

# FLY RC Review

BY BURT SIMSEK

## Key Features

- > The Grasshopper has nice, scale features such as operational cabin doors, shock absorbing struts and skylight windows.
- > The model is easy to transport and assemble at the field.
- > It has a very relaxed flight envelope.
- > Using the optional scale components, the Grasshopper can be customized to your liking.

## Pros

- > Large wingspan
- > Operational cabin door
- > Shock absorbing scale landing gear
- > Skylight windows
- > Choice of nitro or electric power

## Cons

- > Some of the scale features require additional purchase
- > The spring that holds the wings together loses tension after a while



## Author's Opinion

The Maxford 1/6-scale L-4 Grasshopper V2 is a very nice replica of one of the most popular light aircraft in aviation history. Supplied in ARF form, the L-4 Grasshopper can be powered by your choice of nitro or electric. The assembly process is quick and easy and the result is a scale-looking airframe that presents a relaxed flight envelope. The Grasshopper contains some nice, scale features such as a functional side door, shock absorbing landing gear and skylight windows. Several additional scale options such as a detailed dashboard, dummy engine and 1/5-scale pilots to complete the look of your Grasshopper are available from Maxford USA.



**MAXFORD USA**

**1/6-Scale**

**L-4 Grasshopper V2**



Originally developed for flight training, the Piper J-3 Cub is one of the most popular civilian aircraft of our time. Still in use today, there have been many variations of the J-3 Cub which included the L-4 military variant. The L-4 is essentially a J-3 Cub which has been painted Olive Drab with the addition of Plexiglas skylight windows for improved visibility. In the postwar era, many aircraft were either sold or given to various countries and several hundred made their way to the Turkish army. The Cub holds a special place in our family since my father-in-law earned his wings as a scout on a PA-11 which was also the first version to have a fully enclosed cowl.

The Maxford 1/6-Scale L-4 Grasshopper is an ARF airframe that offers an impressive 71-inch wingspan and can be powered by your choice of nitro or electric power plants. The L-4 contains several nice, scale touches such as the functional magnetic side door, shock absorbing landing gear, the V-brace inside the canopy and the inclusion of the skylight windows. Additional items available from Maxford USA include the detailed dashboard, dummy engine and 1/5-scale pilots to really make the L-4 stand out in the crowd.

#### NEED TO KNOW

**MANUFACTURER:**  
Maxford USA

**TYPE:** Sport-scale  
nitro/electric ARF

**FOR:** Beginner to  
intermediate sport pilots

**MINIMUM FLYING AREA:**  
RC club field

**PRICE:** \$169.99

**NEEDED TO COMPLETE:**  
Minimum four channel radio system, two mini servos, two standard servos (three if nitro-powered), two 12-inch servo extensions, a 12-inch Y-extension and a .40-size nitro engine or equivalent electric power system.

*Fly your own  
reconnaissance  
missions!*

PHOTOS BY BURC SIMSEK AND LAURENT CAEKEBEKE



## IN THE AIR

The advertised ready-to-fly weight of the L-4 is 5.3 pounds. Maxford USA recommends the Uranus 35425 brushless motor to fly the model. I used a 4S setup with a slightly heavier motor and a larger 4S LiPo battery which explains the difference in weight. With the power system I used, I measured 57A and 760W of input power which made the L-4 extremely powerful. The recommended power system will probably be enough for most but I also plan to perform aero-towing with this airframe which is why I opted for the more powerful setup.

Due to its narrow landing gear and large wingspan, you have to pay attention when on the ground in crosswind situations as it is very easy to tip the L-4 over. However, once lined up with the wind, it does not take much to get the L-4 airborne. Once in the air, the L-4 is a very relaxing airframe to fly. The control provided by the recommended throws is spot-on for this airframe. When I tried to increase the throws to the maximum available rates, I found that the rudder was extremely effective in controlling the yaw and even allowing me to perform some basic spins. It is probably best to keep the elevator throws around the recommended ranges as higher throws only seem to make the airframe less stable. However, even with the higher rates, I did not observe any unexpected snappy behavior and this was most likely due to its large wingspan. I noticed that the L-4 is not an easy airframe to stall. Trying to stall it from level flight, I really had to exaggerate the angle of the nose to get it to drop a wing but it was easily recoverable with some power from the motor. If you keep your angle of attack under control, you should be able to glide the L-4 all the way to the ground.

With an abundance of power from the Power 32 motor that I installed, I was able to perform some basic acrobatics and even some spins which was fun. I was easily able to perform basic maneuvers such as loops, rolls and hammer-head turns. Inverted flight required some up elevator which was expected and the roll rate at max throws was around one roll per second. As the L-4 is not really about acrobatics, I preferred to keep the flight relaxing and scale-like.

Landing the L-4 is uneventful thanks to the nice glide ratio provided by its large wingspan. Since the wings have a lot of lift, cross wind situations are a bit tricky but manageable overall with careful use of the responsive rudder. With a mix of scale and sport-type flying I was able to easily achieve flight times of eight minutes with my power system and all of the components remained cool to the touch.



## ASSEMBLY TIPS

The L-4 assembly process is a quick one. Since it is an ARF, most of the hard work has already been done for you. The majority of the build involves installing the electronics and assembling the wings, landing gear and the tail. To maintain the scale looks of the L-4, I decided to use an electric power system; an E-flite Power 32 brushless outrunner motor, E-flite 60A ESC and an E-flite 4S 3200mAh LiPo battery. An optional electric motor mount for the L-4 is available from Maxford USA. The Power 32 I used fit perfectly on their motor mount and I was able to achieve a very good fit of the cowl. The optional motor box (<http://www.maxfordusa.com/f3epconversionmount.aspx>) gives you flexibility of motor choice which is common on Maxford planes; they like to give the hobbyist more choices for outfitting their models.

The rudder and elevator are actuated by two standard servos which are installed in the fuselage. The control rods have already been placed in the fuselage and guided



through plastic guide tubes. The horizontal stabilizer is keyed so you will not have to worry too much about alignment. All that is required is to strip some covering before installing the stabilizer, hold it in place with the vertical stabilizer and glue it with some thin CA. The elevators are provided in two halves and are held together with a metal, U-shaped rod. Both the elevator and the rudder attach with CA hinges and the cuts have already been made.

The wings use mini servos for the ailerons which required a six-inch servo wire extension to route the leads to the fuselage. Once the ailerons are attached and the connections made to the servos, the wings can be attached to the fuselage using two carbon wing tubes and a spring system to hold them in place. The spring is easily accessed via the



The access hatch on the bottom of the fuselage allows for easy battery changes.

operational cabin door. The doors are attached to the fuselage with tape which works quite well thanks to the powerful magnets that hold the doors in place. The wing is further supported by four wing struts. These attach to the wings with wood screws but the attachment to the fuselage is with a metal screw. Removing two screws and the spring will allow for easy removal of the wing for transport.

There is ample space in the fuselage to mount the ESC and battery. I mounted the ESC under the firewall to shift more weight to the front of the airframe. The battery tray is easily accessible via the bottom battery hatch which also has cooling holes to keep airflow over the power system. The electric motor mount does not come with any holes so you are free to drill and mount your chosen power system. There are guides on the motor mount to help you center the motor but I found that the only difficult part of this build was accessing the back of the motor mount to place blind nuts as the whole assembly is a bit tight. I talked with Maxford and learned that using their optional motor mount significantly simplifies this process.

I really like how Maxford designed the shock absorbing landing gear. The struts are painted metal and attach to the fuselage with hinges. Two springs are then used in a cross pattern to hold the struts in place. The shock absorbing gear is spring-loaded so you don't need to worry about rubber bands getting soft or broken in hot summer weather. You could also dress up the springs by adding a bit of heat shrink tubing if you want a more scale look. The tail wheel is attached to the rudder as with most ARFs of this size.

I was also provided with the scale dash upgrade kit and the dummy engine. I thought

about re-creating the enclosed engine look of the PA-11 which my father-in-law flew but decided to add the dummy engine since this is really an L-4. The detailed dash upgrade is a worthy addition and adds a nice touch to the airframe. I really enjoyed the provided throttle mechanism; you can actually move the throttle back and forth with your finger.

The manual contains the recommended throws and center of gravity. I added a few grams of weight to the nose to balance the L-4 on the recommended C.G. and set the control throws to the recommended distances and the L-4 was ready for flight in no time at all.

#### THE LAST WORD

I think the L-4 is a very nice ARF that would raise the interest of most enthusiasts. The ARF arrives with a nice collection of scale features such as the operational door and skylight windows. There is an abundance of additional scale components such as the scale dashboard, the dummy engine and even scale wheels that can be obtained from Maxford USA to further dress up the L-4 to your liking. I like the fact that they keep the cost down on the base model but have the options to customize it if you so desire. Additionally, the cockpit can be further detailed by adding a floor and scale pilots.

In the air, the L-4 performs without any nasty tendencies and is a pleasure to fly. Depending on how you power it, you will be able to perform some basic acrobatics as well. I chose the electric option to maintain its scale look as I think it would be a shame to have a big muffler sticking out of the side of that beautiful cowl. With a very nice scale look and relaxed flying envelope, I could not find anything not to like on the L-4 and look forward to many more relaxing flights. ☺

#### SPECS

**WINGSPAN:** 71 in.

**WEIGHT:** 6 lb., 2 oz.

**CUBE LOADING:** 9.2

**LENGTH:** 48.4 in.

**RADIO:** Requires four-channel radio system; flown with a Futaba 8FG transmitter and a Futaba FS617R receiver

**SERVOs:** Hitec HS-322HD for rudder and elevator, ParkZone DSV130M servos for the ailerons

**MOTOR:** E-flite Power 32 brushless outrunner

**ESC:** E-flite 60A Pro Switch brushless with BEC

**POWER CONSUMPTION:** 760W at 57A

#### We Used

##### RADIO

Futaba 8FGAS, LXAVCN



##### RECEIVER

Futaba FS617R, LXTHL6



##### MOTOR

E-flite Power 32, EFLM4032A



##### ESC

E-flite 60A Pro Switch-Mode BEC Brushless ESC, EFLA1060



##### BATTERY

E-flite 4S3200mAh LiPo, EFLB32004S30



##### AILERON SERVOS

Parkzone DSV130M, PKZ1090



##### RUDDER & ELEVATOR SERVOS

Hitec HS-322HD, 33322S



##### PROPELLER:

14x7 APC, LXZL02



#### CONTACTS

**E-FLITE** e-fliterc.com, (217) 352-1913

**FUTABA** futaba-rc.com, (217) 398-8970

**HITEC** hitecrd.com, (858) 748-6948

**MAXFORD U.S.A.** maxfordusa.com, (562) 529-3988

**PARKZONE** parkzone.com, (800) 338-4639

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