

Battery information

PLEASE RETAIN THIS INFORMATION FOR FUTURE REFERENCE.

NOT SUITABLE FOR CHILDREN UNDER 3 YEARS DUE TO SMALL PARTS WHICH MAY REPRESENT A CHOKING HAZARD. NOT RECOMMENDED FOR CHILDREN UNDER 10 YEARS OF AGE.

- Non-rechargeable batteries are not to be recharged;
- Rechargeable batteries are only to be charged under adult supervision;
- Rechargeable batteries are to be removed from the toy before being charged;
- Different types of batteries or new and used batteries are not to be mixed;
- Batteries are to be inserted with the correct polarity;
- Exhausted batteries are to be removed from the toy;
- The supply terminals are not to be short-circuited.

Always :

- Make sure battery compartments are secure.
- Use batteries of the correct size and type.
- Fit batteries correctly observing the plus and minus marks on the battery and compartment.
- Replace a whole set of batteries at one time.
- Remove dead batteries from equipment.
- Remove batteries from an appliance that will not be used again for a long time.
- Please remember that small button cells and AAA batteries should be kept away from young children as they could be easily swallowed. Seek medical advice if you believe a cell has been swallowed.

Never :

- Mix different types of batteries.
- Mix old and new batteries.
- Dispose of batteries in a fire.
- Attempt to recharge ordinary batteries.

Consumers have a significant role to play in reducing the impact of waste electrical and electronic equipment on the environment, you can help by re-using or recycling such equipment.

The crossed out wheellie-bin symbol indicates that the product & batteries must not be disposed of in domestic waste as they contain substances which can be damaging to the environment and human health. If you cannot re-use or recycle the product or batteries, please use designated collection points, or civic recycling facilities to dispose of them.

Spare parts are available by emailing tkc@wowstuff.co.uk



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Living Room Flier

science
museum

uk

What does it do?

The Living Room Flier is an ultra-light weight remote-controlled aircraft. Its rugged construction, out of tough EPP material, and protected propeller make it robust enough to fly indoors.

How does it work?

To fly in the air, your Living Room Flier needs to have two forces acting on it: lift and thrust. Lift is the upwards force generated by the wings as they move through the air, while thrust is the forwards motion generated by the electrically-powered propeller. The light weight of this aircraft means that the lift force does not need to be great. As this is generated as a product of the forward thrust it means the aircraft can fly at a relatively low speed – ideal for flying indoors!

Did you know?

Propellers make use of the third law of motion discovered by Isaac Newton in the 17th century: "for every action on an object there is an equal, but opposite, reaction". In other words, any force is balanced by another one in the opposite direction. For example, when you kick a football you apply a force to it that makes it move. At the same time it applies a force to your foot which you feel as the impact. If this didn't happen, when you kicked the ball your foot would just pass through it as if it wasn't there. In the case of a propeller, the force comes from the motion of the propeller blade against the air. The reaction is the pressure that the air places on the blade. Each propeller blade is angled so that this pressure is pointing in the direction you want the propeller to move – it pushes the air backwards and so it (and the aircraft) move forwards.

When wings move through still air they generate an upwards force that lifts the aircraft. The shape of a wing creates a difference in the air pressure above and below the wing. Below the wing, air pressure rises as the moving wing strikes stationary air and slightly squashes it (this surface being slightly angled). Above the wing, the curved shape forces the air in a curved path, creating a slight vacuum as the wing moves away from the airflow. The result of this pressure difference is an upwards force.

Try it out

On a windy day, try holding a thin book or a flat tray at an angle. It might be difficult as the pressure from the wind will try to force the flat surface up or down. This is a way to experience lift first-hand – the only difference for aircraft being that the air stays still and the wing moves instead.

Fact files

Orville Wright was the first person to make a powered, sustained and controlled flight, in Kitty Hawk North Carolina on 17th December 1903. A century later the largest passenger aircraft, the Airbus A380, capable of carrying over 550 passengers was unveiled. In a little over a single human lifetime, air travel had gone from a novelty to being commonplace.

National Curriculum coverage

This product is suitable for exploring science at KS2 and KS3 of the National Curriculum. Use it to discover more about Forces and Motion (physical processes).

In the Science Museum

The Science Museum's Flight gallery contains real and replica aircraft from throughout the history of human aviation. Highlights include a replica of the Wright brothers' Flyer. Orville Wright had presented the original, in which he made the first powered human flight, to the Science Museum in 1928. Following an improvement in his relations with the US government it returned to its native country to go on display in the Smithsonian Institute, and an exact replica was given in exchange.

Living Room Flier

Instructions

It is very important to read and understand these instructions before flying the Living Room Flier (LRF), a plane that can be flown in your own front room.

Battery Requirements

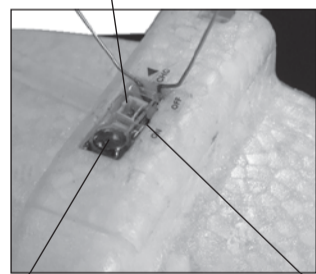
LRF: Li-poly battery (included).

Controller/ Charging Unit: 4xAA batteries (not included). Alkaline batteries are recommended for best performance.

Parts Index

Living Room Flier

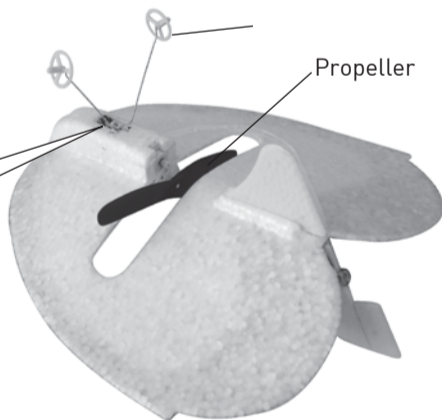
Charging socket



On / Off switch

Infra-red receiver

Propeller



Controller / Charging Unit

Charging socket

Power and charger lights

Throttle (up for increasing power)

A / B / C switch (always have on A)



Direction control switch (LRF goes left and right)

On / Off switch

Preparations before Flying

Battery Installation - Controller/ Charging Unit

1. Open the battery chamber on back using a Phillip's type screwdriver and remove door.
2. Insert 4xAA batteries into the battery chamber according to the correct polarity as shown.
3. Replace battery compartment door and screw shut with Phillip's type screwdriver.



Battery compartment

Recharging the Device

1. Move the On / Off switch on the LRF body to the OFF position. Move the On / Off switch of the Controller / Charging Unit to On.
2. Connect the Controller/ Charging Unit and LRF with the Connecting Wire enclosed. One end goes into the Controller / Charging Unit socket and the other into the Charging socket of the LRF.
3. A green charging light on the Controller/Charging Unit will appear during charging. When completed the green light will go off, indicating the LRF is fully charged. This will take around 20 minutes, and give a flight time of 6-8 minutes.

How to fly the LRF

1. Switch the On / Off switches on both the Controller/ Charging Unit and LRF to the On position.
2. It is best to launch the LRF from a clear table, but it can also be launched from your hand or the floor (not recommended on thick carpet).
3. The red Power Indicator-Light on the Controller/ Charging Unit may be blinking. Push the Throttle to the maximum and back, the Power Indicator Light should now be constantly on. You are now ready to fly.
4. Press the Right side of the Direction Control Switch for LRF to move to the right (if flying away from you), and left (if flying towards you). Pressing the Left side of the Direction Control Switch has the opposite effect on LRF movement.
5. Continuous pressing of either side of the Direction Control Switch will make the LRF go round in circles.

Trimming

It is important the LRF goes straight when flying. If it goes to the left or right, adjust the tail fin trimming to compensate. Only once this is done can the LRF be flown with control and accuracy.

