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RC GUYS Piper Cherokee

PA-140 ARF

The Piper PA-28 Cherokee was introduced in the early 1960's as a lower cost alternative to the Piper Comanche. Where the Comanche featured a constant speed variable pitch propeller and retracting landing gear, in an effort to reduce cost and complexity, the Cherokee came equipped with a standard propeller and a fixed undercarriage. In 1964 Piper began producing the PA-28-140 Cruiser model that came equipped with only two seats and a 140hp Lycoming engine designed primarily for flight training.

I've seen a few of the RC Guys kits at our flying field and at giant scale events I have attended, so I was excited to find out I would be reviewing the RC Guys model of the Piper PA-28 Cherokee. The model features laser-cut balsa wood and light plywood construction and does a good job of duplicating the lines and features of the full-scale Cherokee. RC Guys has included a nicely machined and fully-functional front oleo landing gear strut as well as a full flying stabilizer. The full flying stabilizer, or stabiliator, is popular on many military jets, but the Cherokee is only one of two civilian models so equipped (the Cessna 177 is the other).

The manual states that the recommended engine for the Cherokee is the DLE-55cc gas engine. I already have a couple of these in service in other planes so I had no qualms in using another one for the Cherokee. The DLE starts easily and provided plenty of power for the 18.5 pound model.

A Biela 22x10 carbon prop and a gorgeous Tru-Turn aluminum spinner completed the front end.

Author's Opinion

The RC Guys Piper Cherokee is a good looking model of the civilian classic that has taught thousands of students how to fly full-scale planes. It comes in a simple, but attractive blue and white color scheme with silver accents and the graphics are pre-applied at the factory. The fixed landing gear and removable wings make transportation reasonable for such a large model and assembly at the field can be accomplished in a few minutes. The smooth and stable Cherokee is a joy to fly and would make a great introduction to larger gas powered models. If electrics are your thing, I believe converting the Cherokee to electric power would be an easy project.

Key Features

- This is a beautiful quarter-scale ARF made of laser cut balsa and light plywood.
- The Cherokee accommodates a variety of power plants and could even be electrified.
- Its simple design would make a good entry model into giant scale.
- It features carbon wing and stab tubes for extra strength.
- The painted fiberglass cowl, canopy and tail cone are a good match to the covering.
- There is plenty of room to add a scale cockpit.
- The Cherokee looks good in flight and is a pleasure to fly.

Pros

- Good looking model with well applied covering job and graphics
- Scale full flying stab
- Plenty of room for a scale cabin
- Nicely machined functional front oleo strut.
- Hidden flap linkages

Cons

- Instruction manual had minor errors and omissions
- Uses Z-bends on control surfaces (elevator needed replacing)
- Some incorrect hardware was included in my kit (but was corrected promptly via mail with one phone call)

NEED TO KNOW

MANUFACTURER/DISTRIBUTOR: RCGuys.com

TYPE: Civilian giant-scale ARF

FOR: Intermediate sport pilots

MINIMUM FLYING AREA: RC club field

PRICE: $539

NEEDED TO COMPLETE: Eight high-torque standard-size servos, 5-channel radio system, 35-50cc gasoline engine (or 1.60 2-str oke or 2.20 4-stroke engine), spinner, prop, three 24-inch servo extensions, two 6-inch servo extensions and three Y-harnesses.

Quarter-scale civilian ARF

PHOTOS BY ANDREW GRIFFITH

SPECS

WINGSPAN: 100 in.

WING AREA: 1,823 sq. in.

WEIGHT: 18.5 lb.

WING LOADING: 22.2 oz./sq. ft.

CUBE LOADING: 7.9

LENGTH: 38 in.

RADIO: JR 11X 2.4GHz transmitter, AR921X 9-channel receiver

SERVOS: Savox SC-0251 digital metal gear

ENGINE: DLE-55 gas engine

PROP/SPINNER: Biela 22x8 Carbon prop with a Tru-Turn 3.5 inch aluminum spinner

RPM: 7,500

FUEL: 2-stroke gas/oil mix with 50:1 Royal Purple 2 stroke oil

IN THE AIR

Arriving at the field the model goes together easily, but since the main landing gear are attached to the wings, a cradle is required for transport and assembly. Preparing the model for flight consists of using the provided carbon wing tube and sliding each wing into position in the fuselage and attaching each wing with a nylon thumb screw style bolt. With the wings in position you have to connect the four wing servo wires and install the canopy hatch with two Allen head screws. I added bonded washers from RTL Fasteners to the canopy and cowl bolts to keep them from vibrating loose.

Once the DLE-55 engine was broken in and running with a reliable idle, there was nothing left to do but go flying. During taxi tests, it was nice to be able to tweak the sub-trim of the nose wheel servo to get the Cherokee rolling straight and true. We are lucky enough to have nice paved runways and taxiways, but with its large tires, I doubt that the Cherokee would have issues flying off of a well maintained grass runway.

With the Cherokee lined up on centerline, I advanced the power slowly and in less than 100-feet the plane was airborne. It needed a few clicks of aileron trim and a little bit of up trim (the stabilator is hard to level by eyeball) and it was flying around hands off at just under half throttle. The DLE-55 is plenty for this plane and then some.

The Cherokee looked great in the air and the model replicates the "Hershey Bar" wing profile of the full scale Cherokee very well. After a few laps around the field, I pointed the Cherokee into the wind and reduced power until it stalled. I assumed that with the large wing and thick airfoil, the Cherokee would fly like a large trainer plane and that was exactly the case. With no flaps and a little up elevator, the Cherokee slowed nicely and then broke forward and resumed flying by relaxing the elevator and adding a little power. With the flaps deployed, the Cherokee slowed down to the point the ailerons became ineffective before it stalled. I did notice some porpoising at anything above half throttle so I figured it was a good time to see how she landed. With the flaps extended, the Cherokee floats in and with just a little bit of power will settle on to the main wheels in a very scale-like landing.

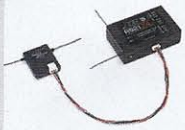
A full post-flight inspection was conducted for loose fasteners or any other issues.The inspection revealed that, as I suspected, the Z-Bend in the elevator in combination with the flight loads imparted by the stabiliator was inadequate, especially with a 55cc engine for power. After replacing the elevator hardware with a ball link on the servo end, the flying stabilizer was much better behaved. While aerobatics aren't the norm and I like to fly my planes in the manner they are intended, I didn't try anything crazy. However, the Cherokee will do very nice looking wingovers and has more than enough power for large loops. The ailerons are plenty for scale flying, but even on high rates the large wing makes any kind of rolls an adventure.

We Used

TRANSMITTER
JR 11X, JRP1100X

ENGINE
DLE-55, DLEG0055

RECEIVER
JR R921X DSMX, JRPR921X



SERVOS
(8) Savox SC-0251 Digital Metal Gear

BATTERIES
JR 5-cell 2700mAh, JRPB5008 and 4-cell 2200mAh, JRPB5001

SWITCHES
JR Heavy Duty Charge Switches, JRPA004

SPINNER
Tru-Turn 3.5 inch Aluminum, T T3502-B-120

PROP
Biela 22x10 Carbon, BP2010

THE LAST WORD

Despite a few issues with the instruction manual and my experience with the elevator linkage, the end result is well worth the effort. The fixed landing gear and overall simplicity of the Cherokee would make it an excellent choice for a first foray into giant scale. If you're a more experienced builder, the cavernous fuselage is just begging for a scale cabin and some pilot figures.

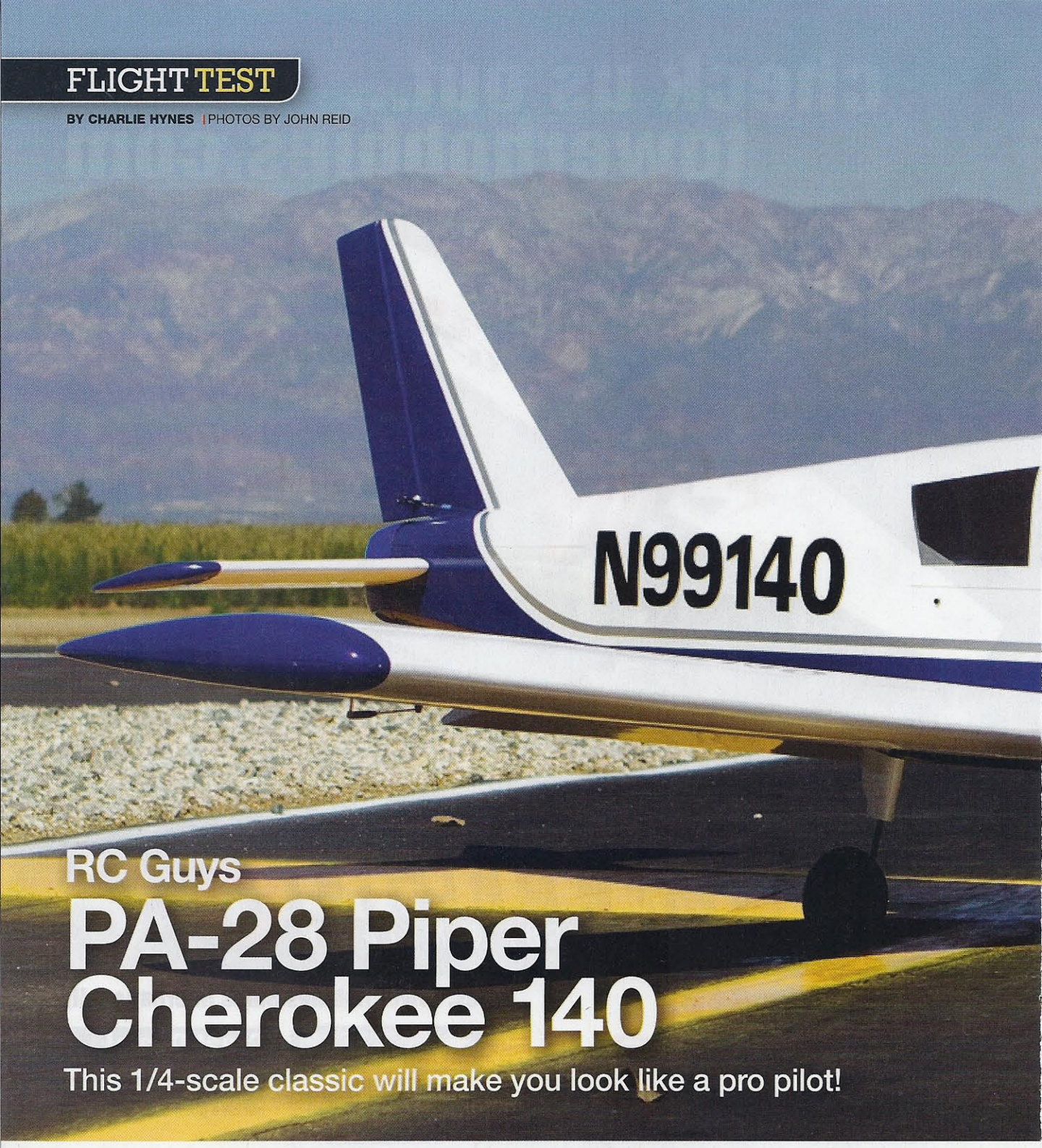
The model flew extremely well and handles like a large trainer. The Cherokee is relaxing to fly and is perfect for those flights at the end of the day doing lazy touch-and-go landings. The recommended engine provides ample power and most flying was done at half throttle. The DLE-55 provided so much power that I wouldn't have any problem flying the plane with a 35cc gas engine that would require less cowl hacking and would make the plane even lighter.

CONTACTS

BIELA PROPELLERS troybuiltmodels.com, (941) 342-8685
DLE ENGINES dleengines.com, (800) 637-7660
JR jrradios.com, (800) 338-4639
RCEXL rcextremepower.net, (678) 372-7697
RC GUYS rcguys.com, (519) 756-1110
RTL FASTENERS rtlfasteners.com, (800) 239-6010
SAVOX savoxusa.com, (855) 767-2869
TRU-TURN tru-turn.com, (281)479-9600
ZAP AND PACER ADHESIVES franktiano.com, (863) 607-6611

For more information, please see our source guide on page 105.

BY CHARLIE HYNES | PHOTOS BY JOHN REID

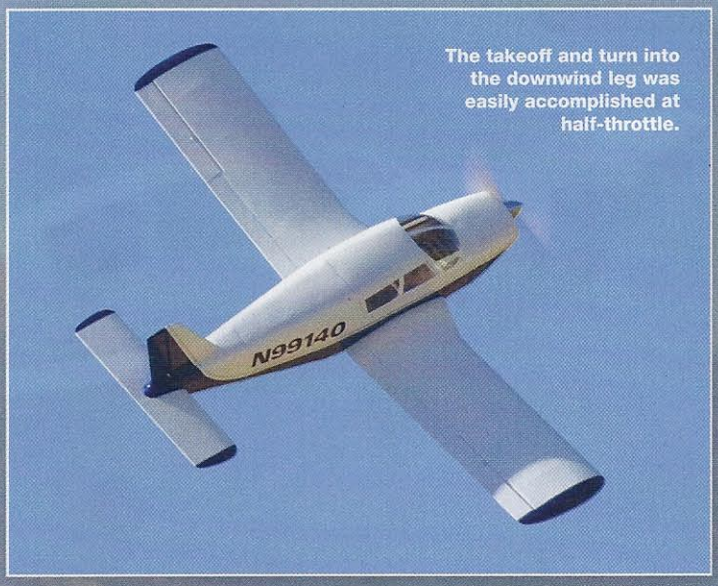


RC Guys

PA-28 Piper Cherokee 140

This 1/4-scale classic will make you look like a pro pilot!

This ¼-scale PA-28 Cherokee is suitable for intermediate to advanced pilots intended for a 160 2-stroke up to 220 4-stroke twin-cylinder glow engine or a 35 to 55cc gas engine and a 5-channel radio. The full-scale PA-28 (140hp) built by the Piper aircraft company was delivered with only two seats intended for flight training and has been type certified since 1960. It was released in a few different variations (including floats) and is still a very popular low-wing civilian plane. This ARF model has all laser-cut wood construction and iron-on covering. The fixed landing gear and wheels are included with a heavy-duty Oleo spring strut on the nose wheel and fiberglass main strut covers. All of the hardware to assemble the plane is included and comes with carbon tubes for the wing and full flying stab. This plane would be a good first gas-powered choice since the nosewheel will save props and having only flaps keeps it simple. This way you can get used to the engine and even play with a smoke system.



The takeoff and turn into the downwind leg was easily accomplished at half-throttle.

SPECIFICATIONS

Model: PA-28 Piper Cherokee
Distributor: RCGuys.com
Type: Civilian
Wingspan: 100 in.
Wing area: 1,823 sq. in.
Length: 73 in.
Weight: 18.5 lb.
Wing loading: 23.4 oz./sq. ft.
Radio req'd: 5-channel
Power req'd: 160 to 220 glow, 35 to 55cc gas
Price: $539

HIGHLIGHTS

- Good parts fit
- Nice finish on painted parts; matches covering
- Wide engine options
- Room for a full cockpit

UNIQUE FEATURES

Everything inside the box looked nice, from the painted fiberglass parts to the laser-cut wood and covering. It comes out of the box with decals installed, so it's a quick build. A manual for the plane is on the RC Guys website, so you can either bookmark it or print it out.

The first thing to get glued together is the keyed engine mount box; I used 30-minute epoxy and some tape while it dried. Triangle stock was the next thing glued to the engine box making the connection to the fuselage stronger and the glue fillet smaller. Then I added the nosewheel strut and mounted a DLE 55 engine to the firewall. Additional holes were marked and drilled for the fuel tubing, throttle linkage

IN THE AIR

I used the club's pavement runway but this plane will perform well on grass or dirt with ease on the 3 ½-inch main wheels provided. The 22-inch prop I used for this review model is close to the ground and could be a problem in taller grass or rocks but I haven't had any prop strikes on the smooth surface and there are no handling issues once the plane starts to move under its own power.

GENERAL FLIGHT PERFORMANCE

Stability: The Cherokee has very straight control response with no unexpected tendencies. I added some lead to the tail to get the plane to balance on the wing rod and this CG seems perfect.

Tracking: Once trimmed hands off, it stays where I point it until the power is increased more than ¾. At this point, I noticed it wanted to start a dolphin kick; the small elevator rod provided is not enough for all that elevator, so if you're using a powerful engine, you can easily upgrade to a 4-40 rod during assembly.

GEAR USED

Radio: Airtronics SD 10G & 92824 receiver (airtronics.net), five Hitec HS 645MG and three HS 422 BB servos (hitecrcd.com), Hydrimax 2000mAh 5-cell receiver pack and 1600mAh 4-cell flat pack for electronic ignition (hobbico.com)

Engine: DLE 55cc w/ stock muffler

Fuel: 87 octane with 2-stroke oil 30:1

Prop: Xoar 22x8 (xoarintl.com)

Aerobatics: The Cherokee can loop and roll with the best of them and even do knife-edge flight.

Glide and stall performance: With the engine running to touchdown, the plane wanted to float without flaps so a little down pressure helped it stick the tires on the marks. Even after I killed the engine with the transmitter, the plane still had enough speed and authority to turn off the runway onto a taxiway. Stalls are straightforward with no tip stall or rolling over on its back.

PILOT DEBRIEFING

This plane handles so well that it could be used as a trainer and, if it ever is, there will be a line at the buddy box all the way down the flightline! The all-flying stab gives you so much to play with but don't start with more that recommended throws until you have it figured out and know what dual rates and expo settings you prefer. You'll have fun with this plane every time you go to the field. Remember it is a big plane, and I found that the Sullivan Super Stand was a perfect fit for handling the fuselage upright or inverted. Putting the wings on and connecting the servo wires is a joy when I'm standing upright not bent over or kneeling. I plan to upgrade to a ¼-scale elevator servo down the road to remove the ballast and boost confidence.

The reviewer installs the included Phillips head screws to the cowl with a power screwdriver.

and nosewheel steering with brad point bits. The engine cowl does need to be cut out for the nose strut and exact engine to stick out on the bottom side. I removed those parts so the plywood could be coated with finishing resin to fuelproof the wood. A little trim on the box was needed to clear the stock muffler. I used a 3 ½-inch Magnum spinner and, since it was already polished, I only had to drill it out to fit the prop hub and open the slots a little more and re-balance it for the 22x8 Xoar prop. All of the other flight surfaces are predrilled and hinged with hinge point hinges. I used 30-minute epoxy on these and covered the hinge area with light grease to keep any epoxy out while they cured. After setting

The reviewer and Leslie Quinn ready the Cherokee for flight.

The scale-like landing gear looks good and supports the plane well.

up the servo trays in the wing next thing was to mount the servos, set up the servo arms, add the aileron horns and cut down the pushrods, adding Z-bends to the non-threaded ends. Adding the fixed gear was simple after drilling the main wheels with ¼-inch drill bit, the wheel collars have a slot for a small screwdriver. I positioned the electronic ignition unit to the side of the engine box instead of mounting it on top.

CONCLUSION

The plane went together in under 20 hours and was very easy to assemble starting with a clear workbench. I used a large Du-Bro gas filler and filter, tygon tubing, peel-and-stick 3M Velcro and zip-ties on everything else that isn't screwed on and a stencil burner tool to remove the covering over openings, I recommend the Cherokee to experienced pilots as a first gas-powered plane because it's both easy to build and handles well in the air. ✚

THRILL RIDE

Once the offer is made to go for a flight in any full-scale aircraft, it's an easy choice for me, all I need to know is where and when and I'm there! As I got to the airport in Carlsbad, CA, the plane we would be taking to Catalina Island was found sitting cleaned, fueled and ready to fly. All we had to do was walk around looking for anything not moving freely or missing like aileron hinge bolts and the bent cotter keys in them, check the fuel for water with a test tube, oil on the dip stick, remove the wheel chocks and hop in. The only door on the Cherokee is over the right wing so the pilot has to get in first, then any passengers in the back seat along with jackets or other gear and last the co-pilot, whose first job is to close the door and buckle up. As we went through a short preflight check and got our head sets on, the pilot got on the radio-checked the weather report and was cleared to taxi out to the runway with the proper code from the weather report. With the brakes on the engine is started with a couple of switches over head and the big red knob is pulled out on the instrument panel a little then stepping on the rudder pedals gets us rolling and turned in the right direction between other parked planes and out to runway. Holding for other planes taking off and landing at some airports can take time but we were lucky, only one plane was landing before we could go. The sky was blue and the wind calm as we got in the air and my job just got harder going from passenger to copilot making the plane climb and holding a heading then holding heading and altitude. The pilot was operating the radio and engine but he let me do the flight part once in the air away from the airport. The Cherokee is easy to fly and it has the smoothest feeling controls. Since we were flying over the ocean the flight was smooth and the wind direction kept pushing me off the compass heading slightly so corrections were needed to maintain that and the air traffic control guys on the radio were expecting us to maintain an agreed on altitude within 200 feet so my attention had to stay on the altimeter and compass while I was in control. As we approached the destination airport on top of the island it came into view and didn't look like much more than a clearing in the trees at first, so the pilot took over the controls and took us in for a nice landing.