at the break will counter that without worry. With the flaps down the stall is straight ahead. Dropping the flaps effectively adds washout, so the tips continue flying and the ailerons remain effective as the inner wing loses lift.

Like many large, high wing aircraft, this one needs coordinated rudder and aileron inputs along with elevator to negotiate smooth turns. A computer radio with rudder/aileron mixing is a big help here. The use of differential aileron throw also helps smooth out the turns. The flaps on the Aerobat are quite effective. They noticeably reduce the distance required for takeoff and really slow the plane down nicely for landings. I normally program some down elevator when the flaps are deployed to keep the plane from ballooning upward as soon as the flap switch is thrown. This time I tried something a little different. I used the McDaniels R/C Go-Slo servo speed controller to slow the flap deployment. Since I did not want to reduce the elevator speed as well, I needed to manually apply a slight amount of down elevator when the flaps were lowered. This does not present any problems because the flaps deploy so slowly that it is easy to control the pitch of the plane as it stabilizes at a new approach speed. This makes for very smooth controlled landings. Keep in mind that large models appear closer than they actually are and, with the flaps down and the plane at reduced speed for landing, it is easy to come in short of the runway. I know because that's exactly what happened on the first landing approach. That is also when we discovered that the nose wheel mounting could use some reinforcing which has since been accomplished. If you keep it on the runway and land without pounding the nosewheel you should be fine.

No flight test would be complete without trying some aerobatics, so Dave guided the Aerobat through a series of loops, rolls, spins and inverted passes, all of which it did without effort. But isn't that what you would expect from a plane called the "Aerobat"? The Cessna Aerobat is a beautiful scale airplane that is capable of being flown gracefully upright or through basic aerobatic maneuvers in a scale-like fashion. The choice is yours to enjoy it either way.

SPECS

PLANE: Cessna 150 Aerobat ARF

DISTRIBUTOR: RC Guys

TYPE: Giant Scale Aerobat

FOR: Intermediate to advanced pilots

WINGSPAN: 96 in.

WING AREA: 1290 sq.in.

WEIGHT: 15 lbs. 8 oz.

WING LOADING: 27.7 oz./sq.ft.

LENGTH: 67 in.

RADIO: Spektrum DX7 transmitter, Spektrum AR7000 receiver, 7 S537 servos

ENGINE RANGE: .90-1.20 2-stroke, 1.20-1.80 4-stroke glow, 20-32cc Gas, Flown with a Zenoah G26 gas engine w/ stock muffler

PROPELLER/SPINNER: 16x10 3-blade Master Airscrew with 2-1/4-inch Tru-Turn aluminum spinner

TOP RPM: 7,800

FUEL: 40:1 gas/oil mixture

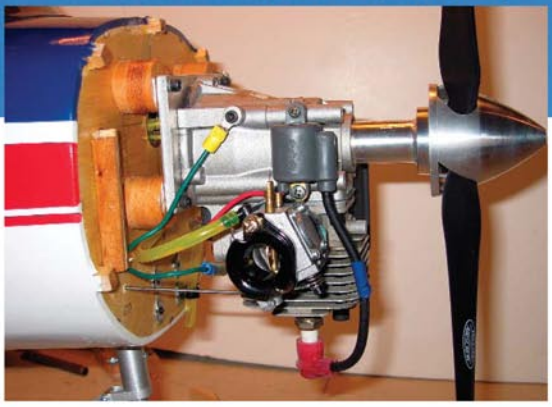
ON BOARD BATTERY: JR 4N1100, 4.8v – 1100mAh NiCd flat pack

COMPONENTS NEEDED TO COMPLETE: Radio system, aileron extensions, Y- harnesses, engine, propeller, spinner, fuel tubing, fuel filler, and shut-off switch for gasoline engine

Price: $499

SUMMARY

This is a very complete and well made scale ARF developed from factory drawings. It is constructed with light-weight laser-cut balsa and ply and features working Fowler flaps, wing struts with fairings, scale wing tips, corrugated control surfaces, scale landing gear including oleo strut nose wheel, working pilot side door with latch, light-weight fiberglass cowl and wheel pants and vacuum formed tinted windows. All that and it flies well too.



The Zenoah G-26 is a great power plant for this airframe, well known for its reliable power and easy handling.

formed tinted windows, scale working pilot side door with latch and a complete quality hardware package. The 33-page assembly and set-up manual is available for downloading from the RC Guys website. This is a great looking scale ARF.

ASSEMBLY TIPS

This is an easy building ARF with an instruction manual that is complete enough to guide an average builder through the assembly process without any problems. The manual is well written and contains dozens of construction photos and tips, so follow them carefully and you are sure to get satisfactory results.

The ailerons, flaps and elevators are covered with white Oracover without scale corrugations. Molded plastic sheets are provided to add simulated corrugations to each of them for a better scale appearance. I decided to add them before the surfaces were attached to the airframe and, after removing the covering from the control surfaces, I attached the corrugated sheets with Gorilla Glue. Hinge points are used to hinge all of the control surfaces. One convenient feature of the Aerobat that I really liked was that all the mounting blocks for the aileron and flap servos were already attached to their respective covers. This really saved a lot of time.

The rudder/nose wheel, elevator and throttle servos are installed on a servo tray on the cockpit floor. A second tray for the receiver and battery is located above the servo tray which makes it a little difficult to install all of the servo mounting screws unless you use a very short screwdriver. A pull-pull cable system is used for the rudder and steerable nose gear and the elevator is controlled with a stiff pushrod. The instructions show the elevator halves joined with a wire joiner but some of the text and the photos show control horns on both elevator halves and a "forked" pushrod connected to them. My kit included the joiner and stiff pushrod.

The large cabin door makes access easy for all the radio gear. Note that due to the shelf right above the servos you will need a short screwdriver to install them.

I used a McDaniels Go-Slo II servo speed controller to control the speed of the flaps. This unit gets installed between the flap servos and the receiver and can be set to slow the speed of the servos in either direction. It has receptacles for three servos; two normal direction and one reverse. I mounted the unit on the upper tray in the cabin area with Velcro tape.

The fuel tank included with the kit is set up for glow fuel so I replaced the stopper and fuel lines to suit gasoline. The tank was suspended beneath the ply support behind the firewall and fastened with Velcro tape.

The fiberglass cowl gets attached with five wood screws into five pre-installed mounting blocks attached to the firewall. I used a Zenoah G26 gas engine to power the Aerobat and mounted it using four 3/4-inch hardwood standoffs and four 8-32 cap screws. It took a lot of cutting and sanding to make the cutouts for the engine and when I was finished, I still had to remove the inlet stack from the carburetor and the spark plug to get the cowl mounted.

A 16x10 3-blade Master Airscrew prop and a 2-1/2 inch aluminum Tru-Turn spinner completed the power package.

The tinted side and top windows were glued in place with canopy glue after the radio installation was complete. The front and rear windshields were also installed after the radio but these were attached with small screws.

The plug-in wings slide onto an aluminum wing tube and are fastened with two 1/4-20 nylon thumb screws that thread in from the inside of the cockpit into the wing root. The wings are stiffened with aluminum struts held in place with cap screws at the wing end and cap screws and stop nuts at the fuse.

CONCLUSION

I found the RC Guys Cessna 150Aerobat ARF to be a well made ARF that builds easy, flies well and looks fantastic on the ground or in the air. Its accurate scale outline should please all but the rivet-counting purists as this one really captures the elegance of the full-scale airplane. I highly recommend it for intermediate and advanced pilots interested in large-scale RC. I give this one two "thumbs up". Well done, RC Guys!

Links

McDaniels RC Products, distributed by Sonic Tronics, www.sonictronics.com, (215) 635-6520

RC Guys, www.rcguys.com, (519) 756-1110

Spektrum, distributed by Horizon Hobby, www.spektrumrc.com, (800) 338-4639

Tru-Turn, www.tru-turn.com, (281) 479-9600

Windsor Propeller Company, www.masterairscrew.com, (916) 631-8385

Zenoah, distributed by Horizon Hobby Distributors, www.zenoah.com, (877) 504-0233

For more information, please see our source guide on page 121.